

Baltic Sea Region Dynamic Sustainability Model for Public Procurement and Catering Services



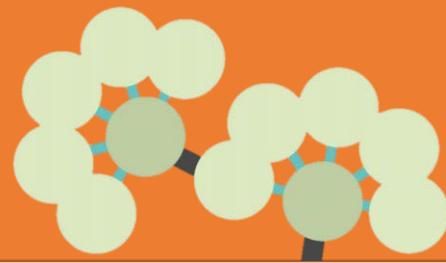
Project

StratKIT – Innovative Strategies for Public Catering:
Sustainability Toolkit across Baltic Sea Region
www.stratkit.eu

Output and date O3.4 (WP3) 30th December 2020

Lead authors

Minna Mikkola & Urszula Ala-Karvia
University of Helsinki Ruralia Institute

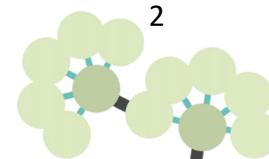


Graphic design of the cover tree model: Graphic artist Kirsti Pusa, Finland

Photographs: Finnish Professional Catering Association, Samuel Hoisko and Tomi Setälä. Photomontage of the cover figure: Urszula Ala-Karvia

Contents

Foreword.....	3
1 Societal role of the PPCS sector.....	4
1.1 Vision for the PPCS sector by European sustainability policies	4
1.2 Basic framework model for the PPCS sector’s sustainability efforts	5
1.3 Principal customer segments for the PPCS sector in StratKIT countries	7
1.4 Overview of StratKIT countries’ agri-food systems.....	10
2 The tree framework model as an infographic learning resource.....	12
2.1 Visual solutions for the tree framework model.....	12
2.2 Communicative uses of the tree framework model	15
2.3 The PPCS provision at a glance by the tree framework model.....	15
3 Sustainability developments in the PPCS sector by country	16
3.1 Denmark.....	17
3.2 Estonia	20
3.3 Finland	23
3.4 Germany (Brandenburg)	26
3.5 Poland.....	28
3.6 Russia (St. Petersburg)	32
3.7 Sweden.....	35
4 The framework dynamics for change in the PPCS sector.....	37
4.1 Balanced dynamics.....	37
4.2 Centralized dynamics	38
4.3 Decentralized dynamics	39
4.4 Individualized dynamics	40
5 Current issues in the PPCS sector in StratKIT countries	41
5.1 Organic labelling of meals and measuring the share of organic food	41
5.2 Preventive healthcare and nutrition in schools	43
5.3 Plant-based public meals	44
5.4 Sustainable procurement criteria for food and catering services	46
5.5 Regional strategies for public meals and catering	48
5.6 Increasing organic food and diminishing food waste in school canteens	51
6 Action for sustainability in the PPCS sector in BSR	53
6.1 Domain based innovations for sustainability.....	53



6.2	Learning networks for sustainability in the PPCS sector.....	58
6.3	Baltic Sea Region Dynamic Sustainability Model	61
6.4	Developmental trails of the PPCS sector in Baltic Sea Region	63
7	References	65

Foreword

This report presents the main output of the Work Package 3, titled ‘Development of the framework models for sustainable procurement and catering services’. The work done here is part of the project ‘Innovative Strategies for Public Catering: Sustainability Toolkit across Baltic Sea Region’ (StratKIT, 2019-2021, www.stratkit.eu, financed via Interreg BSR programme). The framework model shows how Public Procurement and Catering Service (PPCS) provision depend on specific country-based legal and market contexts while administered by public authorities and operating as a bundle of activity centres aka domains. For analytic and communicative purposes, the framework model appears as a tree shaped infographic (tree model), presented in its generic form in the cover image. The tree model depicts each country’s sustainability dynamics which are collated into one BSR infographic, the BSR dynamic sustainability model.

This report leans on public and organizational as well as personal data and gives hands-on ideas of customized developments in the sector. Furthermore, this report includes the outcome of BSR level stakeholders’ workshops conducted in late November and early December 2020. The local StratKIT PPCS cases often represent the flagship developments or those aiming at increased sustainability within their countries.

The ensemble of this report consists of six chapters presenting the societal role of the PPCS sector, addressed by sustainability visions, issues and orientations in StratKIT countries and as an aggregate, the BSR dynamic sustainability model entailing its networks and innovations. The authors would like to thank Anna Post (University of Gothenburg, Sweden), for her valuable contribution regarding Sweden. Finally, the authors greatly appreciate the essential input of the PPCS providers in StratKIT countries, whether Project Partners (PPs), Associated Organizations (AOs) or voluntary collaborators promoting their sustainability interests for the benefit of all.



Figure 1. StratKIT partners on the BSR map
<https://www.interreg-baltic.eu/>

1 Societal role of the PPCS sector

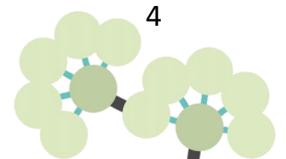
1.1 Vision for the PPCS sector by European sustainability policies

The concept of sustainable development, by its ultimate while ever-developing aim also known as sustainability, stems from WCED's Our Common Future (1987). Sustainable development has since been an umbrella term for 'making the world a better place' by intertwining socio-economic and environmental measures across human activities, which Maastricht treaty (1992) declares as the basis for EU developments. The progress towards sustainability presents itself as 'unfinished business' in terms of first, balancing the combination of these sustainability dimensions and second, resolving between the plethora of foci for sustainability and their interdependencies as action has to be taken across societal levels by both decision makers and citizens. While the notion of 'green' has been deployed as synonymous to sustainable, it also seems to carry a more technical, innovative and competitive edge to it. Eventually, in 2020 comes EU Commission's 'Europe's man on the moon moment' as the outline of the Green Deal was published (European Commission, 2019a; Simon, 2019).

The Green Deal prioritizes extensive and ambitious goals on key policy areas. These have been condensed as follows: 1) climate neutral Europe, 2) circular economy, 3) building renovation, 4) zero-pollution, 5) ecosystems and biodiversity, 6) farm to fork strategy, 7) transport, 8) money for those most heavily reliant on fossil fuels, 9) R&D and innovation and 10) external relations supporting the Green Deal (European Commission, 2019a; Simon 2019). While extensive and heavy negotiations will obviously spark off on these policy areas and implementation may 'muddle through' afterwards, real outcomes will eventually appear across EU.

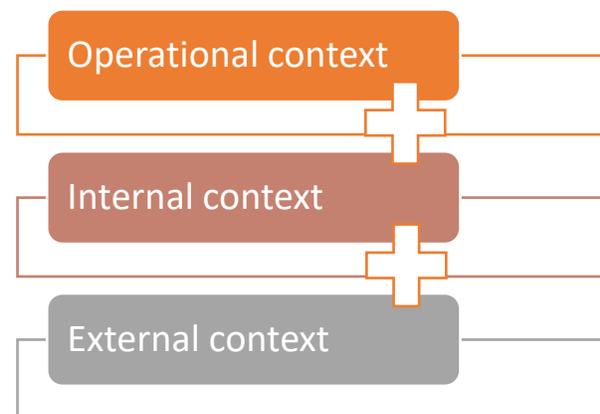
As European public sector serves as a showcase for the implementation of EU and national strategies and policies, the PPCS sector is challenged to illustrate sustainability by its meals (Boyano et al., 2019). Moreover, all Green Deal policy goals seem to impact on the activities of the PPCS sector; the public meal becomes the harbinger of the sustainable meal and the pacemaker for its development. While the GPP recommendations focus on rather rigidly described and quantified sustainability targets for PPCS provision (Boyano et al., 2019), StratKIT aims at analysing the PPCS framework conditions for sustainability and sets to enhance mutual sharing, learning and innovating processes to support the sustainability of PPCS provision within BSR countries.

The PPCS providers' efforts for increased sustainability gain additional degrees of difficulty, as the sector's job is to orchestrate the implementation of these policy goals from its position at the low end of mass catering. Appealing simultaneously to eligible customers and aligning with the rather rigid overall framework conditions of the (public) catering industry makes increased sustainability a tall order. Eventually, the PPCS providers' enhanced activities and efforts display both shared and country specific features; these give unique conditions to each country's working ways when the push towards more sustainable public meals becomes a common reality.



1.2 Basic framework model for the PPCS sector's sustainability efforts

The scholarly understanding about PPCS sector (Mikkola, 2009 a, b; 2011, Post and Mikkola 2012) held that the provision of the public meal entails a plethora of dictates such as hierarchically imposed EU, national and municipal regulations, strategies, recommendations, and initiatives. Moreover, PPCS sector acts as a buyer in the market, which varies across countries regarding particularly the size and price level of the organic market. These conditions form the **external context** for PPCSs, which is shared by the individual PPCS providers on the national basis and becomes more specific but not less authoritative or compelling on the local level. The provision of the public meal is administrated by public organizations such as municipalities or other liable bodies, or by catering businesses contracted by public procurers. This governance level, administered by public authorities, is seen as the **internal context**, which deploys either in-house or contract catering mode. Eventually, there is the **operational context**, which holds the PPCS activity centres aka domains: PPCS strategy, procurement, menu planning, manufacturing, service modes, cost coverage, personnel, communication as well as waste management and premises. The everyday provision of the public meal takes place in interaction of these contexts and domains (Fig. 2).



Importantly, there are differences between the in-house and contract catering modes (Fig. 3).

Figure 2. Basic framework model for PPCSs

The in-house mode of PPCS provision sets everything 'under same roof'; it is the municipality which bears all the costs of the services directly through the municipal budget (with possible state support), including both public procurement, catering services and the premises. In this mode, all employees are public servants. The contract model has the public actor, such as a municipality, to call for tenders of catering services. The successful tenderer among the catering companies then runs procurement, meal preparation and the service, usually in the municipally owned professional kitchens and dining halls. In both modes, the renovation of the premises typically falls on the municipality. It is also possible that the municipality or the catering company owns its central kitchen and delivers hot or chilled meals to satellites working as ready-prepared or assembly-serve services, entailing some logistic issues. Specifically, the PPCS providers in some municipalities procure and cater the meals while others use the British purchaser – provider split, whereby one municipal arm defines the quality of service and another arm delivers it. Another developmental phenomenon is the publicly owned commercial company, which bids its owners' tenders along with private commercial companies. Furthermore, while the in-house mode of PPCS provision enables close and continuous collaboration between the public body such as municipal council and government, the contract catering mode introduces the task of drafting the tender, awarding the winner and monitoring the implementation; service providers may also

change from one contract to another (Boyano et al., 2019). Obviously, both modes entail their specific challenges.

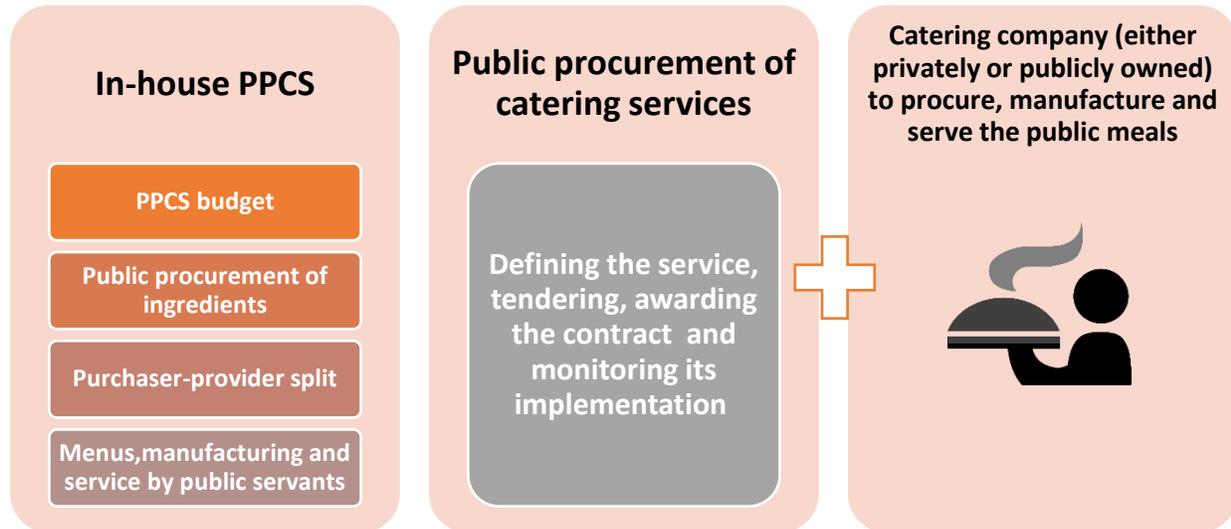


Figure 3. Alternative modes to administrate the provision of the public meal

Obviously, these administrative and infrastructural modes of the PPCS provision reflect historical developments of sharing responsibilities and costs between the welfare state and its citizens. Typically, the decisions pertaining to public services change slowly and require long-term political negotiations (Rothstein, 2010).

The frameworks of PPCS in different countries ‘hide’ behind country specific regulative texts, administrative structures, market actors, food markets, national food cultures and eligible customer basis – in addition to shared generic EU regulations pertaining to procurement, food quality and hygiene. Russian Federation applies its own regulative scripts for similar purposes as well, with St. Petersburg exhibiting its own special features for PPCS framework.

To investigate the PPCS frameworks of StratKIT countries, data was drawn on from two different kinds of sources in each country (Fig. 4). The publicly available data by official sources related to statistics, national and municipal regulations, strategies, policies and other legal policy documents, were collected from the internet. This data corresponded to the external context of the framework for PPCSs. The data regarding internal

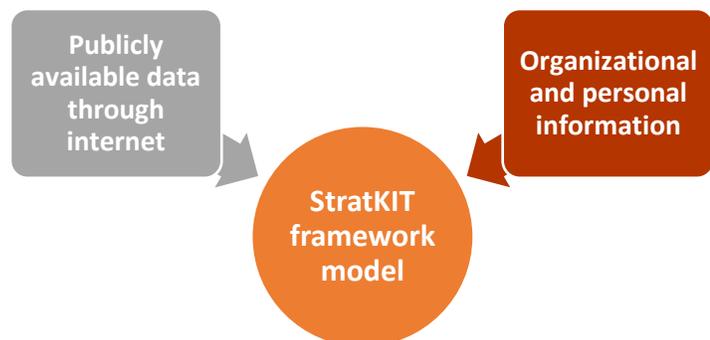


Figure 4. Information sources for the basic framework model

and operational contexts are inherently case based and were derived from those Project Partners (PPs), Associated Organizations (AOs) and other collaborative and voluntary PPCS providers who

represented either in-house or contracted PPCSs. While there were differences between countries in terms of numbers of these PPCS providers who were informants for StratKIT, they represented either progressive PPCS providers or those who aim to become such. In this sense, the framework of forward-looking PPCS providers' working environment is conveyed in a commensurable way. Thus, the understanding about PPCS providers' activities towards increased sustainability is firmly embedded in their national and local social realities and this has rendered the results credible, transferable – within PPCS framework limitations – applicable and confirmable.

1.3 Principal customer segments for the PPCS sector in StratKIT countries

The unquestionable importance of the PPCS provision lies not only in its sustainability aims on the level of healthy nutrition and sustainable supply chains, but also in the size of its customer cohorts, which represent the learning potential for sustainable meals. This potential depends on the sizes of national populations and the share of eligible customers for free meal (universal welfare state) or the share of partly subsidized and partly paying customers (needs-based welfare state), to deploy notions of the responsibilities of the state by Rothstein (2010). The total StratKIT population, for the involved countries (Denmark, Estonia, Finland, Germany (Brandenburg), Poland, and Russia (St. Petersburg as of 1.1.2019) accounted for 58.5 million people in 2019. While there are great differences between the country-specific population sizes (e.g. Poland a bit below 38 million and Estonia reaching 1.3 million in 2019) the unifying feature seems to be the relative sizes of the age-based cohorts (Fig. 5). The population of children less than 5 y (years of age) in all countries sum up for 4 to 6 %. The shares of young people between 5 and 20 y are slightly higher in all countries except St. Petersburg. In all cases, the shares of young adults between 20 – 24 y are visibly higher than the shares of the younger groups. Looking at men and women separately, the shares follow the same pattern in all the countries, the main difference being that the share of women is higher than that of the men in the oldest age group, and the difference is up to more than double in case of St. Petersburg. The need to learn new consumption habits, relevant for educational activities and communication through sustainable public meals, has often been targeted on the children, young people and working age population. These groups, particularly children and young people, are included in the provision of public meals through universal or needs-based



Dining hall of Kellonkoski school, Tuusula municipality, Finland.
Finnish Professional Catering Association. Photograph: Samuel Hoisko

welfare states in all StratKIT countries except in Denmark, where the individual institutions and parents make the decision about provision of public meals on the site. While StratKIT has worked mainly with children, young people and employees in Denmark, Estonia, Finland, Germany (Brandenburg), Poland and Russia (St Petersburg), the elderly are a significant share of all populations and are included in this project in Denmark and in Poland. All of these populations present the pyramid shape familiar to the concept of ageing populations, where the share of elderly is the highest and the share of children is the lowest.

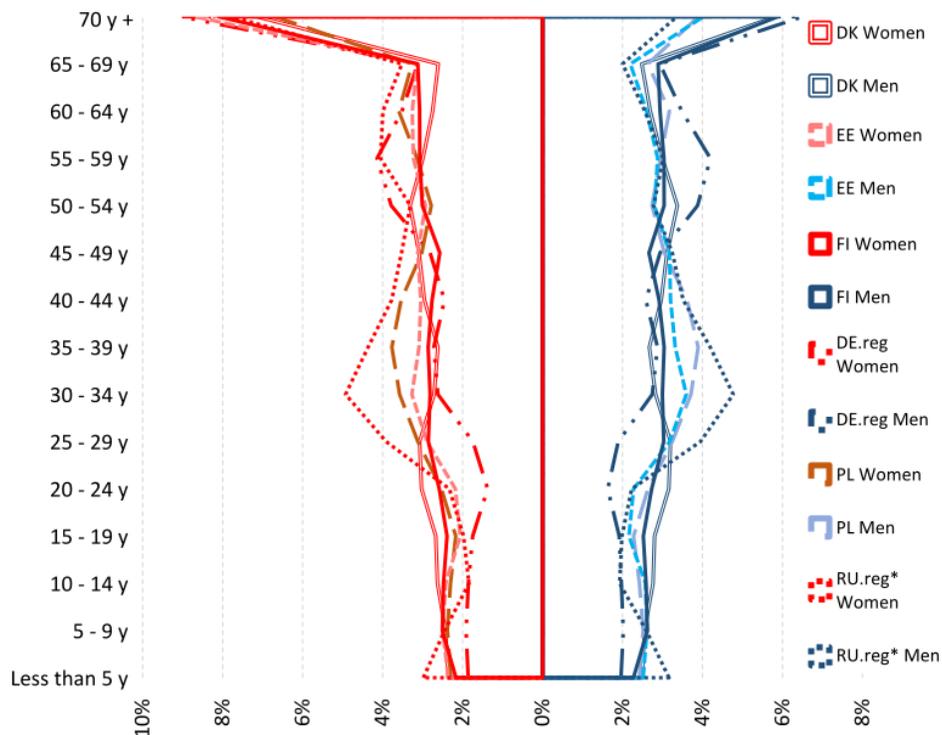


Figure 5. Age groups as share of total population, 2019 (2018 RU)

Source: DE, DK, EE, FI, PL: Eurostat datasets [demo_pjan] and [demo_r_pjangrp3] RU: “Key indicators of the demographic developments in Saint Petersburg in 2018” PETROSTAT, 2019

To better perceive the differences between the countries, the illustrative sizes of important age group cohorts are visualized by pictograms (Figs. 6,7 and 8). In this case, the first age group represents the pre-school age, considered as the day care age from 0 to 6 y, with the exception that data for the region of Brandenburg (DE) was up to 5 y due to the data availability limitations. The second age cohort aimed at displaying the numbers of primary school age children in general, not considering any national variations in school start age. In all countries and regions except St Petersburg, there are more school age children than day care children. The exception in St Petersburg could be partially explained by the lower school age cohort (7-15 y); however, still the sizes of those cohorts are much more similar to each other than those in other countries.

