The role of sustainable HORECA for sustainable lifestyles - identification of challenges and future work

Strassner, Carola; Bügel, Susanne Gjedsted; Hertwig, Jostein; Kahl, Johannes; Nuutila, Jaakko; Paoletti, Flavio

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The role of sustainable HORECA for sustainable lifestyles – identification of challenges and future work

Carola Strassner,[1,2] Susanne Gjedsted Bügel,[3] Jostein Hertwig,[4] Johannes Kahl,[3,5] Jaakko Nuutila[6] and Flavio Paoletti[7]

1 *FH Münster University of Applied Sciences, Department of Food – Nutrition – Facilities, Münster, Germany*
2 *a'verdis Sustainable FoodService Solutions, Münster, Germany*
3 *Department of Nutrition, Exercise and Sports, University of Copenhagen, Frederiksberg C, Denmark*
4 *BERAS International Foundation, Järna, Sweden*
5 *FQH Association, International Research Association for Food Quality and Health, Driebergen, Netherlands*
6 *Finnish Organic Research Institute, Natural Resources Institute Finland (Luke), Helsinki*
7 *Council for Agricultural Research and Economics, Centre of Research on Food and Nutrition, Rome*

ABSTRACT

Internationally there is increasing interest in short food supply chains and local and organic food as part of a wider concern with sustainability. This is strongly evident in both commercially oriented food service, where it is often associated with sustainable tourism endeavours, and in institutional catering, often in connection with sustainable public procurement initiatives. Proponents stress environmental benefits as well as the health and nutritional value of high-quality organic food and re-localized food production and consumption, plus the opportunity for food education, especially in school meal settings. This paper looks at changing policies and practices against a background of rising digitalization and the blurring between retail and food service channels. It will consider long-term strategies for developing sustainable HORECA, cooperation between procurers and smaller suppliers, and community involvement.

CATERING AND HOSPITALITY – IT'S BIGGER THAN YOU THINK

Broadly speaking, people eat at home – or – they eat out of home. Catering and hospitality can be said to cover everywhere that people eat out of home. As an economic activity, it is commonly classified according to categories that are largely similar around the world (see Table 1); this allows statistical reporting and analyses across borders to a certain degree.

Catering and hospitality also go by the term food service, or HORECA (hotels,

Table 1: Food service-related activities according to the International Standard Industrial Classification (ISIC), the Nomenclature of Economic Activities (NACE) in the European Community, and the Australian and New Zealand Standard Industrial Classification (ANZSIC)

ISIC	Classification of economic activities	NACE	ANZSIC
55	Accommodation	55	44
551	Short-term accommodation activities		
	Hotels and similar accommodation	55.1	440
551	Holiday and other short-stay accommodation	55.2	440
552	Camping grounds, recreational vehicle parks, trailer parks	55.3	440
559	Other accommodation, including student residences, school dormitories, workers' hostels, boarding houses	55.9	440
56	Food and beverage service activities	56	45
561	Restaurants and mobile food service activities	56.1	451
562	Event catering and other food service activities	56.2	451
563	Beverage serving activities	56.3	452-3

restaurants, catering), though the nature of the sector is far more complex than these three simple words might suggest. Accommodation with food service covers a restaurant in a hotel, a mini-bar in a motel room, a kiosk in a campsite, a vending machine in a youth hostel and a bar at a trailer park. Restaurants range from fine dining to fast food takeaways, but also food trucks, street food and food preparation at market stalls. Catering can take place in an institutional setting such as corporate or business canteens, in social welfare settings such as in the care sector in hospitals or clinics, or in an education setting from kindergarten through schools to university. Accordingly this may even be referred to as lifecycle catering: catering for human groups at various lifecycle stages. Slattery (2002) divides the hospitality industry into free-standing hospitality business (e.g. hotels, restaurants and bars), hospitality in leisure venues (cultural, sport, music, etc.) and in travel venues (land, air, sea), and subsidized hospitality (e.g. homes, prisons, military).

