Social and Technological Transformation of Farming Systems:

Diverging and Converging Pathways

Proceedings of the 12th European IFSA Symposium
12th - 15th July 2016 at Harper Adams University, United Kingdom

Volume 3

Andrew Wilcox and Karen Mills (Eds.)

Harper Adams University

IFSA INTERNATIONAL FARMING SYSTEMS ASSOCIATION EUROPE GROUP

Workshop 5.9: Public food procurement policies: local and organic food in public catering systems

Convenors: Mark Stein, Helmi Risku-Norja and Carola Strassner

Throughout Europe there is increasing interest in organic food and short food supply chains. This has brought about changes in agricultural, environmental and food policy. There is increasing interest in local and organic food within public procurement, as part of a wider concern with sustainability. The initiatives across Europe feature especially school food programmes. Public catering also includes food provided within nurseries, hospitals and elderly care facilities. The proponents stress environmental benefits and the health and nutritional value of high quality organic food and re-localised food production and consumption as well as local partnership and community awareness. Provision of this food may be accompanied by food education to promote children's awareness of healthy and sustainable food. Within the EU there is wide variation among the schooling systems and school catering policies. However public sector food procurement must be made within the legal framework of EU public procurement law. This workshop focused on public catering services. The aim was to disseminate knowledge regarding the policies and practices which are effective for institutional consumers in increasing their usage of organic and local food. The workshop examined public food procurement for catering services and work practices in public kitchens. It considered the significance of public catering markets for smaller suppliers and how institutional customers may open up more opportunities for smaller suppliers, who may themselves collaborate to win contracts.

The workshop invited participants to present research on public procurement policies and practices, including case studies. Issues considered included:

- Long term strategies for developing public catering based on local and organic supply
- Tendering processes – seeking the most economically advantageous tenders
- Food markets, institutional customers and the Small & Medium Enterprises
- Co-operation between public procurers and smaller suppliers, and among small suppliers in view of the needs of public catering
- Training of kitchen staff: motivation, menu planning, nutrition and environmental aspects of food services, eco-efficiency in meal preparation
- Social sustainability: issues of food culture, food security and sovereignty
- Community involvement, e.g. involving service users (parents, children and teachers) in choices relating to public catering, matching farms and school canteens – what works, what doesn't.
- Case studies of successful suppliers of local and organic food

Organic produce in municipal foodservice operations and other public bodies in Germany

Strassner, C.[1] and Roehl, R.[2]

[1] *Münster University of Applied Sciences, Department of Food - Nutrition - Facilities, Germany*

[2] *a'verdis Sustainable FoodService Solutions, Münster, Germany*

Abstract: In Germany, federal, state and local authorities are increasingly integrating issues of environmental and social sustainability into procurement policies. The network of German organic towns is one of the pioneers and drivers of this development, working together with the aim of promoting the production, processing and consumption of organic and local food. The aim of this study is to determine the status quo for the use of organic foodstuffs by local authorities and other public bodies throughout Germany. Research was carried out by means of a desk study of pertinent literature, the websites bioC.info and oeko-kontrollstellen.de, as well as personal communications from organic suppliers, consultants and companies that assist caterers submitting tenders. Municipalities already using organic foods to a significant extent in their service provisions were identified and examined regarding their process in establishing organic use, the extent and areas of their use. Students of the M.Sc. degree programme "Sustainability in service management and food industries" were involved in the survey. This paper presents the results of the municipal survey in the form of contrasted case studies, all of which target organic use for meal provision of children and youth in kindergartens and schools. Exemplary projects include "Bio für Kinder" (translation: Organic for Children) by the city of Munich together with Tollwood GmbH, the latter of which organises a cultural tent festival in Munich twice a year. A further case is the resolution by the city of Munich that, in kindergarten and school meal services, at least half the foodstuffs procured must be of organic production. In conclusion, even without specific policies, many catering facilities in the public sector are already using organic food in divergent ways and to varying degrees. The use is strongly linked to individuals in administration and to supportive political climates in the states.

Keywords: Local and organic food (LOF), Germany, public procurement, schools, kindergarten

Introduction

Background

In Germany, federal, state and local authorities are increasingly integrating issues of environmental and social sustainability into procurement policies. In the states of Bavaria, Baden-Wuerttemberg and North Rhine-Westphalia, for example, reports, guidelines and a code of practice on this subject were or are being written. Furthermore, a working group, with participation by the Federal Chancellor's Office, a number of Federal Ministries (the Federal Ministry of Finance, the Federal Ministry of the Interior and the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety) and the Federal Office for Agriculture and Food, is dealing with the concept of sustainability for the supreme federal authorities. The network of German organic towns is one of the pioneers and drivers of this

development. Here, among others Munich, Nuremberg, Augsburg, Heidelberg and Freiburg work together with the aim of promoting the production, processing and the demand for organically grown local food (biostaedte.de). On the 4th of February 2016 the German network of Biostädte was officially launched with nine members. As the name implies, the main focus lies in supporting organic food and farming through municipal measures.

Much of this effort in "greening" public procurement overall is aimed at meals served to children and youth in kindergartens and schools (Strassner & Roehl, 2014; Roehl & Fülles 2012). There are a number of factors that contribute to this development: (1) the schooling system is undergoing many changes that include the move to all-day schools (Ganztagsschulen), necessitating a hot meal service and bringing forward school leaving (Abitur) by one year i.e. after 12 years instead of 13 (known as "G8"); and (2) successive integration of earlier health and nutrition initiatives into a large, national programme that targets all school meal stakeholders. IN FORM is Germany's national action plan to promote healthy diets and physical activity across all age groups. These initiatives include the creation of a Network Centre for School Meals (Vernetzungsstelle Schulverpflegung) in each of the 16 federal states, and the adoption and continued development of quality standards for school meals (DGE, 2014) and other institutional foodservices by the German Nutrition Society (Deutsche Gesellschaft für Ernährung, DGE). The quality standard for school meals is a national standard with a voluntary character. It includes general recommendations on aspects of sustainability.

Purpose of the investigation

The purpose of this study is to determine the status quo for the use of organic foodstuffs by local authorities and other public bodies throughout Germany. The focus of interest lies with public bodies that stipulate the use of certified organic products in foodservice operations under their responsibility, specifically those which target organic use for meal provision. The investigation is exploratory in nature.

Materials and Methods

Research was carried out by means of a desk study of literature pertinent to public procurement in Germany, especially green public procurement and sustainable public procurement. Two internet directories of certified organic operators were screened (the websites bioC.info and oeko-kontrollstellen.de) in which data is provided by participating control bodies and associations. Furthermore, personal communications from organic suppliers and consultants were sought, though this approach was not exhaustive. Municipalities already using organic foods to a significant extent in their service provisions were identified and examined regarding their process in establishing organic use, as well as the extent and areas of their use. Where possible, tenders and associated materials were included as a documentary source. Students of the M.Sc. degree programme "Sustainability in service management and food industries" at FH Münster University of Applied Sciences were involved in the municipality survey which took place from March to July 2015.

Results

Local authorities and other public bodies overall

The results of the municipal survey quickly made evident that almost all cases but one found during the time frame of the study were cities that were focusing their efforts on the public procurement of meals in schools and/or kindergartens. We therefore excluded other municipal

institutions of social welfare (e.g. public hospitals or homes for the elderly). Since our interest lay in the introduction and use of organic produce by means of the tender process, and we selected cases accordingly, we have no information on whether any other aspects of sustainability are being addressed by public food procurement policies in other municipal institutions.

The case of the city of Berlin, which has a relatively long history of addressing public procurement of school meals and the integration of organic produce into those meals, is excluded from this paper since it has been comprehensively reported on elsewhere (Roehl et al. in press, Arens-Azevedo & Tecklenburg, 2012; Nölting et al., 2009; Jäger, 2008). As a contrast to the cases presented below it should be noted that the city of Berlin stipulates a minimum of 15 percent organic in its technical specifications (Partmann, 2013). Higher proportions of organic food are awarded more points according to the staggered evaluation criteria. Bidders not meeting the 15 percent entry level are excluded from the bidding process. This minimum organic level has meanwhile been reached at all elementary schools in Berlin; on average the organic level in school meals has reached 40 percent (FÖL, 2014).

Individual or independent public bodies

Federal Office for Agriculture and Food

The Federal Office for Agriculture and Food (Bundesanstalt für Landwirtschaft und Ernährung, BLE) is tasked with matters that fall within the scope of the responsibilities of the Federal Ministry of Food and Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL). These areas include food supply and security, control and licencing, market issues, programmes and research promotion as well as international relations. The federal offices are located in Bonn, Munich and Weimar in which more than 1.200 employees are based. (BLE, 2015)

In 2014 the federal institution in Bonn revised the concession assignment details for its on-site canteen. With the call to tender the BLE searched for an operator able to provide contemporary, healthy and tasty food offers and able to service the canteen rooms as a space for sharing mealtimes and providing further communication opportunities amongst BLE employees and also their guests. The technical specifications, which comprise 17 detailed pages, include guidelines for the quality and the origin of the foods. Food specifications include the use of fresh products of high quality, as far as possible from local production in-season and therewith linked to short routes of transport (short chain). The proportion of local organic foodstuffs has to reach at least ten percent of procurement value overall and, in so doing, emphasis is to be laid on long term supply partnerships with (organic) farmers. Certain foods, e.g. carrots for the salad bar, couscous and whole wheat noodles, should be offered nearly completely in local and/or organic quality. In addition, three or more meal components in organic quality and preferably of local origin are to be included in the menu every week and clearly labelled for easy identification. It is explicitly mentioned that offering and labelling entirely organic meals or regional meals is not necessary. Bidders are expected to undergo organic certification according to German law.

Cities including organic food quality in their technical specifications

City of Neuruppin

Situated on the shores of Lake Ruppin, some 70 km North of Berlin, lies the city of Neuruppin. About 32,000 citizens live in and around this city in the federal state of Brandenburg. In the city's Strategy 2020 paper a core sentence states that Neuruppin's future lies in education (Fröhlich 2010, p.7). The city sees itself as having an important regional function in the provision of teaching concepts and infrastructure starting with pre-school, through primary, secondary and tertiary education institutions.

In early 2015 the public procurement contract addressing meal provision in all of the city's urban kindergartens and schools was revised and put out to tender. About 1,700 meals are provided on a daily basis. The head of the city's Office for Education, Culture and Social Welfare as well as the parents sought an improvement in food quality. A town hall meeting was convened in order to inform parents about the new tender and to gather requests and suggestions from them regarding the school and nursery school meals. The head of the Office had already dealt with the subject intensively in advance. As one measure, he attended a seminar at the Network Centre for School Meals in Brandenburg (Vernetzungsstelle Schulverpflegung Brandenburg), which covered exactly this same issue of invitations to tender for school and nursery school catering. After the seminar he continued to have discussions with the Centre. At the meeting with the parents he was thus already able to present a draft service specification which was then discussed. The support for organic and local food came from both the parents and the head of the Office. At the request of the parents and in order to give smaller regional service providers a chance, the tender was divided into two lots, namely one for the meal service of the schools and one for the kindergartens. The advanced draft version of the tender criteria was then introduced to all schools and nursery schools at their school conferences. They were able to decide freely whether they wanted to participate in the central tender or submit individual tenders. Finally all schools and kindergartens agreed upon a single set of tender documents. Two reasons suggested for this success are the very good preparation and the full participation of institutions in the design of the tender. Moreover, there were some points that the pre-schools and schools could still decide individually for themselves, such as offering a buffet or select menu lines. The inclusion of foods of certified organic quality is now a tender criterion which can constitute up to 15 percent of the total tender evaluation.

City of Oranienburg

The town of Oranienburg lies in the North of Germany, about 35 km beyond Berlin, in the federal state of Brandenburg. Its population comprises over 42,000 citizens and its infrastructure offers around 20 kindergartens and as many schools. (Oranienburg n.d.)

In Oranienburg the desire for the inclusion of organic products in school and kindergarten meals came from the parents. They also voiced concerns about integrating more healthy and fresh foods into the catering for children at the revision of the town's quality criteria. Accordingly environmental aspects and aspects relevant for health should be more strongly taken into consideration. Specifically a 10 percent organic product level was demanded with the renewed tendering of the catering for schools and kindergartens in 2014. Evaluation

criteria of the bids included the price and the fulfilment of the quality concept, which each contributed 35 percent to the assessment, while the remaining 30 percent was awarded for the fulfilment of the organic proportion.

City of Gotha

Gotha, linked to the life of Martin Luther and the history of the reformation, is today home to about 46,000 people. Children and adolescents attend one of approximately fifteen schools in the Thuringian city (Stadtverwaltung Gotha, 2016). Invitations to tender for meal provision services are centrally coordinated by the city offices. The development of the most recent tender documents (Stadtverwaltung Gotha, 2015)) took place in a number of meetings with parents and with facility managers. During this process it became evident that the origin of food used was increasingly important to the stakeholders and that there was a desire for organic produce.

The Thuringian Law concerning the Allocation of Public Contracts *(Thüringer Gesetz über die Vergabe öffentlicher Aufträge – ThürVgG)* forms the basis for the tenders concerned with kindergarten meal provision. Paragraph four makes provision for including environmental and social criteria in procurement procedures (ThürVG, 2011). It states that environmental and social concerns can be considered at all stages of the procurement process, including the definition of the subject of the contract, the technical specifications, the selection of bidders, the award of the contract and the conditions for the execution of the order, provided that they stand in connection with meeting the order and are indicated in the announcement or the tender documents. As a result the aspects "preparation and production" and "origin" each now contribute nine percent in the invitation to tender for warm meals in five of the kindergartens. Here the use of organic food plays a role as well as the question as to whether the supplier has organic certification. These aspects are incorporated in the invitation to tender under the criterion "quality", which in addition to the criteria price, visual appearance, and freshness and flavour, counts as a main criterion.

City of Landau

The local education authority of the city of Landau (population: 43,000) in the federal state of Rhineland-Palatinate wants attractive, healthy school meals that are in accordance with the national school meal recommendations of the German Nutrition Society (DGE). In 2015 the invitation to tender for lunch services in nine all-day schools was announced (Stadtverwaltung Landau, 2015). The description included the request to include local, in-season and organic fruit and vegetables where possible. In this case a binding requirement was waived because the potential bidders were already constrained by the catering system "warm delivery" and the associated maximum hot holding times.

City of Norderstedt

Norderstedt, with almost 72,000 inhabitants, is the fifth largest city in the federal state of Schleswig-Holstein. The state itself has a population density below the national average and projects into the sea with the North Sea on one side and the Baltic Sea on the other. There are roughly three kindergarten groups in Norderstedt with different funding support: 14 independently funded; 11 church-funded; and ten publicly funded (2015/2016) kindergartens (Stadt Norderstedt, 2015).

The Office for Schools, Sport and Kindergartens is responsible for organising meal provision services at eight kindergartens. After a thorough debate on the issue, the city administration defined organic quality as an important criterion in the context of public tenders. It arose at the time of conversion of the foodservice systems from cook-to-serve to delivery-to-serve. In order to have further criteria over and above price in the tender process, “organic” was chosen to describe the quality of the food used. Furthermore, the city of Norderstedt uses the DGE quality standards for school meals as guidance, which suggests that organic foods can and should be used.

While in the tender documents "organic" is not explicitly required but merely indicated as "desirable", it has a significant impact as an award criterion in the evaluation. If less than ten percent organic is reached, the bidder is awarded no points, for up to 40 percent organic 50 points are awarded (5 percent), while for over 40 percent organic 100 points are awarded (10 percent). An organic certificate from the potential contractor will be awarded with an additional 50 points (5 percent). A total of 1,000 points (100 per cent) can be achieved within the evaluation, so that the points awarded for the use of organic food make up a large part (up to 15 percent at 100 percent organic plus organic certification). The tender did not specify which product groups should be organic. The kindergartens can choose from different meals, thus the proportion varies between kindergartens.

City of Marburg

Once home to the Brothers Grimm, the university town of Marburg counts about 81,000 persons as its citizens today. The federal state of Hesse, in which Marburg may be found with about 26,500 students, lies in the centre of Germany and contains Frankfurt as its largest city. The use of organic produce in Marburger kindergartens has a history going back more than ten years. Already in late 2005 the members at the city council meeting in Marburg agreed unanimously that all pre-school and day care facilities in Marburg should offer only foods from organic and / or local production. Two main reasons for this decision were a desire to avoid the use of genetically modified foods in pre-primary catering and also to support regional suppliers (Magistrat Marburg, 2006). Since then all child day care facilities have been obliged by the city to exclusively use products from organic or local production. To support this type of procurement, the city of Marburg covers the additional costs compared to conventional food in the form of a subsidy of two euros per meal. The parents’ share per meal is approximately three euros.

City of Heidelberg

Around 150,000 inhabitants live in Heidelberg, a UNESCO city of literature, located in the south-western federal state of Baden-Württemberg. The oldest German university can be found in this riverside town offering study places to about 30,000 students. Meanwhile more than 4,500 children aged 3 to 6 years are looked after in day care centres. In Heidelberg nearly 30 institutions run 87 facilities offering extensive and varied children’s care services. The department of day-care centres of the Child and Youth Welfare Office is responsible for the urban facilities.

The issue “organic” has been omnipresent in the Heidelberg municipality for several years. Between April 2013 and June 2014 the Agenda 21 office ran a campaign called "Bio in Heidelberg" (Organic in Heidelberg). It was a campaign to promote organic food in Heidelberg

and to convince as many people as possible, including residents and administration employees, to choose and use organic products (Heidelberg, 2016). One element of the campaign targeted the city council as a role model. The municipal offices were provided with information and sampling opportunities and organic was included in the training programme for municipal employees. When tenders were invited for catering to high schools a 10 percent organic ingredients level was set for the first time. (Stadt Heidelberg, 2014)

Parents of children and adolescents in the city and also the employees of specialised agencies (for example, the Child and Youth Welfare Office) thus raised the “organic issue” when deliberating on children’s meals. Employees in the contracting authority discussed with the relevant stakeholders how organic can be included in the tender. Since 2015 the influence of different technically competent participants led to tenders for the procurement of 20 day care meal services stipulating that the organic share of food has to be at least 30 percent. In the tender the food groups are not fixed and can be selected as required.

Evaluation criteria for bids include the following: environmentally friendly, sustainability, the amount of food waste and the breadth of the product range. Together these make up 15 percent of the assessment. The way individual problem formulations and special dietary needs of the children are dealt with contributes a further 15 percent. Measures to effectively deal with or avoid procedural disturbances such as long queueing are weighted with 30 percent and the price with 40 percent. For the future a further increase in the organic level is being taken into consideration, as is its inclusion in the evaluation criteria.

City of Munich

Munich is the capital of the federal state of Bavaria in south-east Germany and home to 1.4 million inhabitants. Land use is a central issue for this state, especially as regards rural development. Both agriculture and food industries are important economic activities and have a high visibility for the population. The city council of Munich published a sustainability report in 2014 which includes child health and organic agriculture amongst its sustainability indicators. Furthermore, it mentions the transformation of public procurement to sustainable public procurement as a goal and the institutionalisation of sustainable development in the city administration. (Schwanck & Gruban, 2014)

Amongst the initiatives mentioned in the report is the "Biostadt Munich" (Organic City Munich) which was launched in 2006 as consequence of a unanimous city council decision. Embedded within it are the individual initiatives "Organic for children" (Bio für Kinder, 2016), "Organic in restaurants" (Bio in der Gastronomie, 2016) and "Organic in the city administration" (Bio in der städtischen Verwaltung, 2016). In 2008 the continuation of the project was confirmed in a further council decision.

Table 1. Main activities of the Organic City Munich *(Stadt Nürnberg, 2016)*

"Organic for children" (Bio für Kinder)	Supports kindergartens and schools that introduce organic food into their meal provision services 50 percent organic measured according to the monetary cost of food procurement across all product categories 50 percent of each stipulated product category (except fish) must be available in organic quality so that individual kindergartens can reach the target of 50 percent organic, 90 percent organic for meat.
"Organic in restaurants" (Bio in der Gastronomie")	Consulting and advisory services, training, supply options in order to include organic produce on the menu, project "Eat Organic" (Ökologisch Essen n.d.)
"Organic in the city administration" (Bio in der städtischen Verwaltung)	50 percent organic at events organised by the city 10 percent organic for meals in municipal facilities 10 percent organic for food offered in public institutions

In the project "Organic for children", which was created at the initiative of Tollwood GmbH, a company that organises a cultural tent festival in Munich twice a year, and in cooperation with the city's Department of Health and Environment, support is offered in the transition phase to organic. Funds are raised in the private sector, with companies or other organisations serving as visible sponsors to individual kindergartens and/or schools. Facilities are supported with up to one euro per meal as financial aid and by means of consulting and coaching offers as further comprehensive support. The aim is that the facilities find long term solutions for the initial additional costs arising through organic use by the end of a 2-3 year transition period and that further funding is no longer necessary. In addition to the optimisation of catering services overall, there is also extensive support in the nutrition education field, initiated by the Department of Health and Environment. Besides training and information, there are cooking classes, excursions to organic farms, facilitation of trading partners and provision of information materials for stakeholders on offer.

"Organic in restaurants" (Bio in der Gastronomie) is an initiative directed at all foodservice enterprises. A broad range of training seminars, advisory capacity and the availability of suppliers' lists are designed to speed up the transition to organic products further. The project "Eat organic" (Ökologisch Essen) supports foodservice enterprises making the change to organic. Experienced consultants are available for the development of individual organic concepts, detailed menu planning and staff training, and provide contacts with organic suppliers.

For the project "Organic in the city administration" (Bio in der städtischen Verwaltung) an overall organic level of at least ten percent can be achieved. The employees of the city of Munich can partake of the foodservice via their canteens and during in-house meetings. In the case of events organised by the city, such as receptions, at least half of the products need to

be from organic production. A professional consulting company has been tasked to support the city's canteens in their endeavour to improve the foodservice in aspects of quality and sustainability. The use of organic products is a key part of this. At the same time all the canteens are being prepared for organic certification within one year.

Conglomerations of public bodies

Regional Association of Westphalia-Lippe

The Regional Association of Westphalia-Lippe (Landschaftsverband Westfalen-Lippe, LWL) is a municipal association with more than 16,000 employees serving over 8 million inhabitants. Westphalia-Lippe is part of the most populous federal state Northrhine-Westphalia. There are nine independent cities and 18 districts, all of which are members of the LWL. The policies of the LWL are determined by the Regional Association Assembly; members of this political committee are elected by the citizens during the municipal elections. The LWL operates 35 special needs schools for young people with physical disabilities and/or cognitive impairments, 21 hospitals and 17 museums. (LWL, no date)

From its catering partners, which supply the schools with hot meals, the Association demands nutritionally balanced, varied, appetizing and tasty meals, which take into account the requirements of the national (voluntary) quality standards for school meals. At four school sites the use of organic products is stipulated by inclusion in the tenders. The award criteria are broken down as follows: the price counts for 60 per cent; the quality of the meals counts for 30 per cent; and service counts for 10 per cent. Meal quality is assessed as follows: half the points are awarded on the basis of "sampling / tasting"; 15 per cent on nutritional quality; and 35 per cent on "procurement value" – which refers to the convenience level, the proportion of organic products, regional and seasonal produce.

Discussion

Even though the number of case studies is relatively small and not all documents were accessible or available in each case (technical specifications, evaluation criteria) some emerging patterns can be observed.

For the public authorities described all cases have included organic food and most cases have included local food in their foodservice tenders successfully at least once. Success here is understood to mean that there are a number of potential bidders willing to participate in the tender process and potentially able to provide the services as described, including the provision of LOF. All cases were able to choose contract partners from the bidders; only Landau did not enforce the provision of LOF. The data suggest that there may be a number of reasons why the process is successful for these public bodies: (1) good preparation of the process and the description of the desired services by the authorities are mentioned (BLE, Neuruppin); (2) the path to the invitation to tender is described as a strongly participatory process with a significant number of direct stakeholders involved either individually in their groups (schools, parents) or together (Neuruppin, Gotha), at the very least the stakeholders were heard (Oranienburg, Heidelberg); and (3) possibly having some degree of individual choice within a seemingly narrow corridor serves to help buy-in overall (Neuruppin, Norderstedt).

A wide variety of supportive instruments was reported on offer and in use across the cases. These ranged from training courses provided by thematic authorities (e.g. Network Centres

for School Meals, organic foodservice experts); access to stakeholder networks including parents, bidders, suppliers, NGOs; town hall meetings; farm visits and tastings to informational materials for various target groups. Interestingly addressing financial issues connected to LOF use came up in two cases (Marburg, Munich) but with different solutions; Marburg pledges a continual subsidy whereas Munich together with Tollwood subsidises only the transition phase.

The initiatives in the various cases come from differing departments or offices within public bodies and they appear to reflect the efforts of enthusiastic individuals who want to champion local and organic food. Reasons given for the inclusion of local and/or organic food in tenders included (1) wanting food offered to be fresh, healthy, tasty/appetising, contemporary (modern) and nutritionally balanced; (2) to support (small) regional suppliers; (3) to avoid GMOs; (4) to avoid being limited to price as a criterion; and (5) as a bold positioning statement. Of these, discontent with the quality of school meal provision is a recurring issue (Lülfs-Baden & Spiller, 2008). Few - indeed only Heidelberg - mentioned the need to serve as role models. Continuity of initiatives and supportive political climates appear to facilitate their further development, though our selection may cause a bias here. An upcoming end of contract seems to be a window of opportunity taken in some cases to revise tenders so that they include LOF and other related aspects.

Within the technical specifications “organic” was often linked to “local”, “in season”, “fresh” and only once to “short chains” and once to “long term partnerships with farmers”. As far as was ascertainable, organic levels expressed in values included minimum figures of 10, 15, 30 and 50 percent of the total procurement sum and/or were listed as evaluation criteria in differing ways. In some cases organic foods were specified, in others organic food groups (e.g. meat) and in one case, explicit communicability via the menu was stipulated. The rationale behind these individual decisions was not further surveyed.

Conclusions

In conclusion, even without specific policies, many catering facilities in the public sector are already using organic food in divergent ways and to varying degrees. The use is strongly linked to individuals in municipal administration and to supportive political climates in the states. This is in agreement with earlier observations in some European countries (Løes & Nölting, 2011; Nölting & Løes, 2011). Factors suggested as possibly supporting successful adoption of LOF in the tender process and subsequent meal services need to be more rigorously tested.

References

Arens-Azevêdo, U., & Tecklenburg, M.E. (2012). Beurteilung der Kosten- und Preisstrukturen für das Bundesland Berlin unter Berücksichtigung des Qualitätsstandards in der Schulverpflegung Teil 1: Preis- und Kostenbeurteilung Im Auftrag der Senatsverwaltung für Bildung, Jugend und Wissenschaft Berlin, 109 pp.

Bio für Kinder (2016). Retrieved from: http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Gesundheit-und-Umwelt/Bio_regional_fair/Biostadt_Muenchen/Leitprojekte/Bio_fuer_Kinder.html

Bio in der Gastronomie (2016). Retrieved from: http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Gesundheit-und-Umwelt/Bio_regional_fair/Biostadt_Muenchen/Leitprojekte/Bio_in_Gastro.html

Bio in der städtischen Verwaltung (2016). Retrieved from: http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Gesundheit-und-Umwelt/Bio_regional_fair/Biostadt_Muenchen/Leitprojekte/Bio_in_Verwaltung.html

BLE (2015). About us. Retrieved from: http://www.ble.de/EN/00_Home/homepage_node.html

BioStadt München (2016). Muenchen.de. das offizielle Stadtportal. Leitprojekte der Biostadt. Retrieved from: http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Gesundheit-und Umwelt/Bio_regional_fair/Biostadt_Muenchen/Leitprojekte.html

DGE (2014). DGE Quality Standard for School Meals. 4th Edition, 56 pp. Retrieved from: http://www.schuleplusessen.de/fileadmin/user_upload/aktuelles/DGE_QS_SchoolMeals_web.pdf

FÖL (2014). Bio-Hauptstadt beim Schulmittagessen. Fördergemeinschaft Ökologischer Landbau Berlin-Brandenburg e.V: Berlin: Vom 24.11.2014. Retrieved from: http://www.bio-berlin-brandenburg.de/presse/detailansicht/meldungen/berlin-bio-hauptstadt-beim-schulmittagessen-vernetzungsstelle-schulverpflegung-berlin/

Fröhlich R (2010). Kommunaler Bildungsplan der Fontanestadt Neuruppin Kitabedarfs- und Schulentwicklungsplanung 2009 – 2030. Ed.: Fontanestadt Neuruppin Amt für Bildung, Kultur, Sport und Soziales. 92 pp. Retrieved from: http://www.neuruppin.de/fileadmin/dateien/Bildung_und_Jugend/Kommunaler_Bildungsplan_2009-2030.pdf

Heidelberg (2016). Bio in Heidelberg. Retrieved from: http://www.heidelberg.de/hd,Lde/HD/Leben/Bio+in+Heidelberg.html

Jäger, M. (2008). Ein Netzwerk für Schulverpflegung mit Qualität – das Berliner Modell. Gesundheitswesen 2008; 70 - A47 doi: 10.1055/s-2008-1076554

Løes, A.-K., & Nölting, B. (2011). Increasing organic consumption through school meals - lessons learned in the iPOPY project. Organic Agriculture 1(2): 91-110 First online: 17 April 2011.