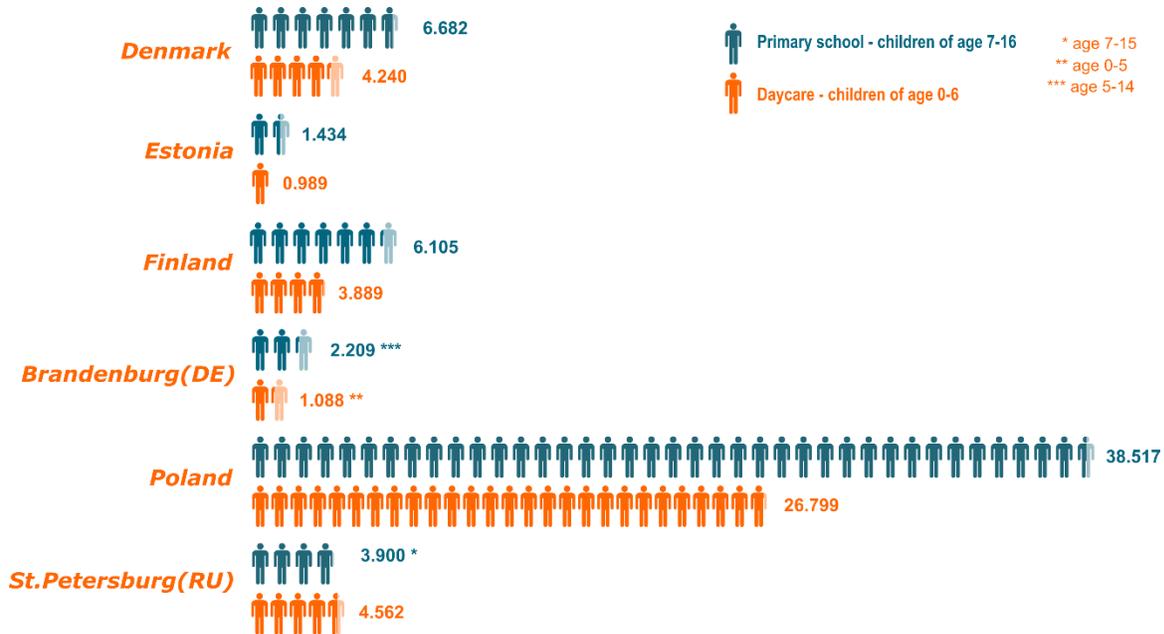


Figure 6. Day-care and school age populations, 2019 (2018 RU), hundreds of thousands

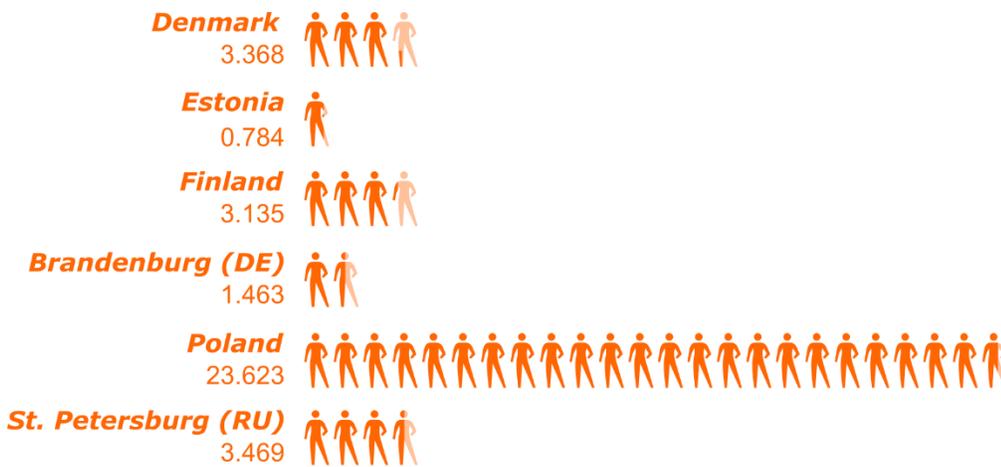


Figure 7. Working population (20-64), 2019 (2018 RU), millions

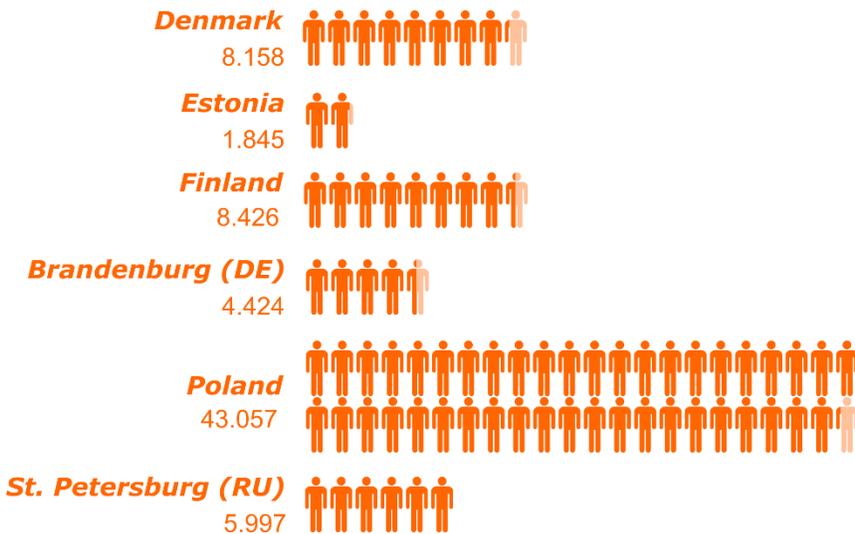
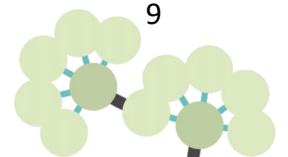


Figure 8. Elderly population (70+), 2019 (2018 RU), hundreds of thousands

Source: FI, EE, PL, DE, DK: Eurostat datasets [demo_pjan] and [demo_r_pjangrp3] RU: "Key indicators of the demographic developments in Saint Petersburg in 2018" PETROSTAT, 2019



The working population of the age group 20-64y is presented in Fig. 7 and the elderly in Fig. 8. All in all, day care population is 4.16 million, primary school age one is 5.89 million, working age one 35.84 million and the elderly 7.19 million, to be seen as StratKIT countries' learning potential for sustainable meals.

1.4 Overview of StratKIT countries' agri-food systems

Next to the diversity of BSR states in the size of their populations come the differences in the agri-food systems, which are particularly visible in organic food and farming (Table 1.) and in production of staple foods (Table 2.). In its early phase, StratKIT project has mapped these agri-food basics of which the most important ones are summarised here.

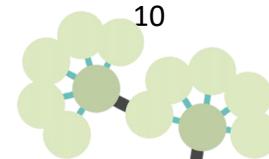
Table 1. Organic food and farming as well as market in the StratKIT countries, 2018

	DK	EE	FI	Brand. (DE)	PL	St Pet. (RU)
Total agricultural area, incl. area in conversion (millions ha)	2.6*	1.0	2.7	1.4	14.4	1.5
Share of agricultural area of the total area of the country/region (%)	62	22	6.7	48	46.9	36.2
Total organic area, incl. area in conversion (millions ha)	0.3	0.2	0.3	0.2*	0.5	n.a
Share of organic area of total agricultural area (%)	10.5	21	13.1	10.7*	3.4	n.a
Number of organic farms (thousands)	3.8	1.9	5.0	0.7	19.3	n.a.
Share of organic farms of total number of farms (%)	9.8	12	10.6	13.1**	1.46	n.a
Average organic farm size (ha)	75.1	107	58.9	218.3	25.23	n.a.
Organic food market, (million euros)	1,500	54.6	336	n.a.	240	n.a.
Share of organic market of total food market (%)	13.3	3.4	2.4	n.a.	0.3	n.a.

*Based on data from 2017, ** Based on data from 2016

Source: StratKIT National mapping reports O2.2

The size of the agricultural area in StratKIT countries varies strongly from 1 (EE) to over 14 (PL) million hectares. As the share of the total land area of the country, agricultural area is very large and even dominant form of land use in Denmark, around half of the area in Germany (Brandenburg), Poland and Russia (St Petersburg), around one fifth in Estonia while in Finland it is rather minimal below 10%. Share of the organic land from the total agricultural land is highest in Estonia, around 20%, around 10% in Denmark, Finland and Germany (Brandenburg), while in Poland and Russia (St Petersburg) this share is either very modest or unknown, respectively. In terms of the market share of organic food, only Denmark has a relatively high share, more than



10%, Estonia has the next highest one (3.4%), then Finland (2.4%) while Poland has a modest share (0.3%). Organic market share is in practice non-existent in Russia (St Petersburg) while the German market, the largest in Europe, is known to be strong, even without regional figures. These organic markets, part of external contexts, obviously influence on the activities of the PPCS providers, offering them either a 'shopping experience' in mature markets like Denmark, require them to develop the organic market in Estonia, Finland and Poland while in Russia (St Petersburg) the awareness of organic food and farming is currently in its initial developmental stages.

It is then to see, that in the country with the biggest agricultural capacity, Poland, the organic farming is the smallest in share as well as the average size of an organic farm. Table 1 shows a clear dominance of Denmark in terms of organic food production and its market. However, the Brandenburg size of an average organic farm is many times bigger than in other countries.

The development potential lies also in the size of national food productions. Selected food products in most of the StratKIT countries, as well as data on other BSR states for comparable purposes, is shown in Table 2.

Table 2. Production of staple foods in selected Baltic Sea countries, 1 000 t, 2019.

Country	Wheat & spelt	Rye	Beef	Pork	Poultry	Dairy milk	Baltic Sea Catches in total (live weight)**
Denmark	4,696.7	893.9	124.6	1,498.6	158.8	5,614.7	conf.
Estonia	846.6	119.0	8.6	45.3	n.a	763.0	83.6
Finland	901.6	182.5	87.2	168.9	139.1	2,329.7	139.2
Germany	23,062.6	3,237.6	1,106.0	5,227.0	1,584.0	32,442.2	207.2
Poland	11,012.4	2,674.6	560.5	1,978.8	2,593.5	12,175.0	181.1
Latvia	2,371.0	191.2	14.8	38.5	34.9	785.2	conf.
Lithuania	3,843.9	108.1	42.5	70.5	100.6	1,358.1	100.7
Norway	n.a	50.0	n.a	n.a	n.a	1,526.4	3.2
Sweden	3,476.8	221.3	139.7	240.3	163.7	2,704.4	178.1

Source: LUKE Database for Research Results, **Eurostat [fish_ca_main]

In many StratKIT countries, meat, dairy, grain, vegetables, fruits and berries form the basis of a traditional public meal. Tellingly, total meat consumption in 2019¹ is (in kg of bone-meat) 104 kg in Denmark, in Estonia 85 kg, in Finland 77 kg, in Germany 88 kg, in Poland 88 kg, in Sweden 82 kg; this corresponds to ready-to-eat meat of about half the respective weight. Similarly, dairy products are a common part of food culture and consumed daily. Fishery in the Baltic Sea connects the BSR countries. The size of the catches of all aquatic organisms differ highly between different BSR states. Typical meals also include bread, potatoes or pasta or rice as side dishes along with the main course.

¹ EU data presented in Finnish at <https://www.lihatiedotus.fi/tilastotietoa/lihankulutus-euroopassa.html>

2 The tree framework model as an infographic learning resource

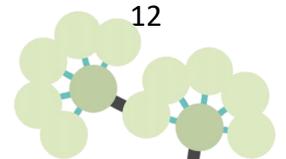
2.1 Visual solutions for the tree framework model

As the core idea of StratKIT pertains to increasingly sustainable development, a tree seemed to represent a suitable visual object for the infographics. Different species of trees are also often used symbols for life, growth and continuity, as is evident in the theme of the tree of life, depicted in historical paintings, and the tree in environmental education (Palmer, 1998). Trees are a source of renewable materials in economic life and used as logo emblems for businesses communicating about sustainability.

Thus, the effort was made to visualize the framework of the PPCS provision with the help of a tree pattern. This seemed feasible as the main structural parts of the PPCS provision – the external, internal and operational contexts – exhibited a match with those of a tree, namely roots, trunk and branches (and the foliage for more detailed depictions).

The external contexts, the roots, aim to display statutory standards like EU (or Russian Federation) laws, additional legislative features such as various country specific educational and subsidy laws, strategies, ministries' rules and initiatives, recommendations and market situation of organic food. The tree trunk would represent the internal administrative context of the PPCS provision, either in-house or publicly contracted catering services. The branches of the tree meant to show the operational context's activity centres as domains. This vast sphere of everyday domains includes: 1) local food policy and strategy (or PPCS's own strategy) on the top; 2) next, procurement methods, 3) procurement criteria, 4) manufacturing, 5) service models, 6) meals and menus, 7) customer payments and subsidies, 8) customer communication and raising awareness with the many stakeholders of the services, 9) waste management and premises developments, and 10) other issues such as occupational wellbeing. The structural parts of the tree were to be tagged by keywords descriptive of the domains' activities for sustainability.

The intended StratKIT tree model was quite rich in structure and keywords. Obviously, there was an issue in developing a tree pattern with keywords, clear enough for perception (Ware, 2004). An illustration from environmental education shows a depiction of interconnectedness of educational spheres by partly overlapping circles drawn on green foliage, with title texts set on the circles (Fig. 9, Palmer, 1998). A more developed version of a tree used to model the project 'Step to Nature and Wellbeing' for day care children, whereby keywords were tagged on tree branches for activities and on roots for key policies (Fig. 10, THL, SYKE and LUKE, 2019).



In StratKIT, the tree pattern was equipped with more structured title domains (the branches) and subdomains (the branch foliage), which would tell the story of changes towards sustainability in a more specified way. This effort brought forth the initial version of the hand-drawn tree model (Fig. 11).

To enhance the visual appeal of this basic tree model a graphic designer was assigned to create a StratKIT tree model (Fig. 12), according to instructions for structural contexts and keywords. The resulting infographics was a crisp, colourful, and modifiable tree model, which has proved to work as an information matrix about PPCS provision.

Importantly, this tree model allows the users to modify the contexts by the form and colours in many ways, to communicate about sustainability developments in PPCS provision. In StratKIT, orange coloured 'hot spots' were used to show domains of intensive developments. Furthermore, colours could be coded for further meanings; keywords could be chosen for different purposes; interconnectedness could be displayed as trails of change showed by lines drawn towards the domains effected. Finally, as the designer tree functions as a fractal, one domain can be enlarged and further sub-leaves be tagged with keywords. While this designer tree is mainly an activity-based structural infographic, it also bends towards short quantifications such as data regarding costs, volumes or weights of ingredients, food and packaging waste and number of customers. Intriguingly, also hypertexts and other graphics can be inserted into the tree model, offering extensive options to portray the PPCS developments.

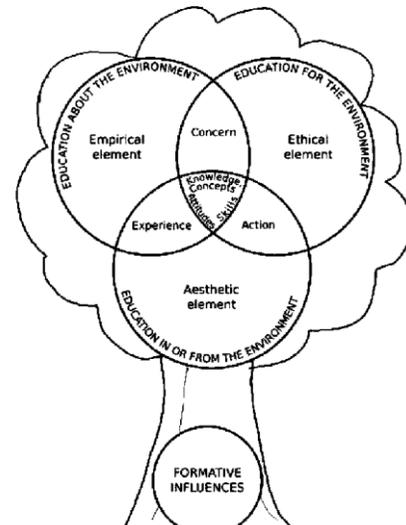


Figure 9. The initial schematic tree pattern of environmental education (Palmer et al., 1998)

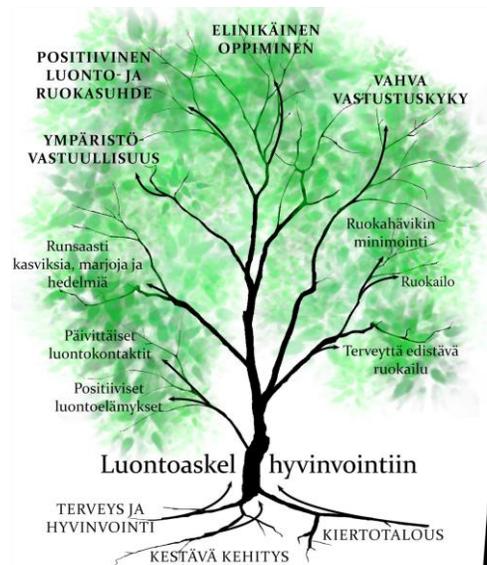
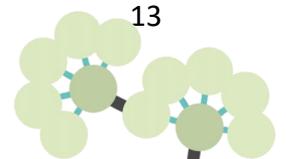


Figure 10. The schematic tree pattern enriched with more titles on foliage (THL, SYKE and LUKE, 2019)



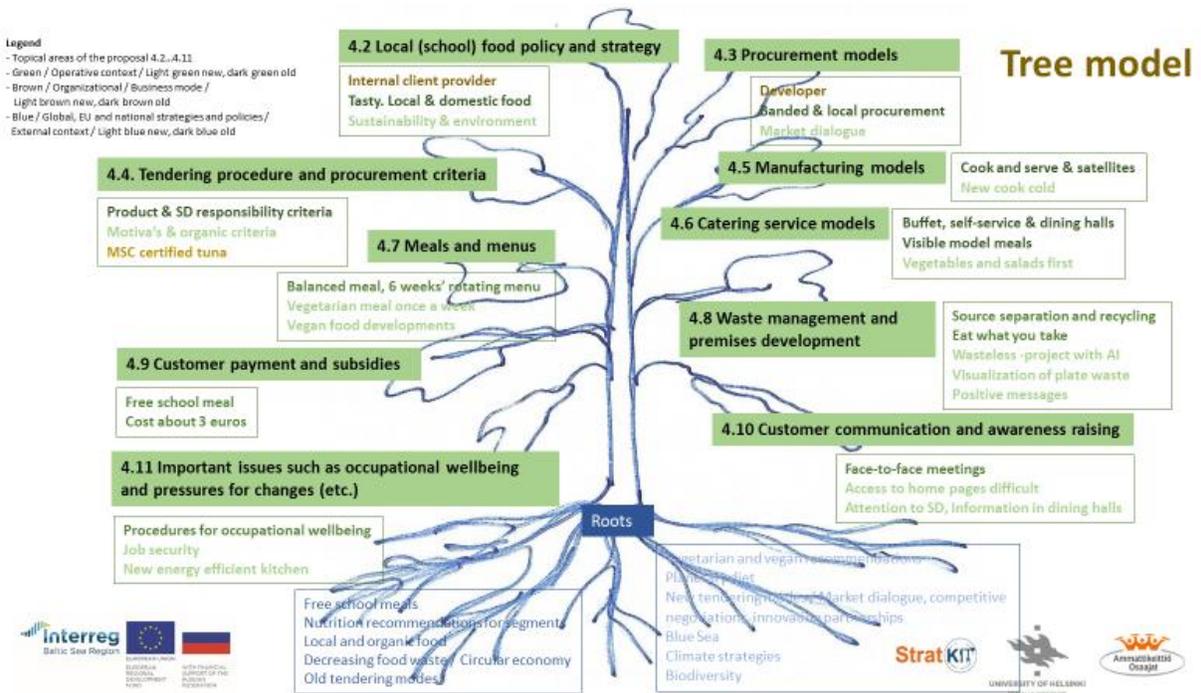
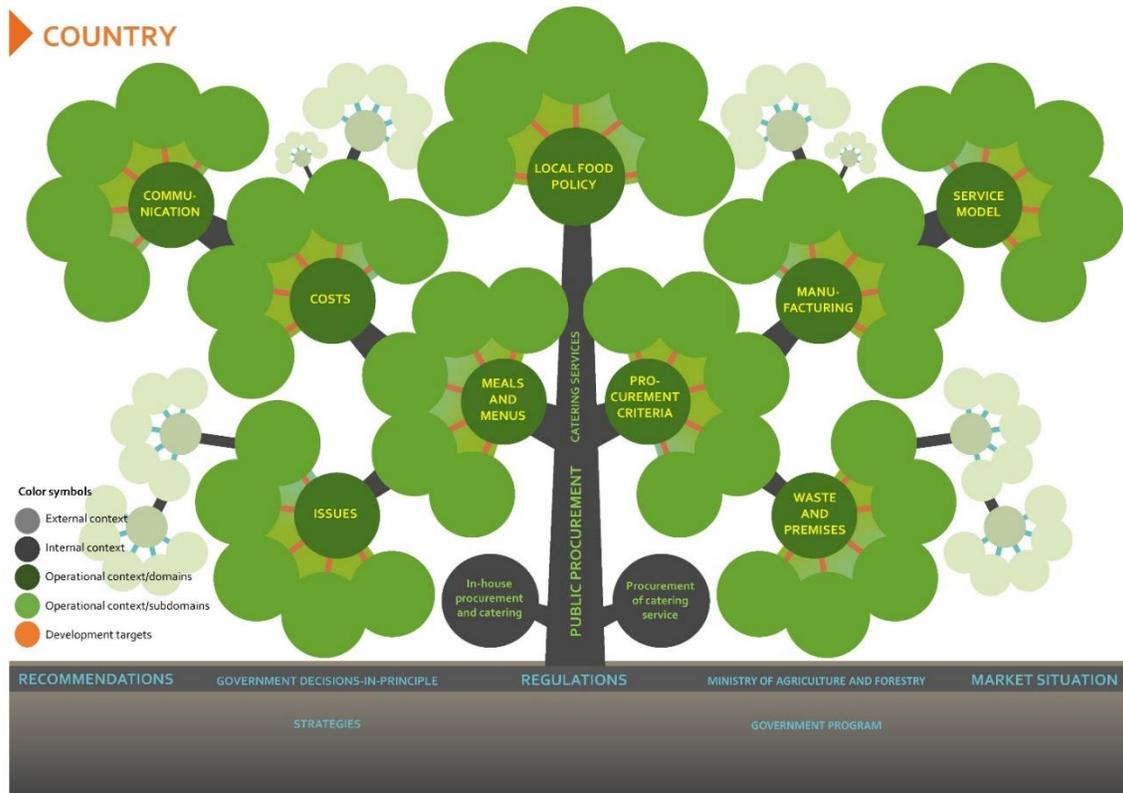
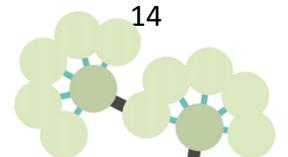


Figure 11. The initial tree model tagged with detailed domain specific information



Graphic design: Graphic artist Kirsti Pusa/Finland

Figure 12. The tree model designed as a structural activity infographics



2.2 Communicative uses of the tree framework model

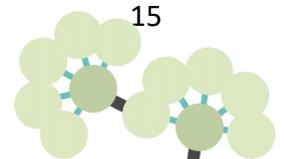
The tree model infographics require focused attention and consistent thinking (Ware, 2004). This pertains to the symbolic pattern, its colours and keywords entailing the legend, yielding rather detailed information about the framework of PPCS provision. Obviously, this requires a conceptual effort; the PPCS providers in StratKIT countries were able to ‘get the message’ quite feasibly as they validated their own country’s tree model. They also deployed the StratKIT tree models to learn from other countries’ PPCS contexts and ways to provide the public meal. In general, the PPCS professionals approved of and were delighted about the designer tree model due to its informative and artistic qualities. However, some few voices did not perceive the tree pattern as a fitting symbol for PPCSs.

