ZERO HUNGER IN MONTRÉAL

PHASE 1

META-SYNTHESIS OF PUBLICATIONS ON FOOD SECURITY IN MONTRÉAL SINCE 2006

October 2018

Report presented by

Foundation of Greater Montréal

Prepared by Marina Jolly and Judith Colombo

récolte

Récolte is a non-profit organization whose mission is to strengthen the impact and sustainability of social innovation food projects, in other words, those that allow people to feed themselves in an environmentally friendly, affordable and healthy way. Récolte helps project owners by working to create favourable conditions for their success and removing barriers that slow them down. Its action is divided into two main parts: strategy, communication and research consulting, and development of joint projects to help project owners develop the skills they need, support their mobilization efforts, and enable them to forge contacts with different actors.

To this end, the organization employs a local ecosystem-based approach.

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A WORD FROM THE PRESIDENT AND CEO OF THE FOUNDATION OF GREATER MONTRÉAL

Is there hunger in Montréal?

Yes.

Our *Vital Signs of Greater Montréal's Children* report, published in 2017, amply showed that hunger does in fact exist in Montréal. Hunger dramatically affects school success, family life and both physical and mental health. Although many community, private, public and philanthropic actors are already tackling this issue, food insecurity persists. Why? And what can be done to fix it?

We are very proud to publish this *Meta-synthesis of publications on food security in Montréal since 2006*. This is the first phase of Zero Hunger in Montréal, a major project aimed at mapping the city's food security ecosystem. For the first time, a report outlines the state of food security knowledge on the island of Montréal. This publication addresses several important needs: it identifies aspects that have been studied, current knowledge gaps and less studied components. It then discusses what needs to be done to advance understanding of the problems associated with food insecurity.

We hope that all the relevant actors take ownership of this publication and its findings and that coordinated initiatives will be developed to ensure that the Zero Hunger goal in Montréal is achieved, in keeping with the Canadian government's objective to cut food insecurity in half by 2030.

I would like to thank Récolte for its excellent research, the members of the taskforce for their involvement and all the public, private, community and philanthropic actors in the ecosystem. I would also like to gratefully acknowledge our donors, without whom this meta-synthesis would not have been possible.

Yvan Gauthier
President and CEO
Foundation of Greater Montréal

BACKGROUND

According to the 2017 edition of the *Vital Signs of Greater Montréal's Children* report, 11% of households in Montréal experience moderate or severe food insecurity, while the corresponding percentage in Canada is 8%. This is true despite the fact that numerous communities, private, public and philanthropic actors have been working to tackle this issue. At about the same time, the Foundation of Greater Montréal (FGM) board of directors adopted the United Nations Sustainable Development Goals to guide its efforts, in particular the Zero Hunger goal. After consulting many stakeholders in the fight against hunger, the FGM realized that it needed a tool to visualize Montréal's food security ecosystem so that it could compare the city with its Canadian counterparts. After obtaining an overview of the food security issue, of which hunger is a fundamental part, it would be able to identify the investments needed. The FGM formed a taskforce to foster knowledge sharing, mobilize the ecosystem actors and see how it could carry out a joint effort. This aim of the resulting initiative is to collaboratively map out all the knowledge and actors as well as the challenges and opportunities in Greater Montréal. Not meant to be a miracle or turnkey solution that will eliminate hunger tomorrow, it is instead a process that will identify needs, define strategies and better guide the collective investments required to fight food insecurity using an integrated vision and action on our territory.

Members of the taskforce (October 2018)

- Centraide of Greater Montréal
- Conseil du système alimentaire montréalais (Conseil SAM)
- Dépôt centre communautaire d'alimentation
- Direction régionale de santé publique (CIUSSS du Centre-Sud-de-l'Île-de-Montréal)
- Foundation of Greater Montréal
- Fondation Lucie et André Chagnon
- McConnell Foundation
- Quebec Ministry of Agriculture, Fisheries and Food (MAPAQ)
- McKinsey Group
- Moisson Montréal
- Ville de Montréal
- Récolte
- Esplanade

The group's mandate is to share knowledge, mobilize the ecosystem actors, help validate and disseminate the project findings, and identify coordinated solutions focused on joint action.

The taskforce thus launched an ecosystem mapping project inspired by the one conducted by the Victoria Foundation from 2012 to 2013. The first step of this joint initiative involved producing a meta-synthesis of articles, reports and other sources of knowledge that **explicitly** shed light on the food security issue on the island of Montréal.

The meta-synthesis has three objectives:

1. Identify gaps in our collective knowledge of the territory.
2. Define a common starting point and overall vision for the remainder of the project.
3. Encourage additional research to fill in the knowledge gaps in order to accurately assess food security on the island of Montréal.

The next step

The ecosystem mapping project is the first step in a long-term effort to help reduce hunger and improve food security on the island of Montréal, as well as entrench the ecosystem approach in the actors' practices. *The meta-synthesis of publications on food security in Montréal since 2006* will be a source of information for the approximately 10 group sessions that will be organized between September 2018 and spring 2019 with a view to capturing tacit knowledge from the actors representing the city's stakeholders. Their challenges, key success factors and dynamics that connect them will enrich the ecosystem map. The goals are to inform and educate the Montréal community, encourage further research to enhance our knowledge, inform decision making (community organizations, funders, institutions) and ensure the relevance of the joint strategic projects that will result from the project. The goal is to have as many actors as possible take ownership of the findings and develop collective strategies that will respond to the challenges identified while respecting each actor's mission.