Kottila (2010) includes HORECA in food chain stakeholders while Nuutila and Kurppa (2016) as part of the food chain. In research (e.g. Whatmore, 1995; Ericksen, 2007), HORECA is often not even mentioned as part of the food system and in statistics (e.g. Meredith and Willer, 2016), it is often included in food markets or retail, or the data are old and incomplete. Nevertheless, HORECA is an important part of the food system, for example in EU28, in 2014 the average annual household expenditure for catering was 6.7 percent and for hotel and restaurant services 8.2 percent, and there were 1.5 million outlets providing food and beverage services (Eurostat, 2016a). The hospitality industry is a significant employer, it has a substantial growth potential and it generates remarkable tax revenues (Mara, 2016), it's highly varied legal trading forms (leases, concessions, ownership, etc.) notwithstanding. Although it is a volatile market, being linked to economic cycles, it is consistent and continues to claim at least one-third and up to one-half of developed market currencies spent on food. In this paper we consider food service overall, focusing on the part eating out of home plays in a sustainable food system. Sustainability is an issue across all types of food service operations and there are many varied individual approaches (Strassner, 2015).

Table 2: Simplified representation of the transformation happening within a food service operation

Input	Output
energy	fuel use, emissions
water	wastewater
air	waste air
energy, air, water	heat and refrigeration
food ingredients	meals, food loss, food waste, leftovers incl. fryer oil
non-food articles	packaging, containers
people	development? health? well-being? skills?
furniture appliances	materials waste
real estate	construction and demolition waste
financial resources	profit, loss, taxes, debts

Source: Roehl and Strassner (2012).

SUSTAINABILITY IN HORECA

Citizens are increasingly interested in the production method of their food and what it contains or does not contain, and that is leading to ecological and ethical consumption and awareness of safe and healthy food. Guests place an increasing emphasis on eco-social values. The HORECA industry has responded to this development and is supporting it along with the trend of locally produced food. The global demand of moving towards a circular economy and promoting high-quality recycling (EREP, 2016) is also exerting influence on the consumption of organic food. Yet the private sector cannot be guided towards sustainability and use of organic produce in other ways than by consumer trends, taxation and legislation. The public sector is the major consumer in EU representing 14 percent of the EU gross domestic product (EC, 2016) and therefore EU has legislation for public procurement (Eur-Lex, 2014) and recommendations for more sustainable green public procurement (GPP) (EU, 2016). These include a special product sheet for catering and food with specific instructions on how to change the procurement and kitchen operations to be more sustainable (EU, 2014). In both documents organic food and its production are indicated as an example of a sustainable method of procuring, preparing and serving food. The consumption of organic produce is also increasing in the HORECA sector (Meredith and Willer, 2016) but, because it is usually not included in official organic controls, the statistics are incomplete in most countries.

In the past, food service operations, much like all other operations, focused on improvements and developments within the boundaries of their operations. With the increasing attention to sustainable development, the inputs upstream and the outputs downstream are being brought into the sphere of operation responsibility and hence actionability (Strassner and Roehl, 2014). A typical food service operation takes a number of inputs and transforms these to a number of outputs (Table 2). In matters of sustainability, the focus of interest is currently mainly on: (i) food, i.e. food quality according to various criteria such as short chain, local, Fair Trade and organic; (ii) emissions (climate change, with CO_2e reduction as a goal, hence a proliferation of climate menus and CO_2e calculators), this links with food issue mainly via meat; and (iii) food losses within operations but especially at the end of the operation, i.e. the guest's food waste.

FOOD QUALITY AND ORIGIN IN HORECA – CURRENT DEVELOPMENTS

Too often the sustainability of the food chain and food is approached with only CO_2 emissions, eutrophication and nutrition (e.g. Vorne and Patrikainen, 2011) and other environmental aspects as well as social, ethical (animals, employees) and economic aspects are disregarded. As a result of a recent meta-analysis of four key sustainability metrics (productivity, environmental impact, economic viability and social well-being) and a comparison of organic and conventional agricultural systems, Reganold and Wachter (2016) developed an assessment illustrating twelve sustainability areas. They conclude that: (i) conventional exceeds organic in yields; (ii) organic and conventional are equal in nutritional quality and total costs; and (iii) organic exceeds conventional in profitability, minimizing water pollution, biodiversity, minimizing energy use, soil quality, minimizing pesticide residues, reduced worker exposure to pesticides, the employment of workers and ecosystem services. Organic food systems can provide sufficient food if consumption patterns change towards less resource-consuming products (Schader, Stolze and Niggli, 2014). A study in the United Kingdom estimated that converting to organic production would reduce the external environmental costs of agricultural production by 75 percent (Pretty *et al*., 2005).