2.3 The PPCS provision at a glance by the tree framework model

The PPCS sector constitutes of a complex web of contexts and activities. These are on the one hand difficult to perceive in their entirety, and on the other hand, as interdependent yet to-be-singled-out activities. The purpose of the framework model of the PPCS provision is to construct a simplified, context and activity specific view into the sector and its dependencies across external, internal and operational contexts. This model turned to a piece of structural infographics, called the tree (framework) model of PPCS provision.

The basic scholarly understanding of this framework has been confirmed by WP2 through country reports and the main output Joint BSR Report for sustainable public procurement and catering service (<https://www.stratkit.eu/en/project/#h-outputs-and-materials>). The framework, constructed by researcher PPs, was also validated throughout by WP3 by PPCS providers as they participated in interviews dealing with learning from other countries and in co-creation workshops to enhance innovations. When the StratKIT tree model collection – all the six trees of six countries – were on display for all countries’ PPCS providers, they could each identify and validate their own country’s model of provision of the public meal. Most importantly, they were enabled to focus on other countries’ working ways, almost at a glance, and thus learn from other frameworks and their ways of provision. This exercise, called expansion of knowledge about sustainability in the PPCS sector in the BSR, created both pragmatic inspiration for sustainability among the PPCS providers and supported their wider orientations as well as more specific targets for their future sustainability efforts. The outcomes as visible as country based tree models, which were finally collated into BSR dynamic sustainability model.

The tree model helps to discern influential actors and the changes they make in different domains and the consequential outcomes. The tree model effectively disseminates the developments of the PPCS sector and enables understanding and further engagement towards increased sustainability within PPCS sector in StratKIT countries.



3 Sustainability developments in the PPCS sector by country

DENMARK Kindergarten

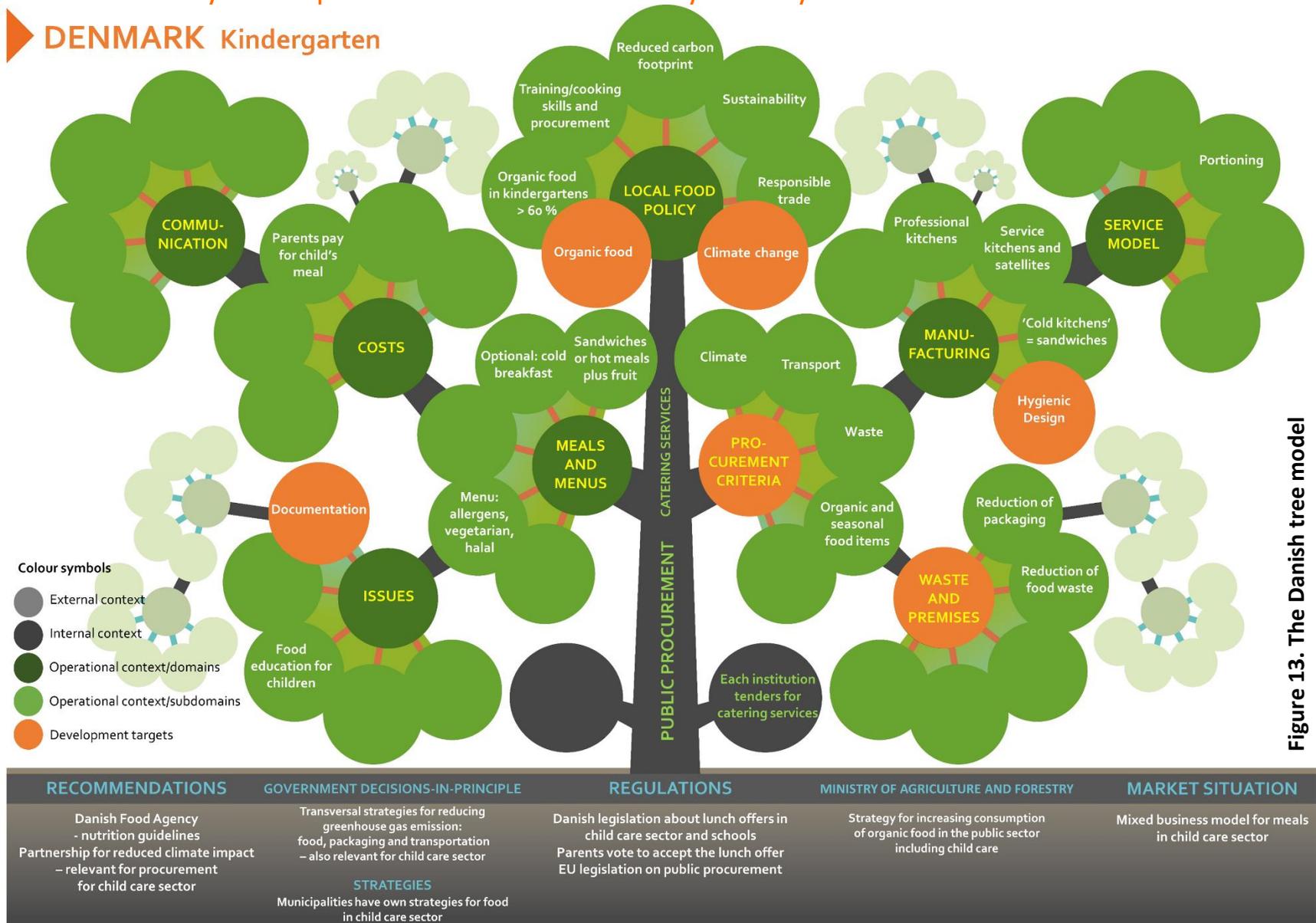
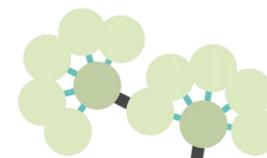


Figure 13. The Danish tree model



3.1 Denmark

External context

In Denmark, kindergartens are administered at the municipal level of government as laid down in the legislation about childcare (*Dagtilbudsloven*). It is further stated in legislation that children in kindergartens must be offered – as a minimum - lunch every day. Parents vote every year or every second year if the childcare institution should offer lunch. The voting result is valid for the whole institution and not just for some of the children. Parents pay a fee for having a child in kindergarten plus an additional fee for the lunch. In Copenhagen, 94% of lunches provided in kindergartens are provided by the public sector².

The Danish Food Authority has published guidelines about the nutritional composition of food for children by age groups. The Danish Ministry of Food, Agriculture, and Fisheries has defined a target for having at least 60% organic food in public meals, including the food in kindergartens. The current share of organic food in kindergartens is in many municipalities much higher than 60 %, for example in Copenhagen, the average share is approx 90%³.

Kindergartens that provide organic food can apply to become certified according to the Danish Organic Cuisine label. This label shows the commitment to use organic food and rewards the institution with a gold, silver, or bronze certificate. All certified kindergartens can be found at a map of the Organic Danish Cuisine Label, <https://www.oekologisk-spisemaerke.dk/om-spisemaerket/danmarkskort/>. The Danish Food Authority has introduced the Healthy Meal label which can be used for meals offered in childcare institutions, schools, and canteens at universities. The Healthy Meal label certifies that the meals offered in this institution are prepared according to the official nutritional guidelines⁴. The Healthy Meal label and the Organic Cuisine label can be used simultaneously but are not interchangeable.

Internal context

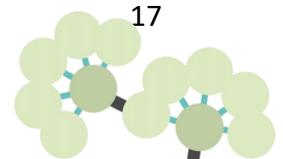
Procurement of food or catering services for kindergartens is subject to the rules on public procurement as laid down in the EU Directive on Public Procurement. But if the call for tender is below the threshold value of 1.489.820 DKK and the call is for products (and not for catering services), then it is not relevant to put the call for tender out as an EU call for tender.

The call tender must provide specifications on the requirements to the food for example the expected share of organic food as well as requirements for products with other certifications.

² [Mad i vuggestue og børnehave \(kk.dk\)](#)

³ [Mad i vuggestue og børnehave \(kk.dk\)](#)

⁴ [Om Måltidsmærket - Alt om kost](#)



This could mean demands for products that are certified as wholegrain⁵, the joint Nordic nutrition label the Keyhole label⁶, halal or kosher. For procurement of catering services, it may be specified that the caterer should provide vegetarian meals with a certain frequency (e.g. weekly). Also, providers of catering services are subject to fulfil the requirement for certifications and provisions of dietetic meals (e.g. gluten, lactose, or egg allergies).

Operational context

There are ways to organise the provision of a lunch meal for kindergarten. Childcare institutions with their own kitchens may cook the food on-site, whereas institutions with minor cooking facilities can receive the lunch from the central kitchen in the municipality or from an external contractor. For example, in Copenhagen, 92% of the childcare institutions cook on-site⁷. In Aarhus around one third of the kindergartens serving public lunch, are getting it from a private catering business. Children in kindergarten are offered cold or hot lunches. Some institutions offer on a voluntary basis snacks and fruits. Voluntary initiatives are paid, and sometimes even organized by the parents.

Meals in kindergartens are considered as more than the provision of food; meals are a means of learning. The pedagogic staff is responsible for organizing a proper setting for the children to have their meals including educating the children about good table manners, social competences, trying new foods, **general hygiene**, and where the food comes from. The latter may involve letting the children help with the cooking or visit farms.

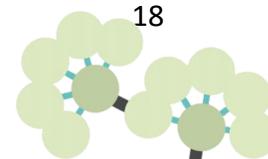


Figure 14. The Danish Veterinary and Food Administration's guides: i) to healthier food in the day care institution, ii) to healthier food in school and the leisure program iii) to healthier food at the educational institution and the workplace

⁵ [DagtilbudFodevarestyrelsenfrokostmaltid.pdf](https://www.fodevarerstyrelsen.dk/dagtilbud-froekostmaltid.pdf)

⁶ The Nordic Key Hole: Nutritional certification, for products that are high in fiber, and in low salt and sugar.

⁷ [Mad i vuggestue og børnehave \(kk.dk\)](http://www.kk.dk/mad-i-vuggestue-og-bornehave)



ESTONIA School and kindergarten

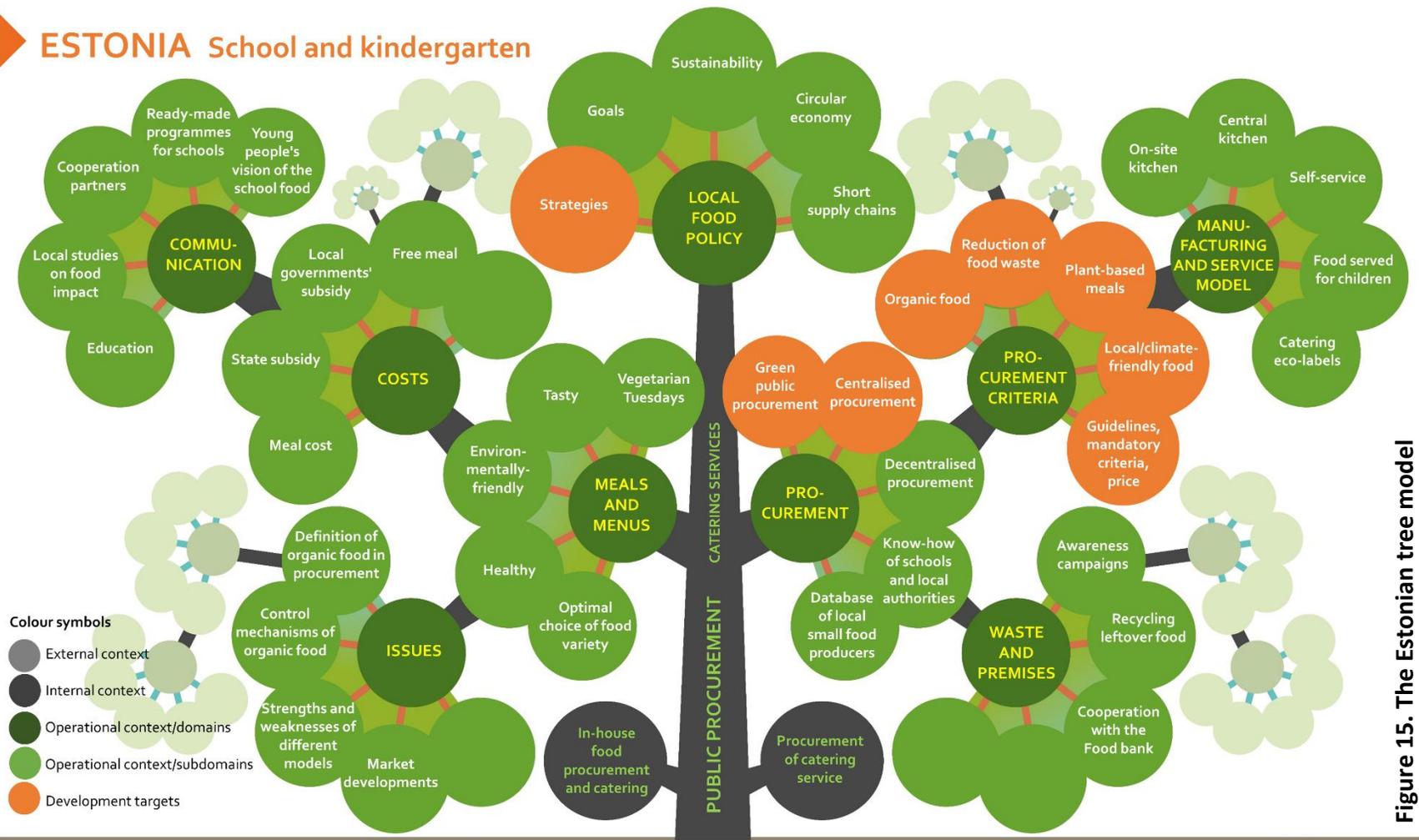
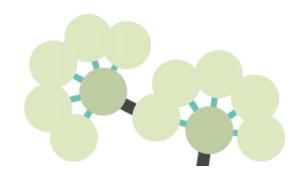


Figure 15. The Estonian tree model

RECOMMENDATIONS	STRATEGIES	REGULATIONS	MINISTRY OF RURAL AFFAIRS	MARKET SITUATION
Nutrition recommendations EU GPP criteria for food and catering services	Health and Well-being Policy Agriculture and Fisheries Strategy – organic food	Public Health Act Basic Schools and Upper Secondary Schools Act – state support for school meals	Plans for organic food in kindergartens and school meals MINISTRY OF SOCIAL AFFAIRS Food hygiene and nutrition	Market share of organic food 2,8 % 5-7 larger school catering companies Organic land 21 %



3.2 Estonia

External context

In addition to EU directives regulating the PPCS sector, there are national strategies, regulations, and nutrition recommendations that address public meals in educational, health care and social welfare institutions. The national policy has focused on the objectives of improving nutrition, reducing/preventing obesity, and malnutrition as well as tackling health inequalities. Environmental sustainability aspects of public meals, however, have so far not been prominent in the nationwide policy framework. One way to improve it would be expanding the national nutrition recommendations beyond the calculation of calorific intake and introducing recommendations regarding the impact of food on climate and other aspects of sustainability.

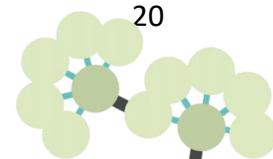
Also, there is a need to integrate the sustainable food and catering issue (focus on **GPP**) better into both national as well as regional strategies and action plans, such as a national circular economy roadmap or strategy for GPP, if these documents are developed for Estonia.

On the local level, **municipal strategies** and goals for sustainable catering and meals should be agreed, especially for educational institutions. Schools would benefit from clear and legally sound guidelines on how to integrate sustainability and environmental criteria into tendering specifications. However, schools cannot be burdened with the whole procurement process, but local governments need to take their opinions into account.

Internal context

The growing trend is to organize procurement centrally by the local government for all or a group of kindergartens and schools. However, this issue still needs more clarification, because it is clear that the procurers need more skills and knowledge not only about the procurement procedure, but also understanding about the overall food system (market, costs, interlinkages between demand and supply, functioning of the catering companies, pros and cons of various procurement and operational models, etc.).

Generally (mainly in larger cities and municipalities), the catering services are procured from private companies (contract catering mode). Some (especially small and rural) municipalities procure food and cater meals in kindergartens and schools by themselves (in-house mode). From the caterers' point of view, in-house and contract catering have different implications for meal cost – whether the subsidized cost should include food, kitchen staff and equipment, or only food. Thus, the organizational mode and meal cost influences the possibility to offer organic food which is more expensive than conventional food.



Operational context

Although the interest of students and parents in contributing to the development of school meals is growing, as is the interest of catering stakeholders in reducing food waste, there is a lot of space to improve communication and education on sustainable public meals.

Plenty of challenges are related to the integration of **criteria for organic food, climate-friendly food, food waste** and **plant-based meals** into procurement and catering activities. It is often an issue that the application of both award criteria in a procurement, the lowest price and organic food, is not possible – the price offered cannot represent then 100% of the total score, which local governments often use in procurements. At the same time, a comprehensive control system for the organic food offering needs to be further developed.



“Let’s Cook Together!” event in Laagri School, Estonia
Photograph: Helen Saarniit

FINLAND School

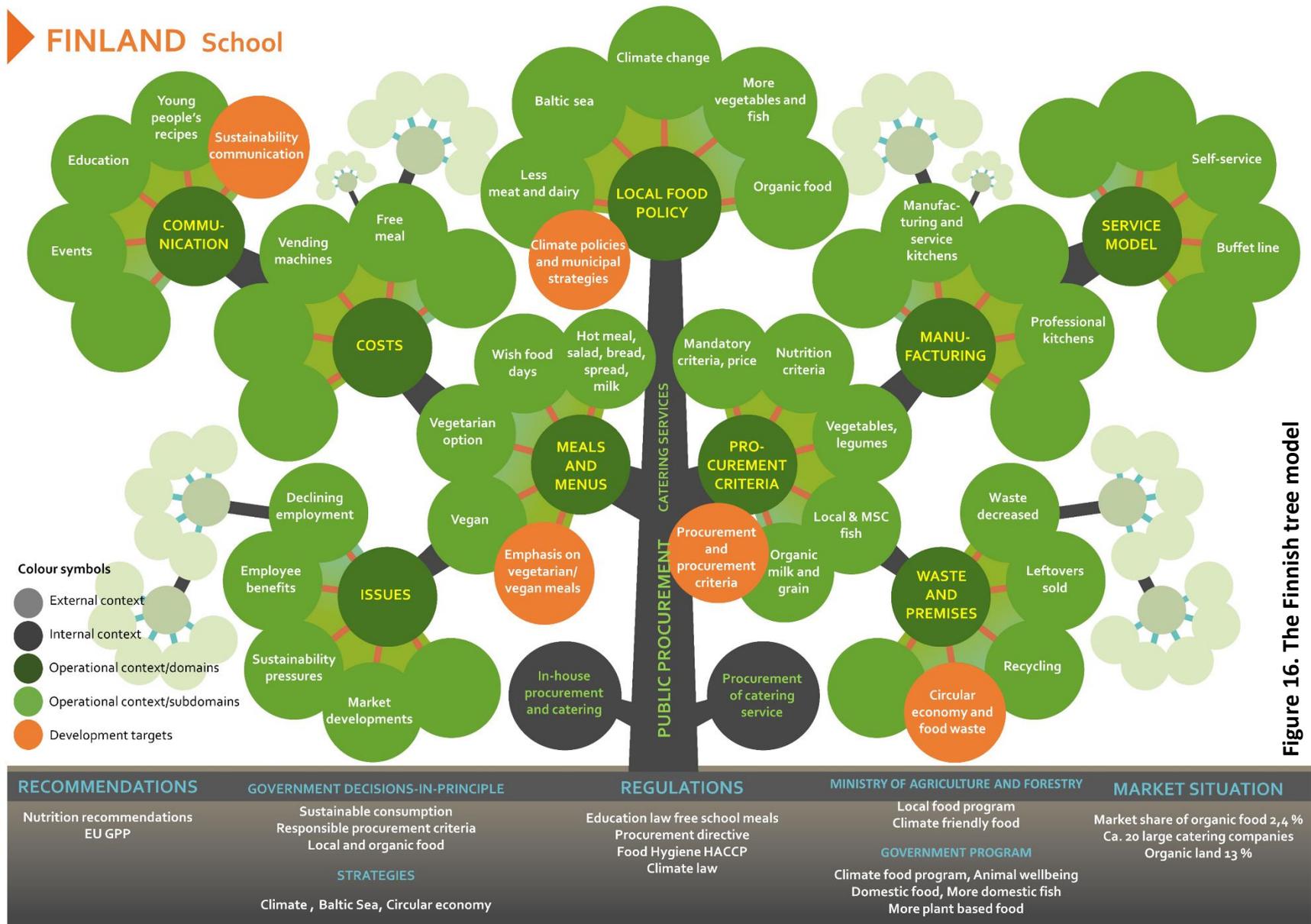
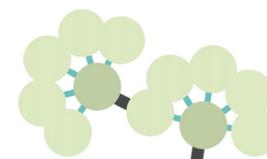


Figure 16. The Finnish tree model



3.3 Finland

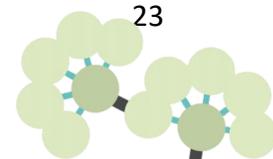
External context

Due to the many EU laws governing public procurement, food quality and hygiene, and future European Green Deal legislation (EC 2019), the basics for PPCS providers are the same for EU countries. On the national level, regulations regarding public meals, such as the free educational school meals and subsidized student meals, cement the Finnish PPCSs in practice. The sector is further guided by the consumer segment specific nutrition regulations (Valtion ravitsemuneuvottelukunta (VRN) 2017, 2018, 2019), which entail the meal format and sequence of different dishes aiming at balanced and varied menus. In their accuracy, these recommendations are applied rather strictly can be seen to approach a regulative status for the sector. These recommendations include nutritional criteria for ingredients such as fat, salt and sugar, protein, energy, vitamins and mineral content and become consolidated by the nutrition calculation programs. Furthermore, nutrition recommendations of 2014 approved of a vegetarian and vegan diet in support of sustainability and climate thinking. However, there are a lot of recommendations, government decisions-in-principle, strategies and programs for increasingly sustainable food system, entailing abundantly notions such as sustainable, responsible, local, organic, plant-based, climate and Baltic Sea as well as animal friendly food, which should be promoted by PPCS providers. While organic food has been promoted for decades by the government and several associations, the local and regional food in general seem more meaningful for PPCS sector; this fits well with the small organic market and only generis wholesalers – including organic items – serving PPCS interests. However, there is ‘Steps to organic’ customer communication campaign promoting PPCS providers serving organic ingredients in their meals.

