

# AMURE



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## **Fresh, local and sustainable seafood: Lessons from the procurement practices in selected French school restaurants**

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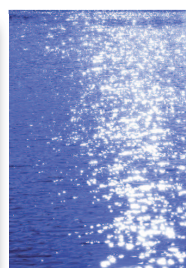
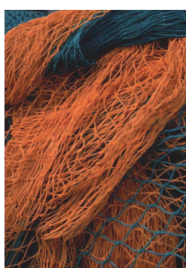
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## OVERVIEW / EXECUTIVE SUMMARY

### GOALS

Public procurement is often seen as an opportunity to encourage sustainability, as it grants outlets to innovative products. However, public procurement may be hindered by social acceptability (or culture), procurement rules, and financial issues. Here we look for good practices, in order to: a) show that such constraints do not prevent from implementing fresh, local or sustainable seafood in public primary school restaurants; and b) try to identify and disseminate a “best approach”.

### EXECUTIVE SUMMARY

This report presents the results of field work dealing with the promotion of seafood in catering for public primary schools. It is a comparative case study on five French cities with different modes of school catering management. Because of their location, their historical and cultural relationship with seafood is likely to be dissimilar. The paper includes the summary of in-depth interviews with the actors in charge of the school catering in each city. On the one hand, we enquired the difficulties encountered when trying to introduce fresh, local and sustainable seafood in catering; and on the other hand the factors facilitating such insertion. On this basis, a discussion of the results and suggestions for concrete actions to carry out are suggested for an improvement in the implementation of public policies in this area.

### KEYWORDS

Seafood; fishing industry; catering; sustainable supply.

### KEY HIGHLIGHTS / OUTCOMES

1. As for fresh seafood, all the selected cities implemented this offer, despite:
  - a. being coastal or not
  - b. the school restaurant being ruled by the local authorities themselves or by a private partner
  - c. unstable market conditions
2. Local seafood is found in all the coastal cities involved in the study. Here again, unstable market conditions and private/public management do not seem to be an obstacle.

3. On the contrary, sustainable seafood occurs only in two (out of three) cities operating by a private partner. Communication policies by Marine Stewardship Council (MSC) may explain this situation.

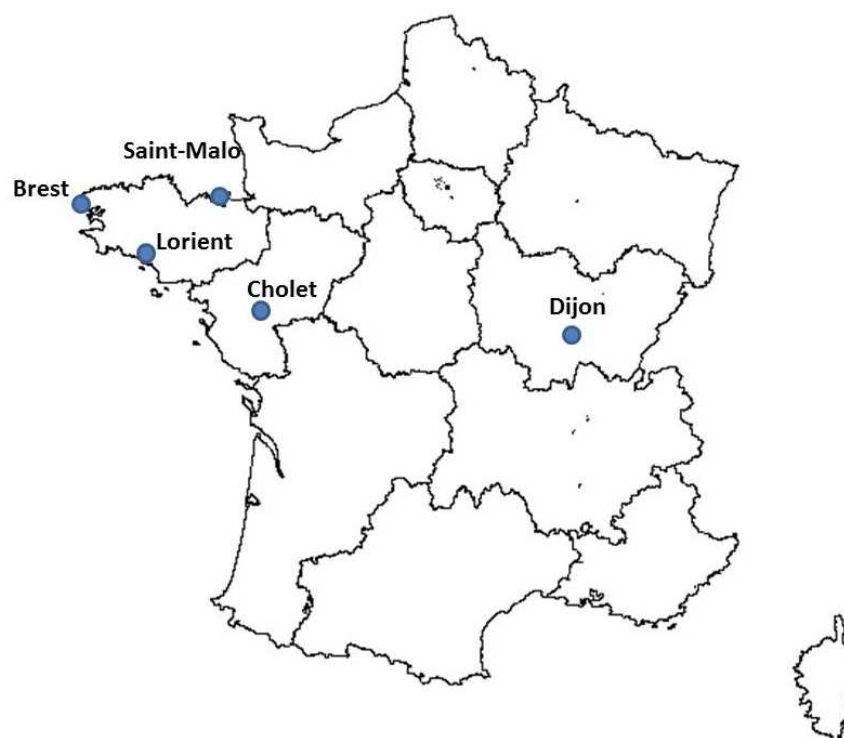
## INTRODUCTION

A statistical work on public primary school restaurants and the seafood helped identify some cities presenting relatively unusual practices if compared to the average of French cities (Droff, Pirrone and the Gallic, 2016). The investigation shows that 21 cities (out of a sample made of 115) offered fresh seafood, mainly fish, 18 adopted sustainable seafood purchasing practices, and only three serves “local” seafood.

Here, we present the practices of five cities which implemented the introduction of seafood showing signs of differentiation (fresh, sustainable, local product). The choice of these cities is also motivated by the fact that they are likely to have a different relationship with seafood, because of their location (coastal vs. not coastal). Finally, they did not adopt the same management strategy: some cities directly rule the restaurants, other rely on a private partner.

Figure 1 locates the cities considered in this study. Table 1 and 2 summarize their main features about catering and the characteristics of the seafood supply.

