

# The school meal system: analysis of calls for tender as a tool for improving quality

Authors: Stefano Bocchi and Roberto Spigarolo

DiProVe (Dipartimento di Produzione Vegetale – Department of Food Crops) – Faculty of Agriculture

State University of Milan

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## Abstract

The quality of school meal system is a very complex issue. It can be presented as a combination of the quality of the food products procure, the quality of the meals provided to pupils and the quality of the service.

The quality of the school system depends on the policies and decisions defined at the school level, but it is strongly influenced by policies defined at higher levels such as municipalities, provinces, Regions up to UE.

Calls for tenders for school meal catering are a key instrument for municipalities to influence the quality of the food procured and, generally, the school food service.

100 calls of tenders from all Italian regions were analysed focussing on procurement policies, evaluation of possible catering companies, differentiation of the quality factors.

Actually in the tenders many products were required in organic quality, in the context of the promotion of the quality of the procurement policies and of the reduction of the products coming from conventional agriculture. The interest for local products is at the same time diffused.

## 1. Introduction

Food quality is a holistic concept including different aspects as i) *hygienic one*, corresponding to food safety, a mandatory feature (all the foods produced and delivered must be safe) which can be recognized by the consumers only when it lacks; ii) nutritional quality, resulting from the composition of the food, which can be measured by the consumers only when the labels of products show their composition; iii) sensorial quality, which is perceived by the consumers with all its senses, normally considered by the consumers as the most important quality; iv) technological quality, an important issue for the producers and the transformers, as well as for the caterers (e.g.: pasta which don't overcook is an important quality for the cooks).

In the European society is becoming more and more important, inside the school system, the quality of the school meal every day provided by the schools.

The quality of school meal system is a very complex issue not easy to be defined in few words. It can be presented as a combination of: i) the quality of the food products procured, that can be well represented by the products coming from controlled and certified production processes (named "controlled chain products"; *filiere controllate*). This category includes organic products, certified as typical or local products (labelled as Protected Designation of Origin/PDO and Protected Geographical Indication/PGI), products from sustainable agriculture, and fair-trade products (R. Spigarolo (ed.), 2006); ii) the quality of the meals provided to pupils, which is a result of the combination of the nutritional values, fixed by the balance of the menu, with the sensorial aspects (good taste, good flavours), due to the ability of the cooks; and iii) the quality of the service, that includes some issues as the skills of the catering staff, the food education

programs carried out by the catering companies and/or the municipalities, the structural improvements of the canteens, the staff training. The quality of the school system depends on the policies and decisions defined at the school level, but it is strongly influenced by policies defined at higher levels such as municipalities, provinces, Regions up to UE.

All around Europe only in few countries, like Italy, France and Finland, the school catering has a long tradition. In many other countries, until the end of the last century, no meals, or at least a very little number of meals, were formally provided at schools. In the last 10 years the situation has changed and in some countries, like Germany and Denmark, the school meal system has been grown up. Nowadays, millions of EU pupils, which number is increasing year by year, eat at school from 2 to 5 days a week during school year.

School meal procurement is generally a difficult task (Morgan & Sonnino 2008) or, as defined in the iPOPY project, a complex constellation (Nölting et al., 2009). In any case, the development of quality and environment issues in the public procurement for the school meals is only half of the challenge: the improvement of the quality of the school meals must involve also cooking, service, the architecture of the canteens and more.

Best practices for developing the quality of school meal system considered in scientific literature are related to nutritional issues (Machado, Simoes 2008), the environment in which meals are consumed (Mc Ateer 2009), the quality standard (Bechthold, Rademacher 2008) or, at least, to some of these aspects compared (Lofton, Nettles, Carr, 2009 – Williams, 2009).

For all these reasons, improving the quality of school meals implies the involvement of many actors and demands technical, logistic, organisational, financial, political, administrative, and cultural contributions, as recently demonstrated by some projects carried out in some European Countries. Based on the results obtained by a comparison analysis among some UE countries, Italy results to fairly rank, providing school food of high quality, with special care to the ingredients included in the meals (Nielsen et al. 2009).

In fact Italian school food catering has a quite long tradition. The primary and the lower secondary schools feed more than 750 million school meals every year, about 4.3 million every day for about 4.3 million pupils (Bocchi et al. 2008). In the early 1990s, some municipalities together with the public administration started a “school food revolution” (Morgan & Sonnino 2008). Their aim was to improve the quality of the school meal system. The project “The taste of quality at school”, carried out in the Municipalities of Milan, Genoa and Cesena in 2000-2001, showed the ambition of improve the quality of school meal system in its slogan “Turning the school canteens into restaurants for kids”.

Two sides of the question have played and still play an important role for such quality challenge:

a) The quality of the ingredients used for school food has to be improved. Among the ingredients provided to the school canteens, those coming from conventional agriculture are steadily decreasing, and they are replaced by increasing quantities of ingredients coming from controlled and certified production processes. This trend will be an important option to provide a more sustainable nutrition to young people because of the environmentally friendly form of agriculture that produces healthy and tastefully food.

b) The nutritional balance of the menus received a particular attention. The ingredients and their weight were controlled by the Health Authorities based on national guidelines (LARN = Livelli di Assunzione Raccomandata di Nutrienti; recommended intake levels of nutrients) – and set by INRAN (Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione - National Research Institute for Food and Nutrition).

From the mid 1990s, public policy was involved in organic agriculture and promoted organic food for school canteens at regional and at national level. Between 1999 and 2002, were made regional laws (mainly in Northern Italy) to support the use of organic food and the other quality foods in public food procurement.

In the following years, several regions produced guidelines for the management of school canteens recommending the use of organic food and other quality food coming from controlled production. Consequently, the number of organic school meals has risen from 24,000 daily in 1996 to 924,000 in 2007. Data referred to 2005/06 show that more than 94 % of the school canteens used organic products, at least once a week. The 76% in weight of all the products came from a “controlled chain”: organic agriculture 40%, sustainable agriculture (integrated production methods with reduced amount of pesticides and fertilisers) 18%, typical local products (PDO and PGI) 14%, and fair trade 4%. Only 24% came from conventional agriculture. The iPOPY project defines public organic food procurement for youth as follows: “all activities with regard to procurement in public food services for children and young people up to 25 years in schools and other public institutions for youth, such as day-care centres, universities, hospitals, and military facilities. The meal system is organised and the responsible public institution pays its costs, at least partially. Youth, or their parents, may need to pay for the food, at least in part. The food contains organic products conforming to EU-Regulations on organic production.” (Nölting et al. 2009, p. 11)

In Italy, and often in other countries, guidelines about the improvement of the quality of the school meal system are provided by central and local governments (at national and regional scale), but political decisions on the quality of supply and school meal service are taken by municipalities. So, the policies of the municipalities have been the main drivers for the school food revolution.