The sustainable performance of HORECA operations derives from official guidelines, such as GPP (EU, 2016), governmental programmes and goals such as the National Plan of Sustainable and Health Gastronomy of Costa Rica (Azofeifa, 2016) and also by the demand coming from the guests or customer companies. The GPP food and catering services toolkit deals with: (i) use of pesticides and fertilizers; (ii) soil degradation, forest destruction and loss of biodiversity; (iii) GMOs; (iv) intensive husbandry, fishing and aquaculture; (v) energy and water consumption and waste generation in manufactured food production; (vi) additives used in processed food; and (vii) waste generation. Considering food sourcing in particular for a food service operation is especially important because it enables consideration of the full length further upstream all the way to the farm and its input. Typically a number of food quality criteria are being included in the technical documents for public procurement tenders, such as those of the City of Munich in Germany (Figure 1). Such criteria may include short chain stipulations often with the aim of supporting rural development and providing economic support for small, medium and micro enterprises (SMMEs). The inclusion of organic ingredients, foods and meals plays a particularly prominent role.

ORGANIC FOOD IN HORECA

There are many such examples of food service operations using or being required to use organic products. Organic agriculture and food production provide a useful study object, insomuch as they can be used as a model linking production and consumption and be followed through a clear organic food value chain (such as in Figure 2) or even observed as an organic food system (Kahl, 2015). In the following section a few cases will be briefly presented.

Organic HORECA in Copenhagen

The Copenhagen City Council decided in 2001 that the public meal service in the Municipality was to convert to organic food products and that by 2011 at least

1. Minimum 10 percent of all food of organic quality
2. Minimum 30 percent of all food from local production
3. Minimum 30 percent of all food or a single animal species with animal welfare standard
4. Marine fish exclusively of Marine Stewardship Council quality
5. Coffee and tea exclusively of Fair Trade quality

Figure 1. The City of Munich's requirements of caterers
Source: Strassner and Roehl (2016).

75 percent of the food used in the public meal service should be of organic origin. In 2007, this goal was increased to 90 percent to be reached by 2015. The Copenhagen House of Food (Københavns Madhus) was appointed to be the driving force behind the conversion (Københavns Madhus, 2015). In spring 2016, the Municipality of Copenhagen celebrated that 88 percent of the food produced for public meal services was organic produce (City of Copenhagen, 2016).

The Copenhagen House of Food has estimated that the Municipality of Copenhagen serves approximately 120 000 meals to 70 000 guests in 900 institutions prepared by 1 750 kitchen staff members daily. A total of 10 700 tonnes food – of which 9 475 tonnes are organic – is produced (Københavns Madhus, 2015). According to the Copenhagen House of Food, the formula for this astonishing shift is clear: political decisions supported by the institutional staff, high professionalism and drive. More organic food in public kitchens is anticipated to have a number of advantages: it is beneficial for the environment, contributes to optimization of the kitchen processes that can reduce food waste, creates more focus on meal quality and provides better and healthier food to the user, while also creating greater job satisfaction for the kitchen staff. The task of making tangible organic progress through conversion in the public kitchens was given to the Copenhagen House of Food and this was set about by a process that the Copenhagen House of Food calls "conversion of heads and saucepans", because it is not sufficient just to replace conventional products with organic products, as that was estimated to increase the costs by 20–35 percent. Instead, by converting the production in the kitchen and the consumption, including a change in the nutritional composition, the final outcome was a balanced diet plan with seasonal organic produce, with no additional expenditure. The reason for the success is understood to be the political decision behind and the investment in the conversion process. Furthermore, the public kitchens participating in this conversion are required to be willing to change, but also curious and professional. In some cases ready-to-use products, canned preserves, frozen peas and bouillons must be replaced by fresh, seasonal ingredients and self-made stock. The conversion may also require extensive examination of the whole process including waste, budget, economy and introduction of entirely new products and recipes. The final product may include higher culinary quality, but also professional satisfaction and pride in the kitchens.