**Figure 1.** Cities studied in this research report



**Source:** authors



**Table 1.** Characteristic of the cities and their mode of catering

City	Population 2012	Meals / day	Management mode
<b>Brest</b> (coastal)	139 676	6 500	Private partner
<b>Lorient</b> (coastal)	57 706	4 300	Local authority
<b>Cholet</b> (not coastal)	54 181	3 400	Private partner
<b>Dijon</b> (not coastal)	152 071	8 000	Local authority
<b>Saint-Malo</b> (coastal)	44 620	2 400	Private partner

**Source:** authors, Insee for the population.

**Table 2** Characteristics of the seafood supply in the case study

City	Fresh (from year)	Sustainable (from year)	Local (from year)	Species of served fish (both fresh and frozen)
<b>Brest</b>	Yes (2007)	Yes (2014)	Yes	Hake, Pollock, Saithe, Whiting, Salmon.
<b>Lorient</b>	Yes (1980s)	No	Yes (1980s)	Ling, Saithe, Hake, Blue Ling.
<b>Cholet</b>	Yes (2008)	No	No	Saithe, Cod, Salmon, Plaice, Lesser spotted dogfish.
<b>Dijon</b>	Yes (1970s)	No	No	Saithe, Cod, Salmon, Alaska Pollock, Halibut.
<b>Saint-Malo</b>	Yes (2006)	Yes (2014)	Yes	Alaska Pollock, Blue grenadier, Cod, Lesser spotted dogfish.

**Source:** authors

Once these cities selected, we conducted in-depth interviews with actors in order to understand the actual practices referring to seafood. Involved people were: central kitchen executives, executives from the private partners, deputy mayors and councillors, local authority staff).

The questions that guided this research are:

How these cities deal with seafood? How they manage the procurement process? Which are the main difficulties they face(d) when they decide(d) to shift toward fresh, local and/or sustainable seafood in their primary school restaurants?

And, which are the factors allowing cities to facilitate the integration of such products in catering?

This report is organized into three sections. Section 1 presents a summary of the seafood products offer for each of the selected cities. Section 2 discusses the main factors which hinder (or promote) the enhancement and development of the seafood in catering. Section 3 focuses on some ideas which aim is both to enhance the practices and to promote school seafood in catering, namely fresh, local and/or sustainable seafood. Finally, Section 4 highlight some considerations about catering suppliers.

# 1 SELECTED CITIES AND THEIR PRACTICES

## 1.1 BREST, FINISTÈRE (29)

### GENERAL CHARACTERISTICS

Brest is a port city with an auction but where fishery is very marginal if compared to naval and military activities (including ship repair and maintenance) and to a lesser extent trade. Concerning school food service, the city of Brest is owner of a central kitchen. A private partner (Sodexo) is entrusted with the management and the maintenance. The kitchen produces about 6 500 covers a day, mainly for primary school pupils.

### SEAFOOD SUPPLY

The “*Groupe d’Étude des Marchés de Restauration Collective et Nutrition*” (GEMRCN)<sup>1</sup> recommends to include seafood in school restaurant menus at least four times out of 20 consecutive menus (GEMRCN, 2015, p.53). The current agreement between the city and Sodexo (2012-2017) provides five: one fresh fish, two menus including sustainable seafood and two with unspecified products. The city offers a single fish fat per month, usually proposed as “*rillettes*”. The risk of allergy prevents the supply of other seafood (as crustaceans). However, shellfish are sometimes included in sauces accompanying fish.

In order to deliver 6500 meals, about to 1,3/1,4 tons of fish needs to be processed. The specie of the fresh fish is determined “according to arrival”. When the season and conditions allow it, fresh fish comes from “enlarged local” supply sites. The auction markets of Lorient (130 km, by route), Guilvinec (100 km) and more occasionally Roscoff (60 km) are cited. The auction market of Brest does not offer enough volume to be included in the procurement process. Fresh fish procurement is achieved essentially trough the company “Top Atlantique” (“Le Saint” group). This intermediary is based in Lorient and the group headquarters are located in Bourg Blanc, 15 km far from Brest.

Regarding labels, on fish (like on other foodstuffs), practices have significantly evolved since 2007. Prior to 2007, the city had no specific requirements on the quality or local origin. This has gradually evolved with the proposal of vegetables

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<sup>1</sup> The latest GEMRCN were published in 2011. This document contains very precise instructions on the balance of the meal (weight, quality of the oils used, frequency of the dishes and so on). It communicates nutritional specifications for all structures of catering. Since 2011, following the GEMRCN recommendation is mandatory in school catering. Thus, the menus served in school catering school must respect a food plan for a period of 20 days of consumption, based on minimum or maximum frequency according to the concerned product families, in order to ensure nutritional balance of meals served in community. At least 4 fishes (or dishes made of 70% of fish) must be served on 20 meals.

from organic farming, then shifting towards local organic farming. Today, differentiation concerns meats and fishes.

Under the current agreement (2012-2017), Sodexo started offering frozen fish labelled *Marine Stewardship Council* (MSC). The species proposed in MSC are: hake (depending on the season it comes either from the Pacific Northwest or Pacific North East), cod and blue grenadier (fished in the South West Pacific). No “fresh MSC” product is provided. The rest of the supply is made up of standard frozen fish, mainly Alaskan pollock (fished in the Pacific Northwest), hake (fishing in the South-West Atlantic) and blue grenadier (fished in the Pacific Ocean). Frozen seafood supply is mainly carried out by Pomona, a nationwide installed company.

The interview reveals bottlenecks on the supply side. Occasional problems of availability of MSC labelled products are mentioned. For fresh fish, during year's end celebrations, mass retail channel purchases fresh fish (particularly cod and pollock) in volume. This strongly limited the availability of fresh products for the city and makes the prices rise. Also, according to Sodexo executives, many fishermen have to stop their activity in January. As a consequence, the market is highly rationed for two months, and the possibilities to provided fresh fish to school restaurants are limited in this period.