Calls for tenders for school meal catering are a key instrument for municipalities to influence the quality of the food procured and, generally, the school food service (The tender, by definition, is the document including all the requirements that a public body - municipality in case of school catering - asks to the private companies).

(Bid is, by definition, the document including all the award standards for the tender)

The political will of the municipalities are realized through the preparation of tenders and the subsequent contracts with the companies that win tenders and that will provide the school meal service. The call for tender is the first part of a complex production chain (the school meal system), but we consider that the choices contained in the tender largely determine the quality of school meal service provided, which aim is to change good ingredients into a tasty and quality meal.

Morgan and Sonnino (2008) stated that the potential of sustainable public procurement has a margin of improvement. They refer especially to the case of school meal procurement as an opportunity which hasn't been taken yet.

However, they claim that Italy is a pioneer in using calls for tenders as a means to improve meal quality, instead of letting the purchases be mainly influenced by the lowest price, at the cost of quality.

This article is based on the results of a research carried out in Italy during 2009 and 2010 inside the UE project iPOPY, aims at i) showing how different policies of the municipalities are carried out, ii) improving knowledge on the quality of the school green public procurement so far weakly considered by the scientific literature.

## **Methods**

Public calls for tender signed in 2009 by 100 municipalities all over Italy were first collected and organized in a database. Municipalities were chosen in order to correctly represent the whole area divided by Regions. The sample took in consideration the progressive use of organic products in the school canteens (data Biobank, Bocchi et al. 2008).

The first contact with Municipalities was for individuating school canteens (table 2 shows the Municipalities classified according to the population; those having more 100,000 inhabitants are in red; blue when between 50,000 and 100,000 inhabitants; violet when there are less than 50,000 inhabitants).

## Synoptic schedule for testing on the tendering process for the school meal system

Regions	sample	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Piemonte	6	Torino	Novara	Alessandria	Asti	Moncalieri	Cuneo	Rivoli	Nichelino	Settimo Torinese																
Valle d'Aosta	1	Aosta																								
Liguria	3	Genova	La Spezia	Savona	Sanremo	Imperia																				
Lombardia	17	Milano	Brescia	Monza	Bergamo	Varese	Sesto San Giovanni	Como	Busto Arsizio	Cinisello Balsamo	Pavia	Cremona	Vigevano	Legnano	Rho	Cologno Monzese	Mantova	Bollate	Gallarate	Lecco	Paderno Dugnano	Lodi	Seregno	Voghera	Rozzano	
Trentino Alto Adige	4	Trento	Bozano	Merano	Rovereto	Bressanone	Pergine Valstagnana																			
Veneto	11	Venezia	Verona	Padova	Vicenza	Treviso	Chioggia	Rovigo	Bassano del Grappa	Schio	San Donà di Piave	Mira	Conegliano	Belluno	Castelfranco Veneto	Villafraanca di Verona										
Friuli Venezia Giulia	11	Trieste	Udine	Portofino	Gorizia	Monfalcone	Gorizia	Cordenons	Codroipo	Porcia	San Vito al Tagliamento	Muggia	Azzano Decimo	Cervignano del Friuli	Tavagnacco	Latisana										
Emilia Romagna	24	Bologna	Modena	Parma	Reggio Emilia	Ravenna	Ferrara	Rimini	Forlì	Piacenza	Cesena	Imola	Carpi	Faenza	Sassuolo	Riccione	Casalechio di Reno	Lugo	Formigine	San Lazzaro di Savena	Cento	Cervia	Castelfranco Emilia	San Giovanni in Persiceto	Fidenza	Scandiano
Toscana	13	Firenze	Prato	Livorno	Arezzo	Pisa	Pistoia	Lucca	Grosseto	Massa	Carrara	Viareggio	Siena	San-dicci	Sesto Fiorentino	Empoli	Capannori	Cascina	Campi Bisenzio							
Marche	5	Ancona	Pesaro	Fano	Ascoli Piceno	S.Benedetto del Tronto	Seni-gallia	Macerata																		
Umbria	2	Perugia	Terni	Foligno																						
Lazio	4	Roma	Latina	Guidonia Montecelio	Viterbo	Aprilia	Fiumicino																			
Abruzzi	2	Pescara	L'Aquila	Chieti	Teramo																					
Molise	1	Campobasso																								
Campania	1	Napoli	Salerno	Giugliano in Campania																						
Puglia	2	Bari	Taranto	Foggia	Andria																					
Basilicata	2	Potenza	Matera	Pisticci	Melfi																					
Calabria	1	Reggio Calabria	Catanzaro	Cosenza																						
Sicilia	1	Palermo	Catania	Messina	Siracusa																					
Sardegna	1	Cagliari	Sassari	Quartu Sant'Elena																						

**Table 2** Summary chart about the test on the tendering process in the school meal system.

The responsables of the municipalities for the school meal system were contacted by phone explaining the project, its aim, and asking for a feedback in order to define the level of cooperation.

The responsables declaring to be available for the project were then formally asked by the University to send: i) the call for tender, containing the required characteristics of the food; ii) the call for bids, containing the award standards. 128 municipalities in total were contacted and only few showed no interest. Finally 100 calls for tender were selected and analysed in the survey.

The analysis focussed on three aspects: i) procurement policies: which ingredients and what type of requirements are required (mandatory quality requirements); ii) evaluation of possible catering companies: what is the weight of the price compared to other requirements, e.g. about food quality; iii) differentiation of the quality factors: how much the call for tender influences non-mandatory quality requirements

Analysis of the section about “the required food quality” and filling of this form

**Table 3: Quality requirements in the tenders (mandatory)**

	Cereals and pulses	Milk and dairy products	Fruit and vegetables	Meat and byproducts	Others
Typical (PDO/PGI)		e.g. mozzarella			
Organic	e.g. pasta				e.g. tomato sauce
Fair trade			e.g. bananas		
Short chain				e.g. beef	
Sustainable agriculture					

## 2. Results

### Analysis of the procurement policies

The analysis was carried out starting from the procurement policies, identifying all quality products required in the contract as mandatory. The quality products were differentiated in five types: organic products; short chain products (from neighboring areas); typical products (PDO, PGI); products from sustainable agriculture, here defined as integrated agriculture with reduced use of pesticides; fair-trade products.