Lülfs-Baden, F., & Spiller, A. (2008). Steuerungsmechanismen im deutschen Schulverpflegungsmarkt: eine institutionsökonomische Analyse., Diskussionspapiere. Department für Agrarökonomie und Rurale Entwicklung, No. 0809, 49 pp, ISSN 1865-2697.

LWL (n.d.). Welcome to the Internet pages of LWL! Retrieved from: https://www.lwl.org/LWL/Der_LWL/English/#anker-25

Magistrat Marburg (2006). Ökologische und regionale Lebensmittel. Stand und Umsetzung in den Marburger Kindertageseinrichtungen. Retrieved from: http://www.dbm-marburg.de/sixcms/media.php/20/%D6kologische%20und%20regionale%20Lebensmittel-%20Stand%20und%20Umsetzung%20in%20den%20Marburger%20Kindertageseinrichtungen.pdf

Nölting, B., & Løes, A.-K. (2011). Bio-Lebensmittel als ein Baustein nachhaltiger Schulverpflegung – ein europäischer Vergleich. [Organic food as an element of sustainable school meals - An European comparison.] Presentation at: 11. Wissenschaftstagung Ökologischer Landbau, Gießen, 15.-18. März 2011.

Nölting, B., Reimann, S., & Strassner, C. (2009). Bio-Schulverpflegung in Deutschland. Ein erster Überblick. [Organic school meal provision in Germany. A first overview.] ZTG discussion paper, Nr. 30/2009. Zentrum Technik und Gesellschaft, Berlin.

Ökologisch essen (n.d.) Projektstelle ökologisch essen. Retrieved from: http://www.oekologisch-essen.de/

Oranienburg (n.d.). Welcome to Oranienburg. Retrieved from: https://www.oranienburg.de/texte/seite.php?id=91511

Partmann, C. (2013). Neuordnung des schulischen Mittagessens an offenen und gebundenen Ganztagsgrundschulen sowie für Förderzentren im Land Berlin. Ed.: Senatsverwaltung für Bildung, Jugend und Wissenschaft, Berlin Retrieved from: http://nbn-resolving.de/urn:nbn:de:kobv:109-opus-236187

Roehl, R., & Fülles, M. (2012). Expertise Bewertung der Preisgestaltung von Lebensmitteln unterschiedlicher Qualitätsstandards im Rahmen der Cook&Chill-Verpflegung. Retrieved from: http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Gesundheit-und-Umwelt/Bio_regional_fair/Biostadt_Muenchen/Aktuelles.html

Roehl, R., Fülles, M., Teufel, J., & Hermann, A. (in press). Praxisleitfaden. Strategien und Konzepte zur erfolgreichen Einführung von Bio-Lebensmitteln im Verpflegungsbereich von Kommunen. Landeshauptstadt München, Referat für Gesundheit und Umwelt, Munich.

Schwanck, J., & Gruban, W. (2014). Nachhaltigkeitsbericht München 2014. Ed.: Landeshauptstadt München, Referat für Gesundheit und Umwelt. 105 pp. Retrieved from: http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Gesundheit-und-Umwelt/Umweltinfo/Nachhaltigkeit/Nachhaltigkeitsbericht.html

Stadt Heidelberg (2014). Bio in Heidelberg Ein kommunaler Erfahrungsbericht mit Handlungsempfehlungen. 30 pp. Ed.: Stadt Heidelberg Amt für Umweltschutz, Gewerbeaufsicht und Energie Agenda-Büro. Retrieved from: https://www.heidelberg.de/site/Heidelberg_ROOT/get/documents_E-

1618252638/heidelberg/Objektdatenbank/31/PDF/Nachhaltigkeitskonzepte/31_pdf_Erfahrungsbericht_Bio_in_Heidelberg.pdf

Stadt Norderstedt (2015). Information zu Norderstedter Kindertageseinrichtungen 2015/2016. 13 pp. Retrieved from: https://www.norderstedt.de/Familie-Freizeit/Familie/Kindertagesst%C3%A4tten/Kita-Info-2015-2016

Stadt Nürnberg (2016)/ BioStädte website. Retrieved at: http://www.biostaedte.de

Stadtverwaltung Gotha (2015). Mittagessenversorgung in 5 städtischen Kindertageseinrichtungen mit Ganztagsbetreuung. Zubereitung und Lieferung von ca. 305 Essen pro Betriebstag. Öffentliche Ausschreibung mit der Vergabe-Nr.: VOL-ÖA-51/15/007. Retrieved from: http://www.gotha.de/fileadmin/stadtinfo/Ausschreibungen/VOL/Bekanntmachung_VOL_OA_51-15-007.pdf

Stadtverwaltung Gotha (2016). Zahlen und Fakten Die Residenzstadt Gotha auf einen Blick Ausgabe 2016. Retrieved from: http://www.gotha.de/fileadmin/stadtinfo/Statistik/gotha_ueberblick_2016.pdf

Stadtverwaltung Landau (2015). Mittagsverpflegung für neun Ganztagsschulen in Landau in der Pfalz für die Schuljahre 2015/2016 und 2016/2017 die Schuljahre 2015/2016 und 2016/2017 Lieferung der Mittagsverpflegung Lieferung der Mittagsverpflegung. VOL/A - EG Offenes Verfahren. Retrieved from: http://www.landau.de/media/custom/1815_4507_1.PDF?1427271634

Strassner, C., & Roehl, R. (2014). Kernpunkte einer nachhaltigen Verpflegung mit Fokus Gemeinschaftsverpflegung. p. 7-29 In: Kettschau I, Mattausch N (eds) Nachhaltigkeit im Berufsfeld Ernährung und Hauswirtschaft am Beispiel der Gemeinschaftsverpflegung. Arbeitsprozesse, Qualifikationsanforderungen und Anregungen zur Umsetzung in Unterricht und Ausbildung, HT - Verlag Handwerk und Technik, Hamburg, 152 pp. 978-3-582-04786-1

ThürVG Gesetz (2011). Thüringer Gesetz über die Vergabe öffentlicher Aufträge (Thüringer Vergabegesetz - ThürVgG -) Vom 18. April 2011 Retrieved from: http://www.landesrecht.thueringen.de/jportal/?quelle=jlink&query=VergabeG+TH&psml=bsthueprod.psml&max=true

Holistic approach in the design of public catering for older people: a case study of fish consumption in Italian hospital and elderly care facilities and implications for public food procurement

Pagliarino, E.[1], Falavigna, G.[1], Agostini, P.[2], Marchesan, M.[2], Scavino, G.[2], Fermani, F.[2] and Murri, C.[2]

[1] National Research Council of Italy (Cnr), Research Institute on Sustainable Economic Growth (Ircres), Italy
[2] Albert Sas, Italy

Abstract: This article presents a case study of the introduction of local fresh fish species, cooked with the revival of traditional recipes in the canteens of geriatric hospital wards and elderly care facilities of five Italian coastal municipalities. Fish consumption protects against natural age-related cognitive decline and has been associated with a reduced risk of dementia, Alzheimer's disease and stroke. These recipes have proved popular with elderly people and fish consumption has thereby been increased. The project "Italian fresh fish in the canteens of healthcare facilities" works to introduce Italian fresh fish, from fishing and aquaculture, into collective public catering services. Increased purchasing of Italian fresh fish reduces the procurement of intensively fished species from heavily exploited fisheries outside Italy. The procurement of fresh rather than frozen fish avoids the freezing process along the supply chain which is responsible for a very large expenditure of energy. The supply of the innovative fish meal was accompanied by a questionnaire survey that involved 500 patients, mainly octogenarians. For these people, mealtime is important not only for its nutritional value, but also for its social and cultural significance. If the food is of good quality, also from the organoleptic point of view, and is prepared according to traditional recipes, much loved by the old patients, it has a profound impact on their physical and mental wellbeing.

Keywords: Catering service, fish, geriatric hospital, elderly care facilities, sustainability, wellbeing

Introduction

"As guests of a nursing home, the elderly must be able to lead a normal, active life, according to their personality and health condition. Their usual habits, as well as their usual pace of living, ought to be respected as much as possible." (Swiss Academy of Medical Sciences, 1988)

In Italy, like in many other Western countries, the population is growing progressively older, with an increase in both lifespan and the share of elderly people compared to the rest of the population. Today, life expectancy at birth is already 80 years of age for men and 85 for women, and this figure has grown by 10 years over the last 40 years. The present dependency ratio, i.e. the ratio of elderly people to the active portion of the population aged 14-65, is equal to 30% and is set to double in the next 50 years (Istat, Italian National Institute of Statistics, 2011). Consequently, there is also an increase in the number of people staying in nursing

homes for extended periods and of patients hospitalised in geriatric wards for long-term care (Istat, 2013).

As the average age of the population rises, conditions of psychophysical and cognitive decline and diseases related to old age become increasingly frequent. This situation is food for thought on the quality of inter-generational relations as well as on the quality of life of the elderly and of their families in general, and in nursing homes in particular. The objective of public policies is to support the good ageing and autonomy of the elderly for as long as possible.

In this regard, the quality of food and of meals in the canteens of healthcare facilities plays a key role, and the consumption of fish is of considerable importance. Its contribution to fighting natural cognitive decline due to ageing and in preventing degenerative diseases such as senile dementia, Alzheimer's disease, and stroke is widely acknowledged (Morris et al., 2005)

The European project LIPIDIDIET (lipididiet.eu) highlighted that *early* diet intervention, before Alzheimer's disease develops, plays a key role in boosting memory performance and that dietary changes can prevent senile dementia.

Moreover elderly individuals, and even more those who are hospitalised, tend to eat less because their appetite is reduced and/or they have difficulty swallowing or suffer from conditions affecting their gastro-intestinal system. Due to its digestibility, fish is particularly suitable for the diet of elderly people, but its quality might be jeopardised by the pollution of fishing waters. This is why fish from organic aquaculture is a safe choice as it is subject to stringent checks. Moreover, appropriate preparation eliminates the risk of fish bones in the dish.

An issue still to be addressed is how to make the recipes more palatable and appealing, in order to stimulate consumption. The government-funded project "Fresh fish in the canteens of healthcare facilities" aims to introduce short-chain fresh fish cooked according to recipes from the local tradition. The focus is on: (i) making the fish more palatable, through the use of certain traditional recipes, thereby increasing consumption among the elderly population, and (ii) improving the sustainability of the whole fish supply chain. This will be done by avoiding intensively fished species, from heavily exploited fisheries outside Italy, as well as avoiding the freezing process, which requires large amounts of energy. Procurement will switch to Italian organic aquaculture thus supporting the economy of small, local fisheries.

Methodology

Fresh fish from local aquaculture, cooked according to recipes from the regional sea tradition, was served in the public canteens of nursing homes and geriatric hospital wards of five Italian municipalities either along the coast or not far from the sea.

Thanks to its conformation, Italy has a number of regions bordering the Mediterranean Sea where fishing and aquaculture are well developed. In the inland areas the farming of trout has spread, with Italy being one of the leading producers in Europe. This situation could ensure a good supply of fresh and local fish for public canteens, if the critical issues related to the management of the fresh product and its preparation in the kitchens are overcome. In our case study, two different suppliers were chosen among those closest to the canteens for their capacity to provide both certified (organic and Friends of the Sea) and semi-processed (i.e.

fillets of fish) products. The technical-organisational, logistic, economic and managerial aspects of the supply chain were borrowed from similar previous initiatives (see Table 2).

A questionnaire-based investigation complemented the serving of fish dishes. The population involved in the investigation is generally weaker than the rest of the population, due to their advanced age and/or existing disease(s), leading to admission to a nursing home or hospitalisation. This is why, to avoid tiring the respondents during administration, the questionnaire was designed to be brief and easily completed. It included six closed-ended questions (*Yes, No, Maybe*), aimed at investigating: fish consumption habits (Q1); perception of the quality of fresh fish compared to frozen fish (Q2); the importance attached to freshness in canteen consumption (Q3); and appreciation of an innovative fish recipe (Q4-Q6). The questionnaire also contained two open-ended questions aimed at exploring the relationship between the respondents and fish (Q7 - *Could you provide the name of a fish recipe that brings good memories to your mind?*) and their interest in improving the recipe served (Q8 - *Suggestions*).

The questionnaire was printed on a card which bore a brief presentation of the project on the front and the questions on the back. The graphics, size, and texture of the card were designed to make it easier for the sample of respondents to read the questions and answer them. The card was distributed along with the meal tray by the healthcare personnel in charge of the canteen service.

Table 1. Distribution of the sample of interviewees by facility, location, date, portions of fish served, response rate and quantity of fish served

Facility	Place	Date	Interviewees (N)	Portions of fish served (N)	Response rate (%)	Quantity of fish served (kg)
Elderly care home	Trieste	31/7/2015 20/11/2015	164	620	26.45	111.6
Elderly care home	Urbino-Montefeltro (PU)	18/9/2015	33	200	16.50	36
Elderly care home	Jesi (AN)	31/7/2015 11/9/2015	168	260	64.62	46.8
Hospital	Macerata	24/7/2015 23/10/2015	52	1,350	3.85	243
Hospital	Chiaravalle -Loreto (AN)	6/11/2015 13/11/2015	85	220	38.64	39.6
Total			**502**	**2,650**	**18.94**	**477**

The sample of population in healthcare facilities involved in the investigation comprises 502 individuals; 75% women and 25% men. The average age of the respondents is 77; 69 for men and 80 for women. The over-80s make up 68% of the sample (77% of the women and 43% of the men); 11% of the sample is within the 65-80 age group (7% of the women and 24% of the men); 14% of the sample is made up of under-65s (11% of the women and 24% of the men). Seven percent of the sample did not provide any information concerning their age.

As for sample distribution in relation to the two different types of facilities (nursing home vs. hospital), 73% of the sample lives in a nursing home, with the remaining 27% being hospitalised. As can be expected, most of the sample individuals aged 65 or under (81%) are hospitalised, while the respondents aged 80 or over mostly reside in nursing homes (90%). As for the respondents aged 65-80, 64% of them reside in nursing homes, while 36% are hospitalised.

The questionnaire was distributed when the innovative fish recipes were served, for a total of eight times during the experiment. As shown in Table 1, the innovative fish recipes were served in the canteens of five different healthcare facilities, i.e. three nursing homes for the elderly (Trieste, Urbino-Montefeltro, and Jesi) and two hospitals (Macerata and Chiaravalle-Loreto). In total 2,650 portions of fish were served, corresponding to 477 kilos of boned fresh fillets of sea bass and gilt-head bream from Italian aquaculture facilities located near the places of consumption. Each portion was equal to 180g of raw fish.

Findings and Discussion

The average response rate is equal to 19%, varying from a minimum of 4% in the Macerata hospital to a maximum of 65% in the Jesi nursing home. This variability depends on the level of collaboration offered by the healthcare personnel involved in the distribution of the meals and questionnaires. In the facilities where the personnel illustrated the content of the card and helped the elderly to fill it in (for instance, by handing out pens or fetching glasses if necessary), the number of questionnaires collected was much higher. This sheds light on the need to better inform (and possibly train) not only the members of the managerial staff (who authorise the investigation) but also the workers operating in the facilities under investigation who are in charge of handing out the questionnaires. Moreover, in larger facilities, where the members of staff who distribute the meal trays might be different from those who collect them at the end of the meal, questionnaires may prove to be a less effective tool to reach the elderly guests.

The respondents in the sample eat fish with pleasure: occasionally (52%) or often (43%). Only 5% state that they never eat fish. Most respondents (87%) believe that fresh fish is better than frozen fish and that it is important to eat it at the canteen (85%). The innovative fish recipes were chosen by the vast majority of the sample (97%). Since hospital and nursing home canteens always offer two options for each course (in the case of fish, the alternative second course is usually a meat dish), this figure clearly shows that the innovative fish recipes proposed were extremely successful. Three quarters of the sample (76%) appreciated the recipes, while only 14% did not like them and 10% did not express an opinion. As for the control answer - “Q6: *Would you like to eat similar dishes more often?*” - 70% of the sample gave a positive answer, confirming the general appreciation of the dish. No gender-related differences have emerged within the sample (checked with t test). These results are in line with the minimum leftovers observed by the hospital staff at the end of the meal.

As for the last two open-ended questions, our target was to determine the ratio of answers which can be considered a proxy of involvement in a given topic or of level of participation in a given matter. In the case of our questionnaire, 66% of the sample provided an answer to the first open-ended question. As expected, the rate of answers decreases as the age increases, due to greater difficulty in filling in the questionnaire. This figure shows a good level of interest

in the question, i.e. fairly strong involvement in the request to mention a fish-based recipe able to bring good memories to mind. The respondents mentioned a large number of typical and regional recipes, in a brief but exhaustive manner. The answers highlight the existence of a wide regional variety of species and preparations, which should be given greater consideration in collective public catering services for the elderly. Unfortunately, the current trend in catering services is to make the dishes increasingly uniform. In order to reduce preparation times and costs, pre-sliced frozen fish products are preferred; also, in order to facilitate consumption, species and preparations with reduced risk of finding bones are often chosen. Conversely, the results of our questionnaire clearly show that fish is ever-present in the food memory of the interviewees and calls positive past experiences to mind. It is not a neutral food, but rather an extremely evocative one. In some cases, the respondents even quoted dishes linked to the preparation of food in their families ("*the mussels my mother used to make"* or *"fish soup made with heart*").

Therefore, the decision to present recipes belonging to the regional cooking tradition seems particularly well-founded, as this makes it possible to devise menus which are, at the same time, balanced from a nutritional point of view and able to meet the wide set of needs of elderly consumers, such as the pleasantness of meals, conviviality, and consistency with personal eating habits prior to admission. The European project PERFORMANCE (performance-fp7.eu) also focused on the extreme importance of making the recipes palatable, concentrating on the texture and look of the food, in order to counter the loss of appetite typical of elderly individuals (especially those who have trouble swallowing their food due to stroke or dementia), which may eventually lead to malnutrition or general worsening of the person's whole clinical picture.

The variety of answers collected in our investigation also indicates that it would be interesting to assemble, starting with the very people who eat in the canteens of healthcare facilities, a collection of fish recipes based on their memories and regional traditions, which could be used as a source for the creation of participative menus.

The second open-ended question was answered by only 11% of the sample. This figure can be interpreted in two ways. There may have been a "physiological" decrease in the respondents' level of interest (due to their age and their being in a nursing home). Or, perhaps, contributing to the creation of the menus (being asked to provide suggestions) might be seen as less involving, compared to the emotional charge of calling to mind fond memories of fish recipes from one's past. Hence, there might be more limited willingness to answer the question. If the second hypothesis were true, the figure would be in line with an attitude of "shrinking of responsibility" during canteen meals, already detected in the literature (Roos et al., 2004). Adults tend to delegate decisions concerning the choice of raw materials and preparation methods to those in charge of the catering services. Hence, this attitude might be linked not to lack of interest but rather to trust in the service, which lightens the burden of responsibility linked to the consumption of fish. Indeed, according to a study in 2014 by Ismea (the Italian national Institute for the analysis of the agro-food market) on infrequent consumers of fish (those who eat it once/twice a week or less), the main obstacles to fish consumption at home are: limited trust in retailers, above all for what concerns freshness; the fact that fish is delicate and perishable; the skills needed to purchase and prepare it; the time required to cook it; the potentially unpleasant preparation; and the price of fish. All these elements do not come into play when fish is eaten in a canteen.

Moreover, canteen meals have been linked to healthier, more sustainable behaviour. In other words, adults behave more virtuously when eating at the canteen than when eating at home (for instance, they eat more fish and vegetables) (Roos et al., 2004). For all the above reasons, the canteens of healthcare facilities seem the ideal place to promote the consumption of fish.

Few answers were provided to the last question (*Suggestions*), but it is useful to comment on them. Most suggestions are requests for different species (especially squid, but also sole, gilt-head bream, pilchard, *No anchovies!*) and different preparations (for instance, *when roasted it's tastier, grill it, boiled fish, a fish broth, risotto*). The most common request concerns fried fish or mixed fried fish (N=11). These answers confirm the need for greater variety in the dishes offered, including less healthy ones (frying is generally avoided in public collective catering facilities), and for recipes closer to "home cooking". Some comments mention excessive portions (N=4), while others concentrate on salt and other condiments (for instance, *could have been spicier, better without tomato sauce, less sauce, not enough salt and condiments, too salty, season it better, prepare the fish with lemon and parsley, more salt*). In order to address this issue, it would be sufficient to make some condiments (such as salt and lemon) available on the tables of the canteens, exactly like they are at home. A few comments express specific concerns and wishes, which are useful to improve the service: *do not manipulate the fish, make sure it's fresh, twice a week, canteens should be equipped for people with coeliac disease*. Lastly, it is encouraging to note that several comments are simply compliments (N=11).

As for the logistic, managerial, technical, and organisational aspects of this innovative canteen service, similar projects successfully implemented in the past have been used as reference. In Table 2 the main characteristics, innovations, and solutions adopted are illustrated for each project. The most innovative measures common in all the projects are:

- careful choice of suppliers, giving priority to national or local, aquaculture, organic and sustainable suppliers[1];
- choice of the fresh product instead of the frozen one[1];
- attention given to the shelf-life of the product, transport and storage modes;
- first processing (gutting, skinning, boning and transformation into fish fillets) charged to the producers;
- revival of attractive and healthy traditional recipes;
- preparation of the recipes in the school kitchens;
- training of the managerial and kitchen staff;
- education and/or information for final users.

---

[1] This is allowed by the Italian Government issued Finance Law n. 488, 1999 which establishes a direct and explicit link between quality, organic and local food and public sector catering. As stated in art. 59, comma 4, "Measures to facilitate the development of organic and quality agriculture": "To guarantee the promotion of organic agricultural production of quality food products, public institutions that operate school and hospital canteens will provide in the daily diet the use of organic, typical and traditional products as well as those from denominated areas (omitted). The awarding of catering contracts will be based (omitted) on the quality of agricultural products offered." http://www.camera.it/parlam/leggi/99488l.htm (accessed on 29/2/2016).

Table 2. Cases of innovative and sustainable fish supply chain in Italian public food procurement

Project/Initiative	Sanpei 1 and Sanpei 2 R&D projects	Tender of the Municipality of Rome	*Pesce italiano a mensa* (Italian fish in the cafeteria) project	Pappa Fish project
Funder	Ministry of agricultural, food and forestry policies, Organic Office	Municipality of Rome	Ministry of agricultural, food and forestry policies, Fisheries Department	Marche Region, Fisheries Dept. and European Fisheries Fund
Target	School and universities' canteens	School canteens	School and universities' canteens	School canteens
Place	Municipalities of Rome, Moncalieri (Turin) and Porto Recanati (MC); Polytechnic of Turin	Municipality of Rome	University of Rome La Sapienza and Municipalities of Manfredonia, Trieste and La Spezia	From 2013 to 2015, 22 → 42 Municipalities involved in the Marche Region
Supply dimension	7 times, approximately 3,000 fish meals served	150,000 fish meals served every time	6,400 fish meals served, 768 kg of boned fresh fillets	From 2013 to 2015, 10,000 → 25,000 children involved; 90,000 t of fish per year
Activities related to the provision of innovative fish	R&D; education; extension and training		Extension	Communication; education
Origin and quality of the product	Fresh, organic, farmed fish of locally grown and very common Italian species such as trout, mullet, sea bream and sea bass	Organic and conventional farmed fish, along with the (rewarded) option to use fresh fillets to replace the standard frozen ones	Fresh Italian farmed fish, certified "Friend of the Sea"	Fresh farmed fish and fresh fish from small-scale fisheries (the so-called poor fish) from the Adriatic Sea
Recipes	Sea bass, sea bream and trout burgers; pasta with mullet sauce	Breaded sea bass fillets; sea bass fillet medallions; pasta with organic trout sauce	Sea bass and sea bream nuggets, breaded sea bass and sea bream medallions, pasta with sea bream sauce	
Source	Pagliarino, 2015; Pagliarino, 2013	Municipality of Rome, 2013	Agostini et al., 2015	Pappa Fish website: pappafish.regione.marche.it and Pappa Fish video report: youtube.com/watch?v=V5thXoMfpys

Conclusions: fish to increase memory and memories of the fish

The government-supported project “Italian fresh fish in the canteens of healthcare facilities”, aims to promote consumption of Italian fresh fish, from fishing and aquaculture. Earlier initiatives concerned canteen services in schools and universities, due to the educational value of meals in these contexts. This project shifts the focus to elderly individuals in nursing facilities and hospitals. The volume of the experimentation has increased and the experimentation has become more complex and delicate.

Our study shows that fish is not a neutral food, but a very evocative one. It is present in the food memory of elderly people and it is able to bring pleasant and family-related memories to mind. The results collected confirm the validity of the project hypothesis, which is revolutionary if compared to the current situation of healthcare catering services and is based on the choice of fresh fish products, of varieties which are commonly eaten in Italy (such as sea bass and gilt-head bream), prepared according to recipes that are as close as possible to the habits and traditions of the elderly. This makes the consumption of fish, and of meals in general, more pleasant and attractive, with a positive impact on the overall physical and psychological wellbeing of the elderly and the sick.

Another important result is that, towards the end of the project, the Ministry asked that the service be extended to three additional facilities not initially included. Two of these are hospitals (Vibo Valentia and Vallo Della Lucania, in the South of Italy) which are difficult to reach, making it harder to manage logistics. They are also located in deprived areas, so that public intervention is even more valuable. The third facility is the paediatric hospital in Massa, Tuscany.

The public administration is increasingly certain of the significant impact of the project, thanks to the positive feedback received. All the different actors involved in the supply chain agree that the project is working well. Therefore, the public administration has been emboldened to extend the project to include healthcare catering services for a new group - very young patients.

Acknowledgements

The research presented in this paper has been carried out as part of the “Italian fresh fish in the canteens of healthcare facilities” project carried out by Albert and supported by the Italian Ministry of Agricultural, Food and Forestry Policies, Fisheries Department. The funder has no role in study design, data collection and analysis, decision to publish or preparation of the manuscript. The authors thank all the project participants.

References

Agostini, P., Marchesan, M., Moiso, V., Pagliarino, E., Scavino, G., & Troiano, E. (2015). Pesce italiano a mensa. La mensa del buon pesce. Guida per l'introduzione di prodotti ittici freschi da acquacoltura marina nelle mense scolastiche e universitarie, Albert: Rome.

Ismea (2014). Il comportamento dei consumatori infrequenti di pesce, Ismea: Rome.

Istat (2011). Il futuro demografico del paese. Previsioni regionali della popolazione residente al 2065, Istat http://www.istat.it/it/files/2011/12/futuro-demografico.pdf (Accessed on 14/01/2016).

Istat (2013). I presidi residenziali socio-assistenziali e socio-sanitari, Istat: Rome http://www.istat.it/it/files/2013/12/Presidi-socio-sanitari-assistenziali.pdf?title=I+presidi+residenziali+-+10%2Fdic%2F2013+-+Testo+integrale.pdf (Accessed on 14/01/2016).

Morris, M.C., Evans, D.A, Tangney, C.C., Bienias, J.L., & Wilson, R.S. (2005). Fish consumption and cognitive decline with age in a large community study. Archives of Neurology 62: 1849-1853.

Municipality of Rome (2013). Appendices no. 2 (p. 10-11) and no. 12 (p. 7-8) to the special tender specification for the school catering service of the Municipality of Rome for the years 2013-2017 (in Italian), http://www.comune.roma.it/PCR/resources/cms/documents/ristorazione_scolastica_allegato2.pdf and http://www.comune.roma.it/PCR/resources/cms/documents/ristorazione_scolastica_allegato12.pdf (Accessed on 27/2/2013).

Pagliarino, E. (Ed.) (2013). Safe as a fish. Research and innovation along the aquaculture-school catering chain (Sano come un pesce Ricerca e innovazione lungo la filiera acquacoltura-ristorazione scolastica) (in Italian). FrancoAngeli: Milan.

Pagliarino, E. (2015). Innovative logistics and supply chain management for sustainable food public procurement. In L. Pretorius and G.A. Thopil (Eds.). IAMOT 2015 24th International Association for Management of Technology Conference Proceedings, Technology, Innovation and Management for Sustainable Growth, 8-11 June 2015 Cape Town, South Africa. http://www.iamot2015.com/2015proceedings/documents/P271.pdf (Accessed on 18/04/2016).

Roos, E., Sarlio-Lähteenkorva, S., & Lallukka, T. (2004). Having lunch at a staff canteen is associated with recommended food habits. Public Health Nutrition 7(1): 53-61.

Swiss Academy of Medical Sciences (1988). Elderly people in nursing homes: recommendations concerning their condition, way of living, and cares needed. Swiss Academy of Medical Sciences: Basel (Switzerland).

Exploring the role of parents in sustainable school food procurement

Santanera, E. and Pagliarino, E.