These supply issues have effects throughout the whole supply chain. For example, in the case of fresh products, this incited logisticians supplying Sodexo to improve their network and to invest in fishing ports, despite they were experiencing a difficult economic situation. For example, in Guilvinec the increase in the demand for fresh fish pushed actors to invest in auction markets and fillet workshops.

## FOOD EDUCATION AND SEAFOOD EVENTS

As for the mission of food education, Brest holds no regular event about seafood, while some occurs for vegetables (for example the parsnips). Nevertheless, in 2014, the day where the central kitchen received the MSC label, a communication event was organized by Sodexo, a photo-reportage "from the boat to the plate". Pictures covered the entire process, from the Guilvinec port to the kitchen, the serving on the table, and so on. Also, the photo-reportage was going along workshops and events about fish. Overall, apart from the explicit mention "sustainable fishing" and "fresh fish" on the menus, the city says not to be quite active on the enhancement of the quality of the fish.

## 1.2 LORIENT, MORBIHAN (56)

### GENERAL CHARACTERISTICS

The city of Lorient is the owner of the central kitchen. Management and maintenance of the central kitchen is directly ensured by the local authority. Hence,



the whole process of production, from the selection of suppliers to the delivery of meals, is under its responsibility and control. In 2016, Lorient produces about 4 000 covers by day. The city takes part of the process of quality improving in catering since the end of the 1990s. In response to the various food crises (BSE and dioxin including) the city gradually changed its procurement attitudes, introducing food from organic farming, “Red Label” or “Blue White Heart” labelled meat, and so on. How to improve food quality is a goal that stimulates serious reflexion. For example, the head of the central kitchen is part of the network Agores<sup>2</sup> and the city participates in Lascaux, a research program in law at the University of Nantes, dealing with food<sup>3</sup>. Finally, a program to fight against food waste has been implemented by the team of the central kitchen (the Director of the central kitchen took part in the last Prorestel<sup>4</sup> convention in Saint-Malo, on this topic).

## SEAFOOD SUPPLY

Fish is generally included in one school restaurant menu per week (week of five days). This practice started several years ago. The central kitchen provides meals also for old-age pensioners. For them, fish can occur twice a week, with a broader presence of more transformed fish, such as kipper.

Primary school restaurant in Lorient offer fresh fish since the 1980s. At the beginning, the kitchen received whole fillets and the kitchen personnel ensured cutting and portioning. From the middle of the 1990s, the fillets began to be received yet cut by the supplier. Today, fresh fish counts for more than 80% of the fish served at the school. For the fresh, the proposed species are: saithe, hake, ling and blue ling. In net weight, this represents about 400 kg of fish for a single service (3600 portions of 90 g and 600 portions of 140 g).

Fresh fish purchasing takes place in the framework of a public market. Despite such a constraint framework, the goal of purchasing locally is achieved. Three suppliers, located in Lorient, are part of the market: Moulin Marée, Sogemer et Top Atlantique. Providers have been selected on the basis of criteria defined by the kitchen (experience, means, responsiveness, etc.). Purchased products vary according to periods and prices. The statement posted on the kitchen truck explains the origin of the fish: “... *landed and transformed in Brittany*”. The delivery truck is a communication medium about the quality of the kitchen (see figure 2) and it provides information about vegetables and meat, along with fish.

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<sup>2</sup> “At its origin, Agores was created to enhance the profession of public catering which was undermined by the arrival of many private catering companies, focusing on profitability rather than on quality. Since 1986, the association advances defending strong values.” (source: [www.agores.asso.fr/](http://www.agores.asso.fr/)). Can be part of this network both cities who directly manage the catering serving and ones having delegated to a private contractor. However, private catering companies are not allowed.

<sup>3</sup> <http://lascaux.hypotheses.org/>

<sup>4</sup> <http://www.prorestel.com/>

Orders of fresh fish usually held three days prior to the proposal on the menu. Providers mention the available species and the kitchen adapts. This deal determines what fish will be included in the menu. This approach, which does not pre-determine the product to be served on a specific date, turns out to be less expensive. Also, Lorient considers easier to cook fresh fish instead of frozen fish. Indeed, delays separating orders, deliveries and services are very short, because of the freshness of the product and its being “local”. This offers more flexibility (for example that facilitates the adaptation of supply during the strikes) and, in the end, a better cost management. However, during the month of January, the kitchen prefers to step back to frozen fish because fresh arrivals are exceedingly expensive.

**Figure 2** Delivery truck as communication medium in Lorient



**Source:** authors, with authorization of the central kitchen of the city of Lorient

Focused on “fresh and local”, Lorient does not provide seafood coming from certified sustainable fishing.

## FOOD EDUCATION AND SEAFOOD EVENTS

As for educational events, there are few specific activities, mainly due to complexity of managing them on 25 different sites. Kitchen staff explains the youth workers the intentions (as fighting against food waste). Youth workers guide children through their ways of eating. Nevertheless, youth workers are not always well trained on food issues, which might be critical. Besides, with turnover rate of 25% for youth workers, to train and to involve such personnel over time is hard done.

## 1.3 CHOLET, MAINE-ET-LOIRE (49)

### GENERAL CHARACTERISTICS

Cholet is a non-coastal city counting for about 56 000 inhabitants. A private partner (Sodexo) is entrusted with the management of the catering service, which provides about 3 400 meals a day. Among them, 2 500 are delivered to primary school restaurants. The others are dedicated to day nurseries, retirement communities and home delivering.