These are the five categories of products with mandatory requirements:

fruits & vegetables; milk & dairy products; meat & by-products; cereals & pulses; other products. The obtained results are reported in tables 4, 5, 6, 7, 8.

The analysis of the procurement policies were carried out for every product category, in this way: first (of all the 100 considered tenders) were analyzed the global data, then specifications were defined according to the different areas of the country: **North - west** (Valle d’Aosta, Piemonte, Liguria) with 9 tenders; **Lombardia** with 17 tenders

**North - east** (Trentino Alto Adige, Veneto, Friuli Venezia Giulia) with 22 tenders; **Emilia-Romagna** with 24 tenders; **Center** (Toscana, Umbria, Marche, Lazio) with 21 tenders; **South** (Abruzzo, Puglia, Basilicata, Calabria, Sicilia) with 7 tenders.

**Table 4: Mandatory quality requirements for organic, short chain, typical, sustainable (integrated) and fair trade of fruit and vegetables found in 100 tenders in Italy**

<b>Requirements of the products</b>					
<b>Nominations</b>	<b>Organic</b>	<b>Short chain</b>	<b>Typical</b>	<b>Sustain.agr</b>	<b>Fair Trade</b>
potatoes	43	3	0	2	0
mushrooms	35	3	0	2	0
leeks	37	3	0	2	0
parsley	34	3	0	2	0
spinach	39	3	0	2	0
onions	39	3	0	2	0
garlic	38	3	0	2	0
carrots	48	3	0	2	0
cabbages	37	3	0	2	0
savoy cabbages	39	3	0	2	0
fennels	38	3	0	2	0
celery	39	3	0	2	0
salads	44	3	0	2	0
cauliflower	37	3	0	2	0
frozen vegetables	27	3	0	2	0
apples	54	3	0	2	0
pears	50	3	0	2	0
oranges	52	3	0	2	0
lemons	45	3	0	2	0
tangerines	45	3	0	2	0
bananas	46	3	0	2	16
peaches	40	3	0	2	0
plums	40	3	0	2	0
cherries	40	3	0	2	0
strawberries	39	3	0	2	0
kiwi	38	3	0	2	0
apricots	38	4	0	2	0
<b>Total nominations</b>	<b>1101</b>	<b>82</b>	<b>0</b>	<b>54</b>	<b>16</b>

A high number of fruits & vegetables were required with organic quality (Tab. 4). On average, 40.78% of the tenders required organic products. On the contrary, requirements for fruits and vegetables from short chains, typical products, sustainable agriculture and fair trade were rarely found. Only fair-trade bananas are sometimes required.

Analysing the data from the different areas, Emilia-Romagna (53,70%), Center (51,32%) and North-West (49,79%) required as mandatory more organic fruits & vegetables than the national average, while Lombardia (22,88%) and North-East (27,44%) are significantly below the national average, with the exception of Friuli-Venezia-Giulia.

Local products and sustainable agriculture products are required as mandatory in few cases only in Emilia-Romagna.

**Table 5: Mandatory quality requirements for organic, short chain, typical, sustainable (integrated) and fair trade of milk and dairy products found in 100 tenders in Italy**

<b>Requirements of the products</b>					
<b>Nominations</b>	<b>Organic</b>	<b>Short chain</b>	<b>Typical</b>	<b>Sustain.agr</b>	<b>Fair Trade</b>
milk	28	1	0	0	0
yogurt	44	1	0	0	0
butter	21	1	0	0	0
ricotta	17	2	0	0	0
mozzarella	16	2	0	0	0
stracchino	16	2	0	0	0
parmigiano reggiano	4	1	45	0	0
grana padano	4	0	20	0	0
pecorino romano	4	1	9	0	0
pecorino toscano	4	0	10	0	0
pecorino sardo	4	0	7	0	0
asiago	4	0	25	0	0
taleggio	4	0	19	0	0
montasio	4	0	15	0	0
fontina	4	0	15	0	0
quartirolo	4	0	6	0	0
gorgonzola	4	0	10	0	0
<b>Total nominations</b>	<b>186</b>	<b>11</b>	<b>181</b>	<b>0</b>	<b>0</b>

In the category *milk and dairy products*, especially milk (28%) and yoghurt (44%), butter (21%), ricotta and fresh cheese like, mozzarella and stracchino (in average 16%) are required in organic quality.

The other types of cheese were especially required as typical products (PDO and PGI).

Requirements were rarely found for milk and dairy products from short chains and sustainable agriculture.

The data show that Emilia-Romagna (54% of milk and 67% of yogurt) and Center (33% of milk and 52% of yogurt) and North-West (49,79%) required as mandatory higher amounts of organic milk, yoghurt, butter and fresh cheese than the national average, while the other areas are significantly below the national average.

The requirement of PDO and PGI cheese were evenly spread in all areas.

Local products and products of sustainable agriculture are required as mandatory in few cases especially in Lazio (Central area).

**Table 6: Mandatory quality requirements for organic, short chain, typical, sustainable (integrated) and fair trade of meat and by-products found in 100 tenders in Italy**

<b>Requirements of the products</b>					
<b>Nominations</b>	<b>Organic</b>	<b>Short chain</b>	<b>Typical</b>	<b>Sustain.agr</b>	<b>Fair Trade</b>
beef (national)	10	18	0	0	0
beef (local)	5	5	0	0	0
pork (national)	2	12	0	0	0
pork (local)	0	0	0	0	0
white meat (national)	8	17	0	0	0
white meat (local)	1	3	0	0	0
raw ham	0	0	48	0	0
bresaola	0	0	20	0	0
speck	0	0	4	0	0
mortadella	0	0	6	0	0
<b>Total nominations</b>	<b>26</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>0</b>

In the category *meat and byproducts*, only few products were required as organic, in particular beef (15%) and white meat (9%).