METHODOLOGY

AN INTEGRATED COLLECTIVE APPROACH

The *Vital Signs of Greater Montréal's Children* report (2017), which prompted the FGM to initiate the ecosystem mapping project, is structured around 10 of the United Nations Sustainable Development Goals. One of the goals, Zero Hunger is defined as "Eliminate hunger, ensure food security and improve nutrition." The FGM has chosen to commit to this goal by fighting against food insecurity, especially among children. For Statistics Canada, food insecurity is "inadequate or insecure access to food because of financial constraints" (Tarasuk, 2018).

According to the *Vital Signs* report, 11.3% of Montréal households are food insecure. The academic, institutional and community milieus all agree that this is a serious social issue. Closely related to other current social issues, food insecurity is also directly or indirectly addressed by various public policies, programs and frameworks (see Appendix 1). To reflect this complexity and to understand the issues affecting our territory so as to facilitate collective action, our approach is based on three interrelated concepts: food security, the ecosystem approach, and the community food security assessment ("CFSA"). This is an innovative and ambitious project; hence the importance of taking the time to define it properly.

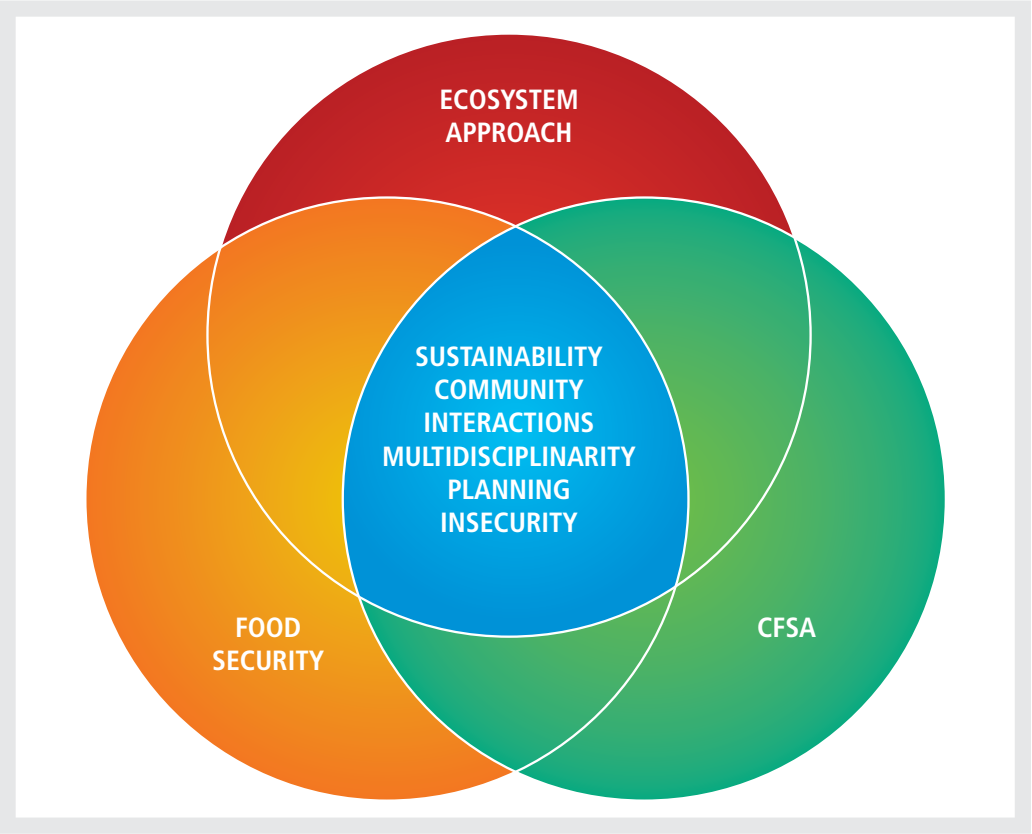


Diagram 1. **Overlapping points between the three concepts used**

Food insecurity and food security: related but distinct issues

Food insecurity is measured at the individual (or household) level and, in this regard, is one of the components of a community's food security. It is influenced by many social, economic, political, cultural and environmental factors. Let us assume for a moment that everyone on the island of Montréal can afford to feed themselves. Having the money to buy food does not automatically mean that nutritious food is geographically accessible, produced and distributed in a way that respects the integrity of our ecosystems for future generations and that fairly compensates Québec producers, or even that people have the time, desire or skills to cook the available food. All these issues are interrelated and shaped by the actions of many economic, institutional and community actors at different times and geographic scales. We therefore selected an integrative definition of food security:

1. Everyone has the physical and economic means at all times to access sufficient food to lead an active and healthy life.
2. Access to food is guaranteed for all.
3. Easy-to-understand, reliable and objective information is available to all in order to make informed choices.
4. Food is nutritious and is personally and culturally acceptable.
5. Food is obtained in a manner that respects human dignity.
6. Food is produced and consumed in a manner consistent with just, equitable and moral social values.
7. Food is produced and distributed in an environmentally sustainable way.