Internal context

The historical developments preferred in-house arrangements for PPCSs somewhat before and after WWII. Therefore, many smallish municipalities still have PPCS providers on the payroll while large municipalities have started to tender part of their catering services and include both in-house and contract catering services. Recently, previous in-house organizations are turning to publicly owned companies, due to municipal administrative preferences. These new companies compete with the original commercial ones in the market. Furthermore, in-house services have often turned to purchaser provider model, largely used to organize public services. Obviously, these changes have caused stronger competition and dynamics in public services, as commercial companies may enter and leave while in-house public servants have stable employment and occupational benefits. However, independently of the status of the catering company, extensive efforts are on-going across PPCS providers towards increased sustainability.

Operational context



The strong national regulative base for principally uniform implementation of the public meal allows some degrees of freedom for individual PPCS providers who develop their services along multiple simultaneous waves, most of them trendy and others unique. The many efforts towards more sustainable food system have entailed the ‘first wave’ as increase in local and organic food as well as domestic fish, with concerns for animal wellbeing; then came the second wave, the rise of plant-based meals and decrease of consumption of meat and dairy. Today both waves are being worked on.

There are municipalities with loose sustainability strategies and PPCSs continue as BAU (business as usual); loose sustainability strategies also enable active managers to work on both waves as well as other sustainability issues they identify; strong municipal strategies necessitates the managers to comply; and finally, there are those managers who may not fully embrace strong limitations of meat and dairy products as they see the need to match consumption of public meals with nutritional requirements.

In general, **climate and water protection (to avoid eutrophication) policies become integrated into municipal strategies** and trickle down to **PPCS strategies**. Within this dynamic implementation of regulations and multiple initiatives towards increased sustainability by PPCS providers, so-called developmental targets were recognised; particularly **procurement methods and criteria** are in change. There is a move away from awarding points to quality features of ingredients; this is replaced by mandatory high-quality criteria for ingredients after which the lowest price gives the winner of the tender. Additionally, market dialogues become more common while competitive negotiations are so far rare; their aim is to collaborate with suppliers for sustainability. Meals and menus are developing with new emphasis of vegetarian and vegan consumption. **Avoidance of food waste** has been a time favourite and continues so within the frame of climate policies and circular economy. Finally, **sustainability communication** has been developed as food and taste education, recipe collaboration with customers and PPCS events in malls – changes for sustainability need to be justified for customers of all ages.



Figure 17. Recent publications of the National Nutrition Council: *Let's eat and learn together - a school meal recommendation (2017)*, *Health and joy from food - a meal recommendation for early childhood education (2018)*, *Let's eat together - food recommendations for families with children (2019)*

GERMANY, Brandenburg Office canteen

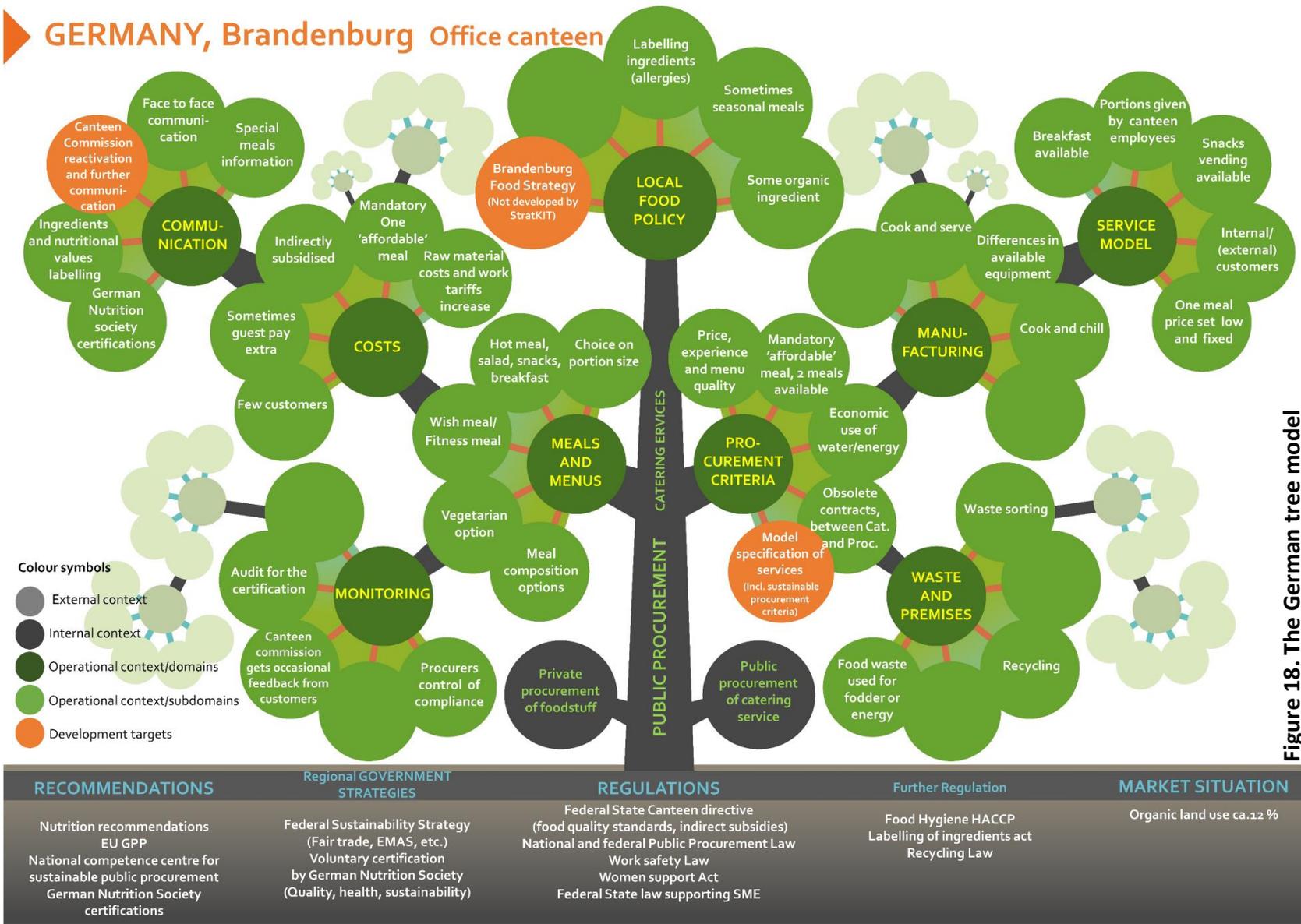
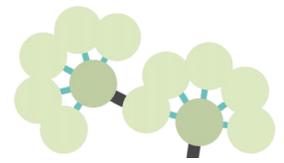


Figure 18. The German tree model



3.4 Germany (Brandenburg)

External context

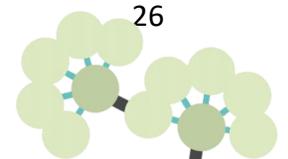
There are several EU-wide, national and federal regulations the PPCS have to consider with regard to public procurement, hygiene, food quality, recycling, labour rights or support of women, SMEs, etc. For some issues, there are also recommendations at hand, like the EU's GPP criteria. What is specific in the federal state of Brandenburg is the federal state's sustainability strategy, which highlights the role model function of the public administration, suggesting the use of fair trade products, applying for EMAS certifications, etc. The procurement of catering services for the federal states employee's canteens has to be according to the federal state canteen directive. The directive states amongst others, that one meal has to be "affordable"; quality has to comply with the standards of the German Nutrition Society; operating costs / equipment can be provided by the public administration; water and energy has to be used environmentally and cost consciously; canteen commissions including representatives from the departments and the caterers guarantee for communication. Catering service providers can apply for certification by the German Nutrition Society. Depending on the customer group (pupils, hospital patients or employees) the certificate guarantees for healthy and high quality food. The certificate also suggests a broad range of sustainability measures.

Internal context

Nowadays, the canteens of the public administration in Brandenburg are almost all run by external caterers. Thus, the public procurers are responsible for the procurement of catering services, while the procurement of the foodstuff lies in the hands of the caterers. The latter is thus private procurement and independent from public procurement regulation.

Operational context

While the canteen directive provides a frame for procurement of catering services, the PPCS can refine the tenders and specification of services as well as adapt the implementation to the changing needs of the customers (e.g. provide wish meals) – including more sustainable measures. Still, there is no holistic approach to implementing sustainability measures with regard to the public canteens of the ministries in Brandenburg. Some public catering services use organic products, some have established canteen commissions, some provide fitness meals, etc. To have a more holistic approach, a new **model specification of services** for the procurement of catering services is developed, containing a broad set of sustainable procurement criteria. As this only addresses the future procurement of catering services, also **canteen commissions** will be reactivated in order to bring all stakeholders together. Thus, specific needs with regard to sustainability can be addressed and the ways forward discussed. At the wider scale a **food strategy** for the Federal State of Brandenburg will be developed by the end of 2021. This strategy, aiming at a more sustainable food system, will also address the sustainability efforts of PPCSs.



POLAND, Rybnik School and kindergarten

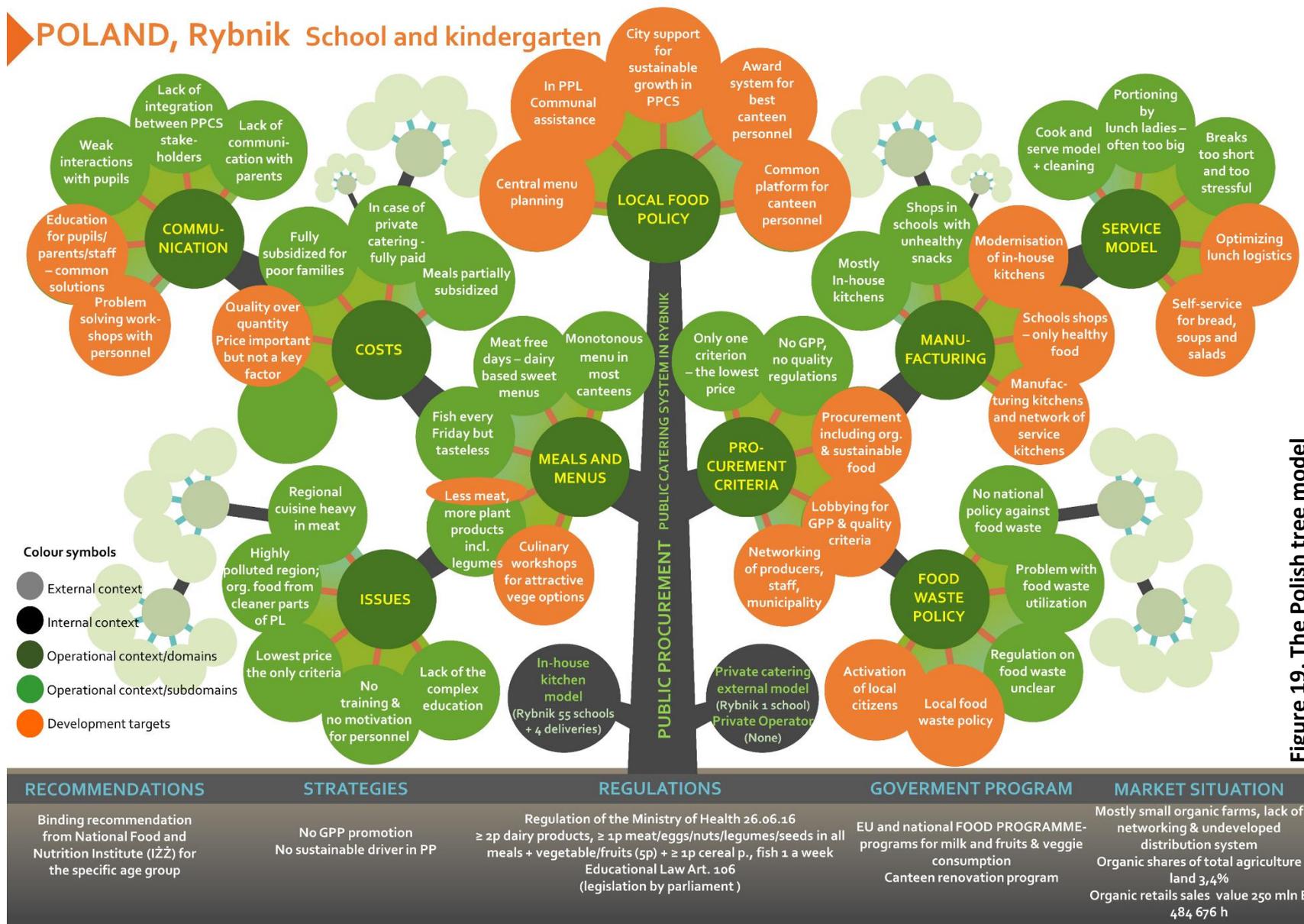
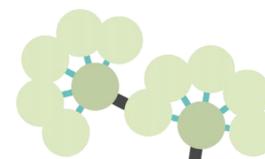


Figure 19. The Polish tree model



3.5 Poland

External context

In Poland the organic food market is not developed enough to support public catering system. It consists mostly of small organic farms challenged by lack of networking and poor distribution system with 3.4% share of total agriculture land.

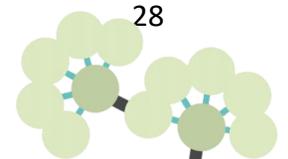
This issue is connected to undeveloped green public procurement system, which according to the stakeholders, could be supported by the introduction of green regulations on national and regional level. That could promote collective offers endorsing organic food market and creating a sustainability driver. For now, the lowest price is the only valid criterion and complicated regulation of public procurement law (PPL) blocks the progressive changes in green direction. The schools are already dividing food contracts into pieces to avoid entering PPL and try to follow only the internal regulations. It all leads to the domination of wholesalers offering the cheapest food products, produced with a damage for the human health and environment.

Rybnik is situated in the south of Poland, in Silesia Province, which is highly polluted due to hard coal mining and heavy industry; therefore, any organic food should be ordered from environmentally cleaner regions of Poland. That will additionally increase the price of organic food which is already more expensive than regular food. Rybnik's canteen manager stated that the level of expertise needed for the introduction of organic food in the administrative system needs to be upgraded because the public procurement is already complex for the non-educated canteen personnel and the existing problem is not only the lack of procurement training but also lack of culinary and health education for the staff.

Ministry of Health Regulation from 26.06.16' is fundamental for schools' public procurement system. It is also a base for controls made by sanitary-epidemiological station, which mostly focus on calculating food norms in meals. There are also binding recommendations from Polish Institute of Human Food and Nutrition for the specific age groups, but they are not being controlled nor obeyed. There are no sustainable, seasonal or regional recommendations.

The stakeholders observed that more communication and cooperation between sanitary-epidemiological station followed by the controls that support nutritional and quality values could assist school canteens in the green transformation.

In Poland most meals in schools are partially subsidized, in case of economically disadvantaged families there are fully funded. According to Educational Law Art 106. only the foodstuff is paid by the parents, the rest should be covered by schools (local government) unless private catering or operator is being employed. Additionally, there are EU and national food programs for milk and fruits and veggie consumption, but controls showed that the pieces of fruits and veggies offered in schools are actually creating food waste and according to the stakeholders this public



money could be used in a smarter and greener way, for example supporting organic food in canteens.

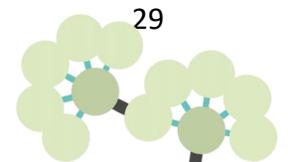
Internal Context

According to the most of the stakeholders public procurement system is the main reason why Polish public catering cannot move into a direction of sustainability. First of all, the canteen workers are not trained in procurement and it is their responsibility to prepare an offer and sign the contract with the suppliers for the whole year. Long term contracts, even if divided into pieces to make an offer below the threshold (30 000 EUR) and to avoid entering PPL, make it risky to order more expensive, high quality products - Polish public procurement system is adapted only to one criterion – the lowest price. Theoretically, a description of the products in the offer should be enough to get what is needed, but in reality, delivered food is often presenting lower quality. Therefore the supervision of an expert could make a difference when ordering and writing an offer, not to mention that the collective order by Joint Services in Rybnik could help to obtain high quality products (seasonal, regional, organic) and to establish some green regulation. The network between organic producers, canteen personnel and the city seems as the possible valuable innovation in Rybnik, the same is true for expanding knowledge and skills among the staff included in public procurement in Rybnik municipality.

In Poland the most popular mode is the in-house PPCS provision, but there are also private operators and external catering models. In Rybnik most of the canteens are publicly run by the city: 55 schools have in-house kitchens and only four have the contract catering; there is only one school with private commercial catering. The existing problem is connected with the private shops in schools selling unhealthy products and nearby markets attracting pupils with cheap and rich in calories food. The change has however already started and in some schools in Rybnik shops are run by pupils' cooperatives selling **healthier food products**. It looks like novelty that should be highlighted and promoted by the city.

Operational context

All interviewed stakeholders agreed that Polish public catering system should develop greener food model, more sustainable menus by adding more vegetables, fruits and legumes, seeds, nuts. There was also common consensus that it is important to increase the attractive ways of cooking and to include pupils into this process, e.g. to organize the **culinary workshops for staff and pupils**. Legumes are mostly used in soups or sides, still it would be useful to practice using them as a tasty substitution for proteins in main meals. The fish appears to be problematic; neither children are used to eat it, nor cooks to prepare it. Consequently, often instead of complying with once in a week serving regulation, it generates food waste (even though it's expensive). The local and MSC (Marine Stewardship Council) certified fish are difficult to obtain on the market, especially with Polish procurement law. Rybnik citizens are accustomed to Silesian cuisine, rich in meat; consequently, they are sceptical about innovative and modern plant-based meals. Monday is meat free day and mostly dairy-based, sweet, monotonous menu is being served (like



pancakes or noodles with fruits /cottage cheese and sugar). It is not considered as a “real dinner” by pupils, so it increases food waste. The vegetarian option seems important to the stakeholders - to include everybody and prepare more climate friendly food but school canteen workers claim that it would be challenging for them, as there are not enough cooks while vegetable options need more human power. It is however not impossible, as one innovative Rybnik school proved. The stakeholders observed that problem with balanced menus but also with food waste is linked to lack of nutritional background, food education and training for personnel. Therefore **ready-to-use menus**, planned by experts according to national regulations for the three age groups, with adequate calculations of the needed energy intake and nutritional values, could be an interesting solution for them as well as nutritional training programs. Cooks are employed decades ago with minimal salary and plenty of work, so in most cases they are not open to any innovation and have difficulty even with obeying new regulation, not to mention healthy and vegetarian cooking.

On the one hand there is no **food waste policy** in Poland / Rybnik and on the other hand there is a serious issue with food waste utilization. What is more, the regulation is unclear to canteen personnel as well to the city officers. Establishing **local regulation** and including all stakeholders (parents, pupils, teachers, canteen staff etc.) in food waste policy is important. In other words - the **activation of local citizens** for more sustainable city is a crucial novelty.

The most important future innovation seems to be, however, the involvement of the city as a sustainability driver. Public officers can encourage different stakeholders to support sustainable development together by creating the platform for personnel, by designing the award system, by supporting local activism in kids and parents, by improving the **stakeholders’ communication**, by promoting **health and environmental education**, by networking between farmers and schools.

To accomplish this promising picture there is however one basic precondition – the authorities at the municipal level have to be interested in the sustainable future.

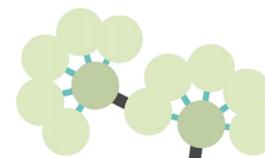


Dining hall of Social welfare centre in Rybnik, Poland
Photograph: Rita Góralaska-Walczak

RUSSIA, Saint-Petersburg School



Figure 20. The Russian tree model



3.6 Russia (St. Petersburg)

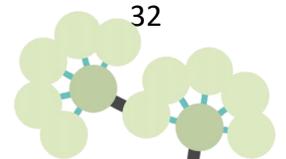
External context

Regulation regarding public and social meals on both regional (St. Petersburg region) and national levels is formed with accordance to the State Standards (GOST) of food quality and safety rules as well as State Sanitary Regulations and Norms (SanPIN). Current state policy in that sphere focuses on food quality and safety, affordable meals and increase in the consumption of free meals. In accordance with the current legislation, all elementary school students in Russia are guaranteed free breakfasts. Also, fully and partly subsidized school meals (including breakfast and lunch) are available for some categories of children regardless of their age. In the beginning of 2020, the President announced a new direction for state policy regarding school meals - a change towards more free meals and more hot meals. New law on at least one free hot meal per day for all elementary school students was approved on March, 1st. All schools across the country are expected to comply with the new law by the end of the transitional phase that finishes in September 2023. Besides, “healthy food” goals were formulated in the new Presidential decree on National Development Goals - 2030 (July 2020).

In St. Petersburg the Department of Social Nutrition is an executive authority of St. Petersburg in the field of public food and social food that was formed in 2004. This is the only institution of its kind in Russia and a key actor in the city’s food chain. They develop school menus and are responsible for implementing state policy in the field of social nutrition. Also, with the accordance to the Saint Petersburg Government decree of 02.03.2004 №296 “On the Department of Social Nutrition”, Department of Social Nutrition of Saint-Petersburg is responsible for organization of the guarantee food system in all educational institutions, some of the hospitals and other social institutions in the city, controls the sector of public food and social nutrition and coordinates the activities between all other executive bodies and authorities responsible for public food and social food in the city. Another key actor of the chain is Rospotrebnadzor - the organization that back in the Soviet Union acted as a sanitary-epidemiological one, was reformed in 2004 and is now responsible for the supervision of consumer rights protection and human wellbeing in Russia.