In several cases are required that it should be raised in Italy or in neighboring areas: altogether 23% of beef, 12% of pork and 20% of white meat are required as national or local.

A large quantity of byproducts are required as typical (PDO and PGI), especially raw ham and bresaola (dried salted beef).

We did not find requirements for meat and byproducts from sustainable agriculture and fair trade.

Looking at the data of the different areas, we see that Emilia-Romagna and South require as mandatory organic meat more than double the national average.

The requirements of short chain meat are concentrated in Emilia-Romagna and in the North-east area.

The requirement of the byproducts as typical products is evenly spread in all the regions.



**Table 7: Mandatory quality requirements for organic, short chain, typical, sustainable (integrated) and fair trade of cereals and pulses found in 100 tenders in Italy**

<b>Requirements of the products</b>					
<b>Nominations</b>	<b>Organic</b>	<b>Short chain</b>	<b>Typical</b>	<b>Sustain.agr</b>	<b>Fair Trade</b>
corn	10	0	0	0	0
rice	42	0	0	0	0
barley	34	0	0	0	0
millet	9	0	0	0	0
emmer	15	0	0	0	0
bread	28	0	0	0	0
flour	21	0	0	0	0
pasta	51	1	0	0	0
semolina	5	0	0	0	0
peas	28	0	0	0	0
beans	32	0	0	0	0
chickpeas	32	0	0	0	0
lentils	32	0	0	0	0
fava beans	31	0	0	0	0
<b>Total nominations</b>	<b>370</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

In the category cereals and pulses, many organic products were required, however in this product category, no requirements were made for typical, short chain, sustainable/integrated or fair trade products, except one case in Veneto where pasta was required as local.

Emilia-Romagna requires these amounts of organic products:

more than 80% of rice and pasta, 67% of barley and 54% of bread: these values are much higher than the national average.

Central Italy exceeded the national average also for the requirements of organic pulses.

The data of all other regions regarding the requirements of organic products are comparable with the national averages, except the case of Lombardia, where cereals and pulses were required as organic in a percentage below the national average.

**Table 8: Mandatory quality requirements for organic, short chain, typical, sustainable (integrated) and fair trade of other products found in 100 tenders in Italy**

<b>Requirements of the products</b>					
<b>Nominations</b>	<b>Organic</b>	<b>Short chain</b>	<b>Typical</b>	<b>Sustain.agr</b>	<b>Fair Trade</b>
extra virgin olive oil	26	4	3	0	0
vinegar	3	0	0	0	0
balsamic vinegar	1	0	0	0	0
eggs	20	3	0	0	0
peeled tomatoes	33	0	0	0	0
tomato sauce	36	0	0	0	0
pesto	5	0	0	0	0
fruit juices	18	0	0	0	0
honey	8	3	0	0	0
jam	18	0	0	0	0
chocolate bars	1	0	0	0	7
biscuits	10	0	0	0	0
stuffed biscuits	1	0	0	0	0
cocoa	4	0	0	0	7
tea	4	0	0	0	0
chamomile	4	0	0	0	0
<b>Total nominations</b>	<b>192</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>14</b>

In the category other products, peeled tomatoes (33%) and tomato sauce (38%) are the most common products required as organic, followed by extra-virgin olive oil (26%), jam (18%) and biscuits.

In few cases extra-virgin oil, eggs and honey are required as local products, while chocolate bars and cocoa, when required, are often fair-trade.

Analyzing the data of the different areas, we see that in Emilia-Romagna and in Southern Italy peeled tomatoes and tomato sauce are required as mandatory organic products in more than 50% of the cases.

data of all other areas regarding the requirements of organic products in this category are comparable with the national average.

In order to assess the different biddings, a call for tender must assign scores to the various elements or parts of the bidding. Normally, the scores are attributed to two categories: the price and the quality of the offer. According to the guide for the "economically most advantageous" offer in contract catering (that is part of a joint initiative of EFFAT (European Federation of Food, Agriculture and Tourism Trade Unions - [www.effat.org](http://www.effat.org)) and FERCO (European Federation of Contract Catering Organizations - [www.ferco-catering.org](http://www.ferco-catering.org)), that are the European social partners in the contract catering sector.

The aim of this guide is to assist public and private purchasers of contract catering services in their efforts to organize a tendering process that will result in the selection of the economically most advantageous offer; this is a voluntary standard, tenders often assign points or scores for price and quality features of the bidding in about equal shares. That means that the price decides only to about 50 % on who wins the tender. The scores for quality features allow the caterers to demonstrate their ability to organize and plan the meal service with a high quality.

In line with this assumption, the analysis of 100 Italian tenders (see fig. 1) showed that 21 assigned the scores only to the price of the offer. Further, even in some of these cases the tender required as mandatory some quality feature such as a demand for a specific food item of organic quality. It means that in these cases, many quality requirements were mandatory, so the quality features are part of the call for tender, even if there is no score for the quality features.

Anyway, in approximately 50% of these 21 cases we find a lack of demand for quality requirements in the tender, which implies, in these few cases that are about 10% of the sample, that the calls for tender tend to the lowest downward.

The quality offer received different scores in the other cases.

The price received 54% of the scores and the various quality features got 46%, on average.

The most common case (38%) is a distribution that got 60% of the scores to the quality features and 40% to the price.