### SEAFOOD SUPPLY

Cholet provides fish in school restoration, essentially fillets. They equally spare between fresh and frozen food. The interview reveals remoteness from the seaside doesn't have much effect on transportation, nor on the product freshness. Residuals preparations (terrines, for example) represent a very small share of supply<sup>5</sup>. The initial goal of the local authority was to provide 100% of seafood meals as fresh fish. Indeed, advantages were expected both from a consumer perspective and a production one. If we focus on the production process, fresh fish (in fillets) is more interesting than the frozen food: it is easier prepared (no thawing needed), quantities are better managed (no loss of yield) and the cold chain is easier managed. However, some residuals skin or fishbone may be to remove manually. On the other hand, if we focus on children consumption, fresh product was expected to be better appreciated.

Actually, budget constraints did not allow attaining the 100% goal. Also, a deeper analysis of the potential supply in fresh products showed that only few species would remain purchasable<sup>6</sup>. Nonetheless, fish dishes are among the most consumed by children. When fish is on the menu, the attendance is higher than on other days. According to the opinion of the kitchen executives, this is at least partially related to cultural habits of some communities: as school restaurants do not provide alternative menus, some children eat at home when meats are on the menu. Also, the consumption of fish increased with the introduction of fresh products, what the kitchen executives called a “new market effect”.

The local authority selected six species of fish to be served in primary school restaurants, both for fresh and frozen products, in order to meet both children's taste and safety requirements (no fishbone): cod, saithe, salmon, plaice, lesser spotted dogfish and skate. Since 2008, skate has been withdrawn from the menus because of calibration problem and because it is now protected.

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<sup>5</sup> Here seafood is rather considered as an “enhancement ingredient”, as in a starter or a salad. The species involved mainly is mackerel and tuna.

<sup>6</sup> In order to meet volumes, boneless requirements, acceptability by children and, finally, costs. For example, plaice had to be associated with a flounder. One of the two species had a finer chair, less well accepted by children. However, with a child audience, acceptability is a constraint strong and does not taken into account leads to a risk of significant waste, and so additional costs.

Unlike Brest or Lorient, Cholet does not adapt their purchase in order to meet contingent market conditions. Menus are established at least two months in advance and they include the reference to a determined product (specie, part of the fish, quantity), even for fresh products. For example, end of March 2016, the city started working on the menus of back to September 2016. This type of procedure rigid and can induce purchasing problems in terms of availability and costs. For example, in a day of relative scarcity, a cod fillet was bought at 26 euros per kilo. Nevertheless, this experience led the local authority to introduce some flexibility: when forecasted product is too expensive, the city tries now to replace it by another (included in the list) which is relatively less expensive.

The agreement between Sodexo and the local authority requires that the private partner provide wild fish, with declared exceptions (e.g. for salmon). According to the kitchen executives, finding a convenient product is harder done for the fresh ones than for frozen, especially regarding portioning and weighting. Also, they relate that the fishmongers tend to place the products they want to place: some cases where the requested product has not been provided and replaced by another species are mentioned. Is it a physiologic response from the industry to a bad steering of demand?

Finally, and despite the efforts provided by the private partner to include “sustainable” fish in the menus, this seems not to be a priority for the local authority.

## **FOOD EDUCATION AND SEAFOOD EVENTS**

Regular events mainly refer to fruits or vegetables. These products are less complex to carry, and require no cooking. These events take place a dozen times a year and focus on taste education and health. There is no regular event about seafood. However, a tasting and games event about fish species, fishing culture and fishing techniques was held once by the nutritionists of Sodexo.

## **1.4 DIJON, GOLD COAST (21)**

### **GENERAL CHARACTERISTICS**

The city of Dijon has a central kitchen working in-house with a production of approximately 8 000 meals a day. The central kitchen's equipment dates back to 2005 (before that the production was split between two sites).

### **SEAFOOD SUPPLY**

The kitchen works with fresh fish, frozen fish but not fish labelled "sustainable fishing". The introduction of fresh fish dates from the 1970s, but it has grown particularly since 2005. The kitchen tries to propose two or three fresh fish per



month. Regarding the species proposed as part of a public market, it is usually saithe, salmon or cod. The school catering service also planned to introduce farm freshwater fish (trout), but it gave up after having received samples because of too many bones. Also, it is an assumed choice not to offer some controversial species as the Pangasius or the Nile perch.

The pieces that are served are essentially the back without skin and fish bones, packed in tray under pressure. The trays of fish contain about 20-25 servings, which are calibrated. The weight ranges from 80 to 100 g for kindergarten and elementary pupils to 120 to 140 g for adults. In total, the kitchen buys more than a ton of fish per service.

In Dijon, fresh fish is considered to be a quality product. It is also a rewarding product to work with for the kitchen staff. Moreover, the fresh fish is easier to cook from an organizational point of view (especially with the system of trays) because there is less loss (less water than with the frozen food). Finally, the fresh fish is generally well accepted by children with only about 20% of loss by service on average.

The kitchen is also working with frozen fish. In general, out 20 meals consecutive if the kitchen offers three times the fresh fish, the meal remaining will be a frozen fish, prepared with products from the sea, or sometimes a reconstituted fish (type "colin steak"). The frozen species that are usually proposed are hake, halibut and cod.

Frozen fish complicates things from the kitchen organization point of view. First, there are losses related to the fact that it contains a lot of water. The product reduces a lot during the cooking phase, which complicates the calculation of the weight on the plate. Frozen food is also a problem in terms of logistics and space management. For example the halibut arrives in frozen shape (about a ton). You then thaw it in a cold room before you can cut it. This process involves a cold room - which cannot be used to another use - and a lot of labor. In the end, frozen halibut becomes problematic although it is a fish with no bones.

Finally, the kitchen does not offer any fish labelled "sustainable fishing". The existence of labels (including MSC) is not clearly identified for the kitchen as an indicator of the sustainability of the supply.