The Danish Minister for Food and Agriculture announced a new policy regarding organic food in 2011 entitled: "A strong new ecology policy - towards a green conversion" and in 2012 a more detailed Organic Action Plan 2020 was presented. In order to strengthen the green conversion a number of initiatives were started and funded by the government.

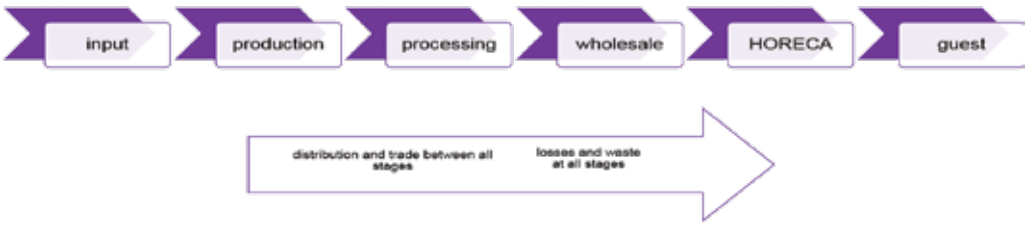

Figure 2. Farm-to-fork via food service in a simplified value chain representation

These initiatives were divided into six categories: (i) governments must take the lead; (ii) ecology after 2013; (iii) farmer reorganization; (vi) product development and innovation; (v) sales and marketing; and (vi) research and development. This multipronged strategy was considered more effective than, for example, farmer reorganization alone.

"Økoløft Danmark" – a joint commitment to ecological conversion of public kitchens – is central to the Organic Action Plan 2020 and the aim is to double the organic agricultural area in Denmark by increasing the demand for organic products in public kitchens. Experiences from the Municipality of Copenhagen will be used to convert to organic food in the public kitchens in other Danish Municipalities (Økoløft Danmark, n.d.).

Organic HORECA in Södertalje, Sweden

School lunches are served in many countries, but the Swedish school meal model is unique in offering free meals to all children in the ages 7–16 years and to most students aged 16–19 years on an everyday basis. National efforts towards free school meals started in the early 1900s and comprised the majority of Swedish schoolchildren in the 1970s. Since 2011, the Swedish School Law stipulates that school lunches must be nutritious, thus equal one-third of the recommended daily intake of energy and nutrients. Every year 260 million meals are served in Swedish schools. The meals are hot and often several alternatives are available. Salad, bread, butter, milk and water are also on the menu. The official recommendations state that school lunches are to be a part of the education and that those pupils who eat lunch have better presupposition to learn. Meal production can be operated by the municipality or by a purchased contractor. The National Food Agency issues recommendations for school meals, considering ingredients as well as time of serving, meal environment and how to involve students in the meal service (Livsmedelsverket, 2015).

Organic food is common in public catering. In the summer of 2001, Ekocentrum in Sweden carried out an investigation on the use of organic food in public catering. Results showed that 84 percent of the communities have organic products in their purchase contract; 40 communities had more than 75 percent of their caterers serve organic food from time to time (Enfors, 2001).

Södertälje Municipality in Sweden is fairly close to Stockholm. Its city council made the decision to use the procurement of food as a tool in their environmental work in 2001. It further decided that food served in kindergartens, schools and elderly care homes should be improved both qualitatively for the guest groups and for the environment. As a consequence, the position of Head of Diet Unit was created. Five years later, in 2006, the

process leading to the creation of a diet policy to guide the direction of the work within food service was set in motion. Within four years, in 2010, the diet policy was adopted by the city council. In the policy it is stated that food "…shall be produced under ethical conditions and with as little harm to the environment as possible." It also states that the municipality shall whenever possible purchase organic food and promote locally sourced and produced products. In a further step, Södertälje municipality became a partner in the BERAS implementation project. The Diet Unit was given the task to develop criteria for, and then implement, the concept called Diet for a Green Planet. Continuing till today the BERAS project produces research that shows that food produced on ecologically regenerative agriculture farms can help revive the Baltic Sea (Beras, 2013). By 2014, around 90 percent of all professional kitchens in kindergartens, schools and elderly care homes are fully equipped, able to prepare and cook food from raw ingredients. Today (2016) Södertalje municipality has 91 restaurants in schools, kindergartens and elderly care homes. There are 24 000 meals served every school day with a 60 percent organic level at no increased cost per meal. The principles of Diet for a Clean Baltic have also been tested out in cities in Poland, Lithuania and Spain (Nordlund, 2015).