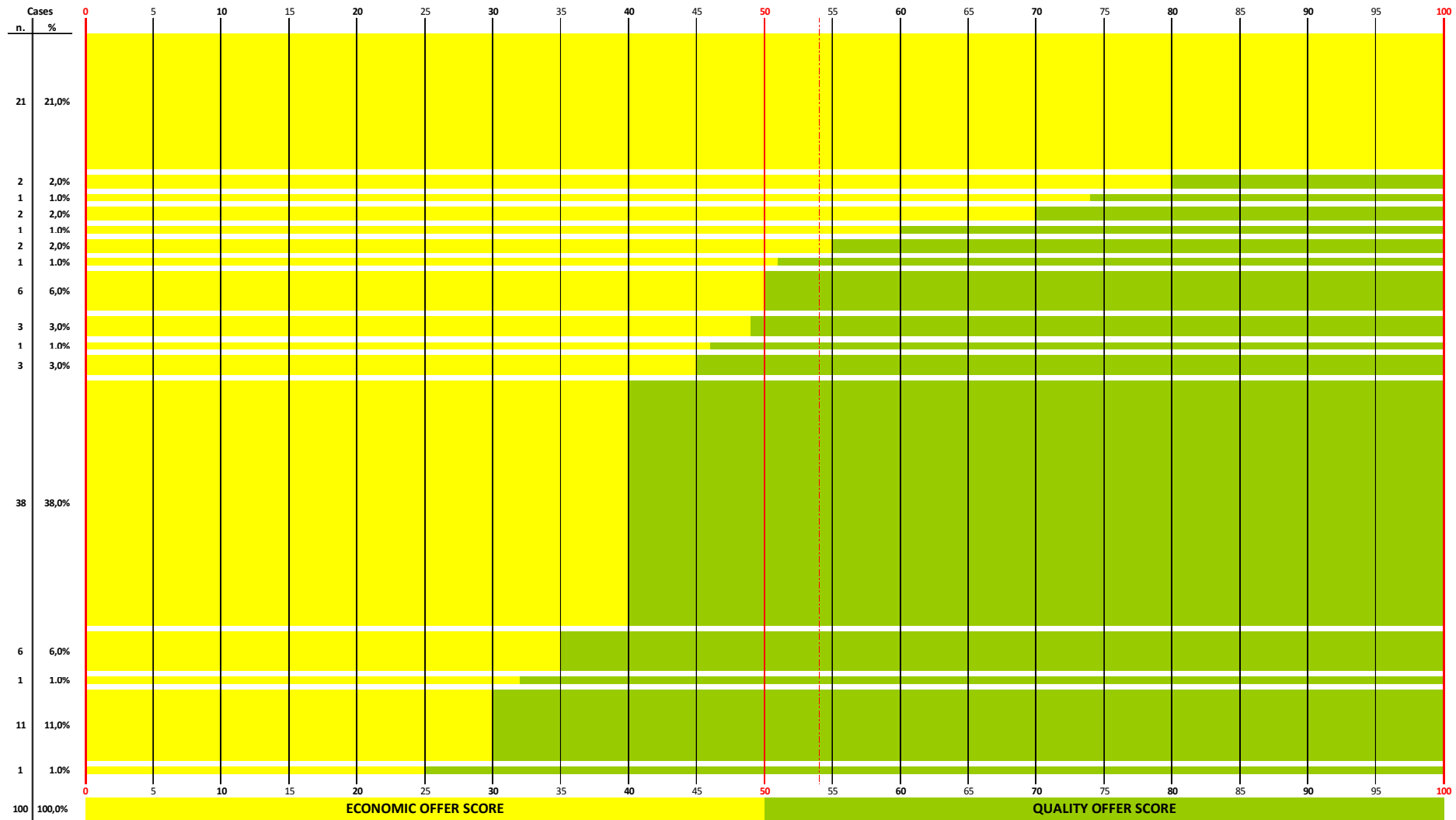


Figure 1: Shares between the weighting of price and quality in 100 tenders for school meal catering in Italy, 2009

The analysis of the distribution of the scores in the different regions (fig. 2) shows that in Lombardia and Emilia-Romagna, the importance given to the quality is slightly above the national average. On the contrary in other regions, in particular in the Centre and in Southern Italy, the scores given to the quality are just over half than the ones devoted to the price that is remarkably below the national average.

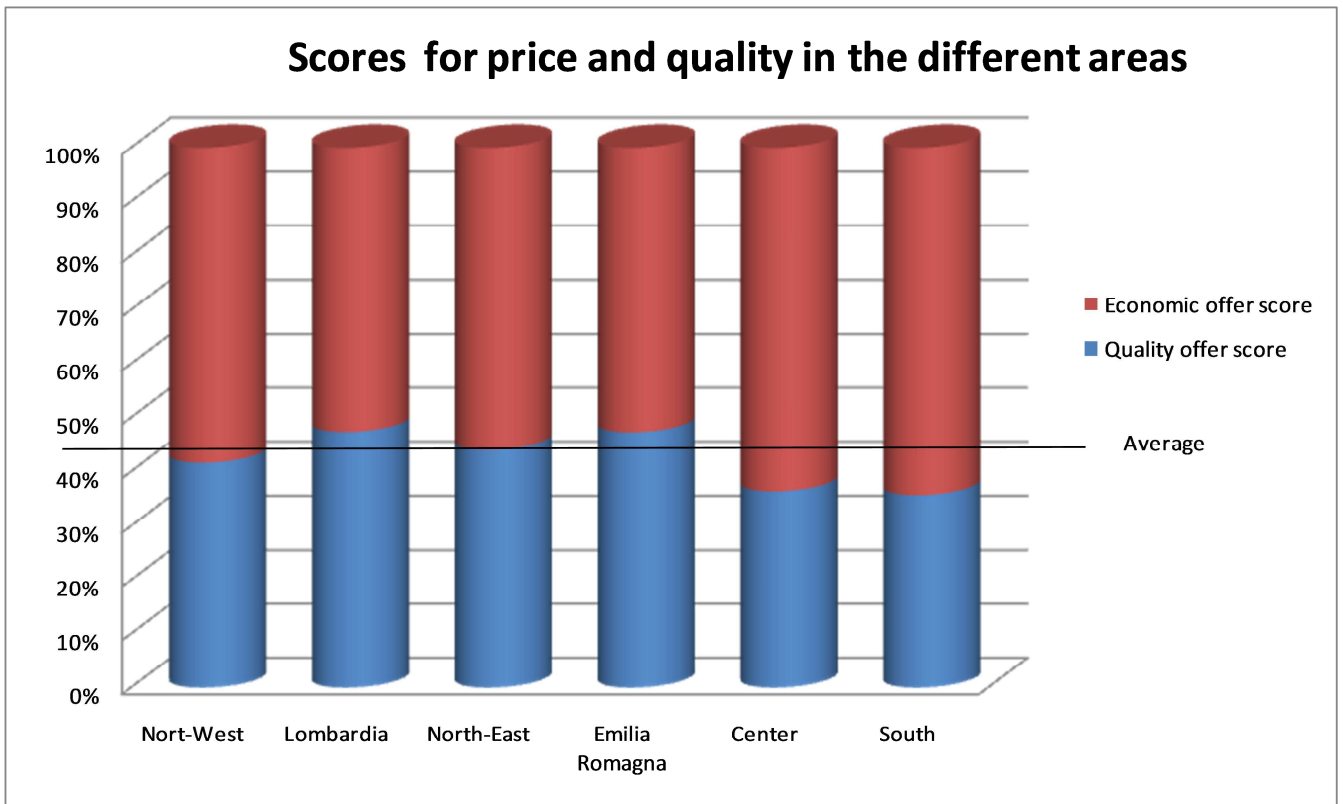


Figure 2: Breakdown of the influence of price and of quality in the different areas

The score of the quality features can be described in two parts (fig. 3):

- The score of the quality features (non-mandatory quality requirements) such as more organic or fair-trade products offered (in addition to those required as mandatory), food education programs, certifications, staff training, structural improvements of the canteens.
- The score for other aspects, not directly connected to the quality such as hygienic issues (that are mandatory), number of employees / number of meals, professional skills of the employees.