National Research Council of Italy (Cnr); Research Institute on Sustainable Economic Growth (Ircres), Italy

Abstract: This paper aims at assessing whether and how to involve parents in public school food procurement. In Italy parents provide financial support to the school canteen service but they have a marginal role in decision-making and food education at school. The study assesses families' willingness to participate in school catering decision making, their accuracy in predicting food preferences and choices for their children, their ability to find the right food compromises with their children and their propensity to consume sustainable foods. The results contribute to: (i) the ongoing discussion about how to help children eat a more sustainable diet at school and how to help parents support their children in this effort; and (ii) the duty of policy makers to design proper strategies to involve parents in choices relating to food in public catering. In particular this relates to procurement of fresh trout from local and organic aquaculture as a more sustainable substitute for frozen fish from heavily fished species such as cod and plaice.

Keywords: School catering, parents, children, food choices, education, involvement

Introduction

In Italy, the school meal has long been used for the pursuit of social and environmental purposes. After the Second World War, the school canteen served as a tool to combat widespread malnutrition among the population and promote the principles of proper nutrition (Helstosky, 2006). More recently, school canteens have been places to promote fresh, organic and local foods[1] and to prevent diseases related to poor diet such as children obesity[2]. In the last twenty years the quality of food and the sustainability of the service have grown considerably, thanks to increasingly careful and sensitive public procurement (Morgan & Sonnino, 2008). Education programmes on sustainable and healthy food multiply (Lambiase & Bisagni, 2014), yet the amount of food waste produced in school canteens is still huge (Falasconi et al., 2015). Food neophobia and pickiness - that is the avoidance or reluctance to eat unfamiliar foods - reaches high levels among children (Laureati et al., 2015; Finistrella et al., 2012).The population of children who are overweight or obese continues to increase. According to the Italian nutritional school-based surveillance system, called "Eye on health" (*Okkio alla salute*), 20.9% of Italian children are overweight and 9.8% are obese (Italian Ministry of Health, 2014).

[1] The Italian Government issued Finance Law n. 488, 1999 establishes a direct and explicit link between quality, organic and local food and public sector catering. As stated in art. 59, comma 4, "Measures to facilitate the development of organic and quality agriculture": "To guarantee the promotion of organic agricultural production of quality food products, public institutions that operate school and hospital canteens will provide in the daily diet the use of organic, typical and traditional products as well as those from denominated areas (omitted). The awarding of catering contracts will be based (omitted) on the quality of agricultural products offered." http://www.camera.it/parlam/leggi/99488l.htm (accessed on 29/2/2016).

[2] With its programmes "Gaining health" (Guadagnare salute; guadagnaresalute.it) and "Eye on health" (Okkio alla salute; okkioallasalute.it), Italy joins the European JANPA "Joint Action on Nutrition and Physical Activity" programme (janpa.eu/) aimed at fostering healthy food habits at school. All websites were accessed on 29/2/2016).

Children's eating habits at home are different from their habits at school, where they are influenced by the behaviour of schoolmates and teachers (Birch, 1980; Clenden et al., 1994; Herman et al., 2003). Nevertheless, children's food acceptance and choice are largely driven by taste preferences and liking (Baxter et al., 2000; Caporale at al., 2009). Parents can have a direct influence on their children's eating habits by increasing exposure to certain foods, making them more familiar at home and by supporting the choices made in school canteens (Salvy et al., 2008; Lytle & Achterberg, 1995; Contento et al., 1992; Contento et al., 1995).

Italian families participate in public food procurement by paying the cost of the meal (on average around € 5.00 according to Pagliarino et al. 2013, p. 105), in whole or in part, based on the family income. For the poorest families the municipalities cover the entire cost of the service. Families also participate through the school canteen committees (in Italian "commissioni mensa scolastica"), that are representative bodies dedicated to monitoring activities (for further detail see Galli et al., 2014; and http://www.foodinsider.it/commissioni-mensa/ruolo-commissari-mensa/).

At the moment, the actions taken to increase the relationships between schools and families go in two directions: (i) to encourage the training of parents, with their children or for themselves; and (ii) to design participatory menus that take into account parents' suggestions. Although 74% of Italian schools include courses in food education and 66% extra-curricular food activities, only 35% of schools involve parents in such activities (Italian Ministry of Health, 2014).

The role of parents in food education programmes or in procurement decisions is highly neglected by the government. Their greater involvement would make parents more aware of public choices and valuable allies in achieving shared educational goals.

The study has two main objectives. First, it wants to understand parents' perception about sustainable choices made by the administration and their interest in being involved in the decision making process. This first objective is pursued through a survey with a questionnaire given to a sample of 500 parents. The second objective aims to explore the relationships between parents' and children's food preferences and choices, the ability of parents to predict consumption behaviours of their children at school, and the capacity to serve (at home) and recommend (at school) healthy and sustainable foods even if unwelcome. All these elements are analysed on a sample of 138 parent/child couples, called to express preferences, choices and predictions with respect to all food provided in a weekly school menu. The behaviours reported by parents and children are compared with the actual behaviour seen in the refectory, measured in terms of the amount of waste of individual dishes.

Methodology

In order to determine whether parents are interested in taking part in the Public Food Procurement (PFP) decision making process and keen on supporting innovative and sustainable choices by the public administration, a structured questionnaire was administered to a sample of 500 parents. In particular, they were asked whether they were willing to become members of the canteen committee. Furthermore, after presenting the hypothesis of introducing changes to their children's usual school menu so as to make it more sustainable – i.e. introducing fresh fish from organic aquaculture to replace frozen fish of heavily fished

species –, the parents were asked whether they would be willing to pay a higher price for the school meal.

In order to assess the parents' ability to predict their children's food preferences and choices, the influence of both parents' and children's personal taste on food habits at home and school, the role of the familiarity with various kinds of food, as well as the degree of responsible consumption by both parents and children, an experiment was carried out involving 138 parent-child pairs.

Before illustrating the research design in detail, it should be pointed out that 74% of Italian schools provides a school canteen service (Italian Ministry of Health, 2014). Therefore, most Italian children lunch at school, either at kindergarten (children under the age of 3 years), nursery school (3-5 years), primary school (6-10 years) or middle school (11-13 years). The canteen service offers a mid-morning snack (usually fruit) and lunch, from Monday to Friday, from mid-September to mid-June, for a total of around 200 days per year. Younger children have approximately one hour to eat their lunch while primary and middle school children generally have only half an hour. According to teachers, this reduction in time is one of the causes of the large amount of food waste in the dishes. An Italian meal typically includes a first course of complex carbohydrates (pasta or rice), a second course that serves as a source of protein (meat, fish, eggs, cheese, legumes) together with a side dish (salad or cooked vegetables) and, as a final course, fruit or dessert. Each item contributes to the overall nutritional quality of the meal.

The children have no choice as to what to eat, since there is only one option for everybody. Special diets are available for ethical, religious or health reasons. The portions are pre-determined depending on the children's age and the pupils cannot refuse a course or get a second helping. Obviously they can leave what they do not like, even though the teachers, who eat with their pupils until primary school and are then replaced by educators, tend to encourage the children to eat their entire meal. In general, the menu varies depending on the season of the year, as there are a spring-summer and an autumn-winter menu. The menus are differentiated also depending on the children's age (kindergarten, nursery, elementary and middle school). In the course of a week, the menu changes every day and the same weekly menu is repeated every 3-4 weeks. This system guarantees a great variety of recipes, to meet the pupils' diverse tastes and support a high-quality diet.

The research started from the school menu of a specific week (13th-17th April 2015), which featured all the usual recipes served in the canteen and only one innovative recipe (included due to its sustainability but unusual for the children and their parents). The parents were asked to express their opinion about each recipe (a total of around 20 recipes for each child, with a certain amount of variation because the menu changes depending on the pupil's age), on a 4-point Likert scale (*not at all, not much, sufficiently, a lot*) regarding:

- appreciation of the recipe by their children;
- recipe consumption by their children, when the recipe was then served the following week;
- their own appreciation of the recipe;
- the frequency with which the recipe is prepared at home (familiarity).

Lastly, the parents were asked whether they wanted to keep the recipe or eliminate it from their children's school menu.

The answers were collected through a questionnaire, handed out by the teachers to the parents and filled in at home, without involving the children, during the week preceding the time when the menu was actually served to the pupils.

Every day of the week in which the recipes were served and immediately after lunch, the children were asked to assess each recipe through a similar questionnaire using the same Likert scale (*not at all, not much, sufficiently, a lot*) in relation to:

- appreciation of the recipe;
- recipe consumption.

Lastly, the children were asked whether they wanted to keep the recipe or eliminate it from the school menu. The items on the questionnaire were read aloud to the younger pupils, while middle-school children were deemed more autonomous and asked to personally fill in the questionnaire.

Moreover, the actual amount of food consumed by each child was measured for each recipe every day throughout the week at the end of each meal, by observing the leftovers on the plate and estimating consumption on the basis of the aforementioned Likert scale. The data provided by the parents and by their respective children were matched and kept as individual sets.

The investigation was carried out in the municipality of Moncalieri (province of Turin, Italy), in the "Nasi" School, a comprehensive institute which includes nursery, primary and middle level students, and it involved two nursery school classes, an elementary school class and a group of students from different middle school classes.

The data were elaborated by means of a descriptive statistical analysis, including pairwise correlation (r), as well as through the estimation of multiple regression models.

Findings

The questionnaire aimed at assessing the families' interest and willingness to take part in the decision making process of the PFP was administered to a sample of 500 parents whose children have lunch at school. It was filled in by the mother in 83% of the cases and by the father in 17% of the cases (60% of the families have 2 children, 17% one child, and the remaining families have between 3 and 5 children).

Importance attributed to the introduction of sustainable innovative food into the school menu

Most families (54%) are not willing to pay extra to modify the school menu so as to make it more sustainable (the scenario presented to the families concerned the introduction of fresh fish of local varieties from organic fish farms instead of frozen fish of heavily caught species), since they believe that the current price of the lunch should cover the additional costs for sourcing high quality and more sustainable foods. The figures indicated as potential price increase options correspond to a truthful estimate of the price increase of each lunch price if

the school canteen offered fresh fish costing respectively € 1.00, € 2.00, € 3.00 or € 4.00 more than the frozen fish normally served (data calculated by Pagliarino et al., 2013). In particular, 54% were not prepared to pay anything extra, while 24% were willing to pay 12 euro cent extra and 6% 3 euro cents extra.

Table 1. Willingness to pay an extra price for the introduction of an innovative sustainable recipe in the school menu

Extra price (€)	Percentage of families willing to pay the extra price (%)
0,03	**6**
0,06	**7**
0,09	**9**
0,12	**24**
0,00	**54**
Total	**100**

Interest in taking part in the decision making process

The school canteen committee is the body through which parents can monitor the service and influence the decisions (for instance, recipes, suppliers, etc.). Most parents (75%) are not interested in being members of the canteen committee (hence, they are not willing to be actively involved in the management of the school canteen service of their children); 23% of parents are interested; and 2% of them are already members.

Parent/child relations

The investigation concerning the parent/child relations involved 138 pairs, of which 47 were nursery school parents and children aged 3-5 years, 23 were primary school parents and children aged 8-9 years and 68 were middle school parents and children aged 11-13 years. The gender distribution was: 80 girls and 58 boys; 117 mothers, 14 fathers and 7 respondents who did not indicate gender.

Table 2. Parent/child distribution in terms of age and gender.

Children school		Children's gender		Parents gender	
Nursery school	**47**	Girls	**80**	Mothers	**117**
Primary school	**23**	Boys	**58**	Fathers	**14**
Middle school	**68**			No response	**7**
TOTAL	**138**	**TOTAL**	**138**	**TOTAL**	**138**

Considering the set of results for the analysis carried out on the different variables describing the food choices of each parent/child dyad, this article discusses only the data which might affect the PFP system, that is: (i) the criterion according to which the parents decide to keep a recipe or eliminate it from the school menu; (ii) the parents' ability to predict which recipes

their children will appreciate at school, with specific focus on different patterns of behaviour in the case of traditional recipes vs. innovative and sustainable recipes.

A multiple linear regression model permits analysis of the direct relationship that binds the variable *elimination_choice* - that measures the parental choice of maintaining vs eliminating a recipe from their children's weekly school menu - to a set of potential explanatory variables regarding children's age and gender and food attitude (squeamishness[3]), parents' conjecture around their children's preferences and choices (liking and consumption) and parents' attitude regarding the recipes in the school menu (familiarity and liking).

$$elimination\_choice = \alpha age + \beta gender + \delta liking + \eta consumption + \pi adaptivity + \rho familiarity + \Omega parent\_liking + \varepsilon$$

Model 1a. Parental recommending choice on weekly school menu recipes

Variable	Coefficient	Std. Error	t	P>t	[95% Conf. Interval]	
Age	0.014	0.005	2.760	0.007	0.0039416	0.0241542
Gender	-0.007	0.032	-0.230	0.817	-0.0700555	0.0553955
Prediction of children liking	0.010	0.064	0.150	0.879	-0.1170261	0.01365264
Prediction of children consumption	-0.156	0.055	-2.860	0.005	-0.2644378	-0.0479962
Squeamishness	-0.047	0.048	-0.970	0.332	-0.1422331	0.0484499
Parent familiarity	-0.061	0.037	-1.660	0.100	-0.1332872	0.0118253
Parent liking	-0.021	0.044	-0.480	0.632	-0.1074623	0.0655225
Constant	0.699	0.152	4.600	0.000	0.3973622	1.000251

N = 115; R-squared = 0.3292; Adj R-squared = 0.2853

From Regression Model 1a, it emerges that the most relevant explicatory variable in driving the parents' food choices is the parents' conjecture around their children's food consumption at school. Parents are more likely to recommend for their children those recipes they believe their children would eat more at school. Regression Model 1a reveals even a moderately significant relationship between the food choices that parents make for themselves and their children at home (familiarity) and the food choices they recommend for their children at school. Parents' familiarity with school menu recipes, measured according to the recipes cooking

[3] *The squeamishness variable measures the children's attitude to refuse a food if it does not perfectly meet their taste. In our database this variable quantifies the real children's squeamishness and not the parents' conjecture around children's squeamishness. It will be more extensively used in data analysis exploring children's real food attitudes at school.*

frequency at home, is moderately significant and negatively correlated with the probability of a recipe rejection choice from the school menu.

As the age of the children increases, the frequency with which the parents eliminate recipes from the school menu rises considerably. Indeed, there is a positive and significant correlation between the variable measuring the age of the children and the frequency with which the parents decide to remove an innovative, sustainable recipe from the weekly school menu.

Model 1b. Parental recommending choice on innovative recipe

Variable	Coefficient	Std. Error	t	P>t	[95% Conf. Interval]
Age	0.050115	0.019805	2.53	0.014	0.0104852 0.089745
Gender	0.07602	0.09652	0.79	0.434	-0.1171173 0.269156
Prediction of children consumption	-0.10181	0.048713	-2.09	0.041	-0.1992817 -0.00433
Parent familiarity	-0.07912	0.057715	-1.37	0.176	-0.1946047 0.036369
Parent liking	-0.15007	0.049697	-3.02	0.004	-0.2495105 -0.05062
Constant	0.690619	0.236175	2.92	0.005	0.2180333 1.163205

N = 65; R-squared = 0.3857; Adj R-squared = 0.3336

When presented with an innovative recipe in the school menu (Model 1b) – the parents' decision to keep the said recipe or eliminate it from their children's school menu is mostly guided by their predictions about whether their children are going to appreciate the recipe. In our project, this was trout from organic aquaculture, an unusual product in collective catering services, where the most commonly used species are those which can be easily transformed into frozen slices or fillets, already portioned and boned, such as cod, plaice, etc. Parents are more likely to recommend a new recipe for their children if they believe their children will eat a lot of it at school. As expected, the "familiarity" variable becomes less important in the case of this decision, while the variable measuring the parents' appreciation of the recipe takes on greater significance. As indicated in Model 1b, the parents are more inclined to keep an innovative recipe in their children's school menu if they themselves appreciate it. The parents' tendency to be more selective as their children's age increases remains unchanged.

The great relevance of consumption predictions on parents' choice of maintaining vs eliminating the recipes from their children's weekly school menu means that it is crucial to understand whether parents are good at predicting their children's food consumption choices at school.

As a first step, the parents' ability to make predictions about their children's food consumption at school was analysed by means of pairwise correlation (*r*) between the variables concerning

the parents' predictions and the actual consumption by the children at school[4]. As shown in Table 2, the parents' ability to predict their children's choices decreases in the case of an innovative recipe (r equal to 0.52 vs. 0.36). In general it is also not characterised by greater accuracy than the level generally indicated in the literature (Hoch, 1987; Davis et al., 1986; Mata et al., 2008) for what concerns the ability to predict attitudes, interests and purchase behaviour of peers (r=0.53) and spouses (r=0.51) or the spouses' average accuracy of predicting each other's preferences towards new product concepts (r=0.27).

Table 3. Correlation between children's consumption and their parents' predictions of children's consumption

	Pairwise correlation
Weekly school menu recipes	*r*= 0.52
Innovative and sustainable recipe	*r*= 0.36

Next, a multiple linear regression model was estimated in order to determine which factors have a greater impact on the parents' ability to make predictions about their children's food consumption choices at school. In particular, we analysed the relationship between mistakes made by the parents in predicting their children's food consumption choices at school and a set of potential explanatory variables, concerning children's and parents' personal characteristics and parents' attitudes. Specifically, the variable *consumption prediction* is measured in terms of difference, in absolute value, between the food consumption declared by the children and the consumption predictions made by their parents.

$$consumption\_prediction = \alpha age + \beta gender + \delta parent\_age + \Omega parent\_liking + \rho familiarity + \eta liking\_prediction + \varepsilon$$

Model 2a. Parental prediction of their children's consumption of school menu recipes

Variable	Coefficient	Std. Error	t	P>t	[95% Conf.	Interval]
Age	-0.0088716	0.0094813	-0.94	0.352	-0.0276712	0.009928
Gender	0.0005896	0.0545964	0.01	0.991	-0.1076649	0.108844
Parent age	0.0072212	0.0047207	1.53	0.129	-0.0021391	0.016582
Parent liking	-0.12134	0.0693446	-1.75	0.083	-0.2588375	0.016157
Parent familiarity	-0.2052011	0.0625126	-3.28	0.001	-0.3291519	-0.08125
Prediction of liking	0.7083512	0.0780897	9.07	0	0.5535137	0.863189
Constant	1.040563	0.3097389	3.36	0.001	0.4264077	1.654718

N =112; R-squared = 0.5269; Adj R-squared = 0.4999

[4] *The actual amount of food consumed by each child was measured every day, for each recipe, at the end of each meal by observing the leftovers on the plate and estimating consumption on the basis of a 4-point Likert scale (not at all, not much, sufficiently, a lot). These data were matched to the data provided by the parents – which consist of a conjecture around their children consumption - and kept as individual sets.*

As Model 2 clearly shows, the element most likely to cause mistakes in the parents' predictions about their children's food consumption is the parents' inaccuracy in predicting the level of appreciation. The more the parents are unable to predict whether their children are going to appreciate a recipe, the more inaccurate they are at predicting consumption. If the parents know their children's tastes well, then they are able to predict their children's consumption choices. What emerges from Model 2 is also that parents are better at predicting consumption at school in relation to types of food which are more regularly cooked at home. In fact, the prediction mistakes made by the parents concerning their children's canteen food choices decrease as the parents' familiarity with the types of food in question increases. Moreover, the frequency of prediction mistakes drops when the parents themselves appreciate the foods in question. In brief, parents are better at making predictions on consumption in relation to types of food which they themselves like and cook at home.

Model 2b. Parental prediction on their children's consumption of an innovative and sustainable recipe.

Variable	Coefficient	Std. Error	t	P>t	[95% Conf. Interval]	
Age	-0.0190192	0.0457199	-0.42	0.679	-0.1111039	0.073066
Gender	0.2699757	0.1566207	1.72	0.092	-0.0454745	0.585426
Parent age	0.0067821	0.0141406	0.48	0.634	-0.0216986	0.035263
Parent liking	-0.0738171	0.0820699	-0.9	0.373	-0.2391144	0.09148
Parent familiarity	0.1578939	0.0954028	1.66	0.105	-0.0342572	0.350045
Prediction of liking	0.6984663	0.0875601	7.98	0	0.5221111	0.874821
Constant	0.0514797	0.6100236	0.08	0.933	-1.177171	1.28013

N =52 ; R-squared =0.6373; Adj R-squared =0.5890

The introduction of an innovative recipe seems to follow the same trends detected in the case of traditional recipes: the more the parents are able to formulate good predictions about their children's appreciation of a certain type of food, the more they are able to make accurate predictions concerning actual food consumption by their children. As expected, the variable "familiarity" becomes less significant, and the same is true for the variable measuring the parents' personal appreciation.

When reading Table 4, it is important to keep in mind that the level of consumption and the level of appreciation of a given recipe - with a range of 4 equidistant values on a Likert scale: *not at all, not much, sufficiently, a lot* - are translated into a numeric scale ranging between 1 and 4 and that the decision to keep a recipe or eliminate it from the school menu is represented by a dummy variable, which is 0 when the recipe is kept and 1 when the recipe is eliminated from the menu.

Table 4. Comparison between children's effective food consumption and parents' conjectures.

	CHILDREN'S BEHAVIOUR		*PARENTS' CONJECTURE ON CHILDREN'S BEHAVIOUR*	
VARIABLE	**N**	**AVERAGE**	**N**	**AVERAGE**
Total recipes consumption	135	3.49	119	2.87
Total recipes liking	135	2.83	118	2.88
Total recipes elimination choice	135	0.39	119	0.15
Innovative recipe consumption	60	3.67	75	2.53
Innovative recipe liking	80	3.03	72	2.57
Innovative recipe elimination choice	80	0.41	75	0.28

It emerges that the schoolchildren chose the innovative recipes more often (3.67 vs. 3.49) and also appreciate them more (3.03 vs. 2.83) than other recipes included in the weekly school menu. Nonetheless, the frequency with which they decide to eliminate innovative recipes is higher than in the case of other, more traditional recipes (0.41 vs. 0.39).

Conversely, the parents believe that their children will eat and appreciate the traditional recipes more than the innovative recipes. The parents' predictions on appreciation and consumption are pessimistic when compared to the actual food behaviour of their children, as confirmed by the fact that the prediction values are always lower than the corresponding values describing the actual food behaviour of the children at school. Nevertheless, the parents are much more reluctant to eliminate recipes from the school menu than their children. However, they too eliminate the innovative recipes more frequently than other recipes (0.28 vs. 0.15).

Conclusions

The results of the study highlight the fact that the parents' greatest concern is that their children eat enough when they are at school. This is the factor which guides their decisions about whether to keep a recipe or eliminate it from the school menu. They keep a recipe if they believe that their children will eat plenty of it. These choices are confirmed by their behaviour at home, where they cook with higher frequency the same recipes which they tend to keep at school. When an innovative recipe is introduced, the parents are guided by the same concern, i.e. abundant consumption by their children at school. But in this case, unable to rely on their familiarity with the food, the parents use their personal taste as a decision-making tool.

In general, it emerges that the parents tend to indulge their children's food preferences, selecting recipes on the basis of predictions about consumption and appreciation. As the age of the children increases, this selection process becomes more stringent.

Reducing the amount of leftovers at school is a concern shared by both parents and school staff. Therefore, a higher level of parent involvement in the decision-making process would be extremely useful in designing successful school menus especially when the parents are good at predicting their children's food choices. When compared to the values reported in the literature, the results of this study show low-medium reliability in relation to the children's actual consumption. Furthermore, they point to a negative attitude towards innovative recipes, since the parents believe that their children will eat and appreciate innovative dishes less than other recipes and, as a consequence, tend to eliminate them. The children display the opposite behaviour: on average, they eat and appreciate the innovative recipes more than the other, more traditional ones. Overall, the parents are in most cases unwilling to eliminate recipes from the school menu, which confirms their trust in the nutritional choices made by the public administration. This might also be a reason for their limited interest in becoming members of the participatory decision-making body, i.e. the canteen committee.

The parents base their school menu recommendations on their children's preferences (which they do not seem to know that well) and on their own cooking habits and, at the same time, they formulate pessimistic predictions about innovative recipes. This is why the parents of schoolchildren do not seem to be crucial actors to be involved in the designing of more sustainable school menus. What might be desirable instead is their involvement in food education actions, so far almost completely neglected, so that the parents of schoolchildren can become precious allies in the innovation process pursued by the public administration aimed at making the supply chain more sustainable and at reducing food waste.

Acknowledgements
The research presented in this paper has been carried out in the Sanpei 2 R&D project, funded by the Italian Crea (Council for research in agriculture and analysis of agricultural economy), the National Research Council of Italy and the Italian Ministry for Agriculture, Food and Forestry Policies. The funders have no role in study design, data collection and analysis, decision to publish or preparation of the manuscript. The authors thank all the participants in the Sanpei 2 project, in particular the city of Moncalieri (Turin), the "Nasi" School and Dussmann Service.

References

Baxter, S.D., Thompson, W.O., Harry, C., & Davis, M.S. (2000). Fourth grade children's observed consumption of, and preferences for, school lunch foods. Nutrition Research 20(3): 439-443.

Birch, L.L. (1980). Effects of peer models' food choices and eating behaviours on preschoolers' food preferences. Child Development 51: 489-496.

Caporale, G., Policastro, S., Tuorila, H., & Monteleone, E. (2009). Hedonic rating and consumption of school lunch among preschool children. Food Quality and Preference 20(7): 482-489.

Clendenen, V.I., Herman, C.P., & Polivy, J. (1994). Social facilitation of eating among friends and strangers. Appetite 23: 1-13.

Contento, I., Balch, G.I., & Bronner, Y.L. (1995). The effectiveness of nutrition education and implications for nutrition education policy, programmes and research: a review of research. Journal of Nutritional Education 27: 279-380.

Contento, I.R., Manning, A.D., & Shannon, B. (1992). Research perspective on school-based nutrition education. Journal of Nutrition Education 24(5): 247-260.

Davis, H.L., Hoch, S. J., & Ragsdale, E.K.E. (1986). An anchoring and adjustment model of spousal predictions. Journal of Consumer Research 13: 25-37.

Falasconi, L., Vittuari, M., Politano, A., & Segrè, A. (2015). Food waste in school catering: an Italian case study. Sustainability 7: 14745-14760.

Finistrella, V., Manco, M., Ferrara, A., Rustico, C., Presaghi, F., & Morino, G. (2012). Cross-sectional exploration of maternal reports of food neophobia and pickiness in preschooler-mother dyads. Journal of the American College of Nutrition 31(3): 152-159.

Galli, F., Brunori, G., Di Iacovo, F., & Innocenti, S. (2014). Co-producing sustainability: involving parents and civil society in the governance of school meal services. A case study from Pisa, Italy. Special Issue "Sustainability and Institutional Change". Sustainability 6(4): 1643-1666.

Helstosky, C. (2006). Garlic and Oil: Food and Politics in Italy. Oxford (UK): Berg.

Hoch, S.J. (1987). Perceived consensus and predictive accuracy: the pros and con of projections. Journal of Personality and Social Psychology 53: 221-234.

Herman, C.P., Roth, D.A., & Polivy, J. (2003). Effects of the presence of others on food intake: a normative interpretation. Psychological Bulletin 129(6):873-86.

Italian Ministry of Health (2014). Eye on health (Okkio alla salute) survey. http://www.salute.gov.it/portale/temi/p2_6.jsp?id=2952&area=stiliVita&menu=sorveglianza (Accessed on 29/2/2016).

Lambiase, M., & Bisagni, M. (2014). Eating at school. Reflections and proposals on food education courses in Italian schools (Mangiare a scuola. Riflessioni e proposte sui percorsi di educazione alimentare nella scuola italiana). Mattioli 1885: Fidenza (PR), Italy.

Laureati, M., Bertoli, S., Bergamaschi, V., Leone, A., Lewandowski, L., Giussani, B., Battezzati, A., & Pagliarini, E. (2015). Food neophobia and liking for fruits and vegetables are not related to Italian children's overweight. Food Quality and Preferences 40: 125-131.

Lytle, L., & Achterberg, C. (1995). Changing the diet of American's children: what works and why? Journal of Nutritional Education 27: 250-260.

Mata, J., Scheibehenne, B., & Todd, P.M. (2008). Predicting children's meal preferences: how much do parents know? Appetite 50: 367-375.

Morgan, K., & Sonnino, R. (2008). The School Food Revolution. Public Food and the Challenge of Sustainable Development. London (UK): Earthscan.

Pagliarino, E., Tron, S., Leggio, K., & Agostini, P. (2013). The Chain of Fresh Fish of Organic Italian Farming from Production to School Catering. Sano come un pesce Ricerca e innovazione lungo la filiera acquacoltura-ristorazione scolastica). Milan (Italy): FrancoAngeli.

Pagliarino, E. (Ed.) (2013). Safe as a fish. Research and innovation along the aquaculture-school catering chain (Sano come un pesce Ricerca e innovazione lungo la filiera acquacoltura-ristorazione scolastica). Milan (Italy): FrancoAngeli.

Prell, H.C., Berg, M.C., Jonsson, L.M., & Lissner, L. (2005). A school-based intervention to promote dietary change. Journal of Adolescent Health 36: 529.e15-529.e22.

Salvy, S.J., Vartanian, L.R., Coelho, J.S., Jarrin, D., & Pliner, P.P. (2008). The role of familiarity on modelling of eating and food consumption in children. Appetite 50(2-3): 514-518.