Source: Pageau et al. (2008)

Adopting an ecosystem approach to build food security

The ecosystem approach is [translation] "an analysis- and action-based strategy that considers the element concerned as an integral part of an ecosystem, a dynamic and coherent complex made up of [humans and other] living organisms and the environment in which and with which they interact" (Vivre en ville). It seeks to preserve the viability of our ecosystems and their essential functions for human activity. Applied to the issue of food security, this approach involves considering all the activities in the local food chain as well as all its actors, their relationships and the interactions with the natural ecosystems affected throughout the chain. This allows us to integrate the inherent complexity of the agri-food system with the goal of achieving food security for our community (Cole, 2018, TEEB, 2018).

This approach is appropriate for our project since it includes hunger as a major issue but goes further by adopting a vision of a resilient, healthy, dignified and self-reliant community (IUCN, 2013). It helps us tackle complex issues with multiple causes, as is the case with food insecurity, while breaking down silos along the food chain (Ericksen, 2007). Viewing food insecurity from the standpoint of emergency aid and as a stand-alone and self-contained issue means disregarding major causes and actors, thus risking that ineffective solutions will be developed with negative social and ecological effects in the long run (National Research Council and Institute of Medicine 2013, IUCN 2013). The ecosystem approach reduces these risks by helping to identify the underlying issues and providing an integrated action framework to paint a new and comprehensive picture that integrates food insecurity into food security.

Getting started: an assessment of the community's food security

TEEB (The Economics of Ecosystems and Biodiversity) is an initiative of the United Nations Environment Programme that brings together scientists, policymakers and agriculture representatives from more than 30 countries. In a report published in 2018, this group calls for systemic thinking to generate solutions that take into account the complexity of the food issue and states that community food security is a necessary prerequisite to individual food security.

The first step to applying this recommendation: assess the local food ecosystem

The United States and other Canadian communities have been conducting community food security assessments (CFSAs) for over 20 years. A CFSA begins with the food needs of low-income communities and aims to develop appropriate and consistent collective strategies (whether economic, political or community based) to improve local food security (Winne, 1997; Pothukuchi, 2004) and thus reduce the food insecurity of low-income people. A CFSA reflects the dynamics, objectives, resources and needs of the community assessed and has four objectives (Cohen, 2002):

1. Understand the local food ecosystem
2. Inform the setting of goals
3. Inform decision-making
4. Establish a long-term monitoring system with a set of clear indicators

To our knowledge, no such assessment has been conducted for Montréal using this method. Our project will take a first step in this direction by generating a map of the local food security ecosystem.

METHODOLOGY

Although not a meta-analysis in the academic sense of the term, the meta-synthesis was created using a methodology inspired by the meta-analysis approach, as follows:

1. Create a datasheet template and choose a framework definition of food security.
   The sheet was validated by a research professional from the Centre d'étude en responsabilité sociale et écocitoyenneté, and the framework definition was discussed with the taskforce established for the ecosystem mapping. The framework definition was presented in the previous section.
2. Conduct a grey and scientific literature review.
   Various strategies were used: online searches (Google, Web of Science-type databases, and websites of relevant sources such as the Direction régionale de santé publique); bibliographies of the documents identified; documents sent by the taskforce; publications of the researchers identified. The search for publications ended on July 31, 2018.
3. Conduct interviews for current projects.
   A number of food security research projects are being carried out in Montréal, for example, Moisson Montreal's assessment of food security practices. In those cases, interviews were conducted using a version of the datasheet that did not contain questions about the project's results or conclusions.
4. Create datasheets for each document.
5. Synthesize the datasheets in a multicriteria matrix (criteria provided at the end of the report).
6. Analyze the data and draft the report.

The analysis consisted of a quantitative and qualitative synthesis of the multicriteria matrix (see Appendix 2). This step shed light on how food security is studied in Montréal, by whom, from what angle, and with what results. Intended to be as objective as possible, it does not judge the results of the documents reviewed or seek to uncover THE cause of the food insecurity rate in Montréal (if there is a single cause) but to take stock of the studies produced collectively, the vision that underpinned them and the approach used, and suggest ways to deepen our understanding.

The ecosystem functions, as defined in 2013 by the Victoria Foundation's mapping (which inspired this project), were used for the matrix criteria:

> Functions of the food ecosystem:
- Local food production
- Storage and processing
- Distribution network
- Recovery and waste
- Access and consumption
- Knowledge

> Support and development functions:
- Coordination and collaboration
- Assets and resources
- Innovation and practices

Qualitative analysis methods

The qualitative analysis is based on three types of information collected from the documents reviewed: keywords, main findings and any further research suggested by the authors. Each analysis shed light on elements of our collective food security knowledge in Montréal.

Analysis by keyword

The objective is to identify the most studied components of food security. This analysis was therefore performed according to two frameworks resulting from the approach presented above:

> The components of the definition of food security selected for this work (Pageau et al., 2008)

> The components of the community food security assessment (adapted from Cohen, 2002)

The list and description of these components are provided in Appendix 3.

Main steps of the keyword analysis:

1. **Keyword creation:** Identify the issues and characteristics of food security addressed in each of the reviewed studies in the form of keywords (from four to seven words, depending on the case). When the authors proposed a list of keywords for their study, it was reviewed and, if necessary, completed.
2. **Keyword classification:** Associate the keywords identified with the various components of food security according to the three concepts presented above.
3. **Quantitative analysis of the results:** Calculate the occurrence of each component in the documents reviewed.

