Towards a territorialized and sustainable food system

Understanding Quebec city's regional food system: a participatory based research. (REPSAQ)
A multidisciplinary and participatory project

Project

- A project led by anthropology professor Manon Boulianne, which brings together 4 other professors from different disciplines: Architecture and Design (C. Després); Law (G. Parent); agroeconomy (P. Mundler); Nutrition (V. Provencher).

- Ten graduate and undergraduate students

- Research conducted in partnership with around twenty local partners

- A project funded by the Social Sciences and Humanities Research Council of Canada (SSHRC)
Origin

Research questions emerged from a World Café conversation held with 22 organizations in Sept. 2015

- What do we produce and eat in the region?
- Where does it come from?
- How are the transformation and distribution of food organized?
- Where do people get their food?
- How existing rules and planning instruments influence the food system?
1. A multidisciplinary and participatory project

Objectives

- Characterization of Quebec City regional food system
- Development of tools and research methods related to territorialized and sustainable food systems
- Knowledge mobilization towards the emergence of local food governance
2. Research and some results

Two concomitant research strategies

1/ Collection and compilation of data on:
- actors,
- provisioning processes,
- marketing processes,
- all along the food chain.

2/ Problematization and research on:
- specific aspects of the food system,
- from different disciplinary perspectives (masters’ thesis and essays)
1. A partnership and multidisciplinary project

Quebec City Metropolitan Community and its regional foodshed

- Area: 33,717 km²
- Population: 1.16 million, including 800,000 inhabitants in CMQ
- Density: 34.5 hab/km²
1. A partnership and multidisciplinary project

Quebec City Metropolitan Community and its regional foodshed

- Area: 33,717 km²
- Population: 1.16 million, including 800,000 inhabitants in CMQ
- Density: 34.5 hab/km²
- Cultivated land: 305,156 ha
- 0.26 hectare of cultivated land per inhabitant
- Number of Farms: 6,333 including 5,360 in Chaudières-Appalaches
2. Research and some results

Specific studies

1. Productive potential of the territory
2. Mapping supply chains
3. Consumers buying habits
4. Regulatory framework for urban agriculture in CMQ

Others Studies

- Legal framework related to food waste reduction
- Home gardening practices according to age and residential area
- Food justice in the regional food system
1. Productive potential of the territory (Marilou Des Roberts)

- How to measure the coverage potential of local needs by local production (in calories and in weight of different foods)?

- What is the adequacy between what is produced locally and what is consumed locally?

- What are the strengths and constraints of the relocation of food according to the actors?
1. Productive potential of the territory (Marilou Des Roberts)

- How to measure the coverage potential of local needs by local production (in calories)?

- Caloric needs of the population: about 900 billion calories per year

- 155% of caloric self-sufficiency (without taking into account hay or sugar maple)

- 196% of caloric self-sufficiency (taking into account ha of hay (1/4 conversion factor) and maple production)
1. Productive potential of the territory (Marilou Des Roberts)

- What is the adequacy between local production and local consumption?
  - Region is deficient in vegetables but high in meat
  - Important seasonality factor
  - Not everything is consumed here

<table>
<thead>
<tr>
<th></th>
<th>our territory</th>
<th>province of Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>spinach</td>
<td>1 %</td>
<td>13 %</td>
</tr>
<tr>
<td>tomatoes</td>
<td>11 %</td>
<td>15 %</td>
</tr>
<tr>
<td>peppers</td>
<td>6%</td>
<td>65%</td>
</tr>
<tr>
<td>lettuce</td>
<td>10%</td>
<td>85 %</td>
</tr>
<tr>
<td>potatoes</td>
<td>209 %</td>
<td>119 %</td>
</tr>
<tr>
<td>apples</td>
<td>66 %</td>
<td>150 %</td>
</tr>
<tr>
<td>strawberries</td>
<td>125 %</td>
<td>49 %</td>
</tr>
<tr>
<td>lamb</td>
<td>27 %</td>
<td>40 %</td>
</tr>
<tr>
<td>beef</td>
<td>58 %</td>
<td>34 %</td>
</tr>
<tr>
<td>pork</td>
<td>980 %</td>
<td>358 %</td>
</tr>
<tr>
<td>milk</td>
<td>348 %</td>
<td>205 %</td>
</tr>
<tr>
<td>maple syrup</td>
<td>4164 %</td>
<td>1415 %</td>
</tr>
</tbody>
</table>
2. Research and some results

1. Productive potential of the territory (Marilou Des Roberts)

- What is the adequacy between local production and local consumption?

Converting everything we produce into calories

- first column: everything that is produced
- second column: everything that is produced by removing the part of product not consumed
- third column: all that is produced up to 100% of the actual consumption.

![Caloric adequacy chart]

- Total calories adequacy: 93%
- Adjusted adequacy for edible portion: 78%
- Limit at 100% adequacy: 38%
What are the strengths and constraints of the relocation of food according to the actors?