Organic HORECA in Seoul

Sustainable practices are implemented in food service operations in the Republic of Korea and are well-received by guests, according to a study by Ju and Chang (2016). This includes organic restaurants (Oh, 2008) and also school meals (Park, Ahn and Choe, 2013). The latter have been crucial to nutrition and health of school-aged children in the Republic of Korea. In 1953 a school lunch service was first introduced nationally (Yoon, Kwon and Shim, 2012). The municipality of Seoul in the Republic of Korea has more than 10 million inhabitants of which a number are concerned about sustainable practices. Several schools have started to use products from environmentally-friendly agriculture (also termed eco-friendly), which includes organic as one of three official schemes along with pesticide-free and low-pesticide agriculture. In October 2008, a programme for organic school meals was launched, which piloted with 62 schools in March 2009. By March 2015, six years later, 723 schools were taking part in the programme, which necessitated the construction of three logistic centres to a value of USD27.5 million (Sohn, 2016).

Organic HORECA in Finland

Finland is one of the few countries that offer warm meals to day-care centre and school children up to the age of 18 years (OPH, 2015; Mikkola, 2008) and that gives a unique possibility to serve organic produce to a remarkable part of the population. Although the organic food system is developing in Finland according to all parameters, it is still lagging behind the best performing EU countries (Willer and Lernoud, 2015). There are many challenges that prevent the development of the organic food sector in Finland such as the poor cooperation among the actors of the food chain, unfair division of power among the food chain stakeholders (Nuutila and Kurppa, 2016a) and also the consumers' trust in the quality of conventional Finnish produce that keeps the organic markets small (Nuutila and Kurppa, 2016b).

A national innovation: free school meals

The use of organic produce in the Finnish catering sector is increasing and in 2015 one-third of the professional kitchens used organic ingredients weekly, more in the private sector and less in the public sector (Pro Luomu, 2015). The share of organic produce in public kitchens was approximately 5 percent (in kg) in 2014 (Pro Luomu, 2014). Since the use of organic ingredients by the professional kitchens is not controlled by the authorities, there are no precise data available. There are 850 000 scholars entitled to free school meals. Additionally, some 47 000 children taking part in before- and after-school activities get to enjoy a snack. Some education providers also offer a free snack to children taking part in school clubs. (OPH, 2015). Public catering has a long history in Finland and free school meals have been served for scholars up to upper secondary school and vocational school level since 1948 (OPH, 2015). This is in line with the Nordic welfare model that addresses tax funds to the common good maintaining a welfare society with high social security (Kautto *et al*.,1999; Miettinen, 2013; Norden, 2013).

Organic food in municipalities

Finland has 313 municipalities (from 1 285 up to 628 208 inhabitants) (Local Finland, 2016) and they provide over half of all meals eaten outside homes. One-third of the population uses public catering services on weekdays, and public meals reach all Finns in some part of their lives (Perälahti and Kumpusalo-Sanna, 2015). School meals provide an important channel for exerting influence on the food choices of citizens (Risku-Norja and Mikkola, 2014) and are therefore also an important channel for organic education. Along with the aforementioned challenges that organic development is facing, the most notable ones for the public procurement are the poor and uneven availability and selection of the organic products and especially in further processed products (Kottila, 2010) and the higher prices compared with conventional alternatives (Risku-Norja and Løes, 2016). Although the use of organic produce in professional kitchens is developing slowly, according to Nuutila (2015), the employees of the public kitchens are the most positive actors in the Finnish food chain for organic production and products and the positivity was even higher in the public sector than in the private sector. The kitchen personnel are well educated: cooks have a vocational school degree, foremen have an applied sciences level degree and the biggest municipalities have nutritionists with a university degree (Mikkola, 2008; Nielsen *et al*., 2009). There is no precise data of the use of organic produce in the private sector. The use of organic ingredients is expected to increase, but the availability is not good enough. According to a survey, 39 percent (n=657) of chefs would like to buy more organic produce, especially peeled and cut vegetables. There is a growing interest towards organic produce because they are regarded as a tasty, safe, ecological and ethical choice (Pro Luomu, 2016).