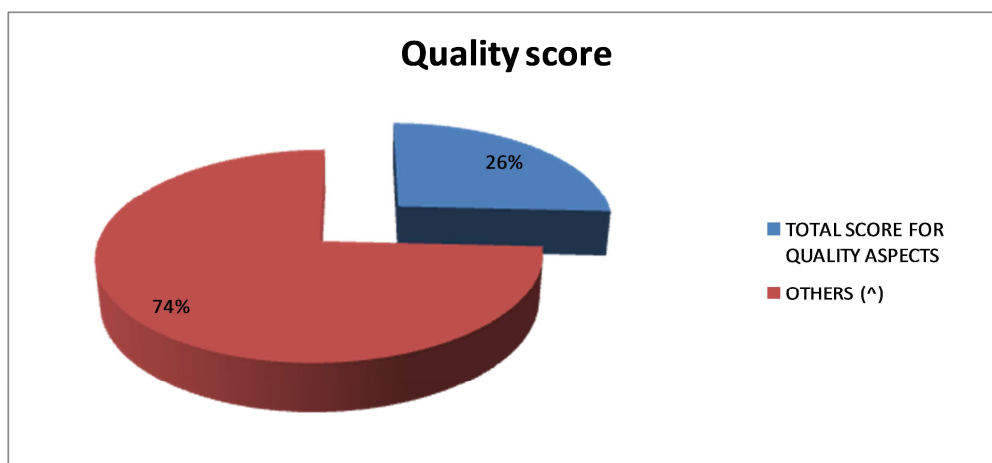


Figure 3: Specification of the scores attributed to the quality

In the category “others” we consider all the aspects not directly connected to quality (see Chapter 2.2).

According to our analysis, 26 % of the scores are devoted to quality aspects and 74 % to other aspects.

Quality aspects cover many parameters in the tenders:

a) Food quality aspects

- Organic products offered by the companies in addition to those required as mandatory
- Typical products (PDO or PGI) offered by the companies in addition to those required as mandatory
- Integrated/sustainable agriculture products offered by the companies in addition to those required as mandatory
- Fair-trade products offered by the companies in addition to those required as mandatory

b) Aspects related to the supply chain:

- Short chain products (from neighbouring areas)

c) Certifications:

- ISO 9001, ISO 14001 and others

d) Aspects related to food education:

- Food education programs offered by the companies (general)
- Food education programs offered by the companies (about organic products)

e) Aspects related to the quality of the school meal system:

- Staff training
- Structural improvements of school canteens

Altogether, the scores related to the **quality of the products** (organic, short chain, quality/typical, integrated/sustainable agriculture, fair-trade) are 59% of the total score related to quality.

Taking into consideration that these features are demanded in addition to the mandatory quality requirements described in chapter 3.1, this shows a wide diffusion of the quality products in the public procurement for school canteens and confirms the aim to reduce the use of conventional products (see Tab. 1).

The other scores are related to the **quality of the service**: the quality certifications held by catering companies, guarantee the attention paid for the quality, for the social and environmental aspects. The food educational programs are an important opportunity to enhance the quality of food and to educate young consumers (to become aware). The quality and the frequency of staff training are strictly related to the quality of the service. Finally yet importantly, the structural improvement of school canteens may make the environment more comfortable, while children eat.

Altogether, the scores related to the quality of the service represent 41% of the total score for the quality aspects.

The quality aspects defined in the voluntary part of the tender; in addition to those required as mandatory qualify the politics of the municipalities regarding the level of quality of school food service that they will maintain. Moreover, the free part of the tender enables the catering companies to demonstrate their ability to deliver a quality service.

Analyzing the 100 tenders, in the section defining the score for the non-mandatory quality aspects, after excluding the aspects not directly connected to quality (see above) we found that they are divided among several requirements (Fig.4) such as:

- more organic products than required as mandatory, which on average was weighted as 30% of the total score;
- more short chain products (9%), quality/typical products as PDO and PGI (10%), integrated/sustainable agriculture products and fair-trade (both 5%), all in addition to those required as mandatory in the tender;
- certifications held by catering companies, such as ISO 9001, ISO 14001 are weighted on average 11% of the total score;
- food education programs carried out by the catering companies (8%), of which less than 0,5% are specific for organic agriculture;
- staff training programs (10%);
- structural improvement of canteens were weighted 12% in average of the total score.