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better quality product</td>
<td>Higher prices</td>
</tr>
<tr>
<td>Fresher product</td>
<td>Lack of consumer education</td>
</tr>
<tr>
<td>Encourage the producer</td>
<td>Lack of political will</td>
</tr>
<tr>
<td></td>
<td>Value chains built on an export model</td>
</tr>
<tr>
<td></td>
<td>Competition</td>
</tr>
<tr>
<td></td>
<td>Lack of volume</td>
</tr>
<tr>
<td></td>
<td>Seasonality</td>
</tr>
</tbody>
</table>

The local scale is the Province of Québec

Local products are more expensive and less competitive

Local and global food systems are complementary
2. Mapping supply chains (Nicolas Delucinge)

- How is the food distribution organized in the Quebec region?
- From where and how far does the food travel?
- Who are the suppliers of different types of food retailers?
2. Mapping supply chains (Nicolas Delucinge)

Map and quantify the flows and origins of 10 staple foods sold in 15 different types of retail stores

- Qualitative Approach - Case Studies
- Interview with managers
- Suppliers and Procurement survey
- Identification of provenance on the shelf
Research and some results

Percentage of weekly apple volume reported in season and off season, by supplier type

Centralized supply

50/50

Direct supply

more direct supply

- Producer/processor (direct supply)
- Market (direct supply)
- Wholesaler (centralised supply)
- Distributor (centralised supply)
2. Research and some results

Map of weekly apple volume reported in season and off season, by supplier type

- **Producer/processor** (direct supply)
- **Market** (direct supply)
- **Wholesaler** (centralised supply)
- **Distributor** (centralised supply)
2. Research and some results

Average food kilometer of supply chains
(weighted according to the shelf area)

Parts of provenances on the shelf
(according to the measured area)

Apples - Provenances globalized, but not only...
3. Consumers buying habits (Julie Fortier)

- Characterize eating habits, including the source of food, and verify links with the nutritional quality of the diet
- Identify perceptions and attitudes about local foods
- Identify barriers and facilitators for their consumption.
3. Consumers buying habits (Julie Fortier)

Phase 1: Quantitative (survey)

1. Development of an assessment tool measuring food purchasing habits and practices (the « Locavore Score »);
2. Completion of Web-based survey by a sample of QMC’s consumers, and reliability evaluation of the « Locavore Score ».

Phase 2: Qualitative (focus groups)

1. Development of a semi-structured interview guide;
2. Selection of a consumer sub-sample from phase 1 based on score;
3. Exploring consumers’s attitudes and perceptions regarding consumption of locally produced foods.
Research and some results

3. Consumers buying habits (Julie Fortier)

Descriptive statistics of the Locavore Score (n=299)

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.91</td>
</tr>
<tr>
<td>Median</td>
<td>2.33</td>
</tr>
<tr>
<td>Mini - Maxi</td>
<td>0.20 - 9.57</td>
</tr>
<tr>
<td>Range</td>
<td>0 – 24.7</td>
</tr>
</tbody>
</table>

Locavore score is a weighted average measuring two key components:

- Frequency of use of short food supply circuits
- Geographic proximity (place of food production).

Distribution (n=299) of the Locavore Score
Some highlights:

• Rather low locavore score in our survey population (n=299)

• Modest but significant correlations between the Locavore Score and the nutritional quality of the diet. Participants who have a higher score show a higher quality diet than those with a lower score.

• The qualitative analysis of the focus groups will provide information about the beliefs that underlie consumption patterns toward locally produced foods and the differences between consumers.

• Integration of quantitative and qualitative data will contribute to address the attitude-behavior gap about consumption of local foods underlined in the literature.
2. Research and some results

4. Regulatory framework for urban agriculture in CMQ (Raphaëlle Bach)

- How is urban agriculture legally supervised in the CMQ?
- Is there a correlation between the extent of the legal framework of Quebec and the actual practice of urban agriculture in the CMQ?
2. Research and some results

4. Regulatory framework for urban agriculture (Raphaëlle Bach)

- How is urban agriculture legally supervised in the CMQ?
- Is there a correlation between the extent of the legal framework of Quebec and the actual practice of urban agriculture in the CMQ?

- Define urban agriculture
- Assess its development and practice in CMQ
- Collect relevant regulations and documentation
- Assess their impact on development of urban agriculture (supports or hindrance)
4. Regulatory framework for urban agriculture in CMQ (Raphaëlle Bach)

Some highlights:

- There is no correlation between the extent of urban agriculture practice and the legal elements surrounding it in the CMQ
  - Practice much more developed than the legal framework
  - Inconsistencies between regulatory elements and the position of municipal authorities on urban agriculture
- There is no regulatory framework dedicated to urban agriculture
  - Regulatory elements are disseminated in the various municipal regulations
  - The regulatory elements do not directly concern urban agriculture, it is necessary to deduce their application
  - The result is an inconsistent legal "framework", difficult to read and to apprehend
Some highlights (continued):

• A compilation of the different regulatory elements, a minima, and the elaboration of a supra-municipal regulatory framework (CMQ), a maxima, would facilitate the practice of the urban agriculture:
  • Would allow to frame the practice and ensure a coherent and concerted development
  • Put urban agriculture on the municipal agenda
  • Promote healthy and sustainable practices, the health and well-being for all
  • Enforce the legitimacy of urban agriculture (production, processing, distribution and recycling).
Conclusion

**The apple doesn’t fall far from the tree... or does it?**

**CONSUMERS**

**Consumption Choice**
- **Locavore**? (8.8/24)
- **Actual choice**
  - **Foodshed**
    - Possible alternative
- **Actual choice**
  - **USA**
    - Possible alternative
- **Actual choice**
  - **Chile**
    - Possible alternative

**DISTRIBUTION**
- **Online market**
- **Public market**
- **Supermarket**
- **Discount store**
- **Warehouse store**
- **Specialist store**

**PRODUCTION**

**Quebec’s Foodshed**
- Self-production?
- 17 Pick your own orchards

**Province of Quebec**
- Production potential:
  - 150% of needs

**Canada**

**World Provenances**
- 1/2 of apples are imported in the Quebec province
- Minimal exports, negative trade balance

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ici.radio - canada.ca/nouvelle/773518/debarquement - pêche - crevettes - sept - îles - zone - 10 / 24 / 24 / 24