In Dijon, menus are planned two months in advance. For example, in April, the kitchen works on the menus for June by selecting the species and types of pieces. If there are supply problems, frozen fish allows compensating for the lack. As a general rule, the fish is ordered three weeks in advance.

This is an approach in which the demand is well specified (species, quantity, etc.). But the head of the kitchen admits that it isn't necessarily the best way to proceed because it is difficult to benefit from the opportunities of the moment (especially on species).

Fresh fish comes from Rungis and is delivered by Neva Food, a subsidiary of Transgourmet. The interview reveals that suppliers capable of providing a ton of fresh fish in the required conditions (specific weight, no edge, no skin) are rare.

Being a non-coastal city does not affect the supply of fresh fish because Dijon is only 3 hours away from Rungis by truck. Concerning frozen fish, suppliers are Brailly, Pomona, Sodifragel and Brake.

Supply is an important element in fish (*especially* the fresh fish). Several factors matter, according to the head of the kitchen:

- The size of the structure: small structures often do not respond to the tender offer because it is a very complex procedure.
- Compliance with the specifications. The latter is complex and in addition to the health constraints and organoleptic quality, suppliers must integrate the notion of weight, calibration and technical constraints (lack of bones and skin).
- The interview also reveals a lack of canvassing of seafood suppliers to offer innovative products. It appears not to be the case for other food products (meat, dairy products or soy for example)<sup>7</sup>.

## FOOD EDUCATION AND SEAFOOD EVENTS

There is no operation of outreach and education to seafood products on a regular basis. However, the interview reveals an interesting (but unique) initiative on the part of the Director of the kitchen. This initiative focused on the knowledge of the product and awareness to the five senses.

A few years ago, the Director of the kitchen went directly in classes with griddle plates and tested different types of cooking with children (steam, burned, etc.). According to the head of the kitchen, this type of initiatives related to fish should certainly be developed in the future. The kitchen is now trying to do it regarding other local products (for example the Brillat-Savarin or marbling ham which are typically Burgundian products).

## 1.5 SAINT-MALO, ILLE-ET-VILAINE (35)

### GENERAL CHARACTERISTICS

The city of Saint-Malo has entrusted the manufacture and delivery of meals to Sodexo since ten years ago. Offer calls periods lasts four or five years. The current

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<sup>7</sup> Interestingly, the head of the kitchen mentions that he sometimes seek seafood suppliers directly to have knowledge of what is new (form of "reverse canvassing").

market holds for 2015-19. Sodexo has to meet demanding requirements and, of course, to comply with the GEMRCN specifications.

Production environment is relatively unusual. Central kitchen hosts two separate teams on two separate slots: the public hospital service that prepares meals for the Hospital of St. Malo (morning slot, 3 000 cutleries per day) and Sodexo who prepares meals for scholars (afternoon slot, 2 400 cutleries per day). This paper only focuses on the production for students of primary schools.

## SEAFOOD SUPPLY

As for seafood, the cuisine offers fresh fish, MSC labelled fish and “local” fish from the “Compagnie des Pêches de Saint-Malo” (CPS).

As for frozen products, they concern essentially backs or fillets, boneless and skinless, in pieces of 50, 70 and 120 g (cooked product) according to the guests. The species are: cod, Alaskan pollock, blue grenadier and sometimes the lesser spotted dogfish. Providers are CPS and Pomona. CPS delivers portioned fillets, individually wrapped on the boat to avoid ice cooking. This process preserves the qualities of the fish. However, the product must then be unpacked in the kitchen before preparation, which requires four hours of labor.

Fresh fish is on the menus since 2006. The species are the same as for the frozen food with the same technical characteristics. Suppliers are CPS and the “Pêcheries Océanes”<sup>8</sup> company.

As for sustainable fish, Saint-Malo kitchen entered the process of the MSC certification in 2014, pushed by Sodexo which yet have engaged his own site in Paris and the kitchen of Sète, in southern France. Main goals were a) to give sense to the work of employees (linking to ISO 14001 approach, yet implemented on site) and, b) enhance the value of the fishery products.

In particular, Sodexo built up a communication strategy in order to reassure scholar’s families about the quality of seafood (and Sodexo’s meals in general). Indeed, reports about species as Tilapia, Pangasius and Nile perch, generated some anxiety. The combination of environmental labels, local supply and adoption of more traditional species, as cod, seems to be successful in reassuring families.

Also, the MSC approach was an opportunity to improve the staff’s skills, both in preparing meals (kitchen) and in serving (room). In this wake, it was the natural complement of a previous partnership with the former three-stars in Michelin Guide Chef Roellinger, from Cancale, who chairs a cooking contest about sustainable seafood, co-founded by SeaWeb Europe and Ferrandi-Paris. Roellinger intervened personally in Saint-Malo developing a specific sauce served with seafood to the children.

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<sup>8</sup> Located in Saint-Malo, but also in Paris, Nantes, the Yeu’s Ile, and Saint Gilles Croix de Vie.

Quantities, prices and potential bottlenecks seem to be well managed and no major issue is reported. However, the kitchen management feels the lack of initiative from the suppliers as obstacle both to the introduction of greater quantity of seafood and to product innovation (new culinary preparation, different species, etc...). As an exception, the case of *Atlantic Limpet Development* (ALD), company based in Cancale, which has set up a business structure that is proactive to sell products based on common slipper limpet<sup>9</sup> which have been tested by the team of the central kitchen.

### FOOD EDUCATION AND SEAFOOD EVENTS

Regular events are held in Saint-Malo, with the support of partners MSC and SeaWeb, with the aims of supporting the local fishery industry and to spread environmental concerns.