Internal context

The most recent development is connected to the growing role of the Department of Social Nutrition in the tendering procedures. Now it is discussed that one catering company will provide food for all schools in the city district - as opposed to the current system, when each school holds a tender, prepares all needed documentation and then hires an organization separately. This change is still underway and the final decree has not been developed yet.



Operational context

Historically, in-house arrangements prevail in city schools with the exception of some schools located in the city centre and in historical buildings. Due to the lack of the required technical capacities organizing fully-fledged food blocks in such schools is not possible even after renovations and major repairs took place. There is an on-going City Government Program on improving and upgrading already existing food production facilities in the schools with new equipment, so that all hot meals could be prepared directly in schools and the tables could be served with the food right from the stove.

Several developmental targets within the operational context were recognised. **Moving towards local food** must be triggered by changes in current policies. Providing one **free hot school meal** has been recently decided upon and its implementation is already under development. The motivation to introduce first **vegetarian meals to the school menus** came via international good practices and it must be directly supported by increased communication with children and parents e.g. in form of **collaborative workshops**. Finally conducting dialogue with **farmers** to assure the **understanding about the tendering procedure and food systems** in general.



Dining hall of Lyceum 126 in St. Petersburg, Russia.
Photograph: Egor Pestov

SWEDEN School

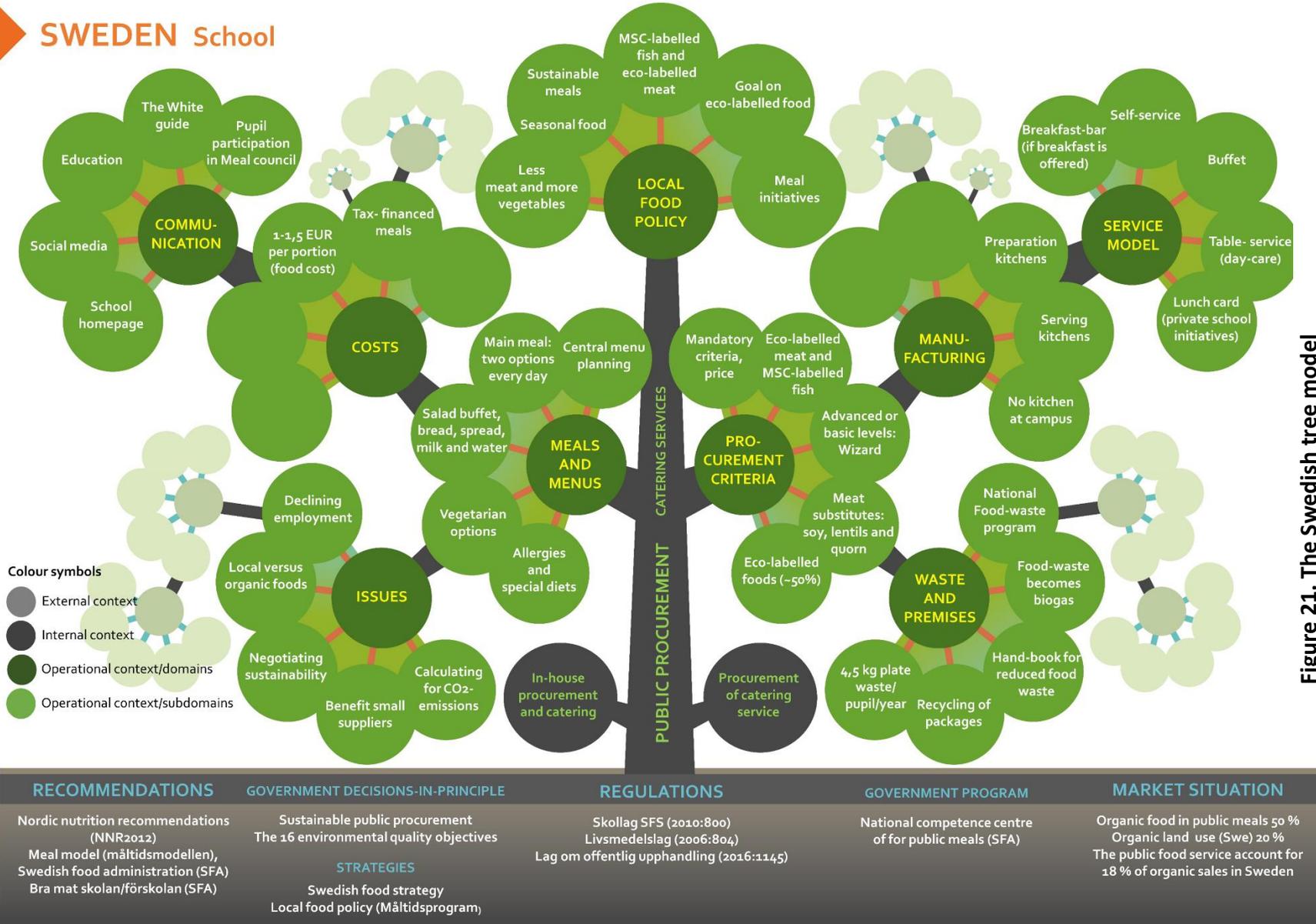
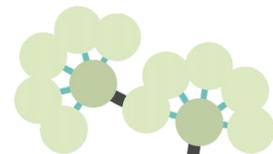


Figure 21. The Swedish tree model



3.7 Sweden

External context

Two different regulations support the Swedish school meal: the Food Act and the Education Act. The Food Act is based on the EU regulation and aims to ensure that the food is safe and traceable. The regulations set requirements for actors in the food chain from “farm to fork”. The Education Act, on the other hand, requires that school meals should be subsidized by the state but also nutritious.

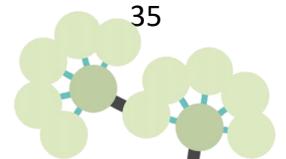
In Sweden, the purpose of the school meals was initially to provide all children the same conditions for education. Since the Education Act requires that meals are nutritious, these also become an important tool for promoting a healthy lifestyle and decline socio-economic differences. The Education Act requires the school meals to be part of the school quality work and are therefore to be systematically improved, evaluated and developed. This process is done in a dialogue between staff, young people and parents. The school principal is responsible for coordinating the quality work.

The Nordic Nutrition Recommendations 2012 (NNR) are the official recommendations in Sweden. They form the basis for the National Food Administration's general dietary advice and are used when planning meals at school. To know that the food served contains the appropriate amount of energy and nutrition, and thus meets the legal requirements for nutritional accuracy, the schools need to monitor the nutritional quality of the meals. Calculating school food menus is one way to ensure the quality and the nutritional content of the meals. Another way is to plan menus from the recommendations on food choices, which are based on the Nordic nutritional recommendations and the National Food Administration's general dietary advice.

In Sweden, the Procurement Authority provides municipalities and regions with guidance within the EU state aid rules. The Procurement Authority has developed Sustainability Criteria's that can be used both in the procurement of food products and in the procurement of meal services. The purpose of the sustainability criteria for food is to facilitate for contracting businesses to set requirements that align with the demands. There are sustainability criteria for different food groups as well as social conditions. Sustainability aspects in the food criteria include environmental impact, climate impact, traceability, animal welfare, use of antibiotics and social responsibility. On the Procurement Authority's website, public enterprises can be assisted to formulate their sustainability criteria without being in conflict with other interests.

Internal context

In Sweden, the municipalities are responsible for the schools and therefore responsible for ensuring that procurement agreements are signed with suppliers. Sweden has 290 municipalities



and in several cases, smaller municipalities have established a joint agreement. In many cases, the municipality or school has decided on policy documents, such as a public health plan or a meal policy. These policy documents are usually based on the national food policy and recommendations from the National food agency but are more specific and detailed. Not all Swedish municipalities have their own meal policy, but it does not exclude them from taking sustainability actions concerning food and meals. The municipality's meal policy often includes goals and guidelines concerning organic food, but also guidelines how to reduce food waste and to decrease the environmental impact of meals.

In 2017, the Swedish government set a goal that 60 percent of public food consumption should consist of certified organic products by 2030. Keeping food costs down has been a challenge when introducing organically labeled foods. The lack of supply of certain goods has also been a challenge, for example, chicken meat. In some municipalities, there is also the ambition to reduce the climate footprint and meals with meat components have been the target for modification. The number of vegetarian dishes has also increased on public meal menus.

Operational context

The school meals are planned according to the Nordic nutritional recommendations and provide about 30 percent of the students' daily needs for both energy and nutrients. The Swedish school meal serve at least two options a day, of which at least one dish is vegetarian and a salad buffet with at least five different components. In addition, bread and spread, water and possibly milk or fortified vegetable drinks are served. There is also the possibility of special diets for children with allergies or other needs. In each school, the consumption and food waste are measured and followed up in order to see how much of the food that is eaten. The waste comes mainly from the kitchen, but also from serving and from the plates. A national waste model has been developed which is based on the “Gothenburg model for less food waste”, and is used by many municipalities today. In total, each pupil generates an average of 4.5 kg of food waste per year.

Menus and recipes are used extensively, in order to calculate the consumption, but also to maintain high quality of the meals. Many of the food items in the meal production are procured considering the environmental impact, animal welfare and social sustainability. For example: wild-caught fish come from stable stocks and have been fished with care for the environment (MSC-labeled). The proportion of meat is limited and often replaced with other protein-rich foods. Stable fruits and vegetables are chosen according to season. Waste and packages are sorted at source.

The service models can look different. The most common model is self-service where the pupils can serve themselves but in some schools a lunch-buffet is used.

4 The framework dynamics for change in the PPCS sector

This societal snapshot aims to clarify the framework dynamics for PPCSs, based on tree models of StratKIT countries. This limited analysis explains country differences by their dynamic modes.

4.1 Balanced dynamics

The notion of balanced dynamics for increasingly sustainable developments for PPCS providers means on the one hand, that there are public, clear as well as comprehensive structures and policies for PPCS provision. On the other, it means that the PPCS providers are an active contributor to the developments by their alignment, initiatives and competence in local settings. These two conditions function through first, centralized guidance, which dictates the nutritional composition and quality of the public meal, the full subsidy, as supported by national and municipal sustainability strategies and policies entailing socio-economic and environmental details. The second condition is the professional education and experience, which also enables the PPCS providers to have some say in the policy processes and implementation of their locally differentiated menus. The PPCs providers are able to construct their own pragmatic strategies, which are ‘translated’ from the municipal ones – if they exist - into the language of ‘procurement and catering’. Further, the PPCS providers have basic educational requirements and are offered further continuing educational inputs, which support strong developmental efforts such as sustainability initiatives.

This dynamics of dual levels of expertise – one of high political and academic sphere, the other also academic and pragmatic – does not mean that developments would always be smooth. There are obviously pressures on the national and municipal levels vis-à-vis the PPCS providers’ pragmatic level. Included in these developments are also the multiple networks, which are entangled with the stakeholders. Rather than yielding in uniform developments, the balanced framework results in many kinds of progressive outcomes with more or less alignment with local interests. Balanced dynamics may be seen in Finland, with strong contributions by the (public) catering industries under comprehensive guidance by respective state scripts and projects. This kind of dynamics emphasizes the collaboration of state and municipal administration and democratic bodies while it offers local and independent options for professional competences.

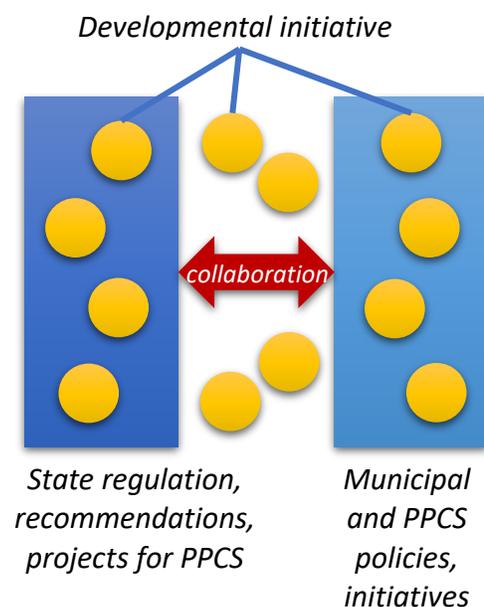


Figure 22. Balanced dynamics model

4.2 Centralized dynamics

This framework displays uniform central control over the public meals, making sure that the PPCS provision is as equal as possible – it represents advanced parity particularly when the free school meals for selected cohorts in primary education start to be implemented according to parliamentary decisions. This public meal provision is technically realized according to national nutrition regulations and executed by a regional body calling for tenders for catering companies and awarding the contracts based on accurate service description against price. The monitoring of the implementation is inserted into operations by technical production charts – ensuring uniform school meals and menus. The equal meal may lose some of its equality if commercial services with more ‘appealing’ meal choices or products are available for paying customers, as is the case in some schools.

This model shows the considerable power of the national regulations and the regulative body through the regional body, across catering companies to be awarded with contracts. However, as these catering companies have the possibility to negotiate about the menus they also can initiate – by the approval of the central power – developments like introducing vegetarian meals into the menu. Furthermore, it is up to the catering companies to procure the ingredients, which allows them to try to introduce local food and organic food into the menu. These developments would need more human resources from the company and hinder operational efficiency when compared to standard requirements.

If these sustainability developments would become a competitive advantage by the central administrators in the future, the supply chains would be within the reach of this catering company. Demands could be set to offer particular kinds of meals and ingredients, entailing socio-economic and environmental considerations. What kinds of demands and criteria could be placed, would obviously convey political negotiations intertwined with scientific understanding about a number of sustainability issues. However, once realistic, progressive decisions are made, their implementation already has an effective machinery in centralized dynamics, as exemplified by Russia, St Petersburg. Decisive actors here are the parliament and central government bodies vis-à-vis catering companies and head masters of schools, both of which may have a role as professional discussants.

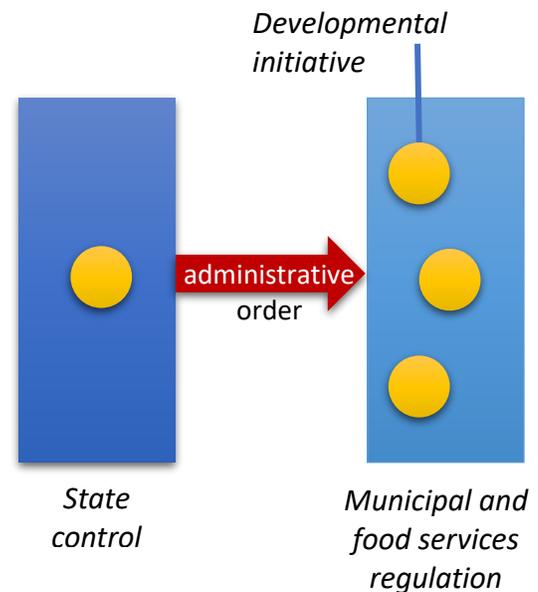
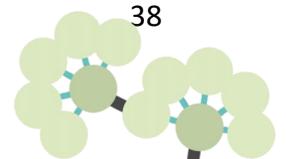


Figure 23. Centralized dynamics model



4.3 Decentralized dynamics

In the case of decentralized dynamics for PPCS sector, the combination of three basic elements seem to characterize the situation. First, the nutritional recommendations for the public meal are clear as well as the needs-based subsidies for eligible customers or catering services (businesses) themselves. Thereby both nutritional and economic conditions are a priority. Second, there may be voluntary, advanced recommendations regarding certification for sustainability, strategies towards sustainability or associations active in developing sustainable quality meals. Third, the implementation of the PPCS provision is dependent on the additional concerns of the public procurement for sustainability issues other than nutrition and cost, which seem to prevail. Thus the sector's aim at more advanced sustainability embodiments such as organic food appear attenuated, which is accompanied by perception of these jobs as rather menial, with less weight on sustainability efforts.

In the decentralized situation, the change may take place on any level of the PPCS sector where there are devoted, determined and enthusiastic people tackling the quality of the service. These initiatives may emerge as strategic regional developments, or companies willing to gain sustainability certificates and organizing 'Regio-Woche' in schools for local food, gaining ground across the sector like in Brandenburg, Germany. Initiatives may take a whole city with most ambitious plans by individual aficionados to increase the overall sustainability of the public meal, like in Rybnik, Poland. The Polish developments have connections with Warsaw University of Applied Sciences efforts to increase organic food offer in day care centres. In Estonia, the decentralization of the public procurement to each school's headmasters when tendering for public catering sets a tall order for the responsible school masters. In Estonia, Germany (Brandenburg) and Poland, there are plans for increased centralised guidance and further education regarding provision of public meals, in terms of sustainability issues. This supports stronger guidance and faster implementations of the sustainable public meal.

The further developments in decentralized dynamics seem to proceed by any stakeholders on various levels. The developments could benefit of getting together of various actors across the levels, such as creating a ministry-level job for promoting sustainable public meals among municipalities or establishing professional associations and offering educational programs for

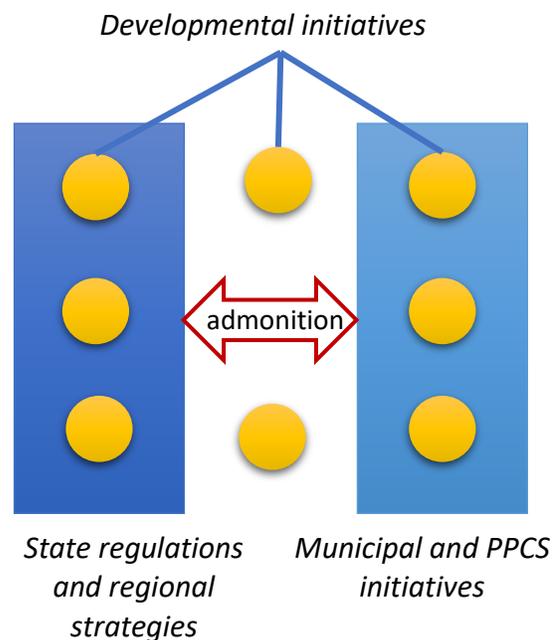
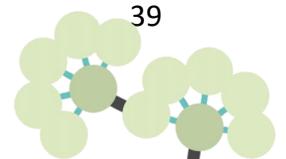


Figure 24. Decentralized dynamics model



PPCS providers in the sector. Promotion of the sustainable public meal depends on the pioneering work done by devotees communicating and upgrading the organizing of the public meal provision towards sustainability interests, as the material and economic ones have been taken care of.

4.4 Individualized dynamics

The individualized dynamics of the public meal entails a combination of two factors: governmental nutrition recommendations and policy aims for sustainability, also on the municipal level, as well as the customers' (parents') rights to choose the services they are willing to pay for. However, municipalities vary in terms of their ambitions regarding sustainability policies; it seems that the aims are often lofty for food and agriculture. These policies have previously heavily emphasized organic food, which has a stable market position and high consumption level. Later, the 'less meat and dairy' policies have come along. While the public policies speak for sustainability, the subsidiarity principle for citizens means they can choose their services regarding the individual institution they engage with. As the PPCS provision does not

work under municipal payroll but the catering companies are contracted as long as customers approve the service (on annual basis in schools and kindergartens), the services are lined up with continuous competition and negotiations with their customers about their working ways. In this framework, in schools and day-care centres the parents (or those with parental responsibility) vote in the first place whether to have a catering service in place and second, they can annually change the PPCS provider according to their customer experiences.

While individualized dynamics allows most degrees of freedom for the customers of the public meals, it also calls for active engagement in decision making, which comes close to a very localized political process. Then again, this process is receptive to on-going discussions regarding sustainability science penetrating the media, levels of government and societal trends leading mainly to ambitious targets in terms of the public meal. In StratKIT the individualized dynamics model was recognised in Denmark. In this model, it is the local food policy by public procurement and the customers of an individual (educational) site who are the decision makers about the public meal.

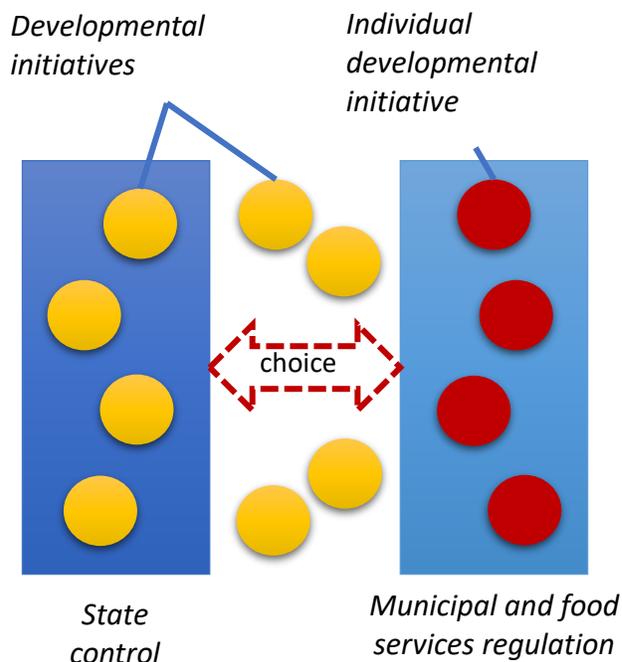


Figure 25. Individualized dynamics model

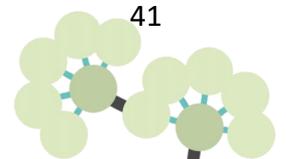
5 Current issues in the PPCS sector in StratKIT countries

In November and December 2020, StratKIT project has organised six virtual workshops for stakeholders – PPCS providers, public administrators and businesses targeting the most current issues of the PPCS sector in the BSR. In total, 171 participants from the six BSR countries took part in all workshops. The participants were pre-selected based on their competence areas and complementarities and invited to join the discussions with the StratKIT partners. The workshops had various forms, as they included short introductions and other presentations to the issue at hand. However, the outcome was the same – clear message from the PPCS provision about the problems, needs and potential solutions.