Winne, M. (2005). Education for change. Journal of Agricultural and Environmental Ethics 18(3): 305-310.

Local food and public food procurement

Risku-Norja, H.

Natural Resources Institute Finland, Economy & Society

Abstract: Throughout Europe, as part of a wider concern with sustainability issues, there is increasing interest in alternative food supply chains. Local and organic food (LOF) is also gradually gaining ground among institutional customers. Public food purchases are constrained by the legal framework of the EU law on public procurement. The law encourages the use of the most economically advantageous tender (MEAT), which enables the contracting authority to take into account criteria other than just the lowest price. One of the restrictions to increasing the use of LOF items in institutional kitchens is the tedious procurement process. Using a case study approach, this paper explores the tendering process and its development from price-based competitive bidding towards anticipatory dialogue and interaction between the suppliers and catering personnel. The implications for SMESs are discussed. It is concluded that when the purchasing know-how is used wisely public catering constitutes a protected space for the SMEs to develop. The most important steps in increasing LOF in public catering are taken at local level. It requires local policy makers' strategic decisions and strong commitment to long-term development work. Access to LOF items vary, and the goals in increasing the use of LOF need to be defined so as to address the case-specific circumstances and by paying due attention to those who are experts by experience, i.e. the actors of the catering sector and their customers. Important elements are the role of the path-breaking municipalities and exchange of experiences both nationally and internationally.

Keywords: Local and organic food, municipal catering service, competitive bidding, tendering process, most economically advantageous tender (MEAT), anticipatory dialogue, SMEs

Introduction

Background

As one consequence of overall striving towards sustainability there is an increasing interest in alternative food supply chains throughout Europe. Activity is growing around local and organic food (LOF) and in short food supply chains (SFSC) among grass root organisations (e.g. Garden Organic, 2015) as well as within public procurement (MacLeod & Scott, 2007). Institutional consumers providing food services comprise schools, day care centres, institutions of social and health care as well as the military and jails. As part of overall sustainability strivings, organic food initiatives across Europe and the US feature especially school food programmes (Kristensen et al., 2009; Morgan & Sonnino, 2008). The proponents stress the health and nutritional value of high quality organic food (He & Mikkelsen, 2014), re-localised food production and consumption relying on local partnership and community awareness (Risku-Norja & Løes, 2016; Sonnino & Marsden, 2006; Tikkanen, 2013) and environmental benefits (Rojas et al., 2011). The European Commission has collected practical examples on Green Public Procurement, where LOF is in several cases utilised as a means to promote sustainable development. The examples illustrate successful implementations of green tenders within the catering sector, and they provide guidance for others (EC, 2015;

Foodlinks, 2013). A compilation of the arguments for and against is presented by Kneafsey et al. (2013).

When the food services are publicly funded, the food purchases are constrained by the law on public procurement (Finlex, 2007). To secure equal opportunities for the suppliers, the law presumes that the tender calls are put out for competitive bidding (EU, 2014). In order to give the LOF suppliers a chance to be chosen, the tender calls need to be carefully designed. This is especially true, if "local organic" is stressed, because "organic" as such is an acceptable criterion. Currently the 2007 law is being revised, and some significant changes that improve the position of the SFSCs are expected, one of them being that the price as the only purchasing criterion needs to be particularly justified.

Conceptual frame

Increasing the use of LOF and stressing the seasonality of the food items as a means to make food production and consumption sustainable are among the principles of the Finnish food policy (VNK, 2010). The government has launched two programmes to increase the use of both organic and local food (MAF, 2014; VNK, 2014), and the public actors are obliged to act as path breakers leading the development (ME, 2009; ME, 2012; VNK, 2010).

In this connection, "local food" refers to genuinely short supply chains, i.e. production, processing and consumption are geographically close to each other. In addition, the focus is on basic food items of local origin. These are to be distinguished from "locality food" or the pricy special products that are marketed as representing a certain region or certain traditional production mode, and the consumers of which may be very far away from the site of production (Risku-Norja & Løes, 2016).

In Finland, the food business is heavily concentrated. Two major actors have about 80% of the market. As market leaders they have the say as to which products end up in the retail stores and at what price. Without either one of the major actors' consent, the alternative SMEs have difficulties in getting their products to the market. Their competitive position is, therefore, weak and the economic situation of the small producers is often insecure. Contracts with institutional customers are potentially important. They provide secure income, and the entrepreneurs can then shift the focus from marketing to developing their core activities.

Public food purchases are constrained by the legal framework of the EU law on public procurement. The law obligates the contracting authority to take into account criteria other than just price. It encourages the use of most economically advantageous tendering (MEAT), which ensures taking into consideration a variety of criteria (EU, 2014). They may deal with overall impacts on regional economy, employment and entrepreneurial activity and on environment, various specific quality attributes such as nutritional requirements, packaging size and their recyclability, delivery times and frequency, freshness and eventually organic production. The law, thus, combines the voluntary EU directives of Green Public Procurement (GPP - EC, 2008) focusing on environmental criteria and Sustainable Public Procurement (SPP - EC, 2010) aiming at balancing economic, social and environmental aspects of sustainable development (EC, 2016).

Research task

The research task is to explore the tendering process and its development from price-based competitive bidding towards anticipatory dialogue and interaction among the suppliers and

catering personnel. Attention is paid to the drivers and bottlenecks in implementing the LOF concept in Kiuruvesi and to the interplay of the tendering process and the SMEs' position in the highly competitive food market.

Materials and methods

The research was carried out as a case study with the public catering of the Kiuruvesi municipality as the case. The data on the municipal catering were obtained mainly from the Kiuruvesi official internet web page, from one research article (Tikkanen, 2013), from four reports dealing with the status of local and organic food in municipal catering in Finland (Muukka et al., 2009), the impact of LOF on regional economy (Vänttinen & Korpi-Vartiainen, 2010), implementation of the LOF concept in Kiuruvesi (Risku-Norja, 2015a) and with a supplier's experiences of the competitive food market and co-operation with the municipality (Risku-Norja, 2015b). The main data source was the semi-structured interviews carried out in 2014. There was one group interview with the representatives of the municipality, catering service and its customers, and three individual interviews, two with the head of the Kiuruvesi catering service and one with the representative of the suppliers, the Järvifisu company (Lake Fish Co.). In order to improve the outcome of the interviews the questions together with a short summary of the data compiled by that time from other sources were sent about a week in advance to the interviewees. The interviews were tape recorded, and the recordings were analysed using Atlas.ti qualitative data analysis software. The conclusions of the interviews were verified by the interviewees in 2015.

Results

General description of Kiuruvesi municipality

The Kiuruvesi municipality is a rural town located in central Finland, in the province of North Savonia (Figure 1.). The land area is 1,328 km², with the inland waters included, the total area is 1,423 km². With seven inhabitants per square kilometre, the municipality typologically represents sparsely populated rural areas, the other municipal types being core rural areas, urban adjacent rural areas and urban areas (Malinen et al., 2006).

Figure 1. The geographic location of the Kiuruvesi municipality.

The population development has long been declining: in 1980 there were about 12,000 inhabitants, today the number is about 8,800. The share of the people in active working age and the level of education is somewhat lower than in Finland on average, whereas the unemployment rate (14%) is higher compared to the average for Finland (11%) (Statistics Finland, 2015).

The economic structure is strongly biased towards primary production. It provides about 26% of the jobs for the inhabitants, the average in Finland being 3.7%. Because of the natural

circumstances the Kiuruvesi region has been for decades among the major agricultural production areas of the country, the climate and soil are especially suited for beef and dairy production.

The LOF strategy of Kiuruvesi municipality and its implementation

Emphasising ecology, ethics and sustainable development in life style and in productive activity, the Kiuruvesi municipality has profiled itself as "Finland's Capital of Sustainable Development" [1]. The LOF concept adopted in municipal catering is an important ingredient of this brand, and LOF strategy has been determinedly developed since the 1990s. In the municipality's strategy LOF is accounted for by stating that the proportion of the LOF items shall be increased gradually in order to enable local producers to accommodate their supply to the needs of the municipal catering (Risku-Norja, 2015a). Seasonality is an important part of the LOF concept, and it is accounted for; in the winter time instead of fresh tomatoes, lettuce and cucumber various root vegetables are used. The strategy is founded on the rich regional production structure of agriculture. It was adopted as one means of enhancing the attractiveness of the municipality, which is located in a fairly remote area and has faced declining population over several decades.

The impetus to prioritise LOF in the municipal catering dates back to the 1990s. At that time, the municipality was economically in a very difficult situation, and something had to be done to reduce the costs of the municipal services, including the food services. The initiative for LOF came from the actors of the educational sector. In addition to the primary school of the municipal centre, there were 11 primary schools in the villages. The options were either to centralise the catering services by giving up the preparation kitchens in the village schools, or to do things differently in some other way. The catering personnel in the village schools actively advocated the possibility of continuing with the decentralised model utilising the possibilities provided by the local farms. It was seen as a matter of survival of the village schools and, along with them, as a matter of survival of the villages themselves. The headmasters and the teachers of the schools, as well as the village people, supported the decentralised model. In fact, in the village schools, the kitchens had always used products from the nearby farms, sometimes from their own school garden and from the forests. However, the approval of the motion initiated the determined development of the LOF strategy. In 2000, the board of the biggest of the village schools, the Rapakkojoki School with 60 pupils, brought forward an official motion to the municipality's board of education, offering to become a pilot in the use of LOF. The school authorities approved the motion and the municipal council supported their decision. With the efforts of the head of the school catering service, the LOF concept has been gradually expanded so as to cover all schools in the municipality.

With organisational re-arrangements in 2010, all municipal catering services were brought within a single administrative unit. There are now two central kitchens, one serving the schools and one serving the customers of the social and health sector. The latter is the responsibility of the Northern Savonia Federation of Municipalities, and the federation buys the meal services from the Kiuruvesi municipal catering. Today there are only four village schools, and these still have their own preparation kitchens. The LOF concept is applied in school catering, whereas price-competitiveness of food purchases is emphasised in social and health care. In 2014 the share of LOF in schools was 43% and in the entirety of the municipality 23% of the

[1] *http://www.kiuruvesi.fi/Suomeksi/English*

value of food purchases. As a consequence of the recent organisational re-arrangement in 2015 the two central kitchens were merged into one.

The drivers and bottlenecks in use of LOF

One of the main restrictions in use of LOF is the availability of suitably pre-processed products. Initially the LOF products were locally available potato and other tubers, vegetables, berries and, to some extent, also cereals, and the producers brought them directly from the farms into the school kitchens. The products were unprocessed, and this caused problems in the beginning both in terms of violations of the hygiene regulations and in terms of the extra work required in the kitchens. In the beginning, an extra 5% resource allocation in the municipal budget was allotted for the catering sector because of the increased workload.

Today, when all food purchases are concentrated into one administrative unit, the volume of the purchases is large compared to the volumes needed in single schools. Another restriction is the operational environment of the municipal kitchens: the kitchens do not have preprocessing facilities which limits the repertoire that can be used. Therefore, small scale preprocessing e.g. slicing, peeling, chopping and grating the root vegetables, of the products before they enter the kitchen, is necessary. The availability, thus, needs to be secured both in terms of the volumes and preprocessing.

Price is also important, but the price constraints can be to some extent compensated for with new recipes and careful menu planning. It has required reformulation of the menus and recipes so as to accommodate the availability of local raw materials. Efforts have also been made to substitute commercial ready-made meals by developing corresponding products made on the premises. In 2000, the whole catering personnel in the Kiuruvesi schools participated a training course on increasing the use of organic food in the municipal kitchens.

Over the years the repertoire of local products has increased and today there are also a variety of local conventional and organic products. The purchased products have also been pre-processed so as to comply with the facilities of the institutional kitchens.

Regarding the fate of the LOF strategy, the powerful actor is the municipal council, because the economic resources allocated for the catering sector are decided on in the municipal budget. The positive attitude of the municipal manager towards LOF has been important and has contributed to the adoption of the concept. A contributing factor was also the fact that the decision-makers were willing to accept two kinds of approaches to providing the food services: the LOF concept was integrated into the practicalities of school catering, whereas the social sector continued as before.

There are several bottle necks to the use of LOF in Kiuruvesi. The fairly northern location of the municipality very much restricts the repertoire of local agricultural products. The choice of locally produced items is rather small, and the choice of items suitable for public catering is even smaller. Another problem is that the small producers cannot supply the volumes that are needed in public kitchens. The heavily concentrated structure of the Finnish food sector focusing on economies of scale poses a big problem; even though Kiuruvesi is in the midst of the main primary production areas of dairy and beef, the great majority of the products are processed elsewhere in large units. Therefore, the supply chains of the beef and milk products are not short, and they are not considered as being of local origin.

Development of the tendering process

When the LOF concept was introduced, each school had its own kitchen, and the volumes needed for each school were moderate. The suppliers were found via announcements in the local newspaper and via personal contacts. Because the volumes were small, the products could be purchased without the burdensome process of competitive bidding.

Today all purchases are centralised. Compared to the beginning, much more attention is paid to the competitive bidding process and information both on the process and its practicalities and on the needs of the catering service is delivered to the potential suppliers in advance before the tender calls are opened.

Anticipatory dialogues before the tender calls are put out have become a formalised part of the procedure. Before the tender calls are put out, the head of the catering service sits down with the interested parties. In the tender calls, a number of criteria are defined and the potential suppliers are informed about the requirements in face-to-face discussions. The aim is to formulate the tender calls in such a way that local products can be chosen whenever possible. The producers also receive all necessary information about the volumes, delivery, degree of processing, packaging and required product qualities, so the potential suppliers know what is expected from them and to what they are committing themselves when they sign the contracts.

This anticipatory dialogue is experienced as extremely useful both by the catering personnel and the suppliers. The dialogue is continuous, and mutual feed-back is also given on an *ad hoc* basis during the contract periods or when the need arises. Often this communication deals with practical matters. The supplier may have problems in keeping the delivery schedule or providing the agreed volume, or the catering sector may have unexpected changes in its demand. The development needs, questions arising and over all experiences are discussed in anticipation of the next tender call and in view of the necessary product development. The co-operation among the municipal catering and its suppliers is based on mutual learning.

Discussion

In Kiuruvesi, the LOF concept has been developed over more than 15 years. National food policy encourages the use of LOF and obligates the public sector to lead the development (MAF, 2014; VNK, 2014). However, without concrete goals and deadlines for realisation of the goals, they are only loose recommendations; the most important steps are therefore taken at local level. The municipal decision-makers and the catering personnel in Kiuruvesi are fully committed to the concept, the idea has been integrated into the municipal strategy and necessary resources have been allocated to implement the strategy.

The municipality's food services are organised under two sectors, education and social & health care. The municipality is responsible for school food, whereas the Northern Savonia Federation of Municipalities is responsible for social & health care. The two authorities have different views regarding the LOF concept. The disagreement culminates in the short term cost savings aimed at by the federation, whereas the Kiuruvesi actors stress the long-term benefits for the regional economy and the significance of the meals as part of preventative health care of the inhabitants and of good care of the customers of the social & health care. The municipal board has accepted the dual situation, and this has led to riding on two horses: the share of the LOF products used in the central kitchen preparing the meals for the social and health care is much lower than in the kitchen preparing the school meals. There is

persistent pressure for cost savings, and with the merger of the two central kitchens into one, the discussion on the fate of the LOF strategy has been opened up again. The impact on the use of the LOF items remains to be seen.

The LOF strategy in Kiuruvesi is based on the gradual increase in use of LOF, and this is dictated by the availability of these products. It is essential to collaborate with the suppliers, and implementing LOF has gone hand in hand with emergence of local suppliers (Risku-Norja, 2015a). Co-operation has been developed especially in the anticipatory dialogues that are carried out among the head of the catering service and the potential suppliers, before the tender calls are put out.

In Finland, the food business is heavily concentrated. Two major actors have over 80% of the markets. As market leaders they have the say as to which products end up for retail and at what price. Without either one of the major companies' consent, the alternative SMEs have great difficulty in getting their products to the market. The economic situation of the small producers is therefore insecure, and often very difficult, and their competitive position is weak. Even though in some cases the entrepreneurs could get a better price by selling the products via retail, the long-term contracts with the municipality give them leeway to plan their activity. This frees resources from marketing and deliveries, and the suppliers can focus on the core business. The regular income also carries the enterprises over quiet periods. The public actor thus provides a kind of protected space for the local suppliers, who would otherwise have difficulty entering the highly competitive Finnish food market.

The MEAT approach is important for SMEs. This is especially true, if "local organic" is stressed, because "organic" as such is an acceptable purchasing criterion. Various quality measures have to be emphasised to allow for procurement of LOF. Formulation of the purchasing criteria is part of the anticipatory dialogue. The procedure has also led to recipe innovations and to co-production of new products in view of the needs of the public catering. With the anticipatory dialogue the relationship between the catering staff and the suppliers has gradually developed from mere business relations towards strategic partnership. However, it is also important to find new suppliers, both in order to expand the repertoire of the LOF products and to make sure that there is true competition between the suppliers; with only one supplier prices tend to go up.

Over the years, the use of LOF products has gradually increased as the entrepreneurs have been able to fulfill the needs of public catering and of new entrepreneurs who have emerged. Since the kitchens do not have facilities or personnel for the time-consuming raw material preparation, developing small-scale pre-processing has been an important prerequisite for increasing the share of LOF items in the municipality's food services.

The most critical constraint is the poor financial basis of the municipality. Like other municipalities in Finland, Kiuruvesi has difficulty in coping with its responsibilities towards the inhabitants. The municipal catering service is statutory. The costs of the service are not paid by the customers directly, but they are covered by the municipality's tax income. The service needs to be cost-effective, and it needs to be accommodated within the budget frame of the municipality. The service is thus not aiming at profits, but rather, "profitability" means economic feasibility in the present circumstances. Because the age structure of the population is biased towards older people and the unemployment rate is fairly high, there is a growing demand for municipal services. However, for the same reasons the tax income is constantly shrinking.

There is an economic “sustainability deficiency”, i.e. the municipality responsibilities exceed the tax income. Generation change in the enterprises may also present a threat. Some of the present suppliers are approaching retirement age. The younger generation is not always interested to take over, and in some cases the continuation of the activity is at stake.

So far, the LOF concept has been shown to be workable. It has brought new vigour to the food sector in the Kiuruvesi region, and it has fused faith also in the future of the sector’s livelihood. The LOF concept has also paved the way for new ideas in the regional economy. The guiding principle in Kiuruvesi is to prioritise local products in order to improve the municipality’s economy. This prioritisation does not apply only to food purchases, but to procurement of all the municipality’s products and services. For the public sector, the social issues are naturally important. Profitability, employer retention, increasing the share of LOF and a firm economic basis are all considered as important. The LOF strategy is seen as an important impulse for entrepreneurial activity. It, needs to be profitable for the entrepreneurs, but it needs to be profitable also for the municipality in terms of the costs of the catering services. In food purchases, the prioritisation order is local organic, local, domestic organic, domestic and imported organic. Price constraints somewhat restrict the use of organic products (Risku-Norja, 2015a).

Conclusions

- Increasing the use of LOF in municipal catering is a slow process, and the most important steps are taken at local level.
- It requires local policy makers’ strategic decisions and allocation of adequate resources.
- It also requires strong commitment of the catering personnel to long-term development work.
- Introducing anticipatory dialogue among catering staff and local suppliers as an essential ingredient of the purchasing procedure strengthens SMEs’ potential for success in tender calls.
- In the competitive food markets, public procurement can constitute a protected space for the local SMEs to develop.

Acknowledgements

The author acknowledges the financial support for the HealthyGrowth project provided by transnational funding bodies, being partners of the FP7 ERA-net project, CORE Organic II.

References

EC (2010). Buying social. A guide to taking account of social considerations in public procurement. Luxembourg: European Commission. Retrieved 10.4.2016 from http://buysocialdirectory.org.uk/sites/default/files/eul14136_socconsidpubprocu_1012101.pdf

EC (2016). Green and sustainable public procurement. Retrieved 15.3.2016 from http://ec.europa.eu/environment/gpp/versus_en.htm

Finlex (2007). Law on public procurement 3.3.2007/348. [in Swedish: Lag om offentlig upphandling 3.3.2007/348]. Retrieved 12.3.2016 from https://finlex.fi/sv/laki/ajantasa/2007/20070348.

EU (2014). Directive of the European parliament and of the council 2014/24. European Union. Retrieved 10.3.2016 from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024&from=EN

Foodlinks (2013). Revaluing public sector food procurement in Europe: an action plan for sustainability. The Netherlands: Wageningen University. Retrieved 10.4.2016 from http://orgprints.org/28859/1/Foodlinks_report_low_action_plan.pdf.

Garden Organic (2015). Garden organic schools. Retrieved 12.3.2016 from http://www.gardenorganic.org.uk/search/node/schools%20organic%20network

He, C., & Mikkelsen, B. (2014). The association between organic school food policy and school food environment: results from an observational study in Danish schools. Perspectives in Public Health 134: 110-116.

Kneafsey, M., Venn, L., Schmutz, U., Balázs, B., Trenchard, L., Eyden-Wood, T., et al. (2013). Short food supply chains and local food systems in the EU. A state of play of their socio-economic characteristics. Report EUR 25911 EN European Commission. Joint Research Centre, Institute for Prospective Technological Studies.

Kristensen, N.H., Netterstrøm, S., He, C., Mikkelsen, B.E., & Nielsen, T. (2009). Making the organic food service chain work and survive. Agronomy Research 7 (Special issue II): 618-624.

MacLeod, M., & Scott, J. (2007). Local food procurement policies: a literature review. Ecology Action Centre, For the Nova Scotia Department of Energy. Retrieved 10.1.2016 from http://www.organicagcentre.ca/Docs/LocalFoodProcurementPolicies.pdf

Malinen, P., Kytölä, L., Keränen, H., & Keränen, R. (2006). Suomen maaseututyypit 2006. (Summary: Rural typology of Finland in 2006.). Helsinki. Retrieved 10.1.2016 from http://www.mmm.fi/attachments/5enfdAPe1/5kYqNENOF/Files/CurrentFile/MMMjulkaisu2006_7.pdf:

MAF (2014). More organic! The development programme of the Finnish government and the goal for organic sector until 2020. Helsinki: Ministry of Agriculture and Forestry. Retrieved 3.3.

2016, from http://mmm.fi/documents/1410837/1890227/Luomualan_kehittamisohjelmaEN.pdf/1badaefc-bc12-4952-a58a-37753f8c24ad

ME (2009). Sustainable public procurement. Public sector becomes a pioneer in sustainable public procurement. Helsinki: Ministry of the Environment. Retrieved 14.2.2016 from http://www.ymparisto.fi/download.asp?contentid=103507&lan=fi>

ME (2012). From less more wisely. Revised programme for sustainable consumption and production 2012. [in Finnish: Vähemmästä viisaammin. Kestävän tuotannon ja kulutuksen ohjelman uudistus]. Helsinki: Ministry of the Environment. Retrieved 12.3.2016 from http://www.ym.fi/download/noname/%7B8B5DC698-70AE-4547-83E1-7F5D49F8F205%7D/30375. Accessed 18.11.2015

Morgan, K., & Sonnino, R. (2008). The school food revolution. Public food and the challenge of sustainable development. London: EarthsScan.

Muukka, E., Kuosmanen, L., Ylinampa, M., Blomquist, U., Kärkkäinen, I., Soininen, T., & Soininen, J. (2009). Local food in municipal catering. A survey on local food purchasing in Finnish municipalities. Savo Vocational College Publication EkoCentria. Savonlinna, Finland.

Risku-Norja, H. (2015a). Full case study report. Kiuruvesi municipal catering, Finland. From niche to volume with integrity and trust. HealthyGrowth. FP7 ERA-net project, CORE organic II. Retrieved 10.1.2016 from http://orgprints.org/28870/1/REPORT_%20FINLAND_KIURUVESI.pdf

Risku-Norja, H. (2015b). Full case study report. Järvifisu, Finland.From niche to volume with integrity and trust. HealthyGrowth. FP7 ERA-net project, CORE Organic II. Retrieved 10.1.2016 from http://orgprints.org/28868/7/REPORT_FINLAND_%20J%C3%84RVIFISU.pdf

Risku-Norja, H., & Løes, A. (2016). Organic food in food policy and in public catering: lessons learned from Finland. Organic Agriculture 1-14.

Rojas, A., Valley, W., Mansfield, B., Orrego, E., Chapman, G., & Harlap, Y. (2011). Toward food system sustainability through school food system change: Think&EatGreen@School and the making of a community-university research alliance. Sustainability 3(5): 763-788.

Sonnino, R., & Marsden, T. (2006). Beyond the divide: rethinking relationships between alternative and conventional food networks in Europe. Journal of Economic Geography 6(2): 181-199.

Statistics Finland (2015). Official statistics of Finland, [in Finnish: Suomen virallinen tilasto]. Retrieved 20.3.2016 from http://www.stat.fi

Tikkanen, I. (2013). Procurement and consumption of local and organic food in the catering of a rural town. British Food Journal 16(3): 419-430.

Vänttinen, R., & Korpi-Vartiainen, J-P. (2010). Use of local food in professional kitchens of the public sector. Benefits for the regional economy in Northern Savonia [in Finnish: Lähiruoan käyttö julkisen sektorin ammattikeittiössä. Ruokasektorin aluetaloudellinen hyöty Pohjois-Savossa]. Sisä-Savon seutuyhtymän julkaisuja 2010/1: 1-29.

VNK (2014). Local food - but of course! Government programme on local food and development objectives for the local food sector to 2020. 1-23.

VNK (2010). Valtioneuvoston selonteko ruokapolitiikasta. Helsinki: Prime Minister's office. Retrieved 10.4.2016 from http://www.mmm.fi/attachments/maatalous/maatalouspolitiikka/newfolder_14/5tTDQgjLk/selontekosuomi.pdf

Short food supply chains and "infrastructure of the middle": the role of university food procurement in sustainability transition

Stahlbrand, L.

Wilfrid Laurier University, Waterloo, Canada

Abstract: This paper argues that university food procurement can play an important role in the development of short food supply chains (SFSCs) supporting sustainable local food systems. The paper presents evidence from two programmes that have contributed to the creation of successful SFCSs in university settings – the Food for Life Catering Mark in England and Local Food Plus in Canada – based on detailed interviews with practitioners. The author herself was a practitioner (as the founder and former leader of Local Food Plus), and thus brings a perspective informed by both theory and praxis. The paper discusses why the notion of SFSCs is especially useful in describing the evolution of local and sustainable food systems. The paper then introduces the term “infrastructure of the middle”, and proposes that the understanding of SFSCs can be amplified by this concept. Infrastructure of the middle describes the hard and soft infrastructure that enables mid-size farmers and institutional purchasers such as universities to develop meaningful connections. In effect, infrastructure of the middle is the operationalisation of SFSCs, to move beyond direct markets into working relationships with larger purchasers. The author adapted the term from Kirschenmann et al.’s concept of “agriculture of the middle”, which describes the mid-size farms and ranches most capable of meeting the needs of a sustainable local food system. A typology of infrastructure of the middle is presented briefly (Stahlbrand, forthcoming). The paper concludes with a discussion of how SFSCs and infrastructure of the middle can be positioned within Sustainability Transition Theory.

Keywords: University catering, university foodservice, public sector procurement, infrastructure of the middle, sustainable food, local food, Soil Association, Food for Life Catering Mark, Local Food Plus

Introduction

Background

The term "Short Food Supply Chains" (SFSCs) has gained credence over the last decade among policy makers and academics, especially in Europe, as a term of choice to describe emerging alternative food networks which feature local food with a distinctive ethical association. In a comprehensive report for the European Commission, Kneafsey et al. define a SFSC as follows: *"The foods involved are identified by, and traceable to a farmer. The number of intermediaries between farmer and consumer should be 'minimal' or ideally nil"* (Kneafsey et al., 2013, p. 13). They point out that, unlike the term "local food systems", which is focused on distance, short food supply chains are about reducing the number of hands food passes through from the farm to the eater. Kneafsey et al. acknowledge that, in and of themselves, SFSCs do not guarantee a commitment to environmental principles or a reduction in GHG emissions, yet "*it is clear that ethical, social and environmental concerns, in addition to quality aspects are the key drivers of consumer interest in this sector"* (Kneafsey et al., 2013, p. 14).

Kneafsey et al. credit Marsden et al. (2000) and Renting et al. (2003) for shaping the early discussions around SFSCs. Both of these sets of authors identify proximity between the producer and the consumer as only one of several attributes of SFSCs. As Renting et al. point out,

> *"SFSCs on the one hand 'short-circuit' the long, anonymous supply chain characteristics of the industrial mode of food production. On the other hand, producer-consumer relations are 'shortened' and redefined by giving clear signals on the provenance and quality attributes of food and by constructing transparent chains in which products reach the consumer with a significant degree of value-laden information. Lastly, SFSCs are an important carrier for the 'shortening' of relations between food production and locality, thereby potentially enhancing a re-embedding of farming towards more environmentally sustainable modes of production"* (Renting et al., 2003).