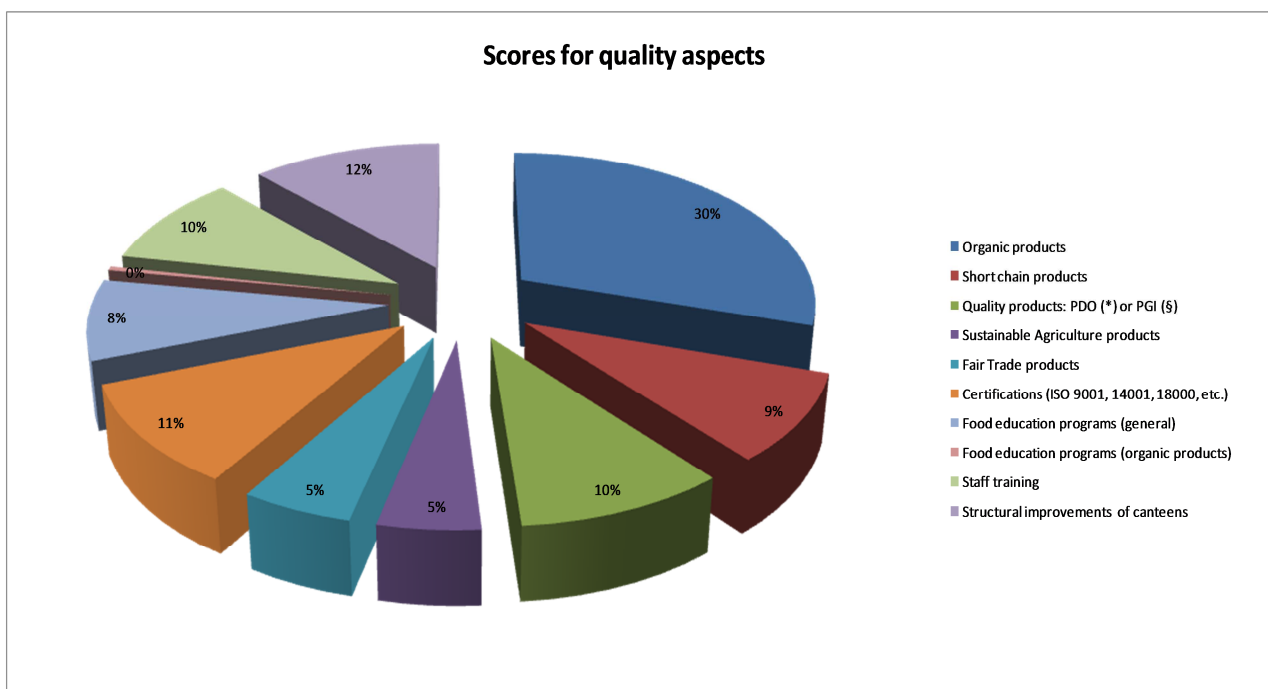


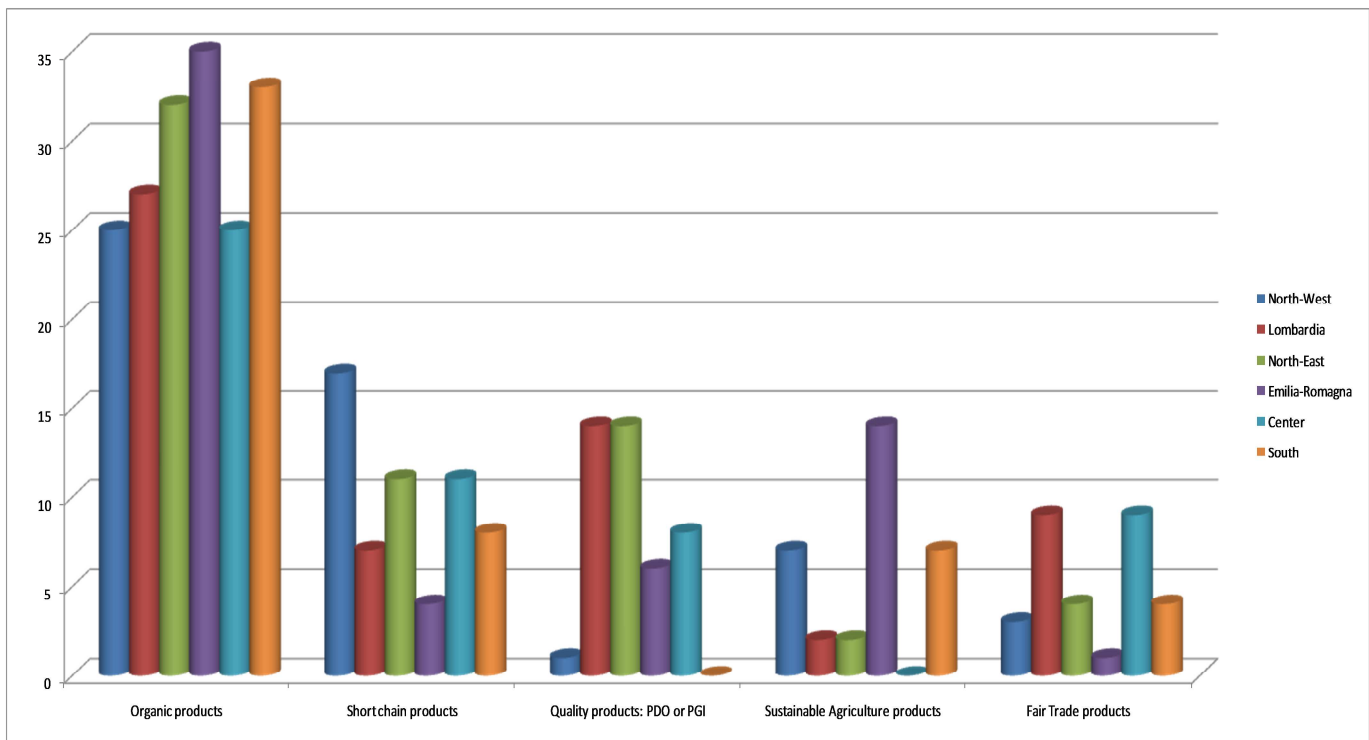
Figure 4: Specification of the scores of the quality aspects

The analysis of the distribution of the scores of the quality features in the different areas shows that there is a wide difference in the policy choices of the public procurement, both from an area to another and even within each area: every municipality has its own policy, often different from that of the nearby town.

Regarding the **scores related to the quality of the products** in the different areas (fig. 5), the most important issues that came out from the collected data are:

- the Emilia-Romagna region requires organic products in the highest amounts - both the mandatory and the free part of the tender; moreover, it is the only area that requires as mandatory some sustainable agriculture products and it is also the main region where these products are required as voluntary: this shows that in this area a great attention is paid for the environmental issues;
- on the other hand, the free requirements of organic products are high in the South: this seems to be a compensation of the fact that the same types of products are rarely required as mandatory;

- a particular attention for local products are paid by the North-West, followed by the North-East and the Centre;
- the free requirements of typical/quality products are concentrated in Lombardia and in the North-East: in both cases it seems to be a choice that privileges quality products as a partial compensation to the fact that, especially in Lombardia, the demand for organic products is below the national average; in the North-East an exception to this trend is the Region Friuli Venezia-Giulia, which laid down the first regional law on the quality of school meal system;
- Lombardia and the Centre are the areas where the fair-trade products are required more frequently as free.