Analysis of findings and further research suggested by the authors

The information collected from the findings and the suggested further research was analyzed using a strictly qualitative approach. First, the information was identified in each of the documents reviewed and recorded in the multi-criteria matrix. Then, ideas were grouped in empirically established categories for summarizing purposes. The highlights of this analysis are presented in the Results section.

LIMITATIONS

The meta-synthesis is not an exhaustive analysis of all the documents on Montréal's food system but a summary of those that are **explicitly** linked to food security and that respect the following inclusion and exclusion criteria:

Inclusion criteria

- Published after 2006.
- The scale of the study includes all or part of the island of Montréal (therefore excluding extrapolations and averages obtained from large-scale statistical studies). However, publications encompassing all of Quebec but that also provide information specifically on the island of Montréal were included.

Exclusion criteria

- Theses and dissertations.
- No explicit and named link with food security. For example, a report published by the Direction régionale de santé publique on the cost of the average food basket or healthy nutrition in schools would not have been included if it did not mention the term "food security." The reason is twofold: To narrow down and simplify the research to respect the deadline, and especially to understand how we take ownership of food security in our community, to what other issues is it clearly linked, and what minimal vision can be extracted from this fact.
- Multiple publications of the same research results.

Despite the care taken when collecting documents, it is possible that some documents meeting the criteria were not included, particularly those produced by community organizations and not widely disseminated. This matter will be resolved during the group sessions scheduled from September to March.

To ensure the utmost objectivity, the articles, datasheets and the matrix were read twice and discussed by the two researchers. However, as with any qualitative approach, interpretation bias may occur.

RESULTS

HIGHLIGHTS OF THE QUANTITATIVE ANALYSIS

The 48 reviewed documents were organized in a synthesis matrix. An initial quantitative analysis was performed for each matrix criterion in order to generate statistics detailing the type of accessible publications that explicitly address food security.

Type of documents reviewed

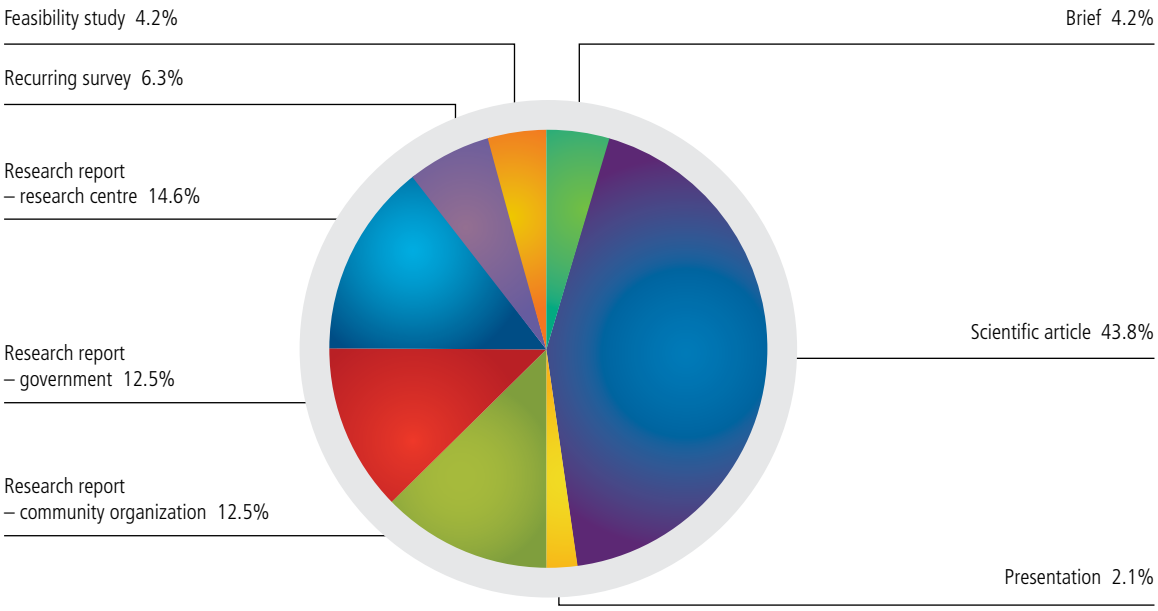


Diagram 2. **Publication breakdown by types of document reviewed**

> Scientific articles make up almost half the documents reviewed.
> Only a small number of research reports by community organizations were reviewed since they are not widely available online; it is likely that many such reports exist.
> Only one feasibility study was reviewed; this type of study is of interest to project owners and funders.

Number of publications per year

Although the sample size is relatively small and there are variations from year to year, the trend between 2006 and 2018 points to an increase in the number of annual publications on food security. Three studies were in progress at the time of writing.