Menu engineering

The daily school meals are composed of a warm main course, a selection of cut and grated fresh vegetables, bread and spread and milk. Depending on the nature of the main course, fruits and sometimes dessert is served. There are two choices for the main course; one is

(ovo-lacto-)vegetarian. The main ingredient for the other main course choice is red meat, poultry, fish or vegetables. Soup is served once a week. According to the school food guidelines (VRN, 2008), the school meal needs to provide one-third of the daily energy intake and it needs to be nutritionally balanced. A government-funded organization created a "step-to-step" programme to increase the use of organic produce in professional kitchens (Portaat Luomuun, 2016). With its six steps, the customers can recognize the share of daily or weekly used organic products. There is also a register of organic food serving outlets, but the data are not complete as the programme is on voluntary basis.

Official goals and challenges

The Finnish Government has set goals for the development of the organic food chain as part of the sustainable food system (YM, 2005; VN, 2009; MMM, 2012). The current "Organic 20/2020" programme means that in 2020: (i) 20 percent of the agricultural land will be under organic production; (ii) the national production will be sufficient for domestic markets; (iii) the sales of Finnish organic products will triple in retail and catering; and (iv) 20 percent of the food served in day-care centres and schools will be organic (MMM, 2014). The goals are reachable with several actions taken in the Finnish food system. The strongest instruments are taxation (such as pesticide and nitrogen taxes), legislation and higher national organic subsidies. Additionally the government and the municipalities could set a specific organic school meal subsidy (Nuutila and Kurppa 2016b) in the same way that EU sponsors school milk and fruits to the schools. Menu engineering gives a kitchen-level possibility to increase the share of organic produce either by replacing the most expensive ingredients (e.g. meat) with the less expensive organic and seasonal vegetables or by replacing part of the meat with root vegetables in stews, ragouts and soups (Ekocentria, 2016). The domesticity of food and its production is well noticed by the authorities (MMM, 2014; VN, 2014) and the organic growth as part of the development of the national food chain (VN, 2010, 2011). It is true that the organic food system offers a possibility to improve national food security. In Finland it is also important to start using organic wild berries and mushrooms because the world's largest non-agricultural organic area is in Finland (11.6 million ha) (Pro Luomu, 2016) providing certified organic berries and mushrooms to the markets.

Organic HORECA in Italy

In Italy, a legal framework exists to support organic, traditional and local food consumption in food procurement. To guarantee the promotion of organic and quality food production, the Italian Parliament passed a law in 1999 (National law no. 488 of 23 December) in which it was established that the public institutions that manage the school and hospital food service have to provide in the daily menu for organic, typical and traditional food products, and those of geographical indication (Protected Designation of Origin [PDO]; Protected Geographical Indication [PGI]) as well, taking into account dietary guidelines and recommendations in the composition of the diet.

The national law represented the starting point of a significant change in the school food service in Italy. Currently, several regions (Emilia-Romagna, Basilicata, Tuscany, the Marche, Lazio, Friuli Venezia Giulia, Veneto, Trentino, Umbria) have their own laws in

which the use of organic and local food products in school canteens and the hospital food service is promoted and, in some cases, also financially supported.

There are many municipalities where organic and local food products are provided in the school canteens. However, the situation is highly differentiated. There are school canteens that have only one organic food product in the list of the foodstuffs used; others provide some organic food products and, finally, others provide a complete organic menu.

According to the BioBank report (Mingozzi and Bertino, 2015), the school canteens in Italy that provide at least one organic food product were 1 249 in 2014. The number of meals provided in these canteens amounted to 1 230 000. In 2010 there were 872 so-called organic canteens; this means an increase of about 43 percent in five years. Food products provided are mainly fruit and vegetables, but also yoghurt, milk, eggs and oil are included.

During the economic crisis, some municipalities have decided to save money by discontinuing the provision of organic food in school canteens. However, the number of these canteens has been exceeded by that of newly organic canteens, thus resulting in a net increase.

In about 23 percent of these organic canteens, organic ingredients represent a minimum of 70 percent of all the raw materials used for the preparation of the menu. They are mainly located in Northern Italy (71 percent), while 18 percent are in Central Italy and 11 percent in Southern Italy.