The growth of interest in SFSCs is in keeping with recent trends throughout North America and Europe toward what are sometimes referred to as Alternative Food Networks (AFNs) or Values-Based Supply Chains (VBSCs) – the mix of networks, movements, projects and businesses that promote a systemic approach to relocalising food while addressing environmental and social sustainability (Barham, 2002; Blay-Palmer, 2011; Goodman, 2004; Hardesty et al., 2014; Lerman, 2012; Levkoe, 2011; Morgan et al., 2006; Stevenson & Pirog, 2008). These have been largely focused on direct farm sales, farmers markets and box delivery schemes. To date, SFSCs have had minimal uptake in institutional procurement, despite the fact that this area has enormous potential for scaling up and out the volume of such food across the system (Friedmann, 2007; Morgan & Morley, 2014; Morgan & Sonnino, 2008; Roberts et al., 2014)

Research Task

The research task is to evaluate two organisational approaches - the Food for Life Catering Mark in England developed by the Soil Association, and the Local Food Plus programme in Canada -as examples of SFSCs in university settings. This paper argues that universities are especially well-positioned to play a key role in the development of short food supply chains (SFSC) that support the growth of more sustainable local food systems.

In addition, this paper proposes that the notion of SFSCs can be deepened by incorporating a new concept – "infrastructure of the middle". This concept builds on the term "agriculture of the middle" developed by Kirschenmann et al. to describe the mid-sized farms and ranches which "operate in the space between the vertically-integrated commodity markets and direct markets" (Kirschenmann et al., 2008, p. 3). The concept of infrastructure of the middle is also informed by Morley et al.'s concept of the "missing middle" which emphasises the need for a *"mechanism by which small producers can collectively access a middleman facility that enables them to trade with large customers…[including] public procurement consortia"* (Morley et al., 2008, p. 2).

As used in this paper, infrastructure of the middle emphasises the importance of both hard and soft infrastructure in supporting universities to procure from SFSCs. Typically, universities in both North America and Europe contract out their foodservices to global corporations which are geared towards farmers and distributors providing high-volume, anonymous products. This generally excludes small and mid-size farmers and processors. Infrastructure of the middle refers to the networks, resources, facilities and relationships that enable mid-size

farmers and institutional purchasers such as universities to develop meaningful connections. In effect, infrastructure of the middle is the operationalisation of SFSCs to enable them to move beyond direct markets into working relationships with larger purchasers such as universities.

Methodology

This paper takes a qualitative approach to exploring the role of SFSCs in university procurement. It is based on 67 detailed semi-structured interviews with practitioners, and is informed by both theory and praxis. The author was a practitioner, as the founder and former President of Local Food Plus, the Canadian civil society organisation which pioneered procurement of sustainable local food in partnership with the University of Toronto. As such, this paper brings insights gleaned from the daily experience of wrestling with supply chain issues. The interviews were conducted between 2013 and 2015. In England, they included Soil Association staff responsible for the Food for Life Catering Mark and staff at leading universities using the Catering Mark, as well as farmers, processors, and distributors taking part in the scheme. Interviews in Canada included Local Food Plus staff, University of Toronto staff and administrators, as well as a range of suppliers.

The paper begins by outlining the two organisational approaches to procurement that are the subject of these case studies. The paper then discusses why the notion of SFSCs is especially useful in describing the evolution of local and sustainable food systems. The paper proposes that the understanding of SFSCs, especially in institutional settings, can be amplified by the concept of infrastructure of the middle. A typology of infrastructure of the middle is presented (Stahlbrand, forthcoming). The paper concludes with a discussion of how SFSCs and infrastructure of the middle can be positioned within sustainability transition theory.

The Case Studies

Background

The supply chains of two English universities using the Food for Life Catering Mark, and one Canadian university working with the Local Food Plus (LFP) programme, are analysed. The English Universities are Nottingham-Trent, a university of about 27,000 students in the Midlands city of Nottingham with a self-catered food service, and University of the Arts London, a multi-campus university of about 26,000 students in downtown London which works with a contracted domestic caterer. The Canadian university is the University of Toronto, one of the largest universities in North America with 85,000 students over three campuses. The focus of this study is on the downtown (St. George) campus, with about 60,000 students.

The Food for Life Catering Mark

The Food for Life Catering Mark is a project of the Soil Association, which describes itself as "*the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use"* ("The Soil Association - About Us," n.d.). The mark grew out of the Food for Life Partnership, a programme launched in 2007 to transform food culture in British schools. The Catering Mark was launched two years later in order to provide third party certification to institutional foodservice providers. It offers a ladder for improvement, with bronze, silver and gold awards to encourage progress. By moving through the three levels, foodservice operators demonstrate an increased commitment to four principles: 1. serve fresh food; 2. source environmentally sustainably and ethical food; 3. make healthy eating easy; and 4. champion

local food producers. More than 1.6 million certified meals are served every weekday. More than 35 universities currently use the Catering Mark ("The Food for Life Catering Mark," n.d.).

The Local Food Plus Programme

The Canadian case study focuses on the partnership between the civil society organisation Local Food Plus (LFP) and the University of Toronto. Although the LFP programme was significantly less resourced and embedded than the Food for Life Catering Mark, at its launch in 2006 it marked the first time that a Canadian university made a formal commitment to purchase sustainable local food. (At that time, Local Food Plus was known as Local Flavour Plus; the organisation has been in hiatus since 2014.) (Girard, 2006; Local Food Plus, 2006).

At the time of the launch, the University of Toronto had both self-operated units and cafeterias operated by Aramark, a global foodservice company. As part of a programme of continuous improvement, participating cafeteria agreed to purchase 10% of the dollar value of their food in the first year, with a 5% increase each year, from farmers and processors who carried the "Certified Local Sustainable" mark developed by Local Food Plus (confidential document, University of Toronto, 16 January 2006).

The centrepiece of the LFP programme is a farm certification that encourages a transition towards more sustainable practices. The certification standards are based on five guiding principles: 1. Employ sustainable production systems to reduce or eliminate synthetic pesticides and fertilisers, and conserve soil and water; 2. Provide healthy and humane care for livestock; 3. Provide safe and fair working conditions for on-farm labour; 4. Protect and enhance on-farm biodiversity and wildlife habitat; and 5. Reduce on-farm energy consumption.

LFP certification is unique in its effort to combine local with sustainable practices. Farmers must achieve a score of 75% or better to be entitled to call their operation "Certified Local Sustainable" (Local Food Plus, 2009).

Conceptual frame – advantages of SFSC terminology

As Marsden points out, one of the contributions of the term SFSC is that it allows an examination of how supply chains are "built, shaped and reproduced over time and space", a conceptually richer approach than simply a measurement of the unilinear distance of product flows (Marsden et al., 2000, p. 424).

Evidence from the case studies analysed for this research confirms that the concept of the SFSC resonates deeply with developments in university procurement that enhances opportunities for sustainable food systems, and adds nuance to other commonly used terms such as "local food", "alternative food networks" (AFN) or "values-based supply chains" (VBSC). The following section elaborates those nuances.

First, SFSC encompasses more than local food. Because it highlights the central role of the food chain and the producer-consumer relationship, as distinct from the physical location of food production, it can embrace fair trade and diaspora-based foods, essential in multicultural societies. This acknowledges that, for the foreseeable future, a just food system will include a global exchange of many products (coffee, tea, chocolate, sugar and rice are prime examples) which can be traded ethically.

"Short" also implies a more direct route. In this sense, SFSCs indirectly exclude "ultra-processed foods", a term developed by Monteiro et al. to describe *"a vast range of palatable products made from cheap ingredients and additives"* (Monteiro et al., 2013, p. 22). Monteiro et al. developed this term to describe food that is typically high in fat, sugar and salt, made with processing aids and highly refined ingredients, and often aggressively marketed by transnational corporations. Ultra-processing is fundamentally a process of distancing food, independent of the actual geographical distance, because it distances food from nature and holistic health. In this way, the term "short" opens the door to inclusion of nutritional needs and benefits as part of the definition of sustainability.

Second, unlike the term "alternative food networks", the term SFSC is a neutral description which doesn't imply relative stature. The term AFN inherently marginalises the emerging food system by describing it in relation to the mainstream or dominant system. By contrast, the term SFSC is positioned as a positive project with the potential to become the norm.

Third, because it emphasises directness of relationships as a key variable, SFSC is a more functional and practice-based term than values-based supply chain. Stevenson and Pirog argue that VBSCs are *"distinguished from traditional food supply chains by the combination of how they differentiate their products (food quality and functionality, and environmental and social attributes), and how they operate as strategic partnerships (business relationships)"* (Stevenson & Pirog, 2013, p. 3). They contend that VBSCs are supply chains that are mutually supportive, collaborative, cooperative and community-engaged. However, the term itself is not explicit about whose values are being counted. It can be argued that the conventional food system is also values-based – based on narrow values of efficiency, competition and low price, which exclude values about health and nature.

Results and Discussion

Enriching the term SFSC

The term SFSC describes the chain itself as the defining feature. This is compatible with the concept of infrastructure of the middle, which concerns itself with the universe of relationships, not just where the food is produced. In other words, SFSCs and infrastructure of the middle are about the "to" in such phrases as "farm to table", "field to fork", or "farm to cafeteria". Both SFSCs and infrastructure of the middle acknowledge what happens in between.

However, the concept of infrastructure of the middle goes beyond the notion of a food chain, which implies linearity and a single direction leading from farmer to consumer. Infrastructure of the middle is not inherently unidirectional. As Slow Food advocates argue, consumers must take on a new role where *"Consumption becomes part of the productive act and the consumer thus becomes a co-producer"* ("Slow Food Manifesto for Quality," n.d.). Infrastructure of the middle is about communication from farmer to consumer, and from consumer back to farmer. At its most effective, it is a set of relationships and a co-learning system that includes dialogue and negotiation. Indeed, it has the potential to embrace the entire food cycle including inputs and food waste, both of which are often left out of discussions about food supply chains.

However, perhaps the most important contribution that infrastructure of the middle can make to thinking about food supply chains is that it takes the discussion beyond conceptualisation to operationalisation. As SFSCs grow in numbers and complexity across Europe and North America, a key challenge is how to scale up and out, as the system shifts from the early

adopters to the early majority. The next section of this paper presents a typology of infrastructure of the middle that attempts to add operational details to an understanding of how university procurement can contribute to the scaling up and out of SFSCs.

A typology of infrastructure of the middle

This typology of infrastructure of the middle has emerged from analysis of the successful application of the Food for Life Catering Mark and Local Food Plus programme in England and Canada, respectively. The typology is based on the data collected, combined with the author's in-depth experience of the challenges faced in promoting and implementing university procurement of local and sustainable food. This paper presents a brief introduction to the ten organisational characteristics that are present in the university-based sustainable local food initiatives studied here. (The typology is developed more fully in a forthcoming paper (Stahlbrand, forthcoming).) These characteristics include both actors and capacities. Conventional foodservice supply chains are controlled by a handful of multinational foodservice providers and distributors. A distinguishing characteristic of infrastructure of the middle is that it distributes power and benefits throughout the system, both directionally and sectorally. In considering infrastructure of the middle, the "universe of relationships" must be assessed, rather than any one element. The ten organisational characteristics are:

1. **The need for an "anchor institution"** - Anchor institutions, defined as *"large public or nonprofit institutions rooted in a specific place, such as hospitals, universities or municipal governments"* (Dragicevic, 2015, p. 5), are essential because they can use their purchasing power to create long-term stable markets that attract and support mid-size farmers and processors who have the capacity to feed large cafeteria. Universities in both the UK and Canada qualified as anchor institutions.
2. **A civil society organisation (CSO) providing leadership** - Evidence suggests that much work related to the development of sustainable local food systems has been initiated by public interest CSOs (Blay-Palmer et al., 2013; Campbell & MacRae, 2013; Friedmann, 2007; Morgan & Morley, 2014; Orme et al., 2011), despite the fact that food production, processing, distribution and sales are generally considered the purview of the private and for-profit sector. Local Food Plus and The Soil Association are examples of such CSOs.
3. **A tool to measure progress towards sustainability** - Scaling up and out means farmers producing at volume and selling to parties with whom they have no direct relationship, frequently through an aggregator or distributor. Tools, often in the form of certification schemes, offer a way to identify values and best practice beyond personal relationships, as well as to protect all parties from greenwashing and dilution of the values proposition. Both the Soil Association and Local Food Plus had sophisticated certification tools.
4. **Individual champions** - Champions break down silos within an institution to make a new approach to food procurement possible. In a university setting, for example, they can initiate conversations among foodservice, waste management, student recruitment and fundraising – parts of the institution that rarely talk to one another – to discuss how sustainable local food procurement can be leveraged to benefit the larger institution and its public purposes. In addition to being committed to larger public purpose principles, champions must hold a position of some authority, and possess a range of social skills and competencies. Both the UK and Canadian cases studies feature champions in many key roles, including university

administrators, heads of sustainability and foodservice, and chefs, as well as champions among partnering food suppliers. The term "champion" is deserved because the functions fulfilled lack system embeddedness and incentives, and require personal courage, talent and commitment.

5. **A self-operated foodservice or domestic foodservice contractor** - Currently, global foodservice contractors are the norm in institutions. However, their business model - based on volume purchases of standardised low-cost food from anywhere - is incompatible with sustainable local food systems. Global foodservice corporations also have rules and regulations that discriminate against mid-size producers such as minimum volume requirements or minimum insurance requirements. In both the UK and Canada, the facilities that were most effective at supporting local and sustainable food were either self-operated units or worked closely with domestic caterers.

6. **Innovative private sector companies** - Infrastructure of the middle is rich in B2B (business to business) relationships, which have been identified as fundamental to the growth of local economies (Shuman, 2015), much as they are to conventional economies. They include processors, distributors, aggregators and other food businesses. Many are innovators, interested in reconfiguring resources, not just mobilising them (Marsden, 2010; Marsden & Smith, 2005). Unlike global corporations, these "new food-economy SMEs" (Blay-Palmer & Donald, 2006) are regionally-based and independent. In both the UK and Canada, innovative entrepreneurs saw their university sales as part of a strategy to differentiate themselves in the market.

7. **Public policy and public education capacity** - This role may be played by a civil society organisation, an anchor institution, or an actor with dedicated capacity, such as a food policy council. This capacity is essential because it contests the hegemonic activities of global food companies. Eventually, this capacity must be buttressed and embedded in policies of institutions and/or governments. Food literacy which includes sustainability is a key component of food system transformation, because an engaged and educated consumer is more likely to choose products that foster sustainable local food systems. In England, the Soil Association has a public education function to present emerging research and policies that enhance sustainability. This was also part of LFP's mandate in Canada.

8. **Marketing and promotion capacity** - Marketing and promotion capacity is essential to motivate and normalise sustainable procurement initiatives. It can encourage the involvement of new actors, create transparency, and move towards normalising the products and values of sustainable local food systems, thereby establishing the purchase of sustainable local food as an everyday habit. In both England and Canada, there was significant promotion at the universities themselves, as well as by the CSOs through signage, mainstream and social media, trade show booths, participation in food celebrations and fairs, and public speaking. The Soil Association also holds an annual Catering Mark Awards dinner to recognise champions who have contributed to the success of the mark.

9. **Connection to community and environment** - Infrastructure of the middle challenges "agribusiness" at the level of its fundamental presumption – that food is essentially a private sector activity that belongs in the private sphere, removed from public interest issues such as health and sustainability, costs which are externalised by agribusiness. In contrast, the underlying assumption of sustainable local food systems is that food is a policy matter that affects such public goods as identity,

heritage, environment, and so on. In both the UK and Canada, public policy goals were explicitly recognised, and sustainability requirements were important and prominent features of both certifications.

10. Existence of food hubs - Blay-Palmer et al. argue that food hubs are *"vehicles for sustainable transformation of the dominant food system"*. They define food hubs as *"networks and intersections of grassroots, community-based organisations and individuals that work together to build increasingly socially just, economically robust and ecologically sound food systems that connect farmers with consumers, as directly as possible"* (Blay-Palmer et al., 2013, p. 524). Hubs are spaces of aggregation, transformation and collaboration. They offer opportunities to pool resources to provide hard infrastructure such as warehouses, loading docks, processing facilities and meeting spaces. But they can also be part of soft infrastructure, in that they are spaces for relationship-building, and clearing houses for innovation and information-sharing. Hubs are essential to the development of infrastructure of the middle because they can provide both hard and soft infrastructure that few infrastructure of the middle businesses can bear alone. In both the UK and Canada, the universities themselves acted as physical hubs, receiving and preparing food, and bringing together various actors in new ways. The CSOs acted as virtual hubs (Campbell & MacRae, 2013), forming critical relationships, providing tools, expertise and support.

Conclusions

The focus of this paper is ultimately how the transition to more sustainable and local food systems can happen. Sustainability Transition Theory (STT), and the Multi-Level Perspective (MLP) in particular, have made important theoretical contributions in linking technical and social innovation (Geels, 2010, 2011; Shove & Walker, 2007, 2010; Smith, 2006). The following is a brief discussion of how SFSCs and infrastructure of the middle can be positioned within STT.

By focusing on university procurement and arguing that procurement is a key tool of the sustainability transition, this paper extends the range of STT. This paper also enriches and addresses gaps in STT by providing operational details of the sustainability transition in university food procurement, as it has ensued in the case studies presented here.

Notably, both the Food for Life Catering Mark and the Local Food Plus certification represent deliberate attempts to shift responsibility for sustainability transition away from individual consumer behaviour and purchases, towards collective and policy responses through institutional procurement. University key informants stated in several interviews that certification helped them to set procurement goals, and remain current around sustainability trends. Farmers, processors and distributors who supplied the universities confirmed that certification motivated them to adopt more sustainable practices or source more local food in order to get and keep university contracts. This constitutes a breakthrough in the dominant discourse about sustainability, which usually identifies the individual, not institutions or governments, as the key mover.

This analysis suggests that the missing link in food chains that can support a scaling up and out of local and sustainable food systems is the weakness of the connective tissue – the processors, distributors, aggregators, connectors, advocates, marketers and foodservice providers – to manage the sustainability transition, rather than the ability of farmers to produce

enough food. The connective tissue can be collectively referred to as infrastructure of the middle.

The concept of infrastructure of the middle can add theoretical depth to the conceptualisation of sustainability transitions in the food system in general, and SFSCs in particular, because it demonstrates how this universe of relationships has the potential to embed public sector food procurement in local society, nature and economies. In effect, infrastructure of the middle is the operating system, not only of SFSCs, but of embeddedness in socio-technical systems for sustainable food transitions.

Acknowledgements
I would like to thank the interviewees in both the UK and Canada who gave of their time so generously, and Dr. Alison Blay-Palmer for her on-going support. I would also like to thank the Social Sciences and Humanities Research Council of Canada, Wilfrid Laurier University, and the Laurier Centre for Sustainable Food Systems for their financial support.

References

Barham, E. (2002). Towards a theory of values-based labelling. Agriculture and Human Values 19(4): 349–360. Retrieved from http://link.springer.com/article/10.1023/A:1021152403919

Blay-Palmer, A. (2011). Sustainable communities, an introduction. Local Environment 16(8): 747–752. http://doi.org/10.1080/13549839.2011.613235

Blay-Palmer, A., & Donald, B. (2006). A Tale of three tomatoes: the new food economy in Toronto, Canada. Economic Geography 82(4): 383–399. http://doi.org/10.1111/j.1944-8287.2006.tb00322.x

Blay-Palmer, A., Landman, K., Knezevic, I., & Hayhurst, R. (2013). Constructing resilient, transformative communities through sustainable "food hubs." Local Environment 18(5): 521-528. http://doi.org/10.1080/13549839.2013.797156

Campbell, A. M., & MacRae, R. (2013). Local Food Plus: the connective tissue in local/sustainable supply chain development. Local Environment 18(5): 557-566. http://doi.org/10.1080/13549839.2013.788488

Dragicevic, N. (2015). Anchor institutions. Mowat Centre: Ontario's voice on public policy. Retrieved from http://www.deslibris.ca/ID/247477

Friedmann, H. (2007). Scaling up: bringing public institutions and food service corporations into the project for a local, sustainable food system in Ontario. Agriculture and Human Values 24(3): 389-398. http://doi.org/http://dx.doi.org.myaccess.library.utoronto.ca/10.1007/s10460-006-9040-2

Geels, F.W. (2010). Ontologies, socio-technical transitions (to sustainability): and the multi-level perspective. Research Policy 39(4): 495-510. http://doi.org/10.1016/j.respol.2010.01.022

Geels, F.W. (2011). The multi-level perspective on sustainability transitions: responses to seven criticisms. Environmental Innovation and Societal Transitions 1(1): 24–40. http://doi.org/10.1016/j.eist.2011.02.002

Girard, D. (2006, September 26). University Serves Up Fare with Conscience. The Toronto Star.

Goodman, D. (2004). Rural Europe redux? Reflections on alternative agro-food networks and paradigm change. Sociologia Ruralis 44(1): 3–16. http://doi.org/10.1111/j.1467-9523.2004.00258.x

Hardesty, S., Feenstra, G., Visher, D., Lerman, T., Thilmany-McFadden, D., Bauman, A., … Rainbolt, G.N. (2014). Values-based supply chains: supporting regional food and farms.

Economic Development Quarterly 891242413507103. Retrieved from http://edq.sagepub.com/content/early/2013/10/31/0891242413507103.abstract

Kirschenmann, F.L., Stevenson, G.W., Buttel, F., Lyson, T.A., & Duffy, M. (2008). Why worry about the agriculture of the middle? In Food and the Mid-Level Farm: Renewing an Agriculture of The Middle pp. 3–22. Cambridge, MA: MIT Press.

Kneafsey, M., Eyden-Wood, T., Bos, E., Sutton, G., Santini, F., Gomez y Paloma, S., … Institute for Prospective Technological Studies. (2013). Short food supply chains and local food systems in the EU a state of play of their socio-economic characteristics. Luxembourg: Publications Office. Retrieved from http://dx.publications.europa.eu/10.2791/88784

Lerman, T. (2012). A review of scholarly literature on values-based supply chains. Davis: UC Davis Agricultural Sustainability Institute. Retrieved from http://ngfn.org/resources/ngfn-database/knowledge/VBSCLiteratureReview.Lerman.5.31.12_compressed.pdf

Levkoe, C.Z. (2011). Towards a transformative food politics. Local Environment 16(7): 687-705. http://doi.org/10.1080/13549839.2011.592182

Local Food Plus (2006, September 19). LFP-U of T Launch News Release.pdf.

Local Food Plus (2009). LFP-General Standards for Farmers and Ranchers-August-2009.pdf.

Marsden, T. (2010). Mobilising the regional eco-economy: evolving webs of agri-food and rural development in the UK. Cambridge Journal of Regions, Economy and Society 3(2): 225-244. http://doi.org/10.1093/cjres/rsq010

Marsden, T., Banks, J., & Bristow, G. (2000). Food supply chain approaches: exploring their role in rural development. Sociologia Ruralis 40(4): 424-438. http://doi.org/10.1111/1467-9523.00158

Marsden, T., & Smith, E. (2005). Ecological entrepreneurship: sustainable development in local communities through quality food production and local branding. Geoforum 36(4): 440-451. http://doi.org/10.1016/j.geoforum.2004.07.008

Monteiro, C.A., Moubarac, J.-C., Cannon, G., Ng, S.W., & Popkin, B. (2013). Ultra-processed products are becoming dominant in the global food system. Obesity Reviews 14: 21–28. http://doi.org/10.1111/obr.12107

Morgan, K., Marsden, T., & Murdoch, J. (2006). Worlds of food : place, power, and provenance in the food chain. Oxford: Oxford University Press. Retrieved from http://www.loc.gov/catdir/toc/ecip0517/2005023275.html

Morgan, K., & Morley, A. (2014). The public plate: harnessing the power of purchase. In Sustainable Food Systems: Building a New Paradigm pp. 84-102. London: Routledge.

Morgan, K., & Sonnino, R. (2008). The School Food Revolution: Public Food and the Challenge of Sustainable Development. Sterling, VA: Earthscan.

Morley, A., Morgan, S., & Morgan, K. (2008). Food Hubs: the "missing middle" of local food infrastructure? BRASS Centre, Cardiff University.

Orme, J., Jones, M., Kimberlee, R., Weitkamp, E., Salmon, D., Dailami, N., … Morgan, K. (2011). Food for life partnership evaluation: summary report. University of the West of England. Retrieved from http://eprints.uwe.ac.uk/14453/1/FFLP_UWE-Cardiff_Evaluation_SummaryReport.pdf

Renting, H., Marsden, T.K., & Banks, J. (2003). Understanding alternative food networks: exploring the role of short food supply chains in rural development. Environment and Planning A 35(3): 393-411. http://doi.org/10.1068/a3510

Roberts, W., Archibald, S., & Colson, C. (2014). Sharing Out the Campus Food Systems Project.pdf. Meal Exchange.

Shove, E., & Walker, G. (2007). CAUTION! Transitions ahead: politics, practice, and sustainable transition management. Environment and Planning A 39(4): 763-770. http://doi.org/10.1068/a39310

Shove, E., & Walker, G. (2010). Governing transitions in the sustainability of everyday life. Research Policy 39(4): 471-476. http://doi.org/10.1016/j.respol.2010.01.019

Shuman, M. (2015). The Local Economy Solution: How Innovative, Self-Financing "Pollinator" Enterprises Can Grow Jobs and Prosperity. White River Junction, Vermont: Chelsea Green Publishing.

Slow Food Manifesto for Quality. (n.d.). Retrieved from http://www.slowfood.com/about-us/our-philosophy/

Smith, A. (2006). Green niches in sustainable development: the case of organic food in the United Kingdom. Environment and Planning C: Government and Policy 24(3): 439-458. http://doi.org/10.1068/c0514j

Stahlbrand, L. (n.d.). A typology of "infrastructure of the middle" in university food procurement in England and Canada: elaborating the "to" in "farm to cafeteria." Raizes: Revista de Ciencias Sociais E Economicas, forthcoming.

Stevenson, G.W., & Pirog, R. (2008). Values-based supply chains: strategies for agri-food enterprises of the middle. In Food and the Mid-Level Farm: Renewing an Agriculture of the Middle pp. 119–143. Cambridge, MA: MIT Press.

Stevenson, G.W., & Pirog, R. (2013). Values-Based Food Supply Chains: Strategies for Agri-Food Enterprises-of-the-Middle - National Good Food Network. Retrieved from http://www.ngfn.org/resources/ngfn-database/knowledge/valuechain.pdf/view

The Food for Life Catering Mark. (n.d.). Retrieved May 26, 2016, from https://www.soilassociation.org/certification/the-food-for-life-catering-mark/

The Soil Association - About Us. (n.d.). Retrieved May 26, 2016, from https://www.soilassociation.org/about-us/

Investigating reasons for low take up of Universal Infant Free School Meals in schools in South-East England, 2015

Stein, M.[1], Beauchamp, P.[2] and Polychronakis, Y.[1]

[1] *Salford University (Manchester)*

[2] *Independent Consultant*

(Abstract only included at author's request)

Abstract: This research paper examines a number of schools which have been engaged in implementing an important new UK school food initiative - Universal Infant Free School Meals (UIFSM). The paper examines the practices of school catering managers, and shows how managers may choose practices which have the potential to increase or reduce take-up of school meals by children. It considers the following: (i) quality of food on school menus and presentation during the dinner hour; (ii) food waste levels; (iii) best ways to change the menu when introducing healthier and more sustainable food; (iv) proper management of external caterers; (v) dining room environment; (vi) proper supervision in dining rooms; (vii) packed lunch policy; and (viii) communication with parents.

Keywords: Catering manager, menu, dining room, food waste, communication

Capturing the value of sustainable food procurement through Social Return on Investment analysis: lessons from the Soil Association's Food for Life programme

Jones, M.[1], Donnelly, A.[2], Pitt, H.[3], Oxford, L.[1], Orme, J.[1], Gray, S.[1], Salmon, D.[4], Means, R.[1], Weitkamp, E.[1], Kimberlee, R.[1] and Powell, J.[1]

[1] *Public Health and Wellbeing Research Group at the University of the West of England, Bristol.*

[2] *Soil Association Food for Life, Bristol*

[3] *Sustainable Places Research Institute, Cardiff University*

[4] *School of Health Sciences, City University London*

Abstract: Caterers in public service institutions are increasingly encouraged to procure local and organic foods, and to become active partners in promoting healthy and sustainable diets. Food for Life (FFL)[1] is an initiative led by the Soil Association that supports caterers, schools, hospitals, children's centres and other institutions in taking steps to enhance good food culture and, notably, to increase their use of ingredients that are local, organic, seasonal, fair trade and better for animal welfare. As a whole settings programme, one attraction of FFL is that it can have multiple and systemic impacts that extend beyond those that accrue to local farmers and producers. Such forms of holistic understanding are critical in order to bring together stakeholders with different priorities in relation to local food system reform. The aim of this paper is to show how Social Return on Investment (SROI) research has been used to assess the value of Food for Life and the potential of the methodology in driving public food procurement policies particularly at local and regional levels. SROI case study analyses of FFL show that the initiative delivers tangible benefits to schools (and the educational sector more widely); health agencies and their strategic partners; community groups and other voluntary agencies; caterers - as well as to local food businesses. Where the programme has been commissioned as part of a local authority local food strategy, this can be expressed as a SROI ratio of £4.41 of social value created for every £1 of investment. Sensitivity analysis showed that the range of values was closely clustered around the £3 to £5 range. SROI analyses of FFL have been innovative because they take into account a considerable body of evidence from local stakeholders, evaluation fieldwork and external research to develop a whole system account of the social value of a healthy and sustainable food settings and area-based programme. This type of research can be used to inform policy makers of benefits of coordinated action with public service caterers. It also provides additional support for producers and farmers seeking to mainstream the supply of sustainable food through leading catering services.