**Figure 3** : Seeds of Fishermen logo



**Source** : <https://www.msc.org/a-propos-du-msc/education-graines-de-pecheurs>

Once in a quarter it takes place "Seeds of Fishermen". It is part of the overall project Fish and Kids, already developed in the United Kingdom and Sweden.

This program is designed to help teachers, parents, and staff canteens to educate children on the importance of sustainable fisheries and responsible consumption. It is intended to make children aware of their consumer role in the preservation of the oceans. With this activity, the MSC means to educate young generations to the sustainability of the entire fishing sector, involving the teachers, the staff of the school restaurants and the families. Seeds of Fishermen drew some attention from local TV broadcasters. Beyond Seeds of Fishermen, MSC also help organise visits of fish boats and SeaWeb is involved in regular animations which focus on the discovery of the sea.

Finally, we can cite the "Teddy of the Seas" operation. Children participated to a drawing contest and they had to draw a fish. The prize for the winner was a teddy reproducing the draw.

<sup>9</sup> for more information: <http://www.lacrepidule.com/>  
SOV MILESTONE template



**Figure 4** The "Teddy of the Seas"



**Source:** A. Bellemans, company Sodexo, site of Saint-Malo

## 2. MAIN FACTORS AFFECTING THE SUPPLY OF SEAFOOD IN SCHOOL CATERING

Interviews allow highlighting several factors that can influence the supply of seafood products in school meals.

### 2.1 PRICES

Fish is a product considered as noble and often as relatively expensive. The price can be a barrier to the introduction of more seafood in catering, given the budgets constraints of local authorities.

Also, fish is a heterogeneous product from the point of view of the quality and price. Taking Dijon as example we found: 10.70€ for fresh saithe back, 5.12€ for frozen Pollock fillet, 6.33€ for frozen cod back, 3.90€ for “fish cube”, 3.89€ for squared Pollock fillet and 6.42€ a light breaded white fish fillet.

However, the prices of “high quality” fish, as fresh backs, are not so high if compared with appropriate substitutes, as high quality meat. Thus fish, despite a relatively high price may benefit from substitution effect.

### 2.2 SUPPLY

The supply can be seen as a constraint, especially in the case of fresh fish. There are two aspects that may be refraining (more or less strongly): quantity and quality.

#### A) QUANTITY

Risks of bottlenecks and of supply interruptions emerge from interviews, in particular during December and January, where private demand is high (holidays) and many fishermen are at rest period, as well as for the species which are in danger.

#### B) QUALITY

Case studies point out that it is often difficult to have fitted portions, particularly for fresh fish when requested portions are lower to 90-100 g. This push the buyers away from rough products and to replace them by transformed ones.

The risk of finding bones is also highlighted. The AFNOR standard about frozen fish indicates that in: *“catering for children or the elderly, it is recommended that the buyer to order quality without bones”*. The boneless product is defined as

containing less of an edge to the kilogram. The strict application of this standard largely explains why only some species are demanded by school catering buyers (Goldberg and Jones, 2010) communities. Difficulty of finding skinless products also appears as an obstacle to introduction of fresh fish.

For aquaculture fish, the lack of information about the quality of the food provided to the fish may be a factor slowing demand from the cities.

Finally, allergies to seafood are mentioned as being on the increase (for example, in Saint-Malo number of cases of allergies to seafood products has been multiplied by 4 between 2006 and 2016). This is likely to stifle the development of the seafood products in catering (at least in school restaurants).

## 2.3 SERVICE

Mode of service and all of the ancillary services such as animations or different educational supports are important to promote the acceptability of seafood by children and avoid discharges, sources of waste and costs.

### A) THE PRODUCT SERVICE MODE

Service personnel acknowledge the child public has not always a positive *a priori* about seafood products, especially in their more natural shape, as fresh fillets. Appearance, smell, taste, as well as the risk of bones or skin can lead the children to refuse the meal, especially when they do not have the habit of eating seafood at home.

Thus, appropriate service mode has an important role in the support and information on the contents of the plate. For example, the self-service mode (as some Lorient's sites) leaves the child alone in his/her food choice. On the contrary, table service mode (as in Dijon) allows presenting the product to children and systematically asks them to taste.

### B) THE EDUCATIONAL ANIMATIONS

The animations are important to support the child in the discovery, then in the regular consumption of seafood products. Animations can be considered as a service facilitating the relationship with the products. They seem to be particularly relevant for product bearing negative and anxious *a priori* and for which the constraints are relatively strong (edges, smell, etc.).

Animations can be implemented in school restaurants; in schools by the kitchen staff and/or teachers working with children, but also in families.

## 2.4 WORKING WITH THE PRODUCT

How products are managed and transformed is both important for producers (process optimisation) and consumers (confidence, acceptability). This is particularly important facing an audience of children.

### A) UNPACK THE PRODUCT

In the production process, the time required to unpack the products can be an obstacle to their adoption. Such problem led Saint-Malo and Dijon to divert from frozen fish. Notably, the case studies highlight overall logistical and organizational benefits the fresh fish referring to the frozen fish (no rendering of water, technical convenience, feeling of buying real product and not just water). These benefits are clearly highlighted in three case studies: Lorient, Dijon and Cholet.

### B) THE FISH COOKING AND CULINARY PREPARATION OF ACCOMPANIMENT

The culinary aspect will influence the consumption. The cooking method is particularly important because the fish is a relatively fragile product. The example of Dijon who manages cooking temperature of fresh fish with probe is interesting.