Among the municipalities, the city of Rome characterizes a success story. Every day in Rome the school canteens provide about 150 000 meals. About 70 percent of all the food products provided are from organic agriculture. Fruit and vegetables are 100 percent organic, as well as bread. Recently, some types of fish have been introduced, such as trout fillet from organic aquaculture. In 2014, more than 60 percent of the food products in school canteens were from producers (farms, livestock) located less than 300 km from Rome. Some products (e.g. bananas) are of Fair Trade quality.

The Emilia-Romagna region was one of the first Italian regions to have its own legislation specifically addressed to support food education and the public food service of high quality (Regional law no. 29, 2002, 4 November). The approach of the Emilia-Romagna region is grounded on the educational role of the school food service, which presents an opportunity to promote well-being and health from an early age and to orient consumers towards sustainable consumption.

The activities performed by the regional administration from 2002 were to:

- provide widespread information to the municipalities;
- organize training courses for food service operators;
- involve schools;
- establish synergies between different intervention areas (agriculture, health, regional agency for purchasing).

Moreover, the Emilia-Romagna region set up a permanent information service to:

- monitor the food service provided by the municipalities;
- give information and/or advice to local bodies managing food service activities, schools, food service companies, parents, organic operators, about foodstuff price and availability, menu, tenders, legal and administrative aspects, etc.;
- release a newsletter with information, events and news.

The regional law is applied by 80 percent of the school canteens in Emilia-Romagna to different extents: in 30 percent of the cases organic food products represent 80–90 percent of the food products used; 25 percent of the school canteens use only more inexpensive organic food products; finally, 25 percent make infrequent use of organic food products.

Organic HORECA offers some lessons for sustainability in HORECA

These brief cases and many more like them have a number of factors in common that may be useful for other initiatives to promote sustainable development in the HORECA sector.

A supporting environment made up of growers, educators, networks and consultants

Within the organic food system, these cases have a supporting environment in each location or region. There is a strong participation of various groups, such as organic grower associations that actively support the food service channel as a (further) channel for organic products, not just the retail channel. There are also trainers offering organic education and training specifically for food service professionals. Additionally, networks of practitioners or partners share experience on their food service operation's sustainability journey, and consultants specialized in this niche sector actively and directly support the market development and/or accompany it. Thus there are many, many people in many functions and with many varying perspectives and skills all supporting these transitions.

Integration into dietary standards, procurement guidelines, and more

Viewed through a food systems lens, reinforcing loops can be observed, i.e. when small changes become big changes, changes that bring about more changes. For example, after some time sustainability criteria (including organic) were integrated in the German quality standards for school meals. These quality standards were the first of a series so that once the criteria had been integrated, they were moved through the entire series, i.e. into the standards for kindergarten meals, business meals, meals on wheels, homes, hospitals and clinics. Such criteria can also be found in green hospital strategy papers, procurement guidelines, e.g. for student unions, how-to guidelines for school meals, cookbooks for food service operators, as well as educational material for teachers and pupils at different levels.

HORECA – producer partnerships

The interest in organic produce for food service operations is providing an opportunity for direct cooperation between food service operations and small suppliers, between procurers and small producers. There are farm-to-restaurant, farm-to-school, farm-to-college, farm-to-hospital, farm-to-ice cream-parlour, farm-to-youth hostel, farm-to-business canteen cooperative partnerships in numerous countries around the world. Stakeholders appreciate the short chain opportunities, such as the BioMacher Initiative "Wir machen Bio" (BioMacher, 2016).

A variety of certification schemes

The organic food system inherently provides an assurance and control system, given that it is defined and regulated in 86 countries around the world (Strassner, Kahl and Paoletti, 2015), though very few have formal regulations for organic use in food service. It is a food

system active in the communication and promotion activities, inter alia about organic quality. This is what enables public procurement to include organic as a quality criteria, because it can be followed through the value chain and it is unambiguously defined. Moreover, there are many further seals and programmes, especially in the tourism sector, which include organic food quality among their sustainability criteria. The sum total of these very varied initiatives is a wide base of experience both in developing such labels, rolling them out, promoting and monitoring them.