Keywords: Sustainable food, local food, public procurement, catering, social return on investment (SROI)

Introduction

Catering in public service settings such as schools, workplaces and hospitals is increasingly recognised as having an important place in the promotion of healthy and sustainable diets. In

[1] *http://www.foodforlife.org.uk/*

England, adults consume at least a third of their daily calorie intake while at places of work (NHS, 2015) and there are similar estimates for children attending school (Kaphingst & French, 2006). Thirteen percent of all meals eaten out of the home are provided in healthcare environments (WRAP, 2014). National figures point to the importance of food in other settings. In England, almost 2 million students attend 133 higher education institutions (HESA, 2014), 4.7 million children aged 0-5 years attend 82,000 registered childcare providers (DfE, 2014), and more than a quarter of a million people aged 65 and over are living in one of over 15,000 care homes in England and Wales (ONS, 2014). The significance of these settings becomes amplified when put into a life-course and ecological perspective; people move in time and space through multiple settings and settings themselves can interact, especially when in spatial proximity to one another. Even small shifts in the procurement practices of caterers and food services in these environments can therefore have an important impact for producers and suppliers, not least those engaging the local and organic food sectors.

The purpose of this paper is to examine the role of a national programme, Food for Life, in changing the procurement and wider food related practices in public service settings. We argue that an essential feature of the programme has been to create multiple and systemic impacts that extend beyond those that accrue to local farmers and producers. Such forms of holistic understanding are critical in order to bring together stakeholders with different priorities in relation to sustainable food system reform. We start by outlining the mission, operation and evolution of the Food for Life programme in England. We then examine the application of the Social Return on Investment (SROI) methodology in two local authority areas that have actively implemented the programme. The implications of this research are then discussed in the context of driving public food procurement policies particularly at local and regional levels.

Soil Association's Food for Life programme

Overview of the programme

Food for Life is a Soil Association initiative, which began life in 2003 and developed into an award-winning national programme to transform school food culture thanks to funding from the Big Lottery Fund. The Food for Life vision is to make good food the easy choice for everyone, whoever and wherever they are. The Soil Association is a charity based in the United Kingdom. Its activities include campaign work on issues including opposition to intensive farming, support for local purchasing and public education on nutrition; as well as the certification of organic food. It developed the world's first organic certification system in 1967 - standards which have since widened to encompass agriculture, aquaculture, ethical trade, food processing, forestry, health & beauty, horticulture and textiles. Today it certifies over 80% of organic produce in the UK (Soil Association, 2012).

Building on evidence of positive impacts in both primary and secondary schools (Jones et al., 2012; Orme et al., 2011) Food for Life now includes tried and tested approaches to transforming food culture in a wide range of settings including early years, hospitals and care settings. The Food for Life programme takes a whole system approach to food, changing both the food environment and food culture within which people make choices. The programme defines 'good food' as:

- A healthy and sustainable diet: less high fat/salt/sugar/processed food and less but better quality meat; more fruit and vegetables, whole grains and sustainable fish.

- Quality food you can trust: more fresh, local, seasonal, environmentally sustainable food, with low climate impact and high welfare standards.
- Eating together: more opportunities for social contact through food, building families and communities and tackling loneliness

Food for Life local authority commissioned programme

A number of local authorities in England have commissioned FFL to support delivery of their priorities, with some areas now looking beyond their initial focus on schools to connect with food in other settings. FFL locally commissioned programmes involve a coordinated approach between networks of schools, food producers, food suppliers, caterers and other agencies. Each local programme is tailored to meet the needs, priorities and capacity for action in the area. A commissioned local programme for schools would usually involve coordination and support for settings through a Local Programme Manager, and a programme of training courses for school staff, caterers and others on cooking skills, food growing skills, linking schools to farms, setting up school farmers markets, and food policy and leadership. Programmes support schools to achieve Food for Life Schools Award and support caterers to achieve the Food for Life Catering Mark Award.

Food for Life Catering Mark

The Food for Life Catering Mark provides independent endorsement that caterers are taking steps to improve their food through meeting standards on nutrition, freshness, sustainability and animal welfare. There are three levels of award allowing caterers to progress and ensuring continuous improvement. The Catering Mark standards incorporate sector-specific nutrition standards, as well as sustainability and assurance schemes (at Silver and Gold), including LEAF, Fairtrade, RSPCA Freedom Food, Marine Stewardship Council, and organic.

Food for Life Schools Awards

Food for Life awards are centred around four areas of development, which link to Food for Life award criteria and create an action framework for schools:

- Food Quality
- Food Leadership and Food Culture
- Food Education
- Community and Partnerships

Schools achieve the following to gain an award at each of the Award levels of Bronze, Silver and Gold:

BRONZE schools:

- Have committed to improve their school food culture by developing a school food policy
- Meet the Bronze Food for Life Catering Mark which shows that school food is healthy and uses seasonal ingredients that are at least 75% freshly prepared from unprocessed ingredients[2]

[2] *Food for Life state they they use "a common sense definition of 'unprocessed' to include raw, basic ingredients such as fresh or frozen fruit and vegetables, fresh or frozen meat or fish, pasta, rice, flours, pulses and beans. Unprocessed foods are fresh, homemade and natural, as defined by the Food Standards Authority." "75%" is calculated a percentage of the dishes served.*

- Involve pupils and parents in planning improvements to school menus and the lunchtime experience, boosting school meal take-up
- Give every pupil the opportunity to visit a local farm, and take part in cooking and food growing activity

SILVER schools:

- Serve school meals on proper crockery, not plastic 'flight trays'
- Meet the Silver Food for Life Catering Mark which shows that school food is healthy, ethical, and uses some local and organic ingredients
- Have a cooking club, where pupils get to cook with and eat the produce grown in the school growing area
- Involve parents and the wider community to get involved in food education via food-themed events
- Serve food that is healthy, ethical, and uses local ingredients. Schools use a minimum of 5% organic ingredients in menus[3]

GOLD schools:

- Act as hubs for their local community, actively involving parents and community groups in cooking and growing activities
- Meet the Gold Food for Life Catering Mark which shows the food served is healthy, ethical, uses lots of local ingredients and is animal and climate friendly, including a minimum of 15% organic and 5% free range[4]
- Pupils choosing to eat a school meal is the norm
- Are actively involved in the life of a local farm and active in planning and growing organic food for the school.

SROI case study methodology

Social Return on Investment case studies

Social Return on Investment (SROI) is a framework for measuring and accounting for change in ways that are relevant to the people or organisations that experience or contribute to it (Cabinet Office, 2009). It provides an assessment of whether value is being created by measuring social, environmental and economic outcomes and uses monetary values to represent them. SROI captures value often left out of more traditional methods of economic evaluation such as cost benefit analysis (Arvidson et al., 2010; Banke-Thomas et al., 2015).

SROI measures change in ways that are relevant to the people or organisations that experience or contribute to it. It tells the story of how change is being created by measuring social, environmental and economic outcomes and uses monetary values to represent them. This enables a ratio of benefits to costs to be calculated. For example, a ratio of 3:1 indicates that an investment of £1 delivers £3 of social value. SROI is about value, rather than money. Money is simply a common unit and as such is a useful and widely accepted way of conveying value.

---

[3] Calculated as a percentage of ingredient spend. School caterers use a Food for Life Catering Mark Points Calculator to calculate additional points needed for demonstrating sourcing of local, ethical, environmentally friendly food.

[4] Calculated as a percentage of ingredient spend.

A number of SROI studies have been conducted on FFL and similar initiatives (Durie, 2008; Lancaster et al., 2008; Kersley & Knuutila, 2011; Stein, 2012; Couteney, 2012). These have mainly identified benefits to the local economy. Little research has examined the health, educational and wider benefits of programmes such as FFL when delivered at the local authority level. In order to examine the wide ranging impacts of the social value created by FFL local commissions we selected two local authority areas of Calderdale and Kirklees for case study analysis.

Research process

The study followed the standard stages of SROI analysis (Cabinet Office, 2009). Approval for the research was obtained through the UWE HAS Research Ethics Committee. For the two case study areas we focused on a 24 month period and sought to reflect all aspects of commissioned work. Forty seven stakeholders were interviewed to provide perspectives on the outcomes of the programme. These individuals were selected on the basis that (a) they represented a wide range of perspectives on the initiative and (b) they included individuals that were both directly involved and, to minimise sources of bias, those peripheral and/or independent from the initiative. Stakeholders included school teaching staff, school cooks, catering managers, catering suppliers, staff from local food businesses and producers, hospital staff, programme delivery staff, commissioners and advisors to the programme (see Figure 1 below). Additional sources of information about stakeholders' perceptions of outcomes were available through programme records. A total of 78 written statements were analysed from training feedback forms, FFL and FFLCM award application forms, teacher questionnaires completed as part of pupil survey research (Jones et al., 2015), case study reports and press releases.

"The skills one of our students got [from cooking skills in school] directly helped him get an apprenticeship with a caterer." [Calderdale, Secondary Head Teacher #1]

"I've found we've been able to do some quite difficult topics through food-based lessons, for instance cooking lessons have been a great opportunity to compare food origins and learn about carbon footprints." [Kirklees, Primary Teacher, #3]

"Parents have said to me that their children are asking lots of questions about where food comes from. It's been a good project for getting whole families involved" [Calderdale, Primary Teacher, #4]

"We have had well attended events with the majority of parents and the local community attending. We've got to meet people from local groups we didn't know about, like the bee keepers club and the allotment society." [Calderdale, Primary Teacher #2]

"I now have a very active role in cooking club, tasting sessions...I'm getting listened to... I'm very proud of my kitchen." [Kirklees, Primary Cook #3]

*"Business has been good. With me and the rest that's six jobs and I'd say most of them are off the back of our schools [and local authority] contracts…"[*These

contracts are] *"helping us get over the 'stigma' about organic - that organic is time-consuming to process, expensive or unreliable. They're learning. We're learning too about what orders we can and can't do."* [Kirklees, Supplier #4]

"For us the [FFL] catering mark has given us a structure. We've got a very good relationship with FFL. We need to continuously promote the service and FFL helps with this... If we hadn't been working together the [school meal] *take up might not have been as high as it is."* [Kirklees Caterer #2]

Figure 1. Stakeholders report on the outcomes of Food for Life ***(****Examples of feedback from 47 interviewees)*

The research sought to make a comprehensive assessment of costs. In addition to local authority and clinical commissioning group funds, we factored in funds from the Big Lottery, the Department for Education and the cost of some staff time in school, hospital and catering settings.

Although SROI is not centrally focused on outputs, a notable feature of the programme was the scale and reach of the initiative, particularly in primary and special schools in the two areas. For example, over the 24 month period of the commission:

- in Kirklees 56 schools out of a total of 182 had enrolled with FFL or achieved an FFL award
- in Calderdale 27 schools out of a total of 113 had enrolled with FFL or achieved an FFL award
- in both areas FFL continued to support schools (40 in Kirklees and 43 in Calderdale) that had already enrolled with the programme prior to the commission

These data indicate that over 60,000 children and young people, 2,500 teaching staff and almost 1000 catering staff were exposed to the FFL programme for the two areas combined.

Stakeholders reported 55 outcomes that we grouped thematically, assessed in terms of their potential overlap, and examined their viability for inclusion in the next stage of analysis. This involved the identification and collection of potential sources of evidence to estimate the impact of these perceived outcomes. We used: data from a cross-sectional evaluation survey of Key Stage 2 pupils; staff training feedback evaluations; FFL programme monitoring and evaluation records; other survey data, for example on hospital food; questionnaire returns from food suppliers and caterers; and direct reports from interviewees. The study examined both negative and positive outcomes, and sought to locate appropriate financial proxies to support monetary valuation.

Results

Overall SROI results

The social return is expressed as a ratio of present value divided by value of inputs. Although there are likely to be impacts of the programme over many years, we calculated the value of the impacts only up to three years. This was intended to provide funders with an understanding of the social value of the programme over the shorter term of a local planning cycle.

Stakeholders in the two case study areas identified a similar range of outcomes and data sources. This was not surprising given that the commissions had similarities in programme design and delivery. Stakeholders also reported synergy and collaboration between the two local commissions with regard to staff training, food procurement and hospital settings work. We therefore produced a SROI ratio based upon the combined findings of the two case studies.

The total financial value of the inputs for the two case studies was £395,697 and the total present value was £1,743,046. This provided a SROI ratio of £4.41 of social value created for every £1 of investment.

Share of value by stakeholders and interest sectors

The value of the programme can be expressed with regard to different stakeholders or sectors of interest. A breakdown is provided in Figure 2.

Local suppliers (farmers, processors and wholesalers) retained or gained new sales through contracts with caterers. The stability of large ongoing contracts lent greater business security, contributed towards new local job opportunities, job security and increased sales of goods direct to the public through farm shops, market events and other outlets. These changes are also beneficial to central government in the form of local employment creation, tax revenues and reduced welfare spending.

School catering services benefited from the FFL Catering Mark in terms of business security, retention of contracts, improved staff performance and increased capacity to develop and implement procurement of sustainable foods. Small increases in school meal sales over the 24 month period could be attributed to FFL in some schools, although the evidence was mixed in this respect. Cooks and other catering staff benefited from training opportunities, peer networking and improved job satisfaction.

Perhaps one surprising finding was the role of Food for Life in supporting the working practices of teaching and catering staff. Some of this took the form of curriculum support, skills development, expert support and networking opportunities. Other outcomes - albeit less tangible - were reported to carry equal weight, including the role of FFL in promoting enjoyment and a sense of accomplishment at work. Some senior leaders in schools, catering agencies and other settings felt that the link between positive food culture and staff wellbeing was not a peripheral benefit, rather it underpinned a productive and high performing education workplace.

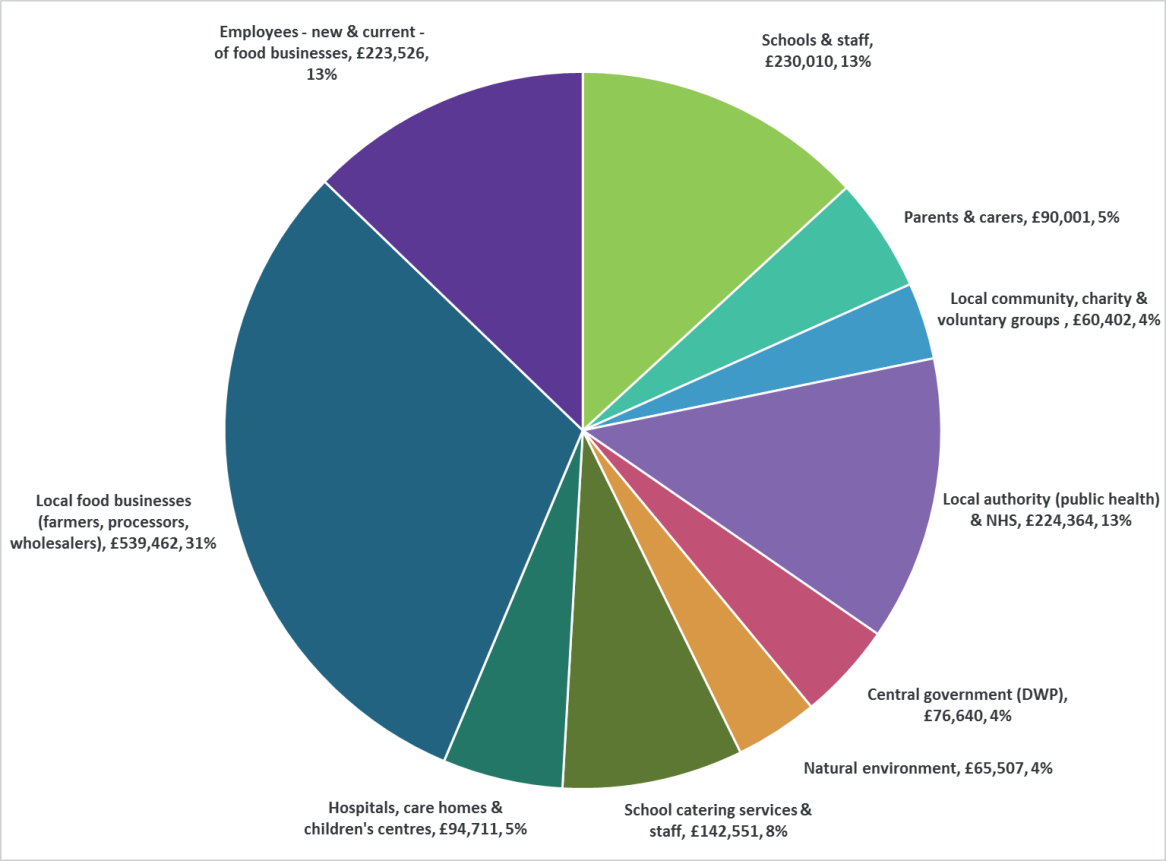

Figure 2. Share of value by shareholders and interest groups

Local Authority Public Health and the local NHS are likely to have benefited from improvements to the dietary health of children. Research in Kirklees and Calderdale found that Year 4-5 pupils in schools engaged with FFL were twice as likely to eat five or more portions of fruit and vegetables a day compared with pupils in schools not involved in the programme. We used this data to estimate the short term and longer term impact on reduced healthcare use. In the absence of a widely accepted approach to assessing the economic value of interventions designed to improve the diets of children and young people we developed a 'willingness to pay' approach with key stakeholders in Public Health. This built upon national evidence of diet-related burden of disease and its economic impact scaled to the local level. We adjusted for the role of other key factors, such as the work of Kirklees Council Catering Service that has developed in synergy with that of Food for Life.

Food for Life was a popular programme in schools and other settings and acted as a bridge with local communities. Parents and carers benefited through improved relationships with school and volunteered at FFL school events, which in turn support children's readiness to learn and overall wellbeing. Rather than duplicating the work of other community and charitable agencies, FFL largely helped stimulate local voluntary activities through, for example, market events and community visits. The proactive approach of the FFL programme teams in partnership work with other agencies was a theme running through the stakeholder interviews Through interviews with stakeholders and external evidence we identified a range of financial proxies to place a value on these 'softer outcomes', including equivalents in the form of training, volunteering and fund-raising.

New settings work with hospitals, care homes and children's centres were in the early stages during the 24 month commission period. The main benefits took the form of staff training and expert support to caterers and senior management in changing organisational practices. Work in hospital settings had advanced quickly, despite major challenges in terms of the organisation scale, and there was some evidence of a positive impact on reducing food waste and patient satisfaction with hospital food.

Improvements in reduced food wastage and reduced transportation were the main environmental benefits that we were able to quantify. As has been reported in other research, other outcomes for the natural environment and sustainability were more difficult to evidence at the level of a local authority study. A scaled up SROI analysis of the national FFL initiative, and particularly the FFL Catering Mark, would provide an evidence platform to examine more clearly the impacts of, for example, improved biodiversity from organic food production methods, reduced consumption of meat and dairy products and higher animal welfare standards.

The case study areas: similarities and differences

Kirklees and Calderdale case study areas illustrate important features of FFL local commissions including the role of grass roots networks, coordinated local food strategies and different catering models. They show how benefits can be created through extending work from schools into other settings such as hospitals, early years and care homes. As adjacent local authorities the two areas also acted as a basis for understanding the social value of FFL at a sub-regional level.

The SROI ratio for Calderdale (£1:3.70) was lower than that for Kirklees (£1:5.12). A number of reasons could account for these differences:

- The pupil and other populations of Kirklees are about twice those of Calderdale. This means that potential reach and scale of the programme in Kirklees was significantly greater than that of Calderdale.
- The catering systems are very different. The local authority caterer in Kirklees has contracts with nearly all schools in the authority and holds the Silver Food for Life Catering Mark. Large numbers of stakeholders are therefore affected by changes in FFLCM-related practices. By contrast reforms to school catering in Calderdale are more heterogeneous and less systemic across all schools.
- It is possible that the Calderdale programme creates similar value to the Kirklees programme. However the availability of evidence, suitable indicators and appropriate financial proxies was more difficult to locate in the case of Calderdale than in Kirklees.

These factors show that it is not advisable to make crude comparisons between the two areas, without first taking into account the different local contexts.

Sensitivity analysis: testing the results

Sensitivity analysis is a method for testing the extent to which the SROI results would change if we adjust estimates or removed factors from the analysis. The lowest estimate, based on halving the value of all outcomes, produced a ratio of £1:2.21. The highest estimate, based on reducing drop-off for all outcomes, produced a ratio of £1:6.29. The majority of sensitivity analyses found SROI ratios between £1:3.06 and £1:4.46.

Table 1. SROI sensitivity analysis for the case study areas

Sensitivity Analysis	Calderdale	Kirklees	Two case studies combined
Findings from analysis	£3.70	£5.12	£4.41
Increasing deadweight to 50%	£2.33	£3.16	£2.75
Increasing displacement to 50%	£2.89	£3.18	£3.04
Increasing attribution to 50%	£3.06	£3.60	£3.33
Changing drop-off to 10% for all outcomes	£6.91	£7.51	£6.29
As above, drop-off 75%	£3.48	£4.03	£3.75
Halving all values of outcomes/ beneficiary numbers	£1.85	£2.56	£2.21
Removing all dietary health-related outcomes	£3.18	£4.56	£3.87

The role of the programme in improving the dietary health of children was a challenging area for valuation due in part to the lack of well-established financial proxies. Removing the value of all dietary health-related outcomes for children reduced the SROI ratio by a relatively small amount overall, from £1:4.41 to £1:3.87. Overall, multiple changes to the estimates of deadweight, attribution and drop-off indicate that substantial changes would have to be made to the assumptions in order for the ratio to change from positive to negative. These calculations show that even when significant changes are made to the analysis the results still show clear evidence of social value being created up to 3 years after the FFL intervention.

Discussion

Overview and Implications of the research for Soil Association Food for Life

This SROI analysis of FFL was innovative because it took into account a considerable body of evidence from local stakeholders, evaluation fieldwork and external research to develop a whole system account of the social value of a healthy and sustainable food settings and area-based programme. This type of research can be used to inform policy makers of benefits of coordinated action with public service caterers. It also provides additional support for producers and farmers seeking to mainstream the supply of sustainable food through leading catering services.

The research supported Soil Association Food for Life to demonstrate the impact of the Food for Life approach when delivered across settings throughout a place or area (defined by a local authority boundary in this case). The research will also support Food for Life to understand the impacts of the programme better which will in turn support further programme developments in the future. The research also provides an important evidence-base that can be used to provide a rationale for implementation of the approach in local areas.

Strengths and limitations of the study

This study built upon the principles and methods adopted in previous SROI research. We gathered the perspectives of a large number and variety of stakeholders and used this information to underpin the analysis of outcomes. We took into account a considerable body of evidence from evaluation fieldwork and external research and the study benefited from the availability of well recognised and established financial proxies for many of the outcomes. In order to avoid over-claiming on the role of the programme in creating change we factored in the role of other initiatives and changes in the national policy environment such as the introduction of Universal Infant Free School Meals. The validity of the findings has been explored with key stakeholders and further assessment will be made as the findings of the study are disseminated.

One of the challenges concerned creating an account that adequately captured the scope and breadth of the impacts. This placed limits on the resources available to collect comprehensive data across all outcomes. Some stakeholders declined or were unable to provide detailed supporting data. We focused on short term outcomes rather than those that might result over a longer period beyond three years. A further discussion of the strengths and limitations of the study is presented in the full technical report (Jones et al., 2016).

Conclusions

This study found that FFL is valued by schools, civil society, local business and wider stakeholders as a locally commissioned programme in local authority areas. The SROI provides a financial measure of this value: that for every £1 spent on FFL there is social value of £4.41 created over a three year period. In the analysis, multiple adjustments to the role of different outcomes and other factors shows that the social value is likely to fall between a lowest estimate of £2.21 and a highest estimate of £6.29. The clustering of values around a narrow range of £3 to £4 lends confidence to the validity of the results.

The methods and findings from this research are significant for other Food for Life local commissions, the Food for Life Catering Mark and other area-based food programmes, such as the Sustainable Food Cities initiative, both in the UK and internationally. In many instances, the bottom-up research method places limits on the generalisability of SROI results because stakeholders are making locally specific judgments on value. However in this study the close correspondence with other SROI studies in terms of methodology and findings suggests that a similar range of outcomes can be anticipated in other areas where an FFL programme model is implemented, especially where the programme is directed at schools and public service catering - and engages with other settings such as children's centres and hospitals.

References

Arvidson, M., Lyon, F., McKay, S., & Moro, D. (2010). The ambitions and challenges of SROI. Birmingham: Third Sector Research Centre.

Banke-Thomas, A.O., Madaj, B., Charles, A., & van den Broek, N. (2015). Social Return on Investment (SROI) methodology to account for value for money of public health interventions: a systematic review. BMC Public Health 15(1): 582.

Cabinet Office (2009). A Guide to Social Return on Investment. London: Cabinet Office and SROI Network.

Courteney, P. (2012). The Local Food Programme: A Social Return on Investment Approach. CCRI.

Durie, S., (2008). Hungry for Success – Local Food for School Meals: a Predictive SROI Report,
Social Economy Scotland and Communities Scotland.

HESA (2014). Higher Education Statistics for 2012-13.
http://www.hesa.ac.uk/index.php?option=com_heicontacts&Itemid=87

Jones, M., Dailami, N., Weitkamp, E., Kimberlee, R., Salmon, D. & Orme, J. (2012). Food sustainability education as a route to healthier eating: evaluation of a multi-component school programme in English primary schools. Health Education Research 2 (3): 448-458.

Jones, M., Pitt, H., Oxford, L., Orme, J., Gray, S., Salmon, D., Means, R., Weitkamp, E., Kimberlee, R., & Powell, J. (2016). Food for Life: a Social Return on Investment Analysis of the Locally Commissioned Programme. Full Report. UWE Bristol.

Jones, M., Pitt, H., Oxford, L., Bray, I., & Orme, J. (2015). Pupil survey in local commission areas:
Food for Life's impact on primary school children's consumption of fruit and vegetables. UWE Bristol.

Kaphingst, K.M., & French, S. (2006). The role of schools in obesity prevention. The Future of Children 16(1): 109-142.

Kersley, H., & Knuutila, A. (2011). The benefits of procuring school meals through the Food for Life Partnership: an economic analysis. New Economics Foundation.

Lancaster, O., & Dune, S. (2008). The Social Return on Investment of Food for Life School Meals in East Ayrshire. Footprint Consulting Limited.

ONS (2014). Changes in the older resident care home population between 2001 and 2011.
http://www.ons.gov.uk/ons/dcp171776_373040.pdf

Orme, J., Jones, M**.,** Kimberlee, R., Weitkamp, E., Salmon, D., Dailami, N., Morley, A., & Morgan, K. (2011). Food for Life Partnership Evaluation: full report. University of the West of England, Bristol.

NHS (2015). NHS Choices, Work Place Health. NHS. http://www.nhs.uk/Livewell/workplacehealth/Pages/workplaceoverview.aspx

Soil Association (2012). Our History. https://www.soilassociation.org/

Soil Association, Food for Life Catering Mark (2015). Handbook 2015 for Schools. http://www.sacert.org/catering/standards

Stein, M. (2012). Public Sector Food Procurement & Sustainability in UK Schools. Salford University Conference. http://ifsa.boku.ac.at/cms/fileadmin/Proceeding2012/IFSA2012_WS4.2_Stein.pdf

Discrepancy between theory and practice: procurement of local and organic food in public catering systems

Haack, M., von Münchhausen, S. and Häring, A.M.

Eberswalde University for Sustainable Development, University of Applied Sciences, Germany

Abstract: Spending approximately 19% of the EU´s gross domestic product, public authorities are major consumers in the EU Member States and their decisions have significant impact on the market. The procurement of local and organic food for public kitchens is considered an instrument that contributes to the regional economy and sustainable use of resources. Although the reform of public procurement law enables EU Member States to include environmental and social criteria in award processes, research results point out that public authorities do not yet use these legal possibilities. For the purpose of identifying factors hampering local and organic food purchases in tendering procedures, this paper aims to point out the differences between theory and practice in public procurement processes. The analysis is based on case studies on school catering in Berlin and the Federal State of Brandenburg, which present two different models of procurement policies. The methodical approach consists of an analysis of tender documents and guided interviews with different stakeholders involved in public procurement processes. Results show that the fulfilment of the potential to procure organic and local food services varies in the two different model regions. Supporting factors for the procurement of local and organic food are e.g. the determination of a fixed-price and standardised award criteria, which caused a quality competition among caterers driving an increase of organic food in Berlin to 40%. Based on our results we make recommendations for public authorities that aim to close the gap between theory and practice in their organic procurement procedures.