Accompaniment, by using spices or developing of new sauces (*cf.* action of the chef Roellinger with Sodexo in Saint-Malo), seems also to be a key. Also, introducing “new” products and a recreational feeling happened to be successful (mackerel rillettes in Brest, gratin with seafood in Dijon, seafood “Bolognese” in Saint-Malo, and so on). Finally, work with a quality product, as fresh fish, is rewarding for the staff and cooks.

## 2.5 LEGAL FRAMEWORK

As for what product is served to children, in France, the GEM-RCN framework sets the minimum amount of seafood (especially fish) that has to be served by school restaurants: 4 meals out of 20 services. This recovers pre-existent cities habits of serving fish once a week. No requirements exist about fresh or sustainable products.

On the buying procedure side, the public procurement code represents a constraint for at least two reasons:

- It is complex and it induces heavy administrative burden for sellers wishing to participate to the market. This argument is raised repeatedly, especially as for small, often local, producers
- It may hinder promoting local products, no matter which the reason (low carbon footprint, economic support to a local industry, ...) because such



initiatives may break the equality of treatment of candidates and induce false competition.

## **2.6 SOCIETAL CHANGES**

Enhancing seafood in school catering (more quantity, shift in quality) seems to fit the societal changes of our times. More specifically, interviews highlighted two different dimensions to be looked at: a) seafood as an answer to the complexity induced by religion and culture driven culinary habits; and b) increasing societal demand for a lower consumption of meat.

### **A) RELIGIOUS AND CULTURAL CULINARY HABITS**

Facing the societal evolution of their population, cities modify their offer adding a “replacement” menu when the “standard” one has chances to be rejected by an important part of the audience (no-pork menus, meatless menus, and so on). Of course, this adds complexity.

Seafood may be an appropriate answer in two ways. First, “replacement” dishes are often meats other than pork: given the relatively small quantities per serve, replacement menus are a good opportunity to introduce more seafood in the children diet. Some evidences from cities where replacement menus is an issue show fish is a well accepted replacement (in Cholet, fish dishes are the lesser rejected by children and in Dijon an average of 300 additional seats are measured when fish is on the menu).

And, second, given this good response from the audience, avoiding “replacement” menus by increased presence of fish in “standard” offer may be an effective and convenient option.

### **B) ALTERNATIVES TO MEAT PRODUCTS**

Current nutritional recommendations for the whole society support a reduction in meat consumption. However, in catering, the total protein intake total has to remain stable, for the age groups considered. Thus, there is an implicit demand for a shift towards other products. If vegetal proteins (as soy, beans, lentils and so on) have a prominent role in this shift, seafood is also a credible alternative.

### **3. HOW TO IMPROVE SEAFOOD CATERING?**

Over interviews, the "market" factors (price, supply availability) emerged as day by day severe constraints. For public managed school restaurants, the rigidity of the code of public contracts adds specific issues. However, the analysis of the practices shows that nothing is impossible, no matter if the city directly rules the catering service or if a private contractor is chosen.

Indeed, it seems that these rigidities, although real, are reinforced by a rather rigid purchasing behaviour, while market conditions are structurally volatile, especially for the fresh product.

#### **IDEA 1: FOCUS ON A SUPPLY-DRIVEN PURCHASING PROCESS**

Set menus based on what is available on the market (especially for the fresh fish) is possible, but not a popular practice. For example, Lorient order fish three days prior to the date of service by adapting as far as possible the species available on the market, while Cholet manages his command by specifying the species and the quantities two months in advance. The first solution turns out to be particularly advantageous in terms of price. Also, on the one hand, it helps to avoid supply disruptions related to catches variability and, on the other hand, it better allows the local fisheries participating to the market.

This would facilitate the introduction of the fresh products, with all the advantages related to, granting a reasonable buying price. Of course, some flexibility has to be managed to assure supply continuity in December and January, when fresh resource is rare: a complement of frozen sustainable fish appears to be an appropriate answer.

Nonetheless, adopting a supply-driven approach require the catering service to be able to adapt to changing conditions. Hence, some organizational improvement may be necessary.

#### **IDEA 2: KITCHEN STAFF TRAINING**

Dealing with what is available on the market requires the kitchen staff to adapt to products that may be unusual. It requires innovating in the culinary preparations, including cooking methods, which fit the newly introduced species, in order to diversify the community demand. Also, a better knowledge of seafood and how to enhance them (presentation, sauces, spices) is beneficial also for the treatment of the species more commonly proposed.

Specifically for fresh and local products, it is possible to work on the awareness of the benefits of such products from a culinary point of view, and provide specific training, as it is popular for organics in agriculture<sup>10</sup>.

### IDEA 3: ROOM STAFF TRAINING

Case studies show that further training would help the room staff to better support children developing a positive attitude towards seafood, *especially* when presented in shapes they are not used to (fillets, backs, unusual species and fleshs, stronger probability of bones and so on).

Involving producers, which familiar with the product, could be a way to improve mutual understanding between 'customers' and 'suppliers'. A reduction in the turnover of the supervisors and managers in restaurant would also allow a greater commitment in the long term.

Finally, the effectiveness of management personnel training would be optimized by enlarging the public for the services at table, with animators, to all the pupils in elementary school, and not only for kindergarten classes as is often the case.

### IDEA 4: CATERING EXECUTIVES TRAINING

Case studies show how the relationship with the seafood in catering is mainly driven by the human factor. Hence, it is essential to improve the management consciousness of the benefits of seafood, and in particular of fresh products.

As yet indicated before, seafood is an appropriate opportunity:

- to reduce meat overconsumption;
- to reduce the complexity linked to “replacement” menus.