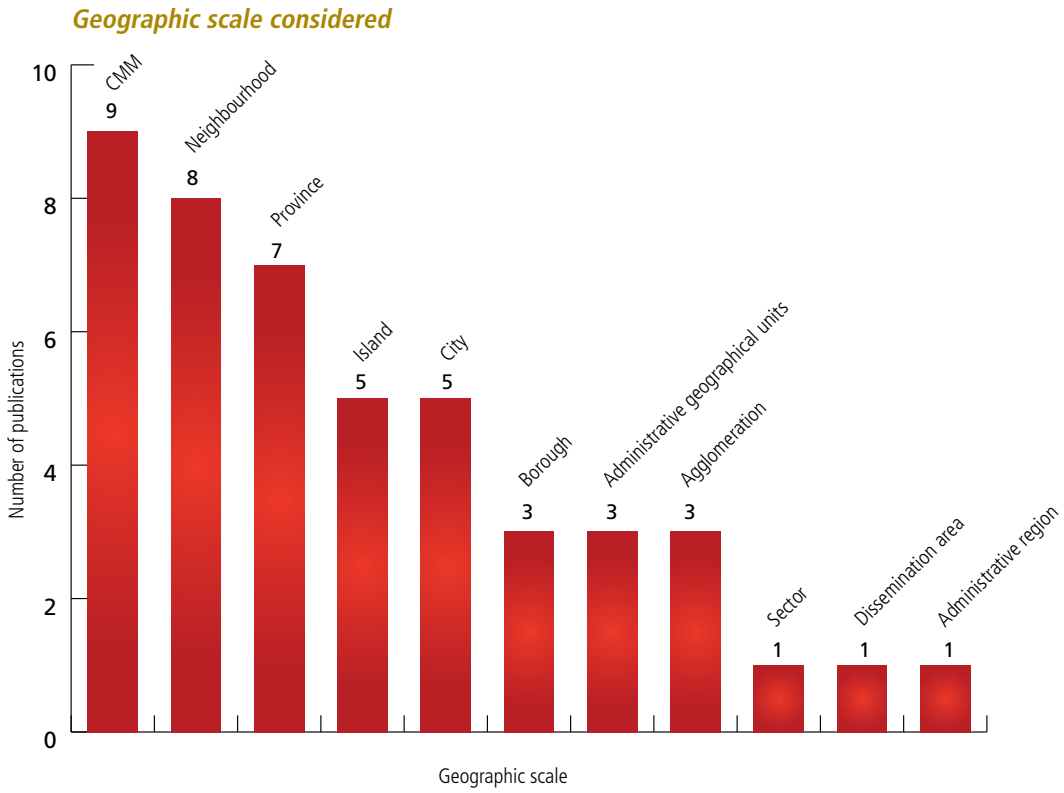
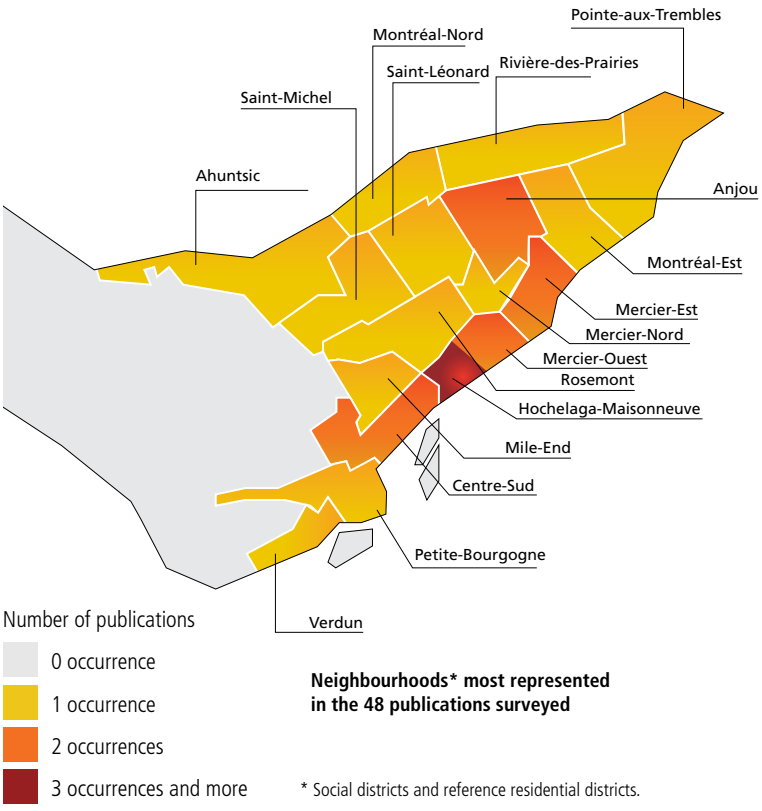


Diagram 3. **Geographic scales used in the publications**



Neighbourhoods* most represented in the 48 publications surveyed

* Social districts and reference residential districts.

> The scale most commonly used is the Communauté métropolitaine de Montréal (CMM), closely followed by the neighbourhood scale.

> However, based on the publications we were able to review, not all neighbourhoods have been studied.

> Scales such as administrative geographical unit or dissemination area were created somewhat artificially for specific research and statistical needs.

> There is no scale harmonization or replication of analyses at similar scales; it is therefore difficult to compare the publication results, even for those using the same scale (written by different authors using various methodologies), and their superimposition produces an incomplete meta-synthesis.