5.1 Organic labelling of meals and measuring the share of organic food

In Denmark, there is a standard for measuring the organic share of meals as required for obtaining the Organic Cuisine Label. How does it work, and what are the key learnings with regard to implementation, benefits, and demand for organic food? What are the challenges and opportunities for measuring the organic share in other countries? What are good practices for measuring the organic share in public meals? On November 25th 2020, 25 invited stakeholders from all StratKIT countries met virtually to discuss the problems and find solutions in relation to measuring organic food in public meals across BSR.

The discussed example, Organic Cuisine Label had demonstrated a significant impact on the demand for organic food in the public and private food service sectors in Denmark. Public catering was leading the way by accounting for 75 % of the certified entities. Most of the public PPCSs measure the share of organic food in weight (kg organic food procured as share of kg food procured). Private catering companies were more inclined to use monetary value (value of organic procurement as share of total procurement). This was because e.g. restaurants use organic meat and wine, and these high-priced items contribute to push the organic share upwards. Communication with suppliers and food service personnel in the public and private sector, as well as occupational training (in kitchens) were said to be a key elements for underpinning the successful development of the Organic Cuisine Label in the country. Estonia has a similar label, used exclusively in the public sector. In Finland, there is for both PPCSs and restaurants the program called ‘Steps to Organic’, which includes six levels signified by stars and has more than 2000 compliant members. Increasing the consumption of organic food meets problems with highly efficient manufacturers which need large-size packages of pre-processed ingredients. Furthermore, most organic meal providers see it important to procure and buy domestic organic food as they see that the organic benefit vanishes in long-haul transports.



In relation to public procurement, contracted organizations must prove compliance with the criteria for organic food as outlined in calls for tenders. Compliance could be documented by stating which food items should be organic (e.g. tomatoes, eggs, pasta), or by documenting the share of organic products from information given in invoices. Public procurement officials were in need of training to become better at describing ways of compliance to criteria in tenders.

Summary of the discussions on measuring the share of organic food

A difficulty to write tender that ensures the intended bid

- Procurement of organic food needs to be properly defined (type of item, regularity, quality, origin, labels and more).
- Public procurement officials need training in defining organic shares and how to include organic food in public tenders.

Lack of harmonized methodology for calculating the share of organic food

- Define for each context (e.g. a label, a program, in a tender etc.) how the share of organic food should be measured.
- Provide detailed guidelines for suppliers and kitchens.

How to create attention to a new label or program that promotes the use of organic food?

- Consider using many different media: flyers, demonstrations, consumer fairs, marketing material for the certified catering services (either public or private, e.g. restaurants), events for drawing attention.
- Consider a direct involvement of personnel groups by occupational training or workshops with wholesalers.

How often should the share of organic food be measured?

- Consider to develop solutions/systems for collecting data from the PPCSs or commercial companies, suppliers and other supply chain actors.
- Define a frequency that is feasible for the system: Frequently (weekly or monthly) if data are available from e.g. invoices and suppliers' information. Less frequently if it is more complicated to measure or the procured volumes are small.

How can public kitchens increase the use of organic food without exceeding budgets?

- Change menus to seasonal items and reduce the use of meat and fish. Cook from ingredients instead of using pre-processed or industrial products. Improve the cooking skills of kitchen personnel; this also helps to motivate the transition to more organic food. However, while these working ways suit for small kitchens, the more industrial-like manufacturing of tens of thousands of meals requires strictly defined preprocessed ingredients. These may not be available as organic.

What products should be included in the calculation of the organic share?

- All products certified as organic (there may be more certification labels for organic food). This includes food and drink products. Water and salt should not be included. In the Danish and Estonian cases, wild-caught fish is not included.

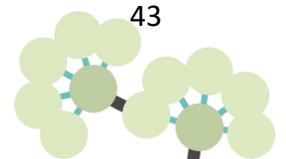
How to calculate the share of organic products if you are bidding for a catering services contract?

- The criteria for organic meals should be stated in the call for tender. Invoices from suppliers of organic food and menu plans would qualify as documentation of compliance.

5.2 Preventive healthcare and nutrition in schools

Current COVID-19 pandemic situation made it necessary for all of us to pay more attention to basic and yet crucial things like hygiene and promotion of a healthy lifestyle pertaining to public meals. It was recognised that the principles and habits of healthy eating are another key thing that should be inculcated in the minds of young children from the very beginning. The workshop gathered virtually 22 participants on 25th of November, 2020 and discussed instructions and recommendations issued by local authorities, public meal service reorganization in schools and by NGOs in order to create a healthy environment in schools and to promote a healthy lifestyle among children and their parents.

The COVID-19 pandemic was a challenge for the PPCS provision due to partial or full school lockdowns as well as unpredictable numbers of pupils, effected by various quarantines. In general, the schools were providing take-away meals, organized food donations to comply with best before labelling of food items to avoid food waste or produced food waste due to no-show customers (albeit pre-registered as recipients of public meals). While there were large differences between countries and individual schools, it is obvious that the pandemic created a considerable demand to modify PPCS activities in extremely short time periods, as the



cancellations and lock-downs proceeded unpredictably. However, it can be stated that the PPCS provision withstood this stress test.

Summary of the discussions on healthcare and nutrition in schools

How to check and control what food children bring from home? Is this food healthy and sustainable?

- It cannot be controlled, however speaking about the issue and educating the parents on what is healthy food and why it is important for children to eat healthy products should be taken care of..
- To add some free and healthy additions to the usual school lunches (example: children getting free vegetables a few times a week in Poland).

How to make healthy food attractive to children?

- To involve pupils in practical activities, for example, some master classes in schools (examples: Denmark, Russia).
- Also, more nice looking labels about food origin and ingredients may help (Finland).

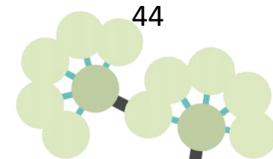
Regulations on nutrition principles are not being updated regularly enough in some countries

- Start with smaller steps, talk more about the need for a change, raise awareness.
- Working towards updated guidelines with clear focus on healthy (and sustainable) food.

5.3 Plant-based public meals

Many PPCS providers have recently received the message about increasing plant-based food for their meals. Reasons often cited for are e.g. climate change, healthy diets, cost aspects and more tasty, colourful and interesting meals. On November 27th 2020, a group of 28 participants met virtually to discuss the promotion of plant-based public meals and the issues related to them.

In this discussion, some concepts like plant-based, vegetarian and vegan needed some clarifications and specifications. It is possible, that most of the population – and thus the customers of PPCSs – are not aware of the nutritional issues of vegetarian and vegan meals. They need nutritional calculations to balance the lack of essential amino acids by using complementary plant proteins. Furthermore, the PPCS providers are also aware of the vitamin and mineral fortifications needed by vegans. They are concerned about the nutritional status of their customers and are aware of the importance of the customer's overall menu; it is a different matter if the customer eats one third of daily food intake at a PPCS dining hall or if they follow the vegan diet consistently every day. Particularly special groups such as children and young



people as well as the elderly in public nursing homes may be vulnerable to vegan diets, which require considerable competence to produce.

Plant-based meals are thus a flexible concept, ranging from eating every now and then a vegetarian or vegan meal, or increasing the share of vegetables in the meals and menus to lacto-ovo-pescatarian meals or finally to the 'plant products only' veganism. Many PPCS providers have additional concerns about plant-based meals; if the customers do not approve of these, their nutrition becomes impaired, there will be more food waste and more costs due to expensive ingredients such as industrial plant-based products replacing animal-based foods. Moreover, even usual vegetables may be in short supply during some seasons or some are expensive too, like almonds and nuts. Finally, while soy has all essential amino acids and represents an ideal vegetable, it is mainly imported to Europe; seitan consists of wheat gluten, not suitable for celiac patients; other protein sources such as mycoprotein (Quorn, Fusarium) and insect proteins are used to some extent. Quite novel protein sources are discovered in bacteria and algae – the protein range of nature is extensive.

In Finland the project Climate Kitchen (<https://www.helsinki.fi/en/projects/climate-sustainability-in-the-kitchen>) developed a number of vegan recipes and in Denmark there is an association developing plant-based (vegetarian and vegan) recipes for hospitals. The nutrition issue is well supported by professional recipes, to be collected and disseminated by StratKIT. Finally, the issue of plant-based meals served by PPCS providers meets an obstacle as not all country specific nutrition recommendations include vegetarian or vegan meals; this is the case for Poland and Russia (St Peterburg), while Finnish, Nordic, Swedish and American recommendations recognize this option as an environmentally oriented healthy diet.

Summary of the discussions on plant-based public meals

How to change the consumer's relation to plant-based food as that is often perceived somewhat negatively?

- Example of a successful implementation ratio was twice per month or weekly only a plant-based meal is being served, or that there is everyday a vegetarian and sometimes vegan option alongside conventional animal based meals.
- More tasty and colourful plant-based foods, more attractive naming of the meals, focusing on what is included and not on what is lacking.
- Education of children as well as parents.

Low access to variety of plant-based recipes

- Non-profit sharing of existing recipes (in English) supported by EU projects or other national and local initiatives.
- Cooking videos publicly available at e.g. Youtube.

Public meals have often a very small budget and the price of e.g. plant-based protein is high.

- State subsidies for farmers growing vegetables.

Vegan meals cannot be served in some of the BSR states due to national regulations that e.g. require that the meal contains animal-based ingredients such as meat and dairy.

- Change of the regulations to include plant-based proteins to replace animal-based ones.
- A vegan meal is given individually with either parents' written request or doctor's documentation.

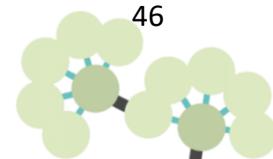
The seasonality and availability problem of domestic vegetables and fruits

- Long-term agreements with the farmers.
- Active dialogue with farmers. Knowing there is a high demand for particular product, they may be willing to modify their offer.

5.4 Sustainable procurement criteria for food and catering services

Public procurement has a certain market share which allows it to lead by example and also steer the development of a market segment towards increased sustainability. For the procurement of public catering services, a broad set of Green Public Procurement Criteria (GPP) exists. But which sustainability criteria are missing? How can the criteria be implemented in reality? How can compliance be measured?

A group of 20 online participants met on 2nd of December 2020 and chose two main foci for the discussions about the procurement criteria examples: 1) criteria in the domain of **food quality**: seasonal, plant-based, organic, local and regional as well as fairly traded, 2) the criteria in the domain of **food and other related waste**.



The raised issues were based on the experiences of the participants and examples listed were e.g. invalid or cancelled procurement procedures due to lack of clarity, difficulties in adding regional or local requirements into the tender without the threat of discrimination, as well as defying the boundary for local (Km0 choices are intended as low climate impact, not as quality standard). The fully plant-based meal, e.g. with a plant-based cheese or milk is not accepted as a substitute meal for small children. Protein quality is an overall issue in plant-based food compared to animal-based food, that needs to be explored (more on plant-based meals can be found in subchapter 5.3)

Second focus was the food waste as well as other waste directly linked to the procurement, as well as the recent impact of the COVID-19 on the increased amount on plastic packaging as well as on the unpredictability of required food amounts.

Summary of the discussions on sustainable procurement criteria

How to express innovative concepts (as regional or plant based) in the procurement? What kind of wording clearly supports these intentions?

- EU template seems not to be accepted and used in all countries; there is need to come up with suggestions (for procurers on how to use words) and engage stakeholders (suppliers, caterers) and the supervisors of the procurement to agree in advance on which criteria can be pushed on the tender and will be accomplished by the market.
- Connecting stakeholders is crucial, possibly before the tendering, by market dialogs etc.
- EU templates vs. simpler shorter template to start easy.

How to act when green attributes in procurement are missing?

- The EU Farm to Fork strategy may be inspirational due to the connection between food, health and environment.

How to introduce criteria for fairly traded food, if those are missing?

- It could help to have guidelines in which the priorities are clarified. The higher the level of these guidelines, the better the effect on the market (National Guidelines).

Making sustainable attributes "compulsory" is not easy because of the limited resources devoted both at the procurement stage, and at the consumers level.

- RAISING THE BUDGET could HELP.

TRADE OFF is in every choice. It is about prioritising.

How to communicate with the customers about food waste? How to make them aware?

- Real-time visualisation of food waste in canteens in Lahti (Finland); App for download; playful approach; several measures in service and customer communication.

Due to COVID-19, more single use plastic in the canteens for take away

- Refund system with bowls.
- Start in smaller steps.
- Use finger food.

Customers/ Tenders ask for more choices, which increases food waste

- Raising awareness.
- Network point for school catering can support such campaigns.
- Cooperation of caterers and teachers for awareness raising/trainings.
- Choosing food in advance for better planning, but this means less flexibility for customers.
- Learning curve with vegetarian meals – it takes time to introduce something new.
- Naming of the food to make it more appealing; might be a challenge to appeal to all.
- Cooperation with food sharing/ food banks.

5.5 Regional strategies for public meals and catering

There are already several good examples of regional and municipal strategies in the BSR, which aim to increase the use of sustainable food in the public meal. The strategic approach helps local and regional authorities tackle food issues systematically and across departments by developing goals and actions for food and nutrition. On the 3rd of December, 30 participants from the BSR countries met online to learn from each other and share their experiences in strategic planning for sustainable food systems.

At the workshop, the establishment and implementation of three local-level strategies were introduced: Food Strategies of Copenhagen (Denmark) and Berlin (Germany) as well as the Climate Programme 2030 of Porvoo (Finland). These cities have defined their commitments in several fields of food-related action, such as increasing the share of organic and climate-friendly food, reduction of carbon emissions and food waste.

As the cross-sectoral food strategy can be implemented only in partnerships with food producers and consumers, an example of such a collaboration was presented from the Copenhagen area. The Community of Food organises events and offers support for local farmers and kitchens to consume more local, climate-friendly food. Another example of alternative food networks to industrial food systems are Food Hubs in Berlin. In Porvoo, the PPCS providers have been able to add clean transport requirements into tenders, deploy partly plant-based milk products, reduce meat and introduce more local fish and vegetables into meals. Organic products can be found in many product groups.

There are some common challenges in developing and implementing the food strategies which are related to balancing different interests of stakeholders, strengthening the links between city and countryside as well as scaling up sustainable food procurements in municipalities. Here, the StratKIT toolkit will have a possibility to offer municipalities ideas and innovation for overcoming these challenges.

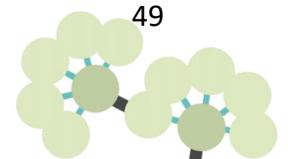
Summary of the discussions on regional strategies

Food system on a local level faces the same sustainability challenges as on the global level: the need to reduce climate and environmental impact, improve public health as well as strengthen the link between food producers and consumers.

- Tackle the food system issues systematically and strategically across local government departments – by developing strategic goals and actions for food and nutrition.
- In Finland, local municipalities have developed action programmes with targets for sustainable food services – e.g. Climate Programme of the City of Porvoo for 2019–2030.
- The City of Copenhagen has its food strategy with sustainability goals related to carbon emissions, organic food, food waste and the city-countryside link.
- The Berlin Food Strategy sets out measures in eight fields of action.

The development of food strategy can get stuck into political agenda and discussions.

- Establishing an advisory board or similar structure balances political discussions.
- In Copenhagen, the advisory board consisted of food professionals and experts within the fields of nutrition, health, sustainability, and climate. Partnership with the university provided science-based inputs into food strategy.
- In Berlin, the steering committee consisted of the representatives from the Senate for Justice and Consumer Protection, civil society, science, business, and NGOs.



Overcoming administrative silos and hierarchical separation in city-region governance structures can be a challenge for developing and implementing the food strategy.

- Strong governance structure across the city is important – to ensure that all speak the same language and work for the same ambition.
- The city can engage in strategic partnerships, e.g., with universities, other municipalities and regions, international partners.

The implementation of food strategy can be hindered by the lack of political interest and resources

- If the mayor(s) and all coalition partners sign the strategy, it creates a joint political mandate and understanding of where the city/region is heading.
- Allocate budget and resources for the implementation of the strategy.

The industrial food system is efficient, but it may cause negative impacts on the environment and climate as well as losses of jobs for local people. The capacities in regional food production, processing and distribution can be limited, the link between local food supply and food demand may be weak.

- Establish strategic partnerships in regional food production, processing, distribution and consumption.
- Municipality of Copenhagen, together with regional partners, has launched the Community of Food which brings together local food producers and buyers (kitchens) and helps them make deals with each other.
- Food hubs in Berlin offer space for alternative food networks (e.g., community-supported agriculture and food cooperatives), direct marketing, learning and awareness-raising – places where civil society, producers and consumers can get together.

Transition to climate-friendly and sustainable meals may require training and counselling of PPCS providers across personnel.

- The City of Copenhagen has hired external consultancy supplier who provides training courses and counselling on how to prepare meals which are both climate-friendly and nutritious, of high-quality and tasty.
- The Food Organisation of Denmark employs three chefs who help kitchens in making new menus and inspire people.
- In Finland, the five-six weeks' rotating menu is renewed annually by professional managers and both traditional (plant-based!) as well as new entries are tested.

Scaling up and making sustainable food procurement mandatory may be opposed by municipalities who justify it with limited resources.

- Most important is to have political support.
- It is possible to keep the same price level of public meals with organic food, if some components are switched for regional and seasonal products and less meat is used which make meals cheaper.
- Environmentally-friendly products are not necessarily more expensive if not only the price of a purchase but full life-cycle costs are taken into account.

5.6 Increasing organic food and diminishing food waste in school canteens

The last workshop, which took place on 11th of December 2020 with 40 participants, was divided into two substantive parts: first organic food and second food waste. The aim was to discuss these two separated issues and find connections between them. The speakers tried to demonstrate practical examples and realistic solutions to achieve sustainability in public catering.

The workshop had summarized the demonstrated examples, outlining the possibility of introducing organic food and at the same time diminishing food waste in public catering. The workshops showed that working together with national and local decisions makers, headmaster, scientists, pupils, parents and learning from the successful examples supports introducing common European green goals in PPCS provision. Starting from food and environmental education, supporting organic farming and direct sales, motivating the implementation of Green Public Procurement with quality criteria, training and encouraging canteen personnel to create fully functioning kitchens serving real, nutritious, organic and tasty food; consequently limiting food waste will form healthy, conscious and happier society and greener planet.

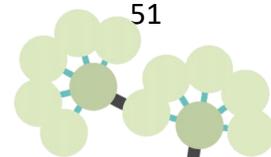
Summary of the discussions on increasing organic food & diminishing food waste

How the issue of high prices of organic food, as well as lower availability and limited range of the organic assortment can be approached?

- Working directly with the farmers - a successful example of the Green Kindergarten in Warsaw shows that a person who works with the food cooperatives, knows farmers, prices, seasonal & local products can get attractive deals for the group orders directly from the producers.
- Staff training and advance preparations - Rural commune Izabelin (PL) is an example of seasonal, healthy and tasty public cooking done by trained canteen staff – during summertime the canteen personnel is preparing jars for winter.
- Increasing the demand by supporting schools in ordering organic will naturally increase availability and range of organic products.
- Limiting ready-to-eat products in public canteens will also increase variety of demand and therefore the range.
- The government should support organic farmers in the way it supports dairy and meet industry, it would create bigger market and the prices would drop.

Limited understanding and awareness about the quality of the organic food within the group of canteen personnel

- Workshops and trainings within the group of canteen personnel about sustainable diet (to teach them environmentally friendly diet) alongside with the practical, culinary workshops using ORGANIC products
- Practical lesson about importance of organic food for all of the stakeholders targeting newest research on organic farming in comparison to massive development of intensive agriculture
- Keeping up with the latest environment, health nutritional aspects proven by scientists



Lack of support from decision makers

- Activists, educators and scientists should pressure local and national decision makers to create a framework, a public health and environmental policy and to support organic food in schools
- National level motivation and support for GPP criteria implementation in local PCs
- A platform created for public stakeholders to understand organic food value

What kind of public procurement procedures can increase the shares of organic food ?

- Support on national level for voluntary GPP criteria implementation in local PCs, collaboration between government, procurers and schools to understand GPP criteria and the way to successfully implement them
- Award system for green institutions (implementing GPP criteria)
- Working on quality criterium to avoid lowest price criterium
- Modernizing and simplifying Public Procurement Procedures in the way that procurement and tenders could be done more often (not once or twice a year) involving seasonal, local and organic products

How to tackle the lack of the educational activities to increase environmental awareness of the society and decision makers

- Environmental and health education program on national level from preschools to university, not occasional actions but constant education included in all of the subjects in school program
- Green Deal and Farm to Fork trainings for all decision makers

How to avoid over-preparation of food in public canteens?

- Food waste measurements – understanding how much food is being wasted
- Adequate portions - too big portions are the main reason why children waste food
- Dietitians are needed to calculate the amount of food per serving and its correct nutritional value
- Motivating families to always notify schools about the absences of children during lunch

Developing the framework of rational, legal procedures to donate food

- Collaborating with Sanitary Inspection

Limited knowledge of the PPCS personnel about the operations diminishing food waste as well as lack of societal awareness about the problem

- Introducing food waste measurement
- Educating staff and management about the amount of food being wasted in their institutions and the environmental consequences and possible savings
- Prevention is the most important step to fight food waste, second are donations
- Culinary workshops held by a professional chefs improving the culinary skills of the staff and introducing the principles of a sustainable menu
- Educational workshops towards better food planning, shopping, kitchen logistics, storing and management
- Educating pupils and their families about food waste in general
- Creating place for the compost
- Educating stakeholders about “best before” and “used by”
- Fully functional kitchens cooking real, tasty, nutritional meals with modern recipe

6 Action for sustainability in the PPCS sector in BSR

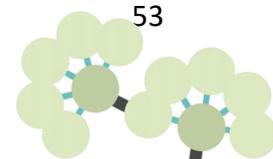
Altogether 197 PPCS providers, public administrators and business people participated in six national co-creation and co-innovation workshops in the spring 2020 to take their sustainability orientations to the edge; they made efforts to innovate even more ways to enhance their sustainability approaches. The outcomes of these national efforts are collated here according to the tree model domains, with emerging innovations, indicated by country of origin.