CHALLENGES AND FUTURE WORK

Nevertheless, there are a number of critical obstacles to sustainable HORECA and their integration into sustainable lifestyles of citizens worldwide.

Technical innovation needed for small-scale activities

For food service operations starting the journey of sustainability, there is a challenge of finding suitable products, ready to use in professional kitchens. Food service operations are used to ready-to-use food service products that are calibrated, uniform, pre-processed products. Farms or other small suppliers often have no resources to bridge the gap between products off the field and food service needs. Food services, having tight budgets, often released those human resources that once washed lettuce and peeled potatoes and hence also do not have the resources. Technical innovation and advancement for small-scale actors is needed, those processing innovations that better bridge the gap between producers and professional kitchens.

The (changing) social practice of eating

Lifestyles are changing, especially with regard to mobility, demography and digitalization. Eating is part of diet, which is part of lifestyle. Viewed as a social practice, eating is changing. The example of the ubiquitous coffee-to-go explains why this is relevant: typically efforts in sustainability will focus on ensuring that the coffee is of organic and Fair Trade quality, or similar. The focus is laid perhaps too much on the food product level. Whether the coffee in the cup is organic or Fair Trade and the cup is made of renewable resources does not change the relatively young lifestyle fashion of a coffee-to-go itself. It does nothing to address such a new practice entering mainstream and producing the most tremendous amount of waste. Initiatives addressing the wasteful practice, such as the kill-the-cup campaign, took a few years before they were up and running. For sustainability endeavours to be effective, tackling the context of eating will be critical.

Data definition difficulties and data availability

Decisions are made on the basis of data, not just market policy decisions but also for policies targeting health and nutrition. Data are only as good as their definition (and method). Food eaten in HORECA used to be clearly an "out of home" activity while food bought from a retail outlet used to be prepared and cooked at home. The activities underlying the definitions were straightforward and quite separate. Nowadays, retail-bought food is often

eaten out of home (on the go). This can be illustrated by the following examples. A person has just bought a drink and a baked good to go from a bakery at a train station and eats it at the travel station. This is an out-of-home eating act. However, the place it has been bought from is classified as a bakery, hence it is a retail sale. Also, nowadays restaurant-bought food is delivered to homes to be eaten there. People are meeting up with friends at home, eating together, but the food that they eat comes via a delivery service from a restaurant. How is this defined or classified? The sales part is out of home and the eating part is at home, though the definition may change with the perspective. One feature of this may be that we are missing the shift because of the way the data are measured. Increasingly such data are not only interesting for industrial activity measurements but also to follow food through a value chain (system) for questions important to public health nutrition and other fields.

Does everyone need a kitchen?

The continued course of human movement from rural to urban settings underlines the critical role of cities and of providing food-related services to or within cities. The act of eating is inextricably linked to lifestyle and the architecture of life. When we consider what kind of sustainable food products and meals populations will be consuming, the context of that activity should bear equal scrutiny, especially in view of increasingly small household units (one to two person households) and their resource consumption. One urban laboratory exploring these questions is the Kalkbreite Cooperative in Zurich, Switzerland (http://anleitung.kalkbreite.net/). The residential development was designed to meet the 2000-watt energy consumption goal per person. Besides commercial (e.g. office space) and cultural (e.g. cinema) spaces, there are private housing units. With regard to kitchens, the units either have a mini-kitchen or are cluster flats that share a common room and a large, professionally equipped kitchen. This translates to real space and material savings, as not every unit needs every appliance. Kalkbreite has a sizable walk-in freezer (–18 °C) with lockers, releasing household units from the perceived need to possess their own freezer. Lifestyle-related questions that may deserve more attention include: does everyone need a kitchen? a store room of their own? a freezer of their own? does everyone need to cook? what scales are sustainable? It is here that a professional food service has a critical role to play.

Take home messages about the role of sustainable HORECA for sustainable lifestyles

1. Introduce organic and sustainable goals as a change agent; in this way the operational units and the people involved start a transformation journey.
2. Inspire with stories about people (champions) and practice (places). Information is important but the rational consumer model is outdated. These stories can be addressed to all stakeholders. Consumer information can and should happen in food service too, especially in institutional catering (captive audience).
3. Enlist foodservice to co-create a better food system now. Chefs can drive transformation, how can stakeholders contribute to drive transformation?

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