Keywords: Public procurement, organic food, food service, tendering, school meals, procurement law

Introduction

With increasing awareness of environmental and social sustainability there is increased public interest in the procurement of products which are in line with societal expectations of sustainable food production and consumption. Research results and local development strategies highlight the procurement of local and organic food products (LOF) as an instrument contributing to the improvement of both the regional economy and the sustainable use of natural resources. The benefits associated with procurement of LOF do not exclusively concern environmental issues like soil degradation, loss of biodiversity, energy and water consumption, waste generation and animal welfare (European Commission, 2008). They can even include social, health and economic advantages. Public institutions have the potential to become pioneers creating markets for sustainable products and services. Spending approximately 19% of the EU´s gross domestic product, public authorities are major consumers in the EU Member States and their decisions have significant impact on the market

(European Commission, 2015). They are able to provide incentives to the private sector to develop sustainable technologies and products (McKinsey & Company, 2008). By using adequate criteria to procure LOF, they can promote small and medium-sized enterprises (SME) and regional value-based food chains (Risku-Norja & Løes, 2016; Spigarolo et al., 2010b; Foodlinkscommunity, 2013).

A number of directives and agreements such as the reform of European legislation on public procurement in 2004 or the European "Green Public Procurement" criteria enable EU Member States to include environmental and social criteria in award processes. Research results point out that the uptake of green and social criteria in tenders varies significantly across Member States, and also across regions and product groups within countries. While public authorities in e.g. Sweden, Denmark, Belgium and the Netherlands include green criteria in 40-60% of their tender calls, the proportion of green criteria in procurement processes in Germany, France and the UK amounts only to 20-40% (Renda et al., 2012). Criteria enabling the procurement of local and organic foods are not applied in 48% of all award procedures (Renda et al., 2012). Current research findings relating to school catering in Germany indicate that organic food is requested in only 40% of all tender procedures for school meals, whereas local food seems to be randomly integrated into most menus (Arens-Azevedo, 2012; Arens-Azevedo et al., 2015). These research results based on surveys indicate that - despite changing public procurement law - public authorities do not yet use their potential to procure local and organic food. Explanations for this hesitant and partial implementation of sustainability criteria include lack of legal expertise and training, lack of procurement targets, insufficient political support and the higher costs of LOF (European Commission, 2015; Beck & Schuster, 2013; Schmidt & Dubbers, 2014; McKinsey & Company, 2008). Although the different studies describe the reasons for an insufficient implementation of sustainability criteria in public procurement processes, suitable approaches to overcome these barriers have still not been realised in practice. The results of these previous studies are mainly based on surveys of tendering authorities and they concern the procurement of different products and services.

Materials and methods

Our approach is to analyse tender documents in order to identify and assess the weak points preventing the procurement of LOF and to present opportunities to address these issues. Based on an analysis of tender calls and guided interviews, our paper points out the differences between theory and practice in public procurement processes. The focus is on school catering in Berlin and the Federal State of Brandenburg, which present two different models of procurement policies. After defining appropriate analysis criteria for the procurement of local and organic food, the analysis of tender documents for catering services in schools and day care institutions highlights the implementation of these criteria in procurement procedures. Our results of guided interviews with different stakeholders involved in public procurement processes point out new business opportunities for catering companies offering local and organic food. Finally, we discuss the lessons learned from the analysis of the two case study regions by considering the legal opportunities for LOF in public tenders. Based on these experiences, we develop practical recommendations for public authorities that aim to close the gap between theory and practice in procurement procedures.

In order to identify and assess drivers and constraints for LOF in procurement procedures, we used a combination of a document analysis and guided interviews. The survey concerning public procurement of school and kindergarten meals in Germany pursues the following objectives:

- to point out the current status of sustainability criteria in public procurement processes;
- to asses current procurement policies with regard to supporting and inhibiting factors for local and organic foods in communal catering.

Analysis of calls for tender

Calls for tender are the key instrument for municipalities to influence the quality of food and to put food policies into practice (Spigarolo et al., 2010a). Their specifications and award criteria provide the basis for the contracts between public institutions and catering companies and thus the percentage of LOF in public kitchens. The analysis of tender documents was the starting point for the analysis of the current status of sustainability criteria implementation and potential weaknesses in procurement processes.

Selection of case studies

The focus of our work was on award procedures for school and kindergarten catering in the neighbouring states Berlin and Brandenburg, published in the period 2013-2015. Berlin and Brandenburg represent two models of different procurement policies. In Berlin, a political decision in 2013 led to a standardisation of award criteria in tender procedures for school catering. These regulations include a minimum percentage of 15% of organic foods in school meals and a fixed price of 3.25 Euro per school meal (Senatsverwaltung für Bildung; Jugend & Wissenschaft, 2013). Due to these unified standards for tender procedures in Berlin, the common template for the award processes was analysed instead of individual procurement processes.

In Brandenburg, the procurement law does not contain specific requirements for the procurement of school catering. To obtain tenders published by public institutions in Brandenburg, a national database of call for tenders helped to identify recently conducted award processes. We identified 19 tenders meeting the specified requirements. After contacting the responsible authorities, 9 of these 19 local authorities put their tender documents at our disposal, so that we could analyse 9 award processes in Brandenburg

Definition of analysis criteria

Prior to the analysis of the tender documents, it was important to define appropriate assessment criteria. For this purpose we used EU-regulations on public procurement (European Union, 2004; 2014) and purchasing recommendations (European Commission, 2008) as a common point of reference. Since EU-regulations determine the characteristics of organic food, the term “organic” was easy to apply for this specific group of products. In contrast, the application of the concept of “regionality” was challenging because the term “local food” does not refer to a legal framework. Although the EU principles of equal treatment and non-discrimination do not permit the municipal authorities to prefer local enterprises (European Union, 2004; 2014), the procurement law does not prohibit specifying a percentage of local products. According to a legal expert, public authorities are allowed to procure local products, because each catering company has the opportunities to purchase from local suppliers (A. Theurer, personal communication, March 18, 2016). However, the definition of

"local products" can constitute a difficulty. EU-guidelines for green public procurement recommend hence the use of the term "seasonal products" instead of "local foods" (European Commission, 2008; 2011).

This paper uses the following criteria for the assessment of local and organic food procurement:

- **Criteria 1: specification of a minimum proportion of local/seasonal and organic foods.** Public institutions are able to determine a minimum share of either a defined product group or a specific product to be used carrying out the service.
- **Criteria 2: additional points for local/seasonal and organic foods**. Public procurers sometimes use a scoring system. In these cases, offers based on LOF receive additional points in comparison to offers which only cover the minimum requirements.
- **Criteria 3: facilitation of access to public catering for small and medium-sized enterprises**. When public procurement lots represent significant volumes, only a small number of large-size, over-regional catering firms will be able to participate in the tender. Only smaller lots enable SMEs and new businesses to bid. Awarding offices have the opportunity to divide contracts into smaller lots. Moreover, they have the opportunity to define contract requirements in a way that even SMEs and new businesses will be able to comply with (e.g. proof of references).
- **Criteria 4: innovative public procurement.** Public procurement law allows the support of innovation. It may be that public authorities are not easily able to determine technical specifications. In such cases, if there are no well-defined products or services available to meet the public sector need, a "competitive dialogue" or "technical dialogue" within a procurement procedure can be conducted with potential bidders (European Union, 2004; 2014).

Interviews

Based on the analysis results of tender documents, we conducted expert interviews. The objective was to evaluate whether current procurement processes prevent or encourage LOF. The interviews took place in November 2015 with managers of local catering companies and an expert of the Berlin Networking Agency for School Catering[1].

The following key questions guided the interviews:

(1) How much impact has there been from different policies? The fixed-price on quality properties of school meals in Berlin versus the price competition in Brandenburg?

(2) How suitable are the current award criteria with regard to the procurement of LOF?

(3) Which opportunities and constraints do SMEs experience when they aim to participate in tendering procedures?

[1] the Berlin Networking Agency for School Catering (Vernetzungsstelle Schulverpflegung) is a non-profit association which supports activities related to healthy school meals

Results

S*tatus quo of sustainability criteria in tender processes in Berlin and Brandenburg*

In Berlin, the departments of education of the respective district offices are responsible for the procurement of school catering. The procurement volume of these award procedures comprises 100 000 meals per day. In Brandenburg, municipal authorities in charge of youth and education affairs carry out the tendering procedures. The 9 analysed tendering calls in Brandenburg included contracts for 240 up to 2 200 meals per day. Contract values amounted to between 500 000 Euro and 4 200 000 Euros.

We analysed the calls for tender based on the criteria defined in Materials and methods. The most relevant results of the analysis concern the three following aspects: (1) Specification of a minimum share of local and organic foods as compulsory criteria; (2) Weighting of price and quality criteria; and (3) the lot sizes.

Specification of a minimum percentage of local and organic foods as compulsory criteria

The first objective of the analysis was to identify the minimum percentage of LOF required in the selection criteria of the tender documents. Selection criteria determine the quality of the procured product or service. Bidders have to fulfill these criteria in order to be considered in the award process.

In **Berlin**, the calls for tender require a minimum percentage of 15% of organic products. The specified percentage is related to the total amount of costs and do not refer to product groups. A minimum proportion of local products is not demanded. Nevertheless, the bidders have to meet the quality standard for school meals elaborated by the German Association for Nutrition (DGE). This quality standard recommends the use of seasonal products where possible.

The analysis of procurement procedures in **Brandenburg** highlighted that organic products are required in only one of nine tender documents. As in Berlin, the compliance of the German quality standard for school meals is recommended or - in some tender documents - required. Local products are not considered within the compulsory criteria.

Weighting of price and quality criteria

In order to assess the different bidders in a transparent manner, public authorities have to determine award criteria. By assigning a score to different aspects, such as e.g. price or percentage of organic products, the tendering authority is able to weigh price and quality criteria in order to obtain the most economically advantageous tender. The bidder who receives the highest score wins the contract.

By analysing the award criteria with regard to the weighting of price and quality criteria, we detected not only major differences between the case studies in Berlin and Brandenburg, but also within the award procedures in Brandenburg (Table 1).

Table 1. Award criteria in calls for tender in Berlin and Brandenburg (B1-B9)

	Award criteria	Berlin	B1	B2	B3	B4	B5	B6	B7	B8	B9
1	**Price**		50%	40%	30%	60%	30%	50%	15%	50%	25%
2	**Organic products**	10%			15%			15%		10%	10%
3	**Local products**				15%		20%	15%	10%	20%	30%
4	**Seasonal products**		20%							20%	
5	**Test meal**	50%		50%			40%				50%
6	**Time keeping food warm**	15%	30%		20%			20%	15%		
7	**Menu samples**					40%			50%		
8	**Amount of convenience food**										30%
9	**Implementation concept at school**	25%									
10	**Efficiency (staff, transport routes, energy consumption)**			10%							
11	**Ordering procedure**				20%				10%		
12	**Communication**						10%				

In the analysed calls for tender, a large variety of award criteria was identified. We differentiated these heterogeneous parameters into five categories:

1) Price

2) Organic products

3) Local/seasonal products

4) Sensory/nutritional quality (test meal, time keeping food warm, menu samples, amount of convenience food)

5) Service quality (implementation concept at school, efficiency, ordering procedure, communication)

In order to show the weighting of award criteria in Berlin and Brandenburg, we calculated the average scores of the above defined categories.

In **Berlin**, the political decision to set fixed prices per school meal led to award processes in which different quality criteria decided the award of contract. In consequence, the quality criteria do not have to compete with a low price; 10% of the total score is assigned for a percentage of organic products exceeding the minimum requirement defined in the specification (Figure 1); 65% of the points are awarded for sensory and nutritional quality of the meals and 25% for the service quality.

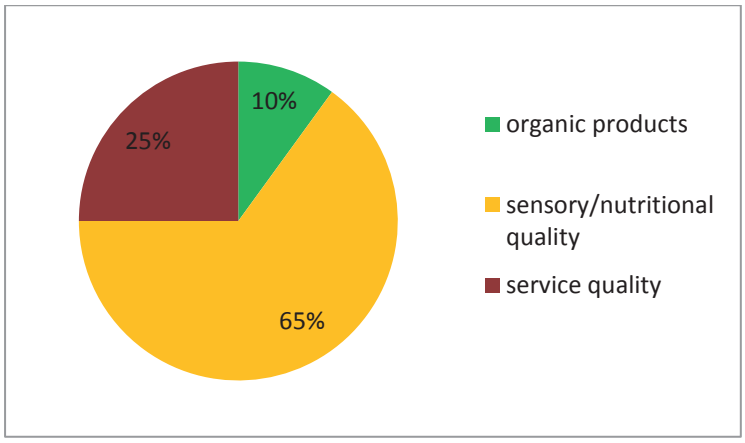

Figure 1. Weighting of award criteria in Berlin

The analysis of the calls for tender in **Brandenburg** shows that in comparison to quality aspects the price is a very important factor in the award procedures. With an average of 39% of the total score, the price is given equal weight to sensory/nutritional quality (Figure 2). The analysis highlights that up to 60% of the total score may be awarded to the lowest price provider (Table 1).

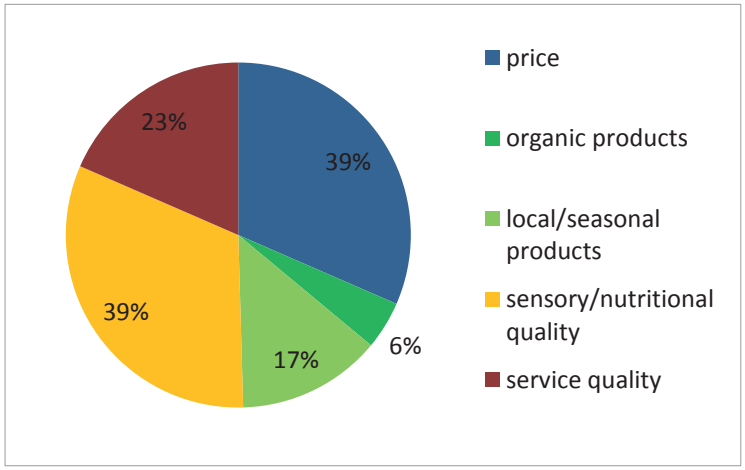

Figure 2. Weighting of award criteria in Brandenburg

On average only 6% of the total score is awarded for a high percentage of organic products. Bidders receive on average 17% of the points for a high proportion of local or seasonal products. The sensory/nutritional quality is assessed with 39% and the service quality with 23% of the total score. In the analysed calls for tenders we detected a variety of 11 different award criteria, which were used in different combinations and weightings (Table 1). This inconsistency of award criteria and the impact on bidders will be discussed in the next chapter.

Lot sizes

A major objective of the reform of public procurement law is the facilitation of the access to public contracts for SMEs (European Union, 2014; BMWI, 2014; 2015). In particular, growing businesses or newcomers have significant problems participating in public tenders. However, public institutions have the opportunity to organise tendering processes with realistic chances for new catering businesses (BMWI, 2015). For this purpose, regulations on public procurement recommend the division of contracts into smaller lots (European Union, 2014; BMWI, 2015). Any exceptions to this principle require justification through the tendering authority.

According to these policy papers, large contract volumes and disproportionate requirements related to economic performance tend to be disadvantageous for SMEs (BMWI, 2015; Deutscher B&estag, 2015). Despite these important legally based requirements on lot sizes, our analysis of the tender documents identifies significant differences in lot sizes in both case study regions.

In **Berlin**, lot sizes are small. Normally contracts for school meals are concluded for each school. Consequently, the lot sizes equate to on average 300 meals. Smaller providers can take part in tenders as long as they can give evidence of at least three years of successful school catering experience.

In **Brandenburg**, the division of contracts into school-based lot sizes depends on the respective tendering authority. Lot sizes vary between 260 and 1 600 meals per day (Table 2). The average lot size in award processes in Brandenburg is significantly higher than in Berlin with 655 meals per day.

Table 2. Lot sizes in award processes in Brandenburg (B1-B9)

Tendering authority	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**B8**	**B9**
Meals per day	2 200	372	1 770	780	770	1 700	1 300	2.100	240
Lot sizes	lot 1: 1 500 meals lot 2: 710 meals	lot 1: 372 meals	lot 1: 660 meals lot 2: 310 meals; lot 3: 510 meals; lot 4: 190 meals	lot 1: 260 meals lot 2: 520 meals	lot 1: 770 meals	lot 1: 700 meals lot 2: 1000 meals	lot 1: 580 meals lot 2: 720 meals	lot 1: 1 600 meals lot 2: 500 meals	lot 1: 240 meals

Small catering enterprises are excluded from tenders for large lots, because they will not be able to produce 1 000 or more meals per day. However, experts who were interviewed emphasise that tendering authorities tend to justify the decision to create large lots with the argument that small lot sizes are uneconomic. The experts view was that it would be perfectly possible for the SMEs they know to fulfil the contract.

Supporting and inhibiting factors for local and organic foods

In order to evaluate if current procurement procedures in Berlin and Brandenburg support or inhibit LOF, we discussed our results of the analysis of tendering documents with experts.

Impact of the politically realised fixed-price on quality properties of school meals in Berlin

In Berlin, the city took a political decision to set a fixed-price of 3.25 Euro per school meal. According to the interviewed experts, this concept caused a "quality competition" among caterers driving an increase of organic food[2] to 40%. They added that the fixed meal price enabled catering enterprises to concentrate on food quality and to fulfil the requirements specified in the award criteria. Although the defined price of 3.25 Euro per meal was currently adequate to meet sustainability criteria, the consultations with experts revealed that parents and politicians often demanded a higher percentage of organic products. Caterers explained that organic meat was too expensive for the current fixed price per meal. According to the interviewed stakeholders, it would hence be necessary to discuss the fixed-price by the next procurement procedures in 2017. With a further increase of the price per meal, catering companies could continuously improve quality aspects.

Suitability of current award criteria with regard to the procurement of LOF

In the analysis of tender documents we have already highlighted the differences between the award criteria in Berlin and Brandenburg. In Berlin, they are standardised for all procurement procedures, whereas award criteria in public tenders in Brandenburg are inconsistent. In this regard the experts pointed out that the unified award procedures in Berlin led to more transparency and simplification than seen in Brandenburg. Due to clear signals given by the tendering authorities, catering companies were able to improve their performance and thereby the food quality. Conversely, award criteria in public tenders in Brandenburg were highly varied, which, according to the experts, makes compliance very difficult for catering companies. The interviewed stakeholders concluded that in order to ensure equal opportunities for all enterprises and to improve quality, standardised award procedures should be discussed.

The experts criticise furthermore the use of certain award criteria, such as "regionality", because it is not clearly defined and therefore hard to verify by tendering authorities. Such imprecise criteria led to a lack of transparency and potential disadvantages for catering companies. The same observations were made related to award criteria in Berlin. Following caterers' arguments, the usual test meal, amounting to 50% of the total score, was overrated. They argued that the test meal was prepared for adults and under conditions which never reflected daily cooking for school children. Caterers asserted that it would be more appropriate if daily meals in school were tested unannounced.

The consultations with experts showed that criteria such as sensory quality seemed to be overvalued, whereas too little importance was paid to other criteria like origin of ingredients. Although public tenders demanded a minimum percentage of organic products, according to the caterers, information on the origin of the products was not required. We see that public institutions do not yet use their potential to promote regional value-based food chains for large consumers, which would be necessary in Brandenburg. Experts highlighted that the current

[2] *According to education authorities, the percentage of organic food in school meals was 10% in more than half of the schools and 20% in nearly one third of the schools (Arenz-Azevedo & Tecklenburg, 2012)*

lack of availability of local organic foods and the costs involved constituted a barrier for catering companies for local sourcing. They concluded that as long as local products were not required in tender procedures, enterprises preferred to purchase the products from wholesalers to lower costs.

Opportunities and constraints for SME to take part in tendering procedures

The consultations with experts confirmed that the division of contracts for school meals into small lot sizes offered opportunities for smaller catering companies in Berlin. According to the experts interviewed many small enterprises had won contracts with public schools. A major aim of the current procurement procedures was thus attained. However, the objective to attract more newcomers or companies in other areas of communal catering was not achieved. The precise reasons for this lack of participation with the procurement procedures were not known.

The experts presumed that the large lot sizes and the associated large contract values in Brandenburg impeded the participation of small or new businesses. They pointed out that it was increasingly difficult for these companies to access the market, because a certain company size was necessary in order to fulfil the contract requirements.

Discussion and conclusions

An analysis of public procurement regulations and of findings from the literature illustrates that EU-regulations legitimate sustainable or “green” procurement. There is widespread public discourse supporting the procurement of sustainable products and services. A number of aspects, such as local and organic food, waste avoidance, the use of ecological materials, compliance with social standards and the support of SMEs are considered to be sustainable. Although the modernisation of European public procurement law enables the inclusion of various aspects of sustainability in award procedures, research results from the literature show that sustainable public procurement has hardly been implemented.

Our research results confirm the initial hypothesis. We have found evidence of a clear discrepancy between theory and practice in current procurement procedures. There are significant weaknesses in the two different model regions that we studied. The analysis of the two neighbouring regions of Brandenburg, a large Federal State in north-eastern Germany and the City-State of Berlin shows that even in the same geographical region, with similar legal frameworks, the implementation of public procurement processes differs significantly. We see that, in Brandenburg, price is an essential factor and most award decisions focus on value for (little) money instead of local and organic products. Although, several tendering authorities consider LOF within the award criteria, they have a small impact on the decision-making compared to other criteria such as price or sensory quality. In contrast, the Berlin model with a fixed-price per school meal and standardised award criteria led to a “quality competition” resulting in an increase of organic products in school kitchens up to 40% of the total catering volume. This comparison indicates that a careful selection of award criteria and the weighting of price and quality criteria is a key factor for the share of LOF in public kitchens. Related to the suitability of current award criteria applied by public authorities, our results reveal that certain award criteria like “percentage of local foods” are insufficiently defined, whereas other criteria like “sensory quality” seem to be subjective or overrated. When applying these criteria in public tenders, tendering authorities have to be aware that they complicate the transparent evaluation of bids and could hence cause uncertainties for the catering companies. Another relevant factor for sustainable procurement is the determination of contract sizes by tendering

authorities. The results of our study confirm the importance of smaller lot sizes for the participation of SMEs in procurement procedures.

The lessons learned from the analysed case studies in Berlin and Brandenburg illustrate that the drafting of tender documents, including clearly defined award criteria, is essential for the realisation of sustainability goals in public procurement processes. Approaches for the increase of local and organic food services deriving from our findings are:

- the importance of clear political signals related to a desired product quality, for example by the declaration of a requirement for a fixed share of LOF products;
- the determination of fixed-price for the school meal , in order to prevent a price competition at the expense of sustainability goals as successfully realised in the city of Berlin;
- standardised award criteria - as practised in Berlin, but not in Brandenburg - make it easier for businesses and thereby encourage more businesses to prepare tenders for the public sector;
- the definition of precise and transparent award criteria which are easily verifiable, in order to minimise complaints and ensure a fair competition;
- the division of contract sizes into smaller lot sizes, in order to enable access for SMEs and newcomers.

Finally, we would like to highlight two open questions that result from our research; first, the specification of lot sizes and second, the definition of award criteria. Will it be possible to define suitable lot sizes for LOF procurement, and if yes, what would be adequate lot sizes to enable the access for locally based and/or new businesses? Furthermore, appropriate award criteria - in particular for the procurement of local foods - have to be developed. In order to meet these challenges, public authorities can use legal tools like the “competitive dialogue” or “technical dialogue” to develop, together with catering companies, solutions for local and organic food services.

Acknowledgement
The authors acknowledge the financial support for this project provided by transnational funding bodies, being partners of the FP7 ERA-net project, CORE Organic II. The development of this paper was funded by the German Ministry of Food and Agriculture with the Federal Programme for Organic Agriculture and other forms of Sustainable Agriculture (BÖLN)

References

Arens-Azevedo, U. (2012). Regionale Produkte in der Gemeinschaftsverpflegung: aktuelle Situation, Hemmnisse & Förderndes bei der Verwendung. In: Vierteljahrshefte zur Wirtschaftsforschung: Vol. 81, Ernährungssicherung & Lebensmittelqualität: Herausforderungen für Agrarmärkte, S. 147–161. Retrieved from http://ejournals.duncker-humblot.de/doi/pdf/10.3790/vjh.81.4.147, accessed 12.12.2015.

Arenz-Azevedo, U.,& Tecklenburg, M. (2012b). Beurteilung der Kosten- & Preisstrukturen für das B&esland Berlin unter Berücksichtigung des Qualitätsstandards in der Schulverpflegung. Hamburg: Hochschule für Angewandte Wissenschaften Hamburg.

Arens-Azevedo, U., Schillmöller, Z., Hesse, I., Paetzelt, G., & Roos-Bugiel, J. (2015). Qualität der Schulverpflegung – B&esweite Erhebung. Abschlussbericht. Hochschule für Angewandte Wissenschaften Hamburg. Retrieved from http://bildungsserver.berlin-brandenburg.de/fileadmin/bbb/schule/Schulkultur/Schulverpflegung_BB/20150625INFORM_StudieQualitaetSchulverpflegung_1_.pdf, accessed 12.12.2015.

Beck, S., & Schuster, F. (2013). Kommunale Beschaffung im Umbruch. Große deutsche Kommunen auf dem Weg zu einem nachhaltigen Einkauf? Hg. v. Institut für den öffentlichen Sektor. Retrieved from http://www.publicgovernance.de/docs/Studie_Kommunale_Beschaffung_im_Umbruch.pdf, accessed 13.12.2015.

BMWI - B&esministerium für Wirtschaft & Energie (Hg.) (2014). Impulse für mehr Innovationen im öffentlichen Beschaffungswesen. Leitfaden. Retrieved from http://de.koinno-bmwi.de/system/publications/files/000/000/201/original/BMWi_Leitfaden_KOINNO_web.pdf, accessed 29.02.2016.

BMWI - B&esministerium für Wirtschaft & Energie (2015). Eckpunkte zur Reform des Vergaberechts. Retrieved from https://www.bmwi.de/BMWi/Redaktion/PDF/E/eckpunkte-zur-reform-des-vergaberechts,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf, accessed 12.12.2015.

Deutscher B&estag (2015). Entwurf eines Gesetzes zur Modernisierung des Vergaberechts. VergRModG. Retrieved from http://www.forum-vergabe.de/fileadmin/user_upload/Gesetzestexte/18-6281.pdf?PHPSESSID=b980b80edd551fbe848d434e42a07b3b, accessed 06.01.2016.

European Commission (Hg.) (2008). Food and Catering Services. Background & Product Report. Retrieved from http://ec.europa.eu/environment/gpp/pdf/toolkit/food_GPP_backgro&_report.pdf, accessed 30.03.2016.

European Commission (2011). Buying Green! A Handbook on Environmental Public Procurement. 2nd Edition. Luxembourg: EUR-OP.

European Commission (2015). Green Public Procurement. Retrieved from http://ec.europa.eu/environment/gpp/index_en.htm, accessed 26.11.2015.

European Union (2004). Directive 2004/18/EC of the European Parliament and the Council of 31 March 2004. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/35922/Classic_Directive_I_13420040430en01140240.pdf, accessed 11.03.2016.

European Union (2014). Directive 2014/24/EU of the European Parliament and the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024&from=GA, accessed 11.03.2016.

Foodlinkscommunity (2013). An Action Plan for Sustainability. Revaluing Public Sector Food Procurement in Europe: Hg. v. The Netherlands Wageningen University. Retrieved from http://www.foodlinkscommunity.net/fileadmin/documents_organicresearch/foodlinks/publications/Foodlinks_report_low.pdf.

McKinsey&Company (2008). Potentiale der öffentlichen Beschaffung für ökologische Industriepolitik & Klimaschutz. Studie von McKinsey & Company, Inc., im Auftrag des B&esministeriums für Umwelt, Naturschutz & Reaktorsicherheit. Retrieved from http://www.bmub.b&.de/fileadmin/Daten_BMU/Download_PDF/Produkte_&_Umwelt/mckinseystudie.pdf, accessed 01.01.2016.

Renda, A., Pelkmans, J., Egenhofer, C., Schrefler, L., Luchetta, G., & Selçuki, C. (2012). The uptake of Green Public Procurement in the EU27. Submitted to the European Commission, DG Environment. Centre for European Policy Studies, College of Europe.

Risku-Norja, H., & Løes, A.-K. (2016). Organic food in food policy and in public catering. Lessons learned from Finland. In: Org. Agr. DOI: 10.1007/s13165-016-0148-4.

Schmidt, V., & Dubbers, E. (2014). Regelungen der B&esländer auf dem Gebiet der umwelt-fre&lichen Beschaffung. Hg. v. Umweltb&esamt. Retrieved from https://www.umweltb&esamt.de/sites/default/files/medien/376/publikationen/texte_44_2014_regelungen_der_b&eslaender_beschaffung_korr.pdf, accessed 19.11.2015.

Senatsverwaltung für Bildung; Jugend & Wissenschaft (2013). Handreichung zur Neuordnung des schulischen Mittagessens - neue Mitwirkungsmöglichkeiten der Schule.