6.1 Domain based innovations for sustainability

New ideas and innovations on the PPCS sector developed in response to StratKIT countries’ perceived problem areas, in the basic sense of sustainability as imaginary and detailed correction of the current activities. Intriguingly, no changes have been proposed in EU countries regarding the regulative and strategic external context, neither on the internal context of administrative modes. The PPCS providers did not look for new rules and regulations to control their activities, or to make either in-house provision commercial or commercial one in-house. Rather, these corrections link with the domains of operational context and the EU Green Deal policy goals.

1. Local food policies and strategies

In Finland, the PPCS providers wanted to upgrade their professional profiles and saw the need to master the qualitative and quantitative information on the sector. Equipped with this, they are willing to connect with their municipality’s strategies, policies and even politicians. However, they see the need for these PPCS level scripts to leave some degrees of freedom for



the menu planning as well as procurement methods and criteria. This is due to the cost, availability and local livelihoods considerations.

In Estonia, the benefit of municipal strategies and goals for sustainable catering and meals in Estonian educational institutions is evident. The strategy could be a part of a broader circular economy roadmap. As Tallinn aims to become European Green Capital, then a more sustainable and innovative approach to school and kindergarten meals would strengthen Tallinn's application.

Tallinn schools could use clear and legally sound guidelines on how to integrate sustainability and environmental criteria into their tendering specifications. However, rather than burdening schools with the whole procurement process, local governments could take their opinions into account and administrate for them. The sustainability strategy could also encourage small food producers, including the organic ones, to make themselves and their products known for caterers. The standardisation of procurement procedures is going to be pursued not only thanks to the digitisation of PA but also with the e-Forms, at EU level. (https://ec.europa.eu/growth/single-market/public-procurement/digital/eforms_en)

In Germany, Brandenburg, the recognition of and joining in the Brandenburg Food Strategy could bring forth multiple synergies for different forms of public catering services.

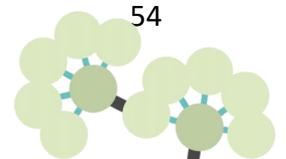
2. Procurement methods

In Finland, the method of awarding points against verifiable quality features regarding products has been in use. Today, a more certain outcome can be achieved by high-level minimum or mandatory criteria, after which price becomes decisive. An even better result in terms of co-development of products towards increased sustainability by both producers and public consumers is the deployment of market dialogues. These open discussion forums entail developmental dialogues. A more advanced version of this working method is the competitive negotiation, which is now very rarely used. It may push forward experimental and collaborative approaches towards new production plants or new products. The problem of 'criteria shopping', the issue of developing relevant, measurable and verifiable criteria by public procurers is topical and is advancing, with some promising outcomes. Finally, maybe scale-matched and rewarding incentives for SMEs would work better than negative sanctions. The involvement of private citizens could play a role in the selection of criteria and the availability of extra budget from diversified sources.

In Russia, an idea for potential innovation was provision of master classes and lectures for farmers. So far, the farmers' lack of connection with and knowledge about the requirements to enter the school food market became evident.

3. Procurement criteria

Progressive PPCS in Germany include sustainability criteria on environment, health and social issues in the tender. One may consider options such as deploying awarding criteria such as 30% price and 70% quality, as well as increasing regional origin, by including criteria like freshness,



seasonality, and limited degree of convenience corresponding to a regional brand. As cost-neutrality is important, 20% more of organic ingredients per dish can be added. Organic certification guarantees organic quality cost-neutrally. However, in some cases caterers pay neither rent nor water or electricity costs, which is intended to benefit the price of food. As contracted catering is prevalent, model specification of services for future tenders would support public procurers.

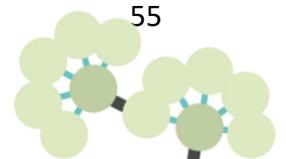
In Poland, mapping organic farmers willing to collaborate with schools and establishing a network between city, organic farmers and schools to organize meetings, events and workshops could support creating suitable procurement criteria for locally available food items. The GPP quality standards and criteria such as organic food, plant-based items and fish could overtake the lowest price as criterion of contract award. Public procurers may also need legal support by municipality's public officers, who work in Shared Services Centre. A communal shopping system is needed, and it could lower the cost of organic due to the scale effect (quantity discount). Organic food regulations also need to be better understood and managed by the public officers.

In Denmark, tenders for public procurement of food should not only address price as criteria but also environment, climate, social aspects, and criteria such as biodiversity and inclusiveness. The issue is to have a more diversified approach to sustainability. While public procurers can include sustainability criteria into tenders for catering services, the criteria and respective documentation were seen as issues of trust by the procurers; this set of information regarding third countries and CO2 is not yet solved. A new tendering criterion could ask whether the dairy company runs a digital platform where surplus products from the dairy are sold to retailers and wholesalers. Using local products is a way to reduce the environmental impact from less transportation and use of packaging. From a climate-perspective, it is more efficient for the wholesaler to handle the distribution in contrast to the local farmer. To improve this situation, a "sustainability patrol" has been suggested as a public entity, which could visit public kitchens and provide guidance for sustainability. The aim is to position the public procurers to be "there to help" in a change process rather than "authorities with rigid systems". Biodiversity (more varieties of e.g. apples, or seasonal choices) should be considered as a criterion in public food procurement. Maybe a word like "plenitude" could be considered instead of biodiversity as more relevant for a public tender on food. The public procurement system must be adapted to facilitate the procurement of plant-protein products and pulses.

4. Manufacturing models

This domain was meant to deal with the choice between central and individual professional kitchens, as an issue of industrial logistics. It could also mean the choice between fresh meals, cook and chill (and reheat) meals or meals to be cooked as they are assembled cold (cook cold method). These choices become actual when (re)constructing the professional kitchen or renewing the equipment. Albeit not dealt with by workshop participants, these issues would be important for those who want to renew premises.

5. Meals and menus



In Finland, plant-based agenda could benefit from the unique and positive characteristics of plant-based meals vis-à-vis animal-based ones; a large collection of recipes, entailing manufacturing, could be published; regarding beef, it should come from grazing animals living on farms enhancing biodiversity; dissonance regarding plant versus animal-based food items could be solved by education. An innovation suggested that 'standard' animal-based unpopular meals could be replaced by popular plant-based meals, making some changes within six or five weeks' menu rotation.

In Russia, St Petersburg, developing vegetarian menus for school lunches was an accepted idea, whereby vegetarian meals could be offered once a week. A director of the catering company 'Alfa-Proviand' became interested in this initiative after looking at the StratKIT trees collection, but also acknowledged that it would be hard to implement on practice since the approval of Rospotrebnadzor (The Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing) would be required.

In Estonia it is seen that schools need ready-made menu programs where planning and procurement work has been done for them. Recipes of plant-based food should align with familiar tastes for children. It is also necessary to justify how plant-based food is good for the environment and the reduction of CO2 emissions. Local studies would help with communication. Education is needed across all levels: heads, teachers and chefs at schools and kindergartens, children and parents, local government and catering companies. After such preparatory work, it would also be easier to set out additional scores for vegetarian Tuesdays in procurement specifications. Good cooperation partners for communication and pilot projects are needed, e.g. the European Network of Health Promoting Schools and the association of nutritionists.

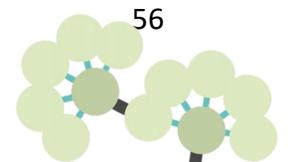
In Poland, a change in working ways could improve the friendly atmosphere in canteen, offer longer breaks, divide children in the age groups and eliminate long lines, making lunch hour and food overall more attractive. Furthermore, taking control over school shops, opening them for few hours and selling only healthy food, would save young people from unhealthy food.

In Germany, Brandenburg, catering service in a hospital was seen to provide regional organic food, without price increase; the concept included the reduction of meat dishes per week, while not naming vegetarian dishes as such and offering "exciting" and very tasty vegetarian meals.

In Denmark, it is commented that climate-friendly food is often associated with plant-based meals. However, vulnerable people need food with fat and protein from meat and dairy products. Moreover, the food industry could provide more innovative products made with plant-proteins to fill this gap.

6. Waste management and premises developments

In Finland, in spite of the screening and targeting the process phases in the professional kitchen to decrease food waste, some will still be there. Leftover food is probably the major fraction



of food waste and it is generated by mismatch between volumes of prepared food and numbers of customers. To increase this match, pre-ordering or signing up for meal as well as parental support for school meal may help. Leftover food can also be sold at friendly prices. Furthermore, many food items can be transported in reusable packaging, decreasing package waste.

In Poland, the actual volume of food waste in school should be analysed. Portions could be better controlled by adjusting served meals and nutritional recommendation to age and personal needs. Young people could be introduced to self-service and more choices in assembling their meal from components. Working with food waste utilization issue and lobbying for change in regulations would enable legal sharing and donation of food to those less fortunate.

In Denmark, if reductions in food waste could be visualized it would motivate those involved to engage in the change process. The EU has missed to include the potential of hygienic design of kitchen equipment in the GPP criteria as equipment has an impact on water and chemical consumption.

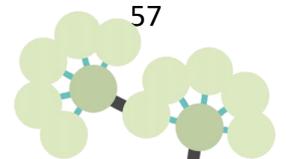
7. Customer payments and subsidies

This domain was not commented by many; it is well understood that public services always have an interest in effective and efficient working ways. The cost aspect for customers has been an economical concern in Germany, Brandenburg.

8. Customer communication and raising awareness

In Finland, it is suggested to use virtual meeting tools to reach municipal decision makers; emphasize messages significant for receivers; calling main courses by their names instead of vegetarian/vegan/plant/animal-based ones. Finally, young people's absence was understood as possibly not connected to PPCS provision of public meal and therefore their presence and food consumption need 'another kind of support'.

In Poland, children, parents, and school workers and other stakeholders were seen to need (complex) food, health and environmental education also on a practical level. Different kinds of diets should be dealt with. Both children and their parents (and those in parental responsibility) are to be introduced to sustainability activities – such as cooking together, volunteering, making school gardens – so they can feel like part of solution. Sustainable diet culinary workshops and elaboration of vegetable, specifically legume recipe options for canteen personnel would count as progress. Possibly a city guide of sustainable development for canteens should be created. A communication platform for canteen personnel and public officers connected to PPCS can enable fast exchange of information. This platform could include a space dedicated to professional education, modern recipes, problem solving activities and other kinds of support. State Sanitary Inspection could explain the control issue regarding food. This should improve communication between different stakeholders. Finally, making development visible, award system for best canteen personnel (workshops, trips, Sustainable Oscars) and events for pupils with famous sportsman's or about sustainable diet could support sustainable food systems via schools.



In Germany, Brandenburg, canteen commissions could be re-activated to enable regular discussions among all stakeholders and to invite guest experts and possibly also customers. For catering staff to gather feedback, a feedback box or a feedback terminal as well as online survey among guests for direct comments could be provided. There are helpdesks and networks for day-care and school catering. A networking centre for catering in elderly homes is currently set up. Moreover, a general network for public caterers is created in Brandenburg. Aside from this, to support communication with patients and guests, nursing staff may be trained to be able to talk about the food and serve it in a positive way. To raise awareness of the customers, several times a year the canteen can be dedicated to manage a specific topic such as health or food waste.

9. Other issues

In Russia, developing a school garden into the Lyceum No 126 is in the planning phases. The aim is to visualize production (and ornamental) plant growing and gardening work, possibly with organic methods in collaboration with several city public servants and other groups.

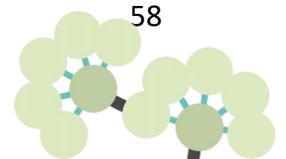
In Poland, a school garden was also seen as educational developments for sustainability.

In Berlin, Germany, there is governmental program similar to the House of Food in Copenhagen. It aims to identify individual sustainability solutions for each canteen in participatory ways, and to provide seminars and training for the kitchen staff, to establish a network for joint operations, and motivate through awards. Finally, it is seen necessary to carry out public relations work to increase the appreciation of canteens and the profession.

6.2 Learning networks for sustainability in the PPCS sector

The PPCS sector works across societal levels with several different networks, which in itself makes communication officers wanted in large organizations. In small organizations, limited by number of employees, communication has often been seen a bottleneck; one does not have time enough to communicate about PPCS provision realities. The learning networks entailing exchange of information and sustainability interpretations are influential in StratKIT countries; one of these networks is the one gathered by StratKIT as a project. It has reached to public bodies not otherwise included in such exchanges and offered connections between those more experienced with the notion of sustainability, seasoned by its multiple measures and those considering, increasingly strategically, how to proceed. The various networks (Fig. 26) are important in overcoming communicative issues and speed up orchestration of organizations for sustainability (Mikkola, 2009 a,b).

The **professional core networks** of the PPCS sector includes **trade associations** such as the one operating in Finland. This grouping has about 300 paying members from municipalities and businesses. The members get-together twice a year for an educational event and receive a high-



quality magazine quarterly. In Denmark there is the public procurers' network which efficiently shares information across public bodies. In Germany, the gastronomy has its own association at national and regional level. Typically, these networks include long-term sharing and extensive learning and career opportunities.

The on-site networks in schools, day-case centres and offices reach important leadership and expert positions such as headmasters and teachers as well as other personnel and young people. These networks may act pedagogically (even for older customers!) to support food education for sustainability, like in Finland and Russia. One of the pragmatic applications of the primary production of the food chain – the school garden – has been planned to be set up in the school yard in St Petersburg.

The intra-organizational networks set PPCS providers to present their aims for sustainability to decision makers who approve of the sustainability measures and budgets. This may come across as challenging for PPCS providers who have encountered less appreciation by their colleagues from other trades than they would like to experience. The 'rise up' type of efforts seem needed in Finland, Poland, Germany and Denmark. The upgrading of relations benefits both the PPCS sector (as initiator) and the host organization such as the municipality, school, hospital or army base in the long run, as the sector's competences can support sustainability work.

Networks with customers or their parents (or those with parental responsibilities) in case of young people, are run by e.g. bodies such as canteen commissions in employees' canteens or school meal committees. They meet with PPCS providers to develop menus and other aspects of eating lunch. These meetings may improve mutual relations, increase social wellbeing and support consumption of healthy and sustainable meals. The quality of encounters with customers on the shop floor is valuable in improving mutual relations; PPCS providers are also seen as food educators particularly in Finnish schools.

Wider strategic networks may arise for regional purposes in search for policy or operational synergies. This effort may unite PPCS sector meeting with

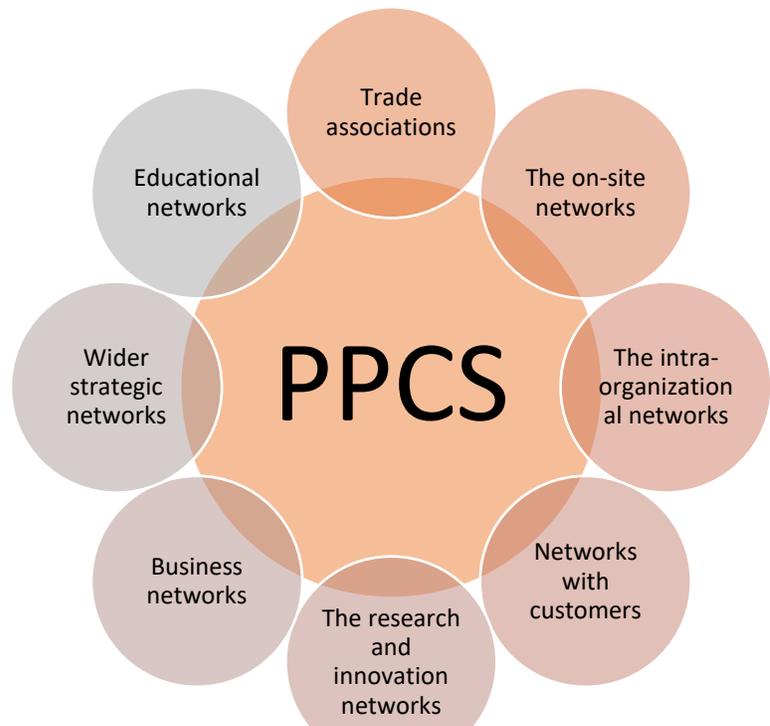
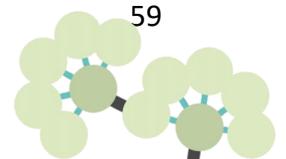


Figure 26. The multiple collaborative networks of the PPCS sector organization.



regional or national bodies such as ministries, sector institutions for health or education, sharing initiatives and developing food strategies like in Brandenburg.

Business networks are another long-term network which may build up by market dialogues with supplying businesses and PPCS providers as well as other decision makers. The businesses and PPCS providers may learn matters of importance for parties of the deals, as PPCS providers do not know production conditions and the businesses have difficulties in understanding demands from the civil society. Long-term sustainability developments may take place.

Within the **research and innovation networks** of the PPCS sector partners new interpretations of increased sustainability may be brought forth. Municipalities such as Aarhus, Kauniainen, Rybnik, Seinäjoki, St Petersburg and Tallinn, but also catering companies such as Baltic Restaurants and Espoo Catering Ltd or private enterprises such as Café Botanika are both teaching and learning. While short lifespan of the projects typically limits chances for changes, these may prove rather influential due to extensive and intensive approaches.

Educational networks may exist between PPCS provider organizations and institutions of vocational and higher education. These long-term networks can renew PPCS activities and support the sector with employees, thus increasing the overall educational level. These networks are typical in Denmark and Finland whereby the sector is intertwined with vocational institutions, universities of applied sciences (close to German Fachhochschulen) and research-oriented universities.



PPCS Staff of Lyceum 126 in St. Petersburg, Russia.
Photograph: Egor Pestov

6.3 Baltic Sea Region Dynamic Sustainability Model

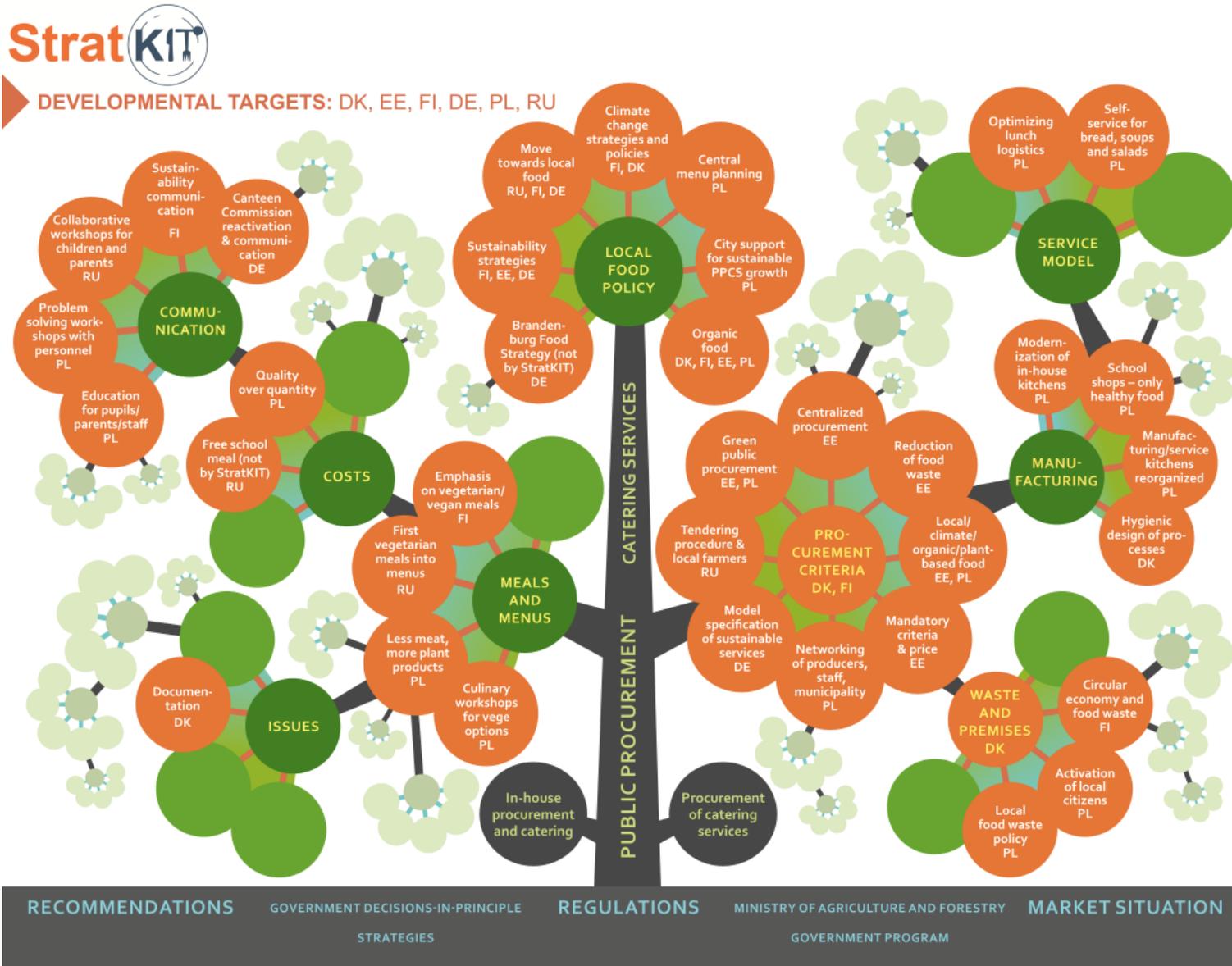


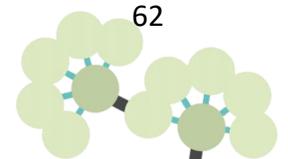
Figure 27. The BSR tree model with developmental targets

The Baltic sea Region Dynamic Sustainability Model, as the outcome of this piece of StratKIT work, reflects the current collated sustainability orientations of those PPCS providers who participated or collaborated on voluntary basis in StratKIT activities. This model shows the PPCS sector to comply with strong and extensive developments towards increased sustainability, blowing across the BSR from the West to East. Often, these PPCS providers represented flagship cases indicating on-going and advanced developments; some PPCS providers epitomized those taking sustainability seriously and aiming to enhance their provision, which thus looks for dynamic future realization. Both validated orientations signal for forthcoming sustainability measures. Importantly for StratKIT, there were clear tendencies for newcomers into sustainability discussions to innovate, adopt and apply these intended measures into their own spheres of PPCS provision.