Sponsors and funders

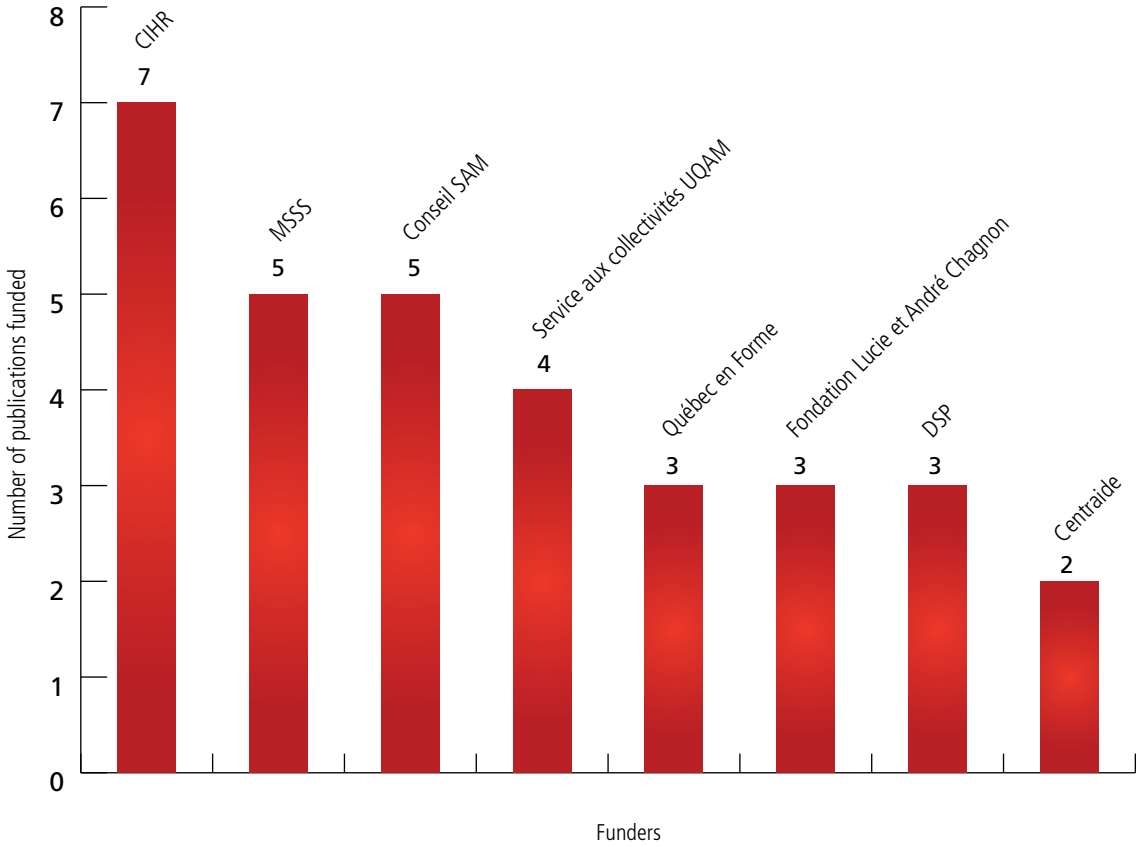


Diagram 4. **Number of publications funded by each funder**

Most of the publications reviewed were not sponsored. Of those that were, eight were sponsored by the Ministère de la Santé et des Services sociaux (MSSS), making it the largest sponsor. The MSSS is the second largest funder, having funded five of the publications reviewed. This result is consistent with the fact that more than a quarter of the publications reviewed were government research reports or reports produced by research centres, specifically, the Direction régionale de santé publique, the Institut national de santé publique du Québec (INSPQ) and the Chaire de recherche Approches communautaires et inégalités de santé (CACIS). The largest funder is the Canadian Institutes of Health Research (CIHR), which is consistent with the preponderance of scientific articles in the publications reviewed. The involvement of the MSSS and the CIHR suggests that the publications will focus heavily on the health component of food security.

Note that not all the publications received financial support or mentioned the source of the funding.

Subjects of study considered

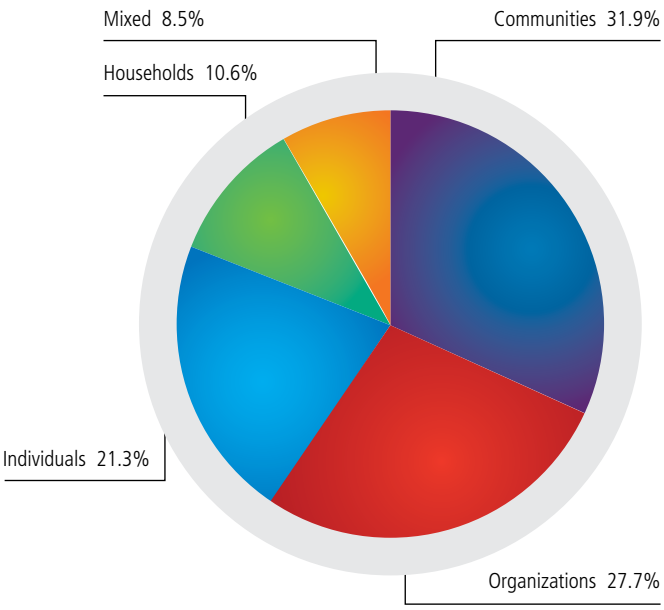


Diagram 5. **Publication breakdown by subject of study**

- Publications where individuals or households were the study subject are mainly scientific articles or research reports based on cross-sectional and/or longitudinal statistical data.
- Publications that focus on the community or organizations use different frameworks and are not harmonized or replicated; this again makes comparisons difficult and does not generate a complete picture of the ecosystem or the needs and challenges of the organizations working to alleviate hunger.