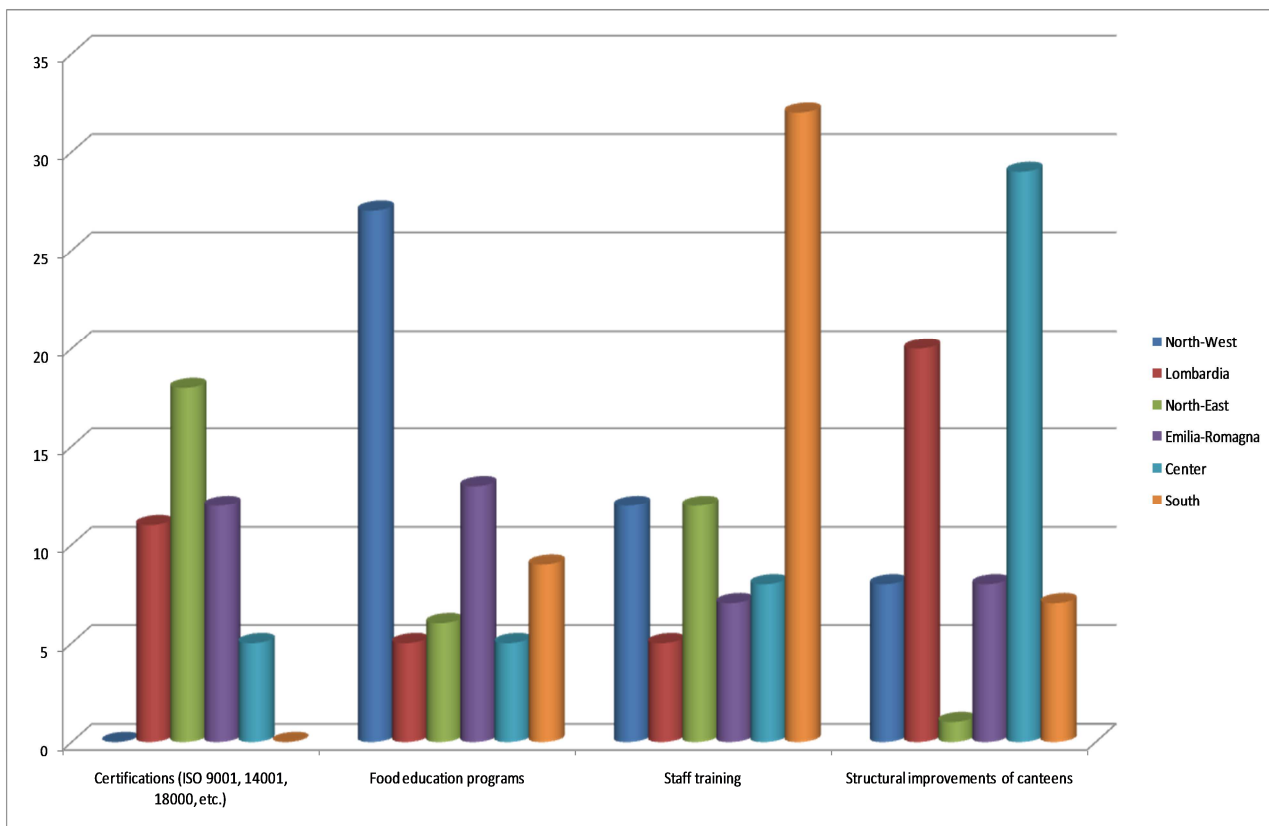


**Figure 5: Specification of the scores related to the quality of the products in the different areas (% on the total of the quality features)**



Regarding the **scores related to the quality of the service** in the different areas (fig. 6), the most important issues that came from the collected data are:

- the certification issues seem to have more importance as free requirements, especially in North-East area, followed by Emilia-Romagna and Lombardia;
- the food education program are particularly required in North-East and, in lesser extent, in Emilia-Romagna and in the South; Emilia-Romagna is the unique region in which 20% of food education programs are required in specific relation to organic agriculture;
- the staff training seems to have a particular importance for the South;
- the structural improvements of the school canteens seems to be a topic of the Centre and of Lombardia.



**Figure 6: Specification of the scores related to the quality of the service in the different areas (% on the total of the quality features)**

## Conclusions

To sum up, many products were required in organic quality in the tenders, especially fruits and vegetables, milk and yogurt, cereals and pulses (including pasta) as well as canned tomatoes, biscuits and olive oil. On the contrary, meat and by-products were rarely demanded in organic quality.

This reflects very well the availability of the products in the mentioned categories in the Italian food supply chain.

Moreover, the interest for local products (short chain) is diffused in many calls of tenders, in few cases as a mandatory requirement, often as a not-mandatory one (about  $\frac{1}{4}$  of the cases). In the survey carried out only 4 years ago (R. Spigarolo (ed.), 2006), this requirement was practically nonexistent.

Here are the main points emerging from the present study:

- An important driver for pushing the quality of school food further are the regional laws that promote the procurement of quality foods, including organic food.
- With regard to the supply chains, producers and caterers still work in their specific and separate logic. Knowledge about restrictions and requirements of the “other side” is rare. A closer relationship and better integrated supply chains from the producer to the kitchen is needed. This relationship can be promoted in the best way by a local authority, like a province or a region, or by bodies like UNI (Ente Nazionale Italiano di Unificazione = National Organization for Standardization) which can invite to a common round table all the actors of the school meal system: producers, caterers, schools. A strong integration supported by shared and clear agreements, like in the case of Piacenza can face effectively this constraints and solve this problem.
- There is not one optimal system for all organic school meal systems but each municipality has to find its own solution adapted to its specific context. However, a municipality can learn a lot from best practice cases, e.g. how to formulate a call for tender, and how to organise organic regional supply chains.
- The trend to reduce the conventional food in school canteens and to increase the consumption of quality foods (organic, but not only) continues. Furthermore, the interest on the quality of the environment of the canteens is increasing, as well as the recent trend of the procurement in buying local products, which is a mix of cultural (local traditions) and environmental (less transportation = low impact) issues.
- All these trends converge in the development of a “sustainable school meal system”, in which all the aspects are considered in a holistic vision: the supply chains, the preparation of the meals, the service, the environment of the canteens, and the waste management.
- The realization of a national observatory on the quality of school canteens, suggested by many experts, would be an important tool for comparison and implementation of the sector.

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