The tree framework model, showing here the BSR level developments, strongly emphasizes the interdependencies of the PPCS developments through external (regulative and market), internal (administrative) and operational (catering) contexts. While this model – unlike the country models – does not explicitly show external or internal context, it appears to change slowly by high-level policies; intriguing exceptions are the new Russian regulation of free school meals, expanding to services for citizens by the universal welfare state and the new Finnish and Nordic nutrition recommendations mention and enable public vegetarian and vegan meals (Valtion ravitsemusneuvottelukunta, 2017; Nordic nutrition recommendations, 2012). The organic market looks rather stable, strong in Denmark, less influential in other StratKIT countries except Poland and Russia, where this market – both on retail and wholesale levels – is negligible.

The BSR dynamic sustainability model underlines the activities in the operational context. The domains of local food policies, trickled down from public authorities into or of organizational initiatives, seem to carry a heavy load of climate neutrality, organic food, local and regional food and various sustainability strategies. This operational domain seems to rise into important position in all StratKIT countries. The domain wields impact on procurement, which is similarly essential in all countries. Meals and menus are developing in Finland, Poland and Russia (St Petersburg), entailing interest in more plant-based meals. Changes in manufacturing and service modes has limited attention only, mainly in terms of modernization and introduction of self-service in Poland. Communication is a domain underlined by all, entailing novel and extensive collaborative, pragmatic and public educational activities particularly in Finland, Germany (Brandenburg), Poland and Russia (St Petersburg). Waste management raised high concerns in Denmark, Finland and Poland.

Across BSR, there seem to be advanced PPCS provision which is in the process of continuous wide-ranging improvements; those with high-level organic course, remedy for many Green Deal policies; those with extensive intentions to simply switch the old course to a new sustainable one; those with high-level regional and economic interests for more sustainability and those with extremely efficient, extensive and regulated PPCS provision entailing vast chances for sustainability. All these developmental efforts align extensively with EU Green Deal policies. They



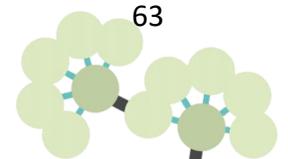
exert simultaneous multi-impacts on environment whereby more organic, plant-based, local and regional food address climate neutrality, zero-pollution and biodiversity as well as farm-to-fork and external policies. Better (non-)waste management again follows circular economy and kitchen renovations likewise attend to circular economy and building renovation, yielding energy savings.

6.4 Developmental trails of the PPCS sector in Baltic Sea Region

While the balanced, centralized, decentralized and individualized framework dynamics for change may characterize the ways sustainability issues are addressed, there seem to be some developmental trails requiring in-depth attention by those aiming to realize their intentions for sustainability.

The public consumption of organic food aligns strongly with EU zero-pollution, biodiversity, farm-to-fork and external relations policies. These policies emphasize conservation of land and sea areas as well as natural biodiversity (European Commission, 2019b); the agrobiodiversity has so far been less focal while globally justified (FAO, 2009). In Denmark, it has raised interests as public policy as 'plenitude'. While public consumption of organic food has its flagships in Denmark, the achievement does not benefit young people alike due to the fragmented individualized dynamics for change. It is also possible, that Danish organic market has benefitted from strong consumer demand, which has supported public consumption through wholesalers. In Finland, the reason for low organic wholesale market lies e.g. in the high-level trust in conventional Finnish food, unavailable packaging sizes for industrial manufacturing (Risku-Norja and Løes, 2017). This makes PPCS providers in low-market countries the ones to lift the market (Mikkola, 2011) and deploy communication support to benefit organic production, like the (public) organic kitchen or restaurant labelling in Denmark, Estonia and Finland. In countries with negligible organic markets there are options for market dialogues and collaborations under threshold limits of public procurement. However, the European pragmatic guidelines on organic production and labelling of products displays its strength as awareness raising communication tool in the market (European Commission, 2018). If this tool is lacking, and initial developmental stages have set on, the PPCS providers have opportunities to act as market breeders.

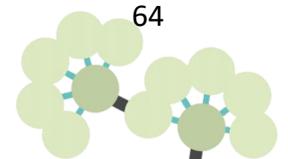
Climate neutrality policies bring forth the issue of plant-based food. It raised strong interest in PPCS providers, albeit notions such as plant based, vegetarian and vegan, entailing detailed ramifications in terms of adequate nutrition, competent and necessary planning of menus and fortifications need to be performed (Nordic nutrition recommendations, 2012; Palmer, 2014). The plant-based food, especially vegetarian diets, assure health benefits (Nordic nutrition recommendations, 2012; Palmer, 2014). While meat and dairy has been identified as environmental burden more than 10 years ago (Weidema et al., 2008), and messages of concern have been published (IPCC, 2019), solutions are not quick and easy to find; animal husbandry is extremely complex and geographically varied business linking with nutritional, food security and



economic issues as well as agriculturally limited opportunities (FAO, 2006; European Commission, 2018b). In general, nutritional, health and environmental benefits have been identified in a planetary diet with limited amounts of meat (Willett, 2019), while the concept of territorial diets – even the Traditional and New Nordic one – in alignment with broader natural and societal circumstances have been accepted (FAO and WHO, 2019). Furthermore, the use of carbon footprints is said to entail large variation between supply chains which increases difficulties for just criteria in public procurement. Clearly, the notion of the plant-based food leads to sustainability trail from policy domain to meals and menus to procurement to manufacturing, serving and communicating about sustainable meals to customers. These domain specific activities often seem to be connected, while four strategies for increasing plant-based food appear to exist among PPCS providers; the strategy to replace meat with plant-based ingredients (Boyano et al., 2019, Post, 2019); the one to serve plant-based meals only once a week, twice a week or once a month; to serve plant-based option daily and to offer ever tastier plant-based meals. Finally, the notion of plant-based food has received considerable attention by projects developing nutritionally balanced vegetarian and vegan recipes, to benefit the transition towards sustainability.

Food and other waste related to PPCS provision links directly with circular economy as well as climate neutrality policies. The matter has been of interest as a recognized grievance across most of StratKIT countries, as it also has its economic aspect. Many PPCS providers plan to save in food waste and invest in organic food. The measures range from across kitchen and customer process reviews to sales and donation schemes of the leftover food. Eventually, kitchen renovations, a matter of circular economy, climate neutrality and energy efficiency, raise the issue of manufacturing modes to be chosen. While the old equipment enters reuse, refurbishing or recycling, the new equipment enables cooking fresh meals, cook-and-chill preparation, cook cold or hot filling methods to prepare meals. These options were hardly presented in discussions as they require specialist planning. However, the manufacturing method also links with centralization of manufacturing tendency present in Finland, vis-à-vis the tendency to cook fresh meals in smaller kitchens on site, evident in Denmark, Estonia, Germany (Brandenburg), Poland, Russia (St Petersburg) and Sweden. This also has implications on procured volumes and packaging sizes, length of contracts and flexibility of meal provision. These two meal preparation modes actually represent logistically different worlds and need respective cures for sustainability. The procurement methods in StratKIT countries relied mainly on basic method of awarding points to product features or requiring mandatory high quality after which price decides. Market dialogues were starting to emerge, while other procurement methods such as competitive dialogue or negotiations, eco- and social innovations as well as innovation partnerships were unheard of (European Commission, 2014; European Commission, 2020). A strong developmental potential for sustainability therefore lies within these new procurement methods, as well as with new criteria constantly under development.

For decades, the PPCS providers have been developing their services for their customers, suppliers and environment. Often under circumstances of limited knowledge, particularly about



environmental matters, many professionals are aiming for the better, even if struggling for that (Mikkola, 2009a,b; Mikkola and Post, 2012; Morgan and Sonnino, 2008). While the science-based visions to be realized by the PPCS providers within their frameworks can be presented by green food system specialists (e.g. EAT-Lancet Commission, 2019), it will be a continuous and complex and joint effort to implement these visions within the frameworks of PPCS provision. This *tall order*, however, still presents the call for the better world for PPCS providers who are committed to increasing sustainability.

7 References

Boyano, A., Espinosa, N., Rodriguez Quintero, R., Neto, B., Gama Caldas, M. and Wolf, O., 2019. EU GPP criteria for Food procurement, Catering Services and Vending machines. Final Technical Report. JRC, European Commission. Accessible 10.09.2020 at https://publications.jrc.ec.europa.eu/repository/bitstream/JRC118360/jrc118360_eu_gp_p_food_catering_criteria_final.pdf

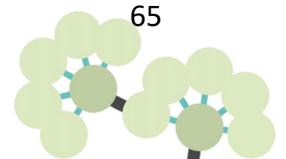
EAT-Lancet Commission, 2019. Brief for Food Service Professionals. Accessible 29.12.2020 at https://eatforum.org/content/uploads/2019/01/EAT_brief_food-service-professionals.pdf

European Commission, 2014. Directive 2014/24/EU of the European Parliament and of the Council of February 2014 on public procurement and repealing Directive 2004/18/EC. Official Journal of the European Union 28.03.2014. Accessible 29.12.2020 at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0024>

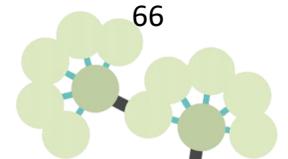
European Commission, 2018. Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and the labelling of the organic products and repealing Council Regulation (EC) No 834/2007. Accessible 29.12.2020 at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L.2018.150.01.0001.01.ENG>

European Commission, 2019a. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS The European Green Deal. Brussels, 11.12.2019 COM(2019) 640 final. Accessible 10.09.2020 at https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

European Commission, 2019b. EU biodiversity strategy. Bringing nature back into our lives. Factsheet. Accessible 29.12.2020 at https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/eu-biodiversity-strategy-2030_en#documents



- European Commission, 2020. Making Socially Responsible Public Procurement Work: 71 Good Practice Cases. Accessible 29.12.2020 at https://ec.europa.eu/info/making-socially-responsible-procurement-work-71-good-practice-cases_en
- European Communities – Council, 1992. Treaty on European Union. (Maastricht Treaty). Accessible 11.09.2020 at https://europa.eu/european-union/sites/europa.eu/files/docs/body/treaty_on_european_union_en.pdf
- FAO and WHO, 2019. Sustainable healthy diets – Guiding principles. Rome. Accessible 29.12.2020 at <http://www.fao.org/documents/card/en/c/ca6640en/>
- FAO, 2006. Livestock’s long shadow. Environmental issues and options. Accessible 29.12.2020 at <http://www.fao.org/3/a0701e/a0701e00.htm>
- FAO, 2009. International Treaty on Plant Genetic Resources for Food and Agriculture. Accessible 29.12.2020 at <http://www.fao.org/cgrfa/policies/global-instruments/plant-treaty/en/>
- IPCC, 2019. Climate Change and Land. An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. Summary for Policymakers. Accessible 03.09.2020 at https://www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM_Approved_Microsite_FINAL.pdf
- Mikkola, M. & Post, A., 2012. Green connections and emotional wellbeing: Sustainability as a factor of occupational (dis)satisfaction in catering. Paper presented at the 6th International European Forum on System Dynamics and Innovation in Food Networks. 13-17 February 2012, Innsbruck-Igls, Austria. Accessible 09.01.2013 at [Proceedings in System Dynamics and Innovation in Food Networks 2012 \(uni-bonn.de\)](http://proceedings.uni-bonn.de)
- Mikkola, M., 2009a. Shaping professional identity for sustainability: Evidence in Finnish public catering. *Appetite* 53(1): 56-65.
- Mikkola, M., 2009b. Catering for Sustainability: Building a Dialogue on Organic Milk. *Agronomy Research* 7(2): 668-676.
- Mikkola, M., 2011. Social dynamics for sustainable food systems. Actors’ orientations towards sustainability in primary production and public consumption. Doctoral Dissertation in Agroecology. Faculty of Agriculture and Forestry, University of Helsinki. 110 p. Seinäjoki & Mikkeli. Ruralia Institute. Publications 21. Accessible 02.06.2011 <https://helda.helsinki.fi/handle/10138/25945>
- Morgan, K. and Sonnino, R., 2008. *The School Food Revolution. Public food and the Challenge of Sustainable Development.* London, Earthscan.



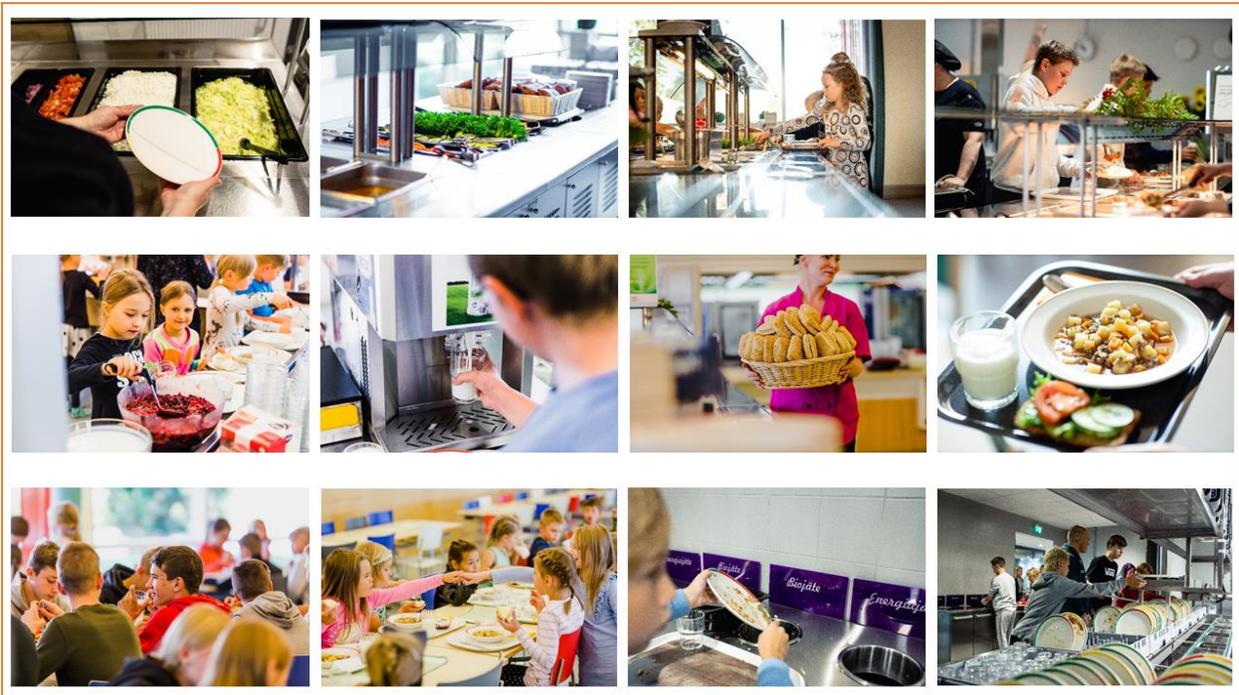
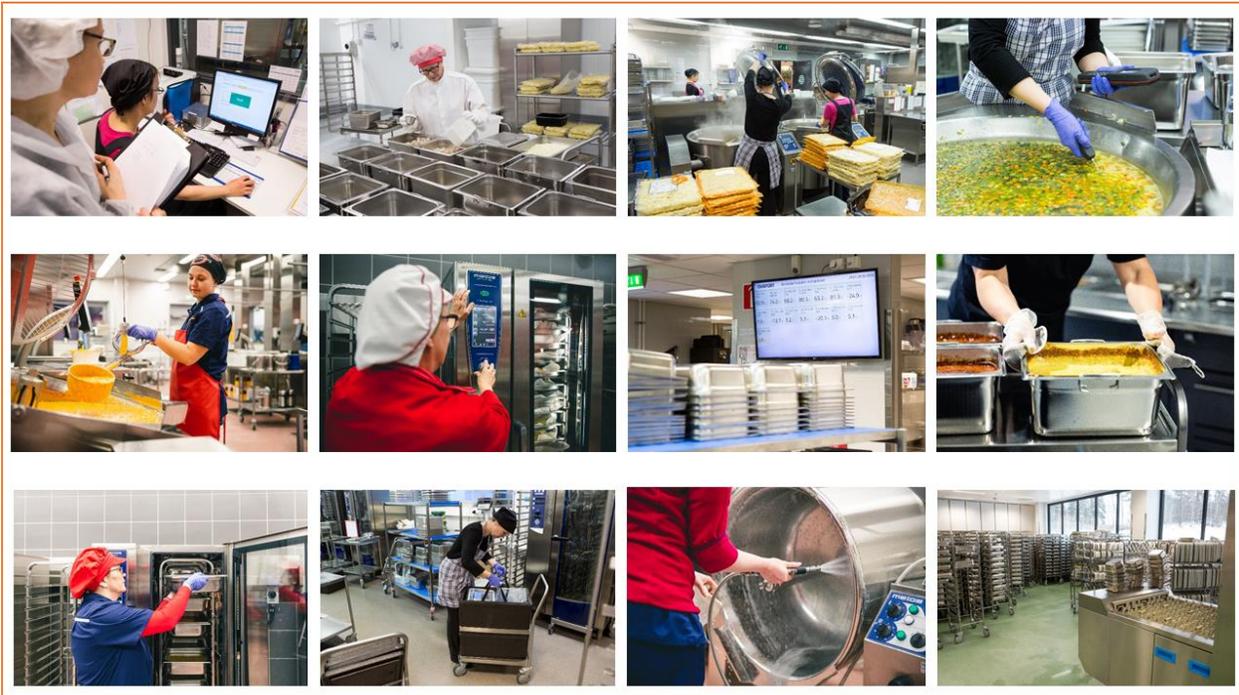
- Nordic Nutrition Recommendations, 2012. Integrating nutrition and physical activity. Nordic Council of Ministers 2014. Accessible 30.12.2020 at <https://www.norden.org/fi/node/7832>
- Palmer, J.A., 1998. Environmental education of the 21st century: Theory, practice, progress and promise. London, Routledge.
- Palmer, S., 2014. Nutrients of Concern for Individuals Following a Plant-Based Diet. Today's Dietitian. The Magazine for Nutrient Professionals. June 2014. Pp. 2-8.
- Post, A. & Mikkola, M., 2012. Nordic stakeholders in catering for sustainability: Chasm between ideology and practice? *British Food Journal* 114(5):743 – 761.
- Post, A., 2019. Sustainability measures in Swedish public catering. Presentation at StratKIT conference 12.11.2019 Tallinn, Estonia.
- Risku-Norja, H. and Løes, A.-K., 2017. Organic food in food policy and in public catering: lessons learned from Finland. *Org. Agr.* (2017) 7:111–124 DOI 10.1007/s13165-016-0148-4.
- Rothstein, B., 2010. Vad bör staten göra? Om välfärdsstatens moraliska och politiska logik. Stockholm, SNS (Studieförbundet Näringsliv och Samhälle). Tredje upplagan. (What should the state do? About welfare state's moral and political logic. SNS. Third edition. In Swedish).
- Simon, F., 2019. EU Commission unveils 'European Green Deal': The key points. Accessible 20.12.2019 at <https://www.euractiv.com/section/energy-environment/news/eu-commission-unveils-european-green-deal-the-key-points/>
- THL, SYKE and LUKE työryhmä, 2019. Luontoaskel hyvinvointiin. Accessible 11.09.2020 at http://www.julkari.fi/bitstream/handle/10024/138943/Luontoaskel_hyvinvointiin_raportti.pdf?sequence=1&isAllowed=y (Step to nature and wellbeing. In Finnish).
- Valtion ravitsemusneuvottelukunta (VRN), 2017. Syödään ja opitaan yhdessä – kouluruokailusuositus <http://urn.fi/URN:ISBN:978-952-302-791-6> (Eng. *Let's eat and learn together. Nutrition recommendation for schools*).
- Valtion ravitsemusneuvottelukunta (VRN), 2018. Terveyttä ja iloa ruoasta – varhaiskasvatuksen ruokailusuositus <http://urn.fi/URN:ISBN:978-952-302-992-7> (Eng. *Health and joy from food - a meal recommendation for early childhood education*).
- Valtion ravitsemusneuvottelukunta (VRN), 2019. Syödään yhdessä – ruokasuositukset lapsiperheille <http://urn.fi/URN:ISBN:978-952-343-254-3> (Eng. *Let's eat together. Nutrition recommendation for families with children*).

Ware, C., 2004. Information Visualization. Perception for Design. San Francisco, Elsevier, Morgan Kaufmann Publishers.

WCED, 1987. Our Common Future, Oxford, Oxford University Press.

Weidema, B.P., Wesnaes, M., Hermansen, J., Kristensen, T. & Hallberg, N., 2008. Environmental Improvement Potentials of Meat and Dairy Products. Eder, P. & Delgado, L., (Eds.). JRC scientific and technical reports. Accessible 20.12.2020 at <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=1721>

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Gamett, T., Tilman, D., DeClerck, F., Wood, A., 2019. Food in the Anthropocene: the EAT-*Lancet* Commission on healthy diets from sustainable food systems. Published Online January 16, 2019. Accessible 03.09.2020 at [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)31788-4](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31788-4)



Photographs: Finnish Professional Catering Association, Samuel Hoisko and Tomi Setälä