Definition of food security retained

Nearly 75% of the publications do not define food security, and there is no consensus among those that do. The most frequently encountered (three occurrences) definition is the one created in 1996 by the Food and Agriculture Organization of the United Nations. However, this definition has since been updated and can therefore be considered obsolete. It is therefore impossible to determine whether the publications share a common framework or vision. It also makes it difficult to develop integrated collective strategies on this basis.

Primary and secondary data sources used

Sixty percent of the publications use or generate two data sources. The survey method is the most frequently used for generating data (30% of publications), followed by focus groups and interviews (21% used each method). Statistics Canada is the most frequently used database (21% of publications). It should be noted that most of the publications do not use the most recent data, which date from 2011, probably due to the time between the start of a research project and publication of the article.

The most common combination of data sources is statistical database and geolocation, followed by interviews and focus groups.

Once again, neither the methodologies nor the data sources are harmonized, making it difficult to follow developments in the situation over time or to obtain an accurate statistical picture.

Type of data used (primary or secondary)

Nearly half the publications are based solely on primary data, in other words, generated by the authors; 31% use secondary data and 23% use a combination of the two. Primary data are mainly collected through consultation with the subjects or primary beneficiaries targeted by the publication (surveys, interviews, focus groups) rather than by observation or measurement.

Involvement of subjects and beneficiaries targeted by the publication

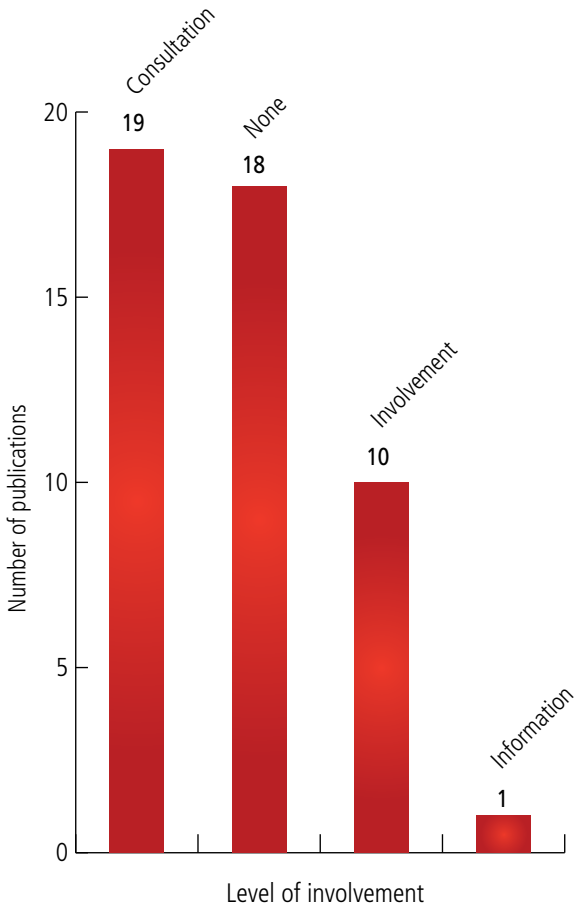


Diagram 6. **Prevalence of subject involvement in the publications surveyed**

- Consultation is the preferred way of involving subjects and beneficiaries.
- More than a third of the publications do not involve the subjects or beneficiaries at all.
- The practice of involving subjects and beneficiaries in research is fairly recent: the first publication to involve them in the entire process (development of the framework, strategy, etc.) dates from 2012, and more than two thirds of publications that used the consultation method were published in 2015 and after.

Type of approach (quantitative, qualitative or mixed)

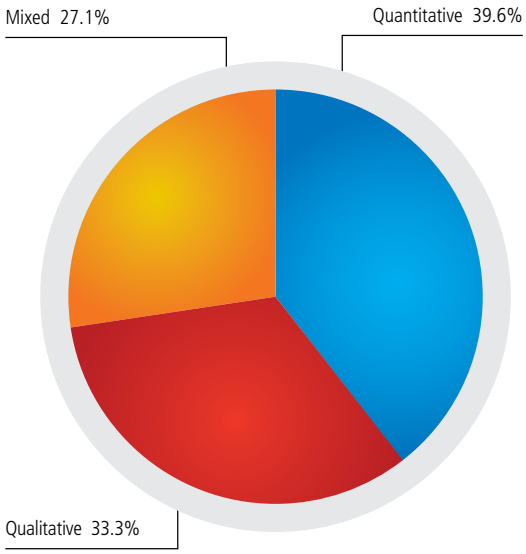


Diagram 7. **Type of approach used**

We noted a balanced use of the different approaches.

Type of methodology
(e.g. cross-sectional, longitudinal)