Focusing on fresh products, they are beneficial from different points of view:

- operational (no defrost time, weight management, ...);
- organizational (see Lorient case for short term, adaptive purchasing);
- educational
- gustatory (as statistics on discards seem to confirm)
- communication (quality, attention to children, authenticity, ...)

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<sup>10</sup> For example, see Initiative Bio Bretagne at <http://www.bio-bretagne-ibb.fr/actualite/restauration-collective/formation-bio-pour-les-acteurs-de-la-restauration-collective/>).

From a more strategic perspective, sharing good practices in public purchasing seems to be another issue. In particular, smart choices about batching (prefer a market divided in more batches to a single comprehensive contracting), may lead both to better select partners and better secure the supplies.

On the other hand, a finer and more detailed batching allows small producers, mostly local, to take part in the competition. Thus, as no segment of sellers is excluded, this fairer competition is expected to be beneficial for the community.

## **IDEA 5: BUILD UP A POSITIVE MOOD**

In order to reinforce and consolidate the seafood acceptability by children, some cities set up entertainment-related educational activities: it is an interesting, encouraging approach. In particular, attention should be paid to frequency, rather than on proposing more important animations. Narrow, and more frequent, initiatives would better focus on the practical, playful aspects which will easily keep the children attention on them. Also, wider animations might be perceived as “more school lessons”: with more focused initiatives, this risk would be reduced.

Finally, the role of the family in the construction of the eating habits of future consumers is obviously fundamental. It is important for managers to involve families, although it can sometimes be difficult. For example, as part of an extension of table service to all primary children, an upstream work with parents of children on the link between product and service seems highly desirable. This can happen, as is the case in many cities, by increased solicitation of parents on these topics at “menus commissions”.

## **IDEA 6: BETTER COMMUNICATE**

Linking to the previous point, the room for improvement in the school restaurant communication appears clearly.

Facing a demand for quality by parents, school restaurants might easily use the menus sheets as a communication tool, providing appropriate information on the product origin and signs of distinction (organic vegetable, sustainable fish, “label rouge” meat, and so on). Some cities (e.g. Lorient and their delivery truck) show interesting practices but a comprehensive analysis of school restaurant menus indicates a strong margin for improvement, especially among the cities directly managing the catering service.



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## 4. SUPPLY SIDE HAS TO IMPROVE ITS PRACTICES TOO

As it is showed before, school restaurants can do better about seafood (and their missions). Nonetheless, supply side agents (including fish traders and fisheries) may better take into account the constraints of their customers. Receiving a well portioned, boneless, skinless is mandatory. A smart packaging will reduce preparation time and encourage choosing seafood as meals ingredient.

Of course, take full account of these constraints, will require to decide investments (weight materials, x-ray detection for bones, ...) which are undoubtedly expensive. However, some experiences indicate that, as market grows, such investment may be profitable (*see further: Le Venec's case*). Also, investments might be shared among producers, in analogy with the experience of agricultural cooperatives, and/or complemented increasing the working force, at least in the short term.

As for commercial initiative, the fishing industry could develop a more proactive policy of canvassing. Proposing unusual species (as for limpet) might be interesting for buyers who has interest to explore new opportunities (escaping some too popular species reduce the risk of unavailability). Reintroducing "local" species (mackerel, sardine, ...) which does not meet the requirement for being used as main dish (bones issue, ...) but well adapted to be introduced in processed forms (rillettes, ...) as starters would contribute to enlarge the market.

Also, with regards to fresh fish, a more direct contact between fishmongers and buyers would help a better matching between species and volumes available on the market and what is actually demanded by school catering.

Finally, specifically focusing on farmed fish, the offer should further improve traceability, thus better having and transmitting knowledge about this peculiar seafood: product labeling and certification would act as facilitators.

### LE VENEC'S CASE

Alan Le Venec is a fish trader in Concarneau (Finistère, France). He runs his company since 2010. Since then, it seeks to develop new markets adopting a short circuit approach. His example is interesting because short circuit initiatives in the fish market are rare, whereas they are popular in sectors as vegetables, fruit, meat or dairy products, mainly yogurt. In Brittany, where Le Venec is settled, one third of new farm projects integrate a short circuit perspective from the start.

From the evidence that French fresh fish represents only 15% to 20% on supermarket fish stalls (even in a region where fishery is very important) he chose to open a fish shop for individual customers next to his cold room. The fish trader becomes also a fishmonger, which is a completely different activity, bearing different

logic than trading with large customers nationwide. In 2012, three people were hired to run the shop. Offer covers fish (whole or fillets), crustaceans, and some seaweed products ("Algues de Bretagne" and "Miss Algues" from local producers).

Le Venec also got markets to supply retirement homes catering services, as well as school restaurants with fresh food. Fulfilling these markets required being able to provide fresh fish in appropriate portions, skinless and boneless.

In order to meet the market specifications, a new slicer was acquired to increase productivity (maximum performance of a ton of fillets per hour). Mastering the thread, and the un-boning process initially were manual, work intensive tasks. Besides freshness, a sales argument was the "true cost" of the product: as frozen fish loses water to cooking, and because portions for scholars and elders refer to cooked product, the catering service can reduce its purchased quantities. Thus, a product which is "delivered it in portions, boneless and skinless, ready to cook" becomes attractive.

In 2014, about 50 schools in the county of Finistère buy Le Venec's fresh fish. However, Le Venec regrets that only the mention "fish of the day" appears on school menus, not the geographic origin (see Lorient and Idea 6).

Next planned step is to acquire a vacuum packing machine and prospect supermarkets for their drive-through.

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