Spigarolo, R., Sarti, V., & Nölting, B. (2010a): Providing organic food for millions of Italian pupils. How do we make it? In: C. Strassner, A.-K. Løes, B. Nölting and N.H. Kristensen (Eds.) Organic Food for Youth in Public Settings: Potentials and Challenges. Preliminary Recommendations from a European Study pp. 17-28. Proceedings of the iPOPY session held at BioFach Congress 2010. CORE Organic Project Series Report. , ICROFS, CORE Organic Project Series Report, Tjele, Denmark.

Spigarolo, R., Sarti, M.V., Bocchi, S., & Giorgi, G. (2010b). Main constraints in developing public organic procurement. Hg. v. Roberto Spigarolo. DiProVe – State University of Milan, Italy.

Competing school food agendas and green public food procurement

Grivins, M., Kunda, I. and Tisenkopfs, T.

Baltic Studies Centre

Abstract: Public procurement constitutes a significant share of public expenditure and as such it is a politically significant instrument that can be used to promote ideas that governing actors find important. Latvia introduced mandatory Green Public Procurement (GPP) in 2014. This was generally seen as a response to foreign policy developments - a means to strengthen local farmers and the food industry. However, the practices that municipalities employed while implementing GPP demonstrated early on that there were differences in terms of: how regulations were seen; in the ways that municipalities were solving practicalities related to the procurement process; and in communication with actors involved related to school food. Recognising these differences the paper asks two questions: firstly, what are the policy making and policy implementation points where the original ideas could be reshaped; and secondly, what consequences these modifications may cause in quality of greenness - for the range of agents who may participate, in the selection process and in other aspects related to GPP. The paper concludes that the openness of GPP offers possibilities for people to push through practices they might benefit from. However, municipalities' and schools' willingness to participate in GPP planning, execution and monitoring can promote pupils access to high quality meals.

Keywords: Green public procurement, school meals, multi-level governance, neo-institutionalism

Introduction

Public procurement (PP) accounts for a high share of overall public expenditure (Schapper et al., 2006). As such it is a politically significant instrument that can be used to promote ideas that governing actors find important (Izumi et al., 2010). PP can be an instrument of change. It might be difficult to change things for every separate administrative unit. However, governing actors as a group hold significant buying power that according to some authors has an enormous potential to influence practices among the general public as well as to force the private sector to introduce new ways of doing business (Morgan & Sonnino, 2008). PP can help create demand (Testa et al., 2012) and has the power to set trends (Sonnino & McWilliam, 2011).

Green public food procurement (GPP) (if not indicated otherwise in this text Green Public Procurement refers only to green food procurement) is not an exception - it is expected to change general practices dominating in food supply chains (Sonnino et al., 2014; Buying green… 2016). This belief has fueled the interest of researchers studying food chains to address procurement and has placed procurement among the instruments frequently suggested for facilitating sustainability of food systems (see Barling et al., 2013).

Latvia introduced mandatory GPP in 2014. The official regulations defined six environmental aspects that characterise GPP for catering and five environmental aspects that characterise GPP for food products. Based on these aspects green criteria are identified (which in overall closely resembles EU GPP criteria (see Catering & Food… 2008). Procurement qualifies as *green* if it takes into consideration at least two criteria. However regulations do not specify how these criteria have to be interpreted and how procurement should be organised in practice. The green procurement procedure is obligatory for all public institutions offering meals to its clients. However, the biggest and the most interesting group of institutions affected by these regulations are schools. In Latvia, in the case of school catering there is a much stronger presence of moral arguments and more pronounced and publicly visible presence of other regulations that distinguish it from other public institutions offering meals.

Schools in Latvia are founded by municipalities and consequently municipalities are also the actor which is expected to solve practical questions related to school functioning. The model of how the practicalities are solved might differ from municipality to municipality - while some are solving everything centrally, other municipalities offer greater freedom to schools. Furthermore, for some functions municipalities receive state funding, while for others they have to pay themselves. This causes additional differences between municipalities.

Early on the practices that municipalities used while implementing GPP demonstrated that there were differences in how regulations were seen; in the ways municipalities were solving practicalities related to the procurement process; and in communication with the actors involved related to school food. This paper analyses the differences mentioned above. It analyses the implementation of green school food procurement to show adaptations made, interpretations introduced and application models created and, most importantly, where and how stakeholders manage to intervene in the procurement process to pursue their vision of what is beneficial and desirable. In order to do this GPP related practices are examined both on a national and municipal level. Because of this the article analyses national level school food procurement regulations as well as analysing three municipal cases where GPP has been implemented.

Two research questions are analysed in the paper. Firstly, what are the policy making and policy implementation points where the original ideas can be reshaped (this question also includes a sub-question - why stakeholders are redefining GPP). Secondly, what consequences these modifications might cause in quality of greenness, for the range of agents who may participate, in the selection process and in other aspects related to GPP. Since the paper is looking both at national level policy making and at municipal level implementation it might be that consequences identified could cause both long term changes in policies as well as minor changes in separate schools which then would be felt only by a limited number of pupils. Both questions supplement each other and allow a more detailed explanation of positive and negative effects emerging from inconsistencies characterising changes occurring after modifications at any point of policy-practice relations. However, in-depth analysis of both questions would require a much longer report than this paper. Because of this we offer only an exploratory analysis of the second question.

The paper is based on data gathered in the Transmango project. Transmango focuses on vulnerability and resilience of EU food systems. This paper presents initial results from the study. The paper is based on media analysis, 16 in-depth interviews and several sources of secondary data.

Green public procurement of food and catering

During the last decades PP has been identified as one of the central instruments that governing actors have available in order to promote their goals and to change the behaviour of market actors (Sonnino et al., 2014; Buying Green, 2016). As an instrument for change, procurement has attracted the interest of all concerned groups - government actors, NGOs, market actors and scientists. Published research illustrates how procurement can be used to support the interests of local entrepreneurs which would then presumably help improve overall social and economic conditions of the community (Preuss, 2009). There are also examples illustrating how procurement can serve to promote certain ethical principles or social goals (Preuss, 2009). Public procurement is also seen by many experts as an opportunity for certain actors, for example, local farmers (Izumi et al., 2010). However, judging from scientific articles discussing the matter it is safe to suggest that it is improved environmental performance or GPP that has attracted most researchers' interest (Smith et al., 2016).

In theoretical literature several concepts are used to designate procurement oriented towards certain goals - such as '*Sustainable Public Procurement*', '*GPP*', '*Environmentally Responsible Public Procurement'*, '*Green Purchasing and Eco-Procurement*' (Michelsen & de Boer, 2009). In most cases these concepts incorporate rather similar ideas - procurement that relies on criteria that reduce negative consequences in all product life cycle stages. There are some differences among researchers around identifying which analytical fields are important and emphasised in procurement – for some these are only environmental issues, while for others there are also ethical, economic and social issues. However, despite these differences some researchers continue to use these concepts interchangeably. Furthermore, no matter what concepts are used the general reason behind the interest in procurement remains the same - the power of public purchasing is seen as an instrument to promote the emergence of more responsible practices in food systems. Additionally, each of these fields hold multiple interpretations regarding the criteria recognised as important; while some of the researchers concentrate their attention on political preconditions needed for implementing GPP, others study environmental aspects chosen for selecting the best tender, food waste associated with school meal procurement, etc. Meanwhile, studies also reveal that while there is evidence supporting many of the expectations, there is also research suggesting that the expectations might be exaggerated (Izumi et al., 2010).

Implementation of GPP is usually achieved by either defining a set of general criteria or by referring to certain quality standards (Cerutti et al., 2016). This is also the way GPP has been organised in Latvia. The general openness (or flexibility) of GPP to various needs has led to a situation illustrated by Smith et al. (2016) - each country and each municipality can choose different principles for selecting *green* products for school meals and thus promote their individual version of goals (Smith et al., 2016; Thomson & Jackson, 2007). Furthermore, there is also evidence illustrating how various stakeholders search for ways to extend the accepted interpretation in order to shape procurement in a way that promotes their vision. Some examples might include NGOs assisting local governments to introduce procurement oriented towards regional food (Thomson & Jackson, 2007). Thus all this evidence suggests that final GPP will take various forms.

The identified diversity hampers the possibility of coming up with simple conclusions regarding the best and worst practices. However, some researchers have identified major obstacles that hinder GPP implementation. Among these aspects researchers mention: lack of information; lack of guidance documents and training; difficulties fulfilling complicated procedures with

the limited resources possessed by procurement organisers (usually municipalities); economic considerations; and lack of knowledge about environmental impacts of these products (Testa et al., 2012; Bouwer et al., 2006). Furthermore, many of these obstacles (especially organisational) become more visible in the case of smaller municipalities. These municipalities will have difficulties mobilising all the resources that are needed to organise the procurement process (Michelsen & de Boer, 2009). Meanwhile, studies also show that all municipalities have limited resources and have to make decisions as to which goals to pursue (Thomson & Jackson, 2007). Similarly, in Latvia, official documents have concluded that successful GPP implementation requires overcoming a set of information, economic, organisational and technical challenges. Major identified threats that might hamper GPP are lack of trained personnel, insufficient exchange of best practice and networking among stakeholders, and the short budget cycle that might cause difficulties with assessment and illustrating the beneficial impact of GPP (Ministry of Environmental Protection and Regional Development of the Republic of Latvia (VARAM), 2015).

On the other hand, published studies also suggest processes that are the basis of successful GPP. These include such aspects as enthusiasm of opinion leaders, collaboration between environmental groups and institutions organising procurement, functioning GPP strategy and a certain level of centralisation, which can all promote successful GPP (Michelsen & de Boer, 2009).

These considerations allow the conclusion that many GPP-related complications emerge from the complex nature of GPP. The process related interplay of several factors, most of them local-level characteristics, renders it unrealistic to offer a ready to use blueprint for how to implement such policy. A successful model would require knowledge, resources and mutual agreements between key stakeholders. One can overcome these problems by collaboration, motivated involved actors and commonality of vision. Both possible limitations and aspects promoting the implementation of GPP presuppose that there are moments for interventions that allow redefining the direction of GPP. These points of interventions are clearly needed because each of these municipalities has their different context and different needs, which means that each of them will have to put forward somewhat different goals (Thomson & Jackson, 2007). However, openness to various solutions can be both the way to success as well as the cause of failure.

Neo-institutional perspective

So far this paper has argued that school food GPP has to align the interests and interpretations of all involved stakeholders and has to take into account the local situation. One of the conceptual models that permits explanation of implementation of specific policies in multi-stakeholder situations is neo-institutionalism. This has been an influential body of theory and research since the 1970s, addressing diffusion of practices and ideas, implementation of policies, and their transformation, in various fields - homogeneous and, increasingly - heterogeneous.

This theoretical perspective sees institutions (in this case, involved in defining and implementing the school meals' policies) operating in an environment where there are a multitude of other institutions. Neo-institutionalism allows a dynamic view of institutions as generators of practices, identities and interests situated in broader socio-cultural contexts. These contexts, in their turn**,** shape organisational behaviour through cognitive, normative and regulative pressures. Transformation of top-down pressures is especially interesting in the

case of adoption and localisation of new policy regulations, which are noted to be often ambiguous and open to reinterpretation at ground level. (Lounsbury, 2001).

Overall, the acknowledgement of the complexity of institutional environments and how this shapes the diffusion of new practices is wide-spread in academic research. Lately, there has been even more pronounced interest in organisational heterogeneity and the ways in which processes associated with this diversity can become a source of change (Lounsbury, 2008). In the case of GPP some ideas emerging from these studies are of particular importance. One of these notions is the influences of the so-called "street level bureaucrats" as the final chain-link in policy implementation, as they actively make policy (see Ellis, 2011; Durose, 2011; Rice, 2012). Street-level bureaucrats' role stems from the premise that "the state" and its "policies" need to be constantly (re-)enacted and (re-)negotiated; and while the officially acknowledged building blocks are encapsulated in official political instruments, the way political decisions will *look* will depend upon the actors implementing these policies (Rice, 2012). In other words, the practitioners closest to actual implementation of a policy, exercising certain autonomy, have an important bearing on what the policy looks like in practice. However, the level of autonomy will be influenced by several characteristics of the relationship between actors involved in governance. Thus the policy diffusion practices described in this paper are likely to evolve during the implementation process, requiring custom adaptation, domestication, and reconfiguration to make them meaningful and suitable within specific organisational contexts (Robertson et al., 1996; Strang & Kim, 2004).

GPP in Latvia

Public procurement in Latvia is only marginally smaller (17% of GDP) than the EU average (19%). (VARAM, 2015). Thus similarly to elsewhere PP in Latvia is an important tool to further broad-scaled changes in public practices. The general application of GPP in Latvia may be traced back to 2004. The first tentative experiments in using the procedure for state-funded school meal procurement started in 2010 and have been increasingly in use in recent years (2014 – 2015). The first experiences in applying GPP to school meals were promoted by a couple of pioneering initiatives around 2010, namely the 7th framework research project Foodlinks (Galli & Brunori, 2013), teaming up with the medium-sized city of Tukums, and the initiative by the Waldorf school in Riga. Both of these cases received outside support in implementing GPP - in the case of Tukums municipality, local governing actors were able to consult with participants in the Foodlinks project while the Waldorf School received help from local NGOs. Both cases abandoned GPP soon after they lost assistance and pressure from outside stakeholders. From these initial attempts to introduce GPP there have been some other examples over the next few years. Most of these cases (such as Bauska municipality, Koknese municipality and Rujiena municipality) have aimed to use GPP to support the local economy by creating a market for the products of local producers. However, all of these cases faced problems and eventually abandoned the practice.

Despite these experiences GPP received a considerable political boost in the aftermath of the Russian trade embargo when, to protect local producers, in October 2014 the Cabinet of Ministers (following the initiative of the Ministry of Agriculture), adopted regulation Nr.673 "*On application of environmental criteria and proposal selection criteria in procuring food and catering services".* This was generally seen as a response to the foreign policy development to strengthen local farmers and food industry (although of course this was not stated directly). Partly the vision to use GPP as an economic instrument is reflected by a shift in actors promoting GPP. Before the embargo it was the Ministry of Environmental Protection and

Regional Development that lobbied for GPP. Yet the regulations that officially introduced GPP as a mandatory solution were pushed through by the Ministry of Agriculture. Thus school meal procurement became particularly visible in the context of difficulties in local food industry and agriculture.

The final version of regulation Nr.673 identified 8 criteria that can be taken into account when GPP is organised: share of organic products; share of products registered in national quality scheme; share of products coming from integrated production sources; share of products that are packed in reusable packaging; share of products that are not pre-packed in separate portions; share of products delivered in environmentally friendly packaging; reduced emissions of delivery services; and production-to-table time. Some of these categories represent the local economic interests of involved actors.

The issue of the capacity of local municipalities to apply the GPP regulation became a visible concern, with an important part of AKIS, the Latvian Rural Advisory and Training Centre (LRATC) attempting to provide support. LRATC claims that they are seriously investing in supporting and educating municipal procurement organisers. In order to persuade municipalities to introduce GPP, LRATC also commissioned a study that illustrates the higher efficiency of money spent on local products (Korpa et al., 2015). Meanwhile, national level institutions issued instructions for GPP implementation and GPP development plans. The National Bureau for Public Procurement has been organising public lectures about the procurement process. Despite all these efforts national level institutions complain that they cannot control the process; municipalities conclude that they lack all kind of resources, some schools suggest that the quality of meals pupils receive has not improved while practically used solutions differ significantly. Our further analysis will reveal major points of interaction that allow these aspects to emerge.

Methodology

In this study a case study approach is used. The procurement strategies of three municipalities in Latvia are analysed and compared. As is common for case studies, multiple data sources are used. This allows development of broader explanations of the observed processes.

The following data is used in this paper. Initially a structured media analysis has been conducted. It covered marginally less than 150 articles available in the public arena, obtained from 55 different media sources. This initial step was mainly to illustrate the diversity of explanations and interpretations present in the public arena. Furthermore, during the next steps additional media analysis was conducted. However, this further use of media was less structured and oriented towards a search for responses for specific questions arising as the policy developments were happening.

The core data used comes from in-depth interviews with people involved in school catering organisations. Overall 16 in-depth interviews have been conducted. Among the interviewed persons two represented parent organisations, one represented a ministry, four interviews were with municipal representatives, four were with school employees, two were with people assisting municipalities or schools organising procurement, one interview was conducted with an expert studying school meals and one interview was with a caterers' association. People interviewed were invited to a full day workshop to discuss the future of school meals in Latvia.

Some secondary data sources were also used - mainly data collected by official institutions: quantitative data collected by the Food and Veterinary Service on food safety breaches, data collected by the Procurement Surveillance Bureau on procurement processes, and official statistical data.

For in-depth analysis three municipalities were selected: Riga, Tukums and Gulbene. All three municipalities differ significantly. Riga is the capital of Latvia. As the capital of Latvia with around 700 000) inhabitants it has highly centralised and sophisticated procedures for organising procurement (PMLM, 2014). This municipality represents the sole territory in Latvia which is so densely populated. Tukums is a rural municipality located in close proximity to Riga and officially is located in the Riga region. With its population of 32 000 (PMLM, 2014) it is one of the biggest municipalities in Latvia. However, its population density - 24 people per km^2 (CSB, 2015) puts it among the least populated municipalities in Riga region. Yet the population density is higher than in most other rural municipalities. Tukums was the first municipality to introduce GPP. Gulbenes municipality is a rural municipality located almost 200km east of Riga. It is among the biggest municipalities in the area. There are just under 24 000 (PMLM, 2014) inhabitants in the municipality and the overall population density is 12 people per km^2 (CSB, 2015) which is a little less than the average density in the region. However, the municipality has been involved in a search for new models to organise its inner activities and has become an unexpected hub for various kinds of activism.

Results and Conclusions

In this section, points where stakeholders might carry out interventions in GPP practices and the consequences of these adaptations will be portrayed. These interventions do not have to occur all the time; they might have been present for just a short while yet have left a significant change. To secure the structure for this analysis the points will be identified from the highest governance level to the lowest level - from interventions that influence most of the actors involved to interventions that influence only some of the actors.

Selection criteria

At the national level the most visible example of how powerful food producer groups succeed in influencing GPP is the criteria that were included in the final GPP regulation Nr673. Among all the criteria regulations identified as *green, the* national food product quality scheme is mentioned. Although theoretically it does not exclude any foreign products which can demonstrate adherence to their own quality scheme, in practice this category is advantageous to products participating in the Green Spoon quality scheme. Green Spoon is a quality scheme developed by the food producer association and it has been a subject of criticism among actors supporting more responsible food production for a while now. Yet it has received a lot of support from the Ministry of Agriculture. As a criteria mentioned in GPP it is meant to secure the position of local producers in the procurement. However, it seems to be protecting only a group of mainly large local food producers. Furthermore, the initial definition of the quality scheme held a much stronger stance towards protecting local producers of raw materials (by defining that one aspect of a quality product is that a high share of raw materials originate from the same country). Currently a spin-off quality Maroon spoon scheme has been introduced - it receives the same support from the Ministry and enjoys the same benefits of being a criterion of GPP. However, it does not require local ingredients in product production and claims that processing is conducted in Latvia. This basically means that the quality scheme becomes ever more beneficial to big food producers.

The scheme has been lobbied as a key component of GPP procurement and is often used interchangeably with organic schemes in public procurement. Since the Green Spoon products are a lot cheaper to produce (it does not require use of organic products in order for producers to receive Green Spoon or Maroon Spoon certification), these products have a strong advantage in procurement.

Flexibility and localisation

Current GPP regulations for school meals in principle allow a certain flexibility and localisation of approach, as the environmental criteria may be included in a number of ways: in the subject of the procurement; in the technical specifications (e.g. mentioning the desirable modes of production); the selection criteria for types of tender participants (including request for specific qualifications and experience); using quality criteria in addition to price; and in special contract provisions to state the preferences for personnel qualifications, modes of service delivery, etc.

Organisation of procurement

Currently there are at least two kinds of procurement for school meals: for catering service providers (on-site or involving transportation from a centralised kitchen), and procurement for food which is then prepared by the school kitchen staff. The end result of procurements may be varied and the winners of the tender may be either major catering companies, or small ones, or an individual school may maintain relationships with a number of local producers and wholesalers to get the products it needs.

Thus, adapting the standard GPP for school meal procurement may entail various locally meaningful adjustments, and in principle opens opportunities for positively influencing the kind of food that pupils are to consume, by considering health, environmental, local development and other concerns. However, although policy automatically presupposes one separate moment where stakeholders could intervene to pursue locally meaningful goals, in practice it seems that this possibility is not as popular as it might be. A scan of procurement documentation pertaining to school meals in various territorial-administrative units of Latvia shows that there are few municipalities that have chosen their own specific way of selecting criteria for procurement. Meanwhile, for most municipalities, regulation is in place yet adapted solutions seem to be reflecting geographical clusters of influence. Thus there is not much adaptation to local situations, opportunities and constraints. These policies rather reflect political influences and ties between municipalities.

Municipality staff capacity and funding

Municipal financial and intellectual capacity differs, which causes differences in food procurement. Firstly, successful GPP requires market knowledge. However, in many cases municipalities struggle to grasp the realities of the market. All three municipalities analysed here have tried to communicate with various producers. Yet in many cases they realised that they do not know where to look for potential suppliers, how to communicate with them and how to motivate them. As a consequence these municipalities find it significantly easier to hire just one enterprise that can secure all the catering. In search for the simpler solutions municipalities are ready to make compromises and sacrifice *green* principles. Yet there are exceptions when municipalities hand the rights to organise procurement to a school. In these cases the situation is even more complicated - adaptations made by schools in some cases lead to corruption while in others to close relations between local farmers and schools.

Catering control

Currently there is no unified system of overseeing and monitoring the GPP system, and analysing actual local practices. This fosters uncertainty both in those applying the system and the institutions which in principle have to oversee it (e.g. the Food and Veterinary authority). GPP incorporates two notions that have been separated before - procurement principles and food characteristics. Unfortunately there are no institutions that would hold rights or would have competence to control both. Thus there are uncertainties as how to follow processes occurring after the procurement procedure has been finished. The National Public Procurement Bureau is able to control the procurement by monitoring the paperwork but cannot analyse the quality of food. The service allowed to control food quality can assess the quality of food yet does not have the qualifications to compare these products with official procurement documentation. This creates an opportunity for a variety of different frauds. Yet the main premise of these frauds is always the same - the caterer has the ability to easily serve products differing from those it is officially contracted to use. It is next to impossible to control the kind of products that get purchased, especially if the catering company is a skilled one at paperwork. This shows that there is room for manoeuvre, which can be used either to provide the best and freshest possible food, barely adhere to the lowest minimum, or serve products of lower quality.

Involvement of school personnel

The analysed example illustrates that leadership and interest of other actors play a key role in the outcome of GPP. Where school administration and parent organisations tend not to give priority to the quality of school meals (and school attendees most often have no say in decision-making), school meal caterers who have won public procurement contracts are fairly autonomous from any feedback or monitoring. They are state-protected, safeguarded by the outcomes of the public procurement tender and the intricacies of procedures. So, school meals, for all that the right procurement procedures are in place, often exist in a no-man's land of little or no scrutiny - except for the obvious cases of food poisoning. This does not mean that school children cannot get fresh, healthy and tasty meals – they can and they do; in the cases when the bottom-up controls are in place owing to the combination of system factors.

Conclusions

Thus, in an exploratory study of localisation of school meals' GPP we conclude that while at the highest levels of producing regulations it may be the most powerful food system actors who influence the design of the procurement criteria, at the "ground" level the actual design and implementation are influenced by trade-offs between municipal staff capacities to engage with local producers and/or catering companies, differences in available municipal funding, and historical local practices. The example of the Green spoon and Maroon spoon serves as an example of how powerful actors can shape policies. Meanwhile, adaptations made on-site illustrate the ground level rule bending. All of the above is also happening within the realities of very limited monitoring and control systems for GPP and the activity and commitment or lack thereof of " street level" actors - parents, school administrators, catering companies, local farmers and their organisations.

References

Barling, D., Andersson, G., Bock, B., Canjels, A., Galli, F., Gourlay, R., Hoekstra, F., de Iacovo, F., Karner, S., Mikkelsen, B.E. et al. (2013). Revaluing Public Sector Food Procurement in Europe: An Action Plan for Sustainability. Retrieved from: http://www.foodlinkscommunity.net/fileadmin/documents_organicresearch/foodlinks/publications/Foodlinks_report_low.pdf

Buying Green… (2016). Buying Green! A Handbook on Green Public Procurement. 3rd Edition. European Commission. ISBN: 978-92-79-56849-7, doi: 10.2779/837689.

Bouwer, M., Jonk, M., Bserman, T., Bersani, R., Lusser, H., Nappa, V., Nissinen, A., Parikka, K., Szuppinger, P., & Viganò, C. (2006). Green Public Procurement in Europe 2006 – Conclusions and Recommendations. Virage Milieu & Management bv, Korte Spaarne 31, 2011 AJ Haarlem, the Netherlands. Retrieved from: http://europa.eu.int/comm/environment/gpp

Catering & Food… (2008). Catering and Food Services: Background Product Report. European Commission, DG Environment-G2. Retrieved from: http://ec.europa.eu/environment/gpp/pdf/toolkit/food_GPP_background_report.pdf

Cerutti, A.K., Contu, S., Ardente, F., Donno, D., Beccaro, G.L. (2016). Carbon footprint in green public procurement: Policy evaluation from a case study in the food sector. Food Policy 58: 82-93.

CSB (2015). Population and Social Processes: ISG01. Population density and area by statistical region, city and county. Central Statistical Bureau. Retrieved from: http://data.csb.gov.lv/pxweb/en/Sociala/Sociala__ikgad__iedz__iedzskaits/IS0010.px/?rxid=cdcb978c-22b0-416a-aacc-aa650d3e2ce0

Durose, C. (2011). Revisiting Lipsky: front-line work in UK local governance. Political Studies 59(4): 978-995.

Ellis, K. (2011). 'Street-level bureaucracy' revisited: the changing face of frontline discretion in adult social care in England. Social Policy & Administration 45(3): 221-244.

Galli, F., & Brunori, G. (Eds.) (2013). Short Food Supply Chains as drivers of sustainable development. Evidence Document. Document developed in the framework of the FP7 project FOODLINKS (GA No. 265287). Laboratorio di studi rurali Sismondi, ISBN 978-88-90896-01-9.

Izumi, B.T., Wright, D.W., & Hamm, M.W. (2010). Market diversification and social benefits: motivations of farmers participating in farm to school programmes. Journal of Rural Studies 26: 374-382.

Korpa, V., Siliņa, L., & Šulce, G. (2015). Vietējo ražotāju produkcijas īpatsvara palielināšana pašvaldības publiskajos pārtikas produktu iepirkumos:situācijas analīze Tukuma novadā. Lavijas Lauku konsultāciju un Izglītības centrs.

Lounsbury, M. (2001). Institutional sources of practice variation: staffing college and university recycling programmes. Administrative Science Quarterly 46: 29-56.

Lounsbury, M. (2008). Institutional rationality and practice variation: new directions in the institutional analysis of practice. Accounting, Organisations and Society 33: 349-361.

Michelsen O., & de Boer, L. (2009). Green procurement in Norway; a survey of practices at the municipal and county level. Journal of Environmental Management 91(1): 160-167.

PMLP (2014). Latvijas iedzīvotāju skaits pašvaldībās. Office of Citizenship and Migration Affairs. Retrieved from: http://www.pmlp.gov.lv/lv/assets/01072013/01.01.2014/ISPV_Pasvaldibas_iedzivotaju_skaits.pdf

Preuss, L. (2009). Addressing sustainable development through public procurement: the case of local government. Supply Chain Management: An International Journal 14(3): 213-223.

Rice, D.A. (2012). Street-level bureaucrats and the welfare state: toward a micro-institutionalist theory of policy implementation. Administration and Society 45(9): 1038-1062.

Schapper, P.R., Malta, J.N.V., & Gilbert, D.L. (2006). An analytical framework for the management and reform of public procurement. Journal of Public Procurement 6(1&3): 1-26.

Smith, J., Andersson, G., Gourlay, R., Karner, S., Mikkelsen, B.E., Sonnino, R., & Barling, D. (2016). Balancing competing policy demands: the case of sustainable public sector food procurement. Journal of Cleaner Production 112: 249-256.

Sonnino, R., & McWilliam, S. (2011). Food waste, catering practices and public procurement: a case study of hospital food systems in Wales. Food Policy 36: 823-829.

Sonnino, R., Torres, C.L., & Schneider, S. (2014). Reflexive governance for food security: the example of school feeding in Brazil. Journal of Rural Studies 36: 1–12.

Testa, F., Iraldo, F., Frey, M., & Daddi, T. (2012). What factors influence the uptake of GPP (green public procurement) practices? New evidence from an Italian survey. Ecological Economics 82: 88-96.

Thomson, J., & Jackson, T. (2007). Sustainable procurement in practice: lessons from local government. Journal of Environmental Planning and Management 50(3): 421-444.

VARAM (2015). Zaļā iepirkuma veicināšanas plāns 2015. – 2017. gadam. Vides aizsardzības un reģionālās attīstības ministrija. Retrieved from: http://likumi.lv/ta/id/272295-par-zala-iepirkuma-veicinasanas-planu-2015-2017-gadam.