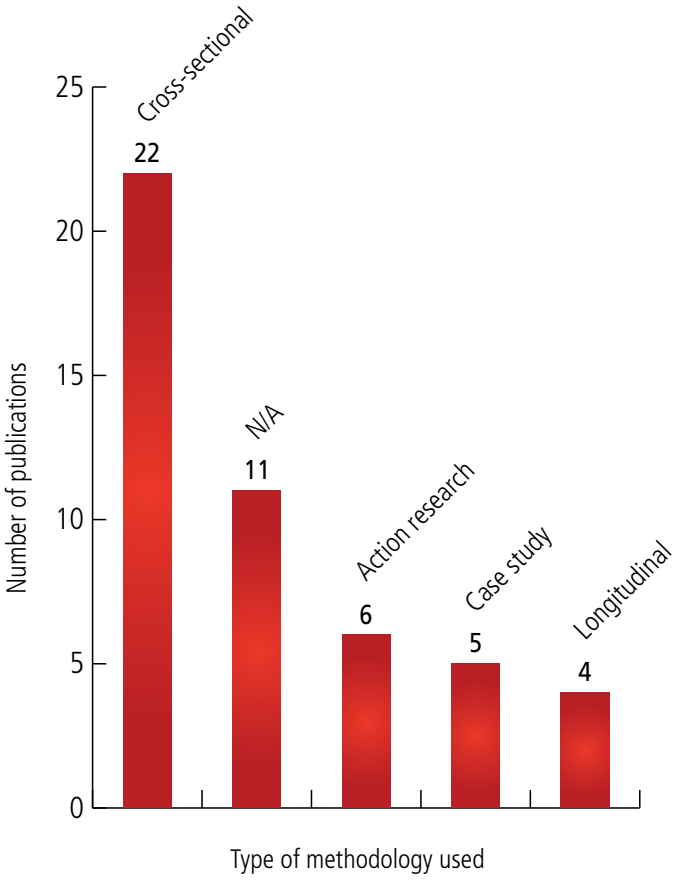


Diagram 8. **Prevalence of methodologies used in the publications surveyed**

The transversal methodology is the most frequently used by the publications reviewed. This is partly due to the fact that researchers used Statistics Canada surveys and other databases that provide "statistical snapshots" of a given moment. This type of methodology is easier to implement than a longitudinal study. The second column in the chart is used to show that the publications contained various documents that were not produced by research centres or according to scientific and research methodologies.

ANALYSIS HIGHLIGHTS BY ECOSYSTEM FUNCTION

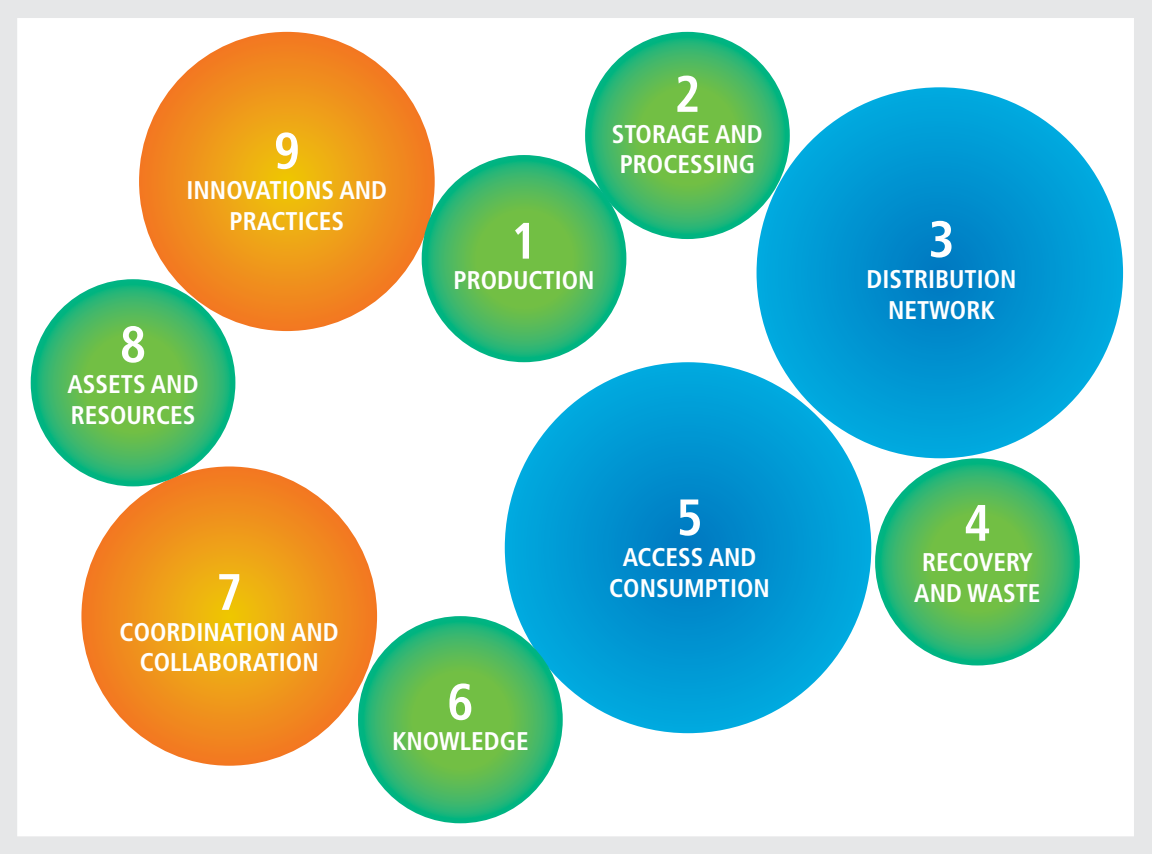


Diagram 9. **Ecosystem functions most represented in the publications surveyed**

This analysis shows the gaps in our current knowledge of ecosystem functions based on the publications surveyed:

> Production
> Storage and processing
> Recovery and waste
> Assets and resources
> Knowledge and education

That said, the "distribution network" and "access and consumption" are significantly more prevalent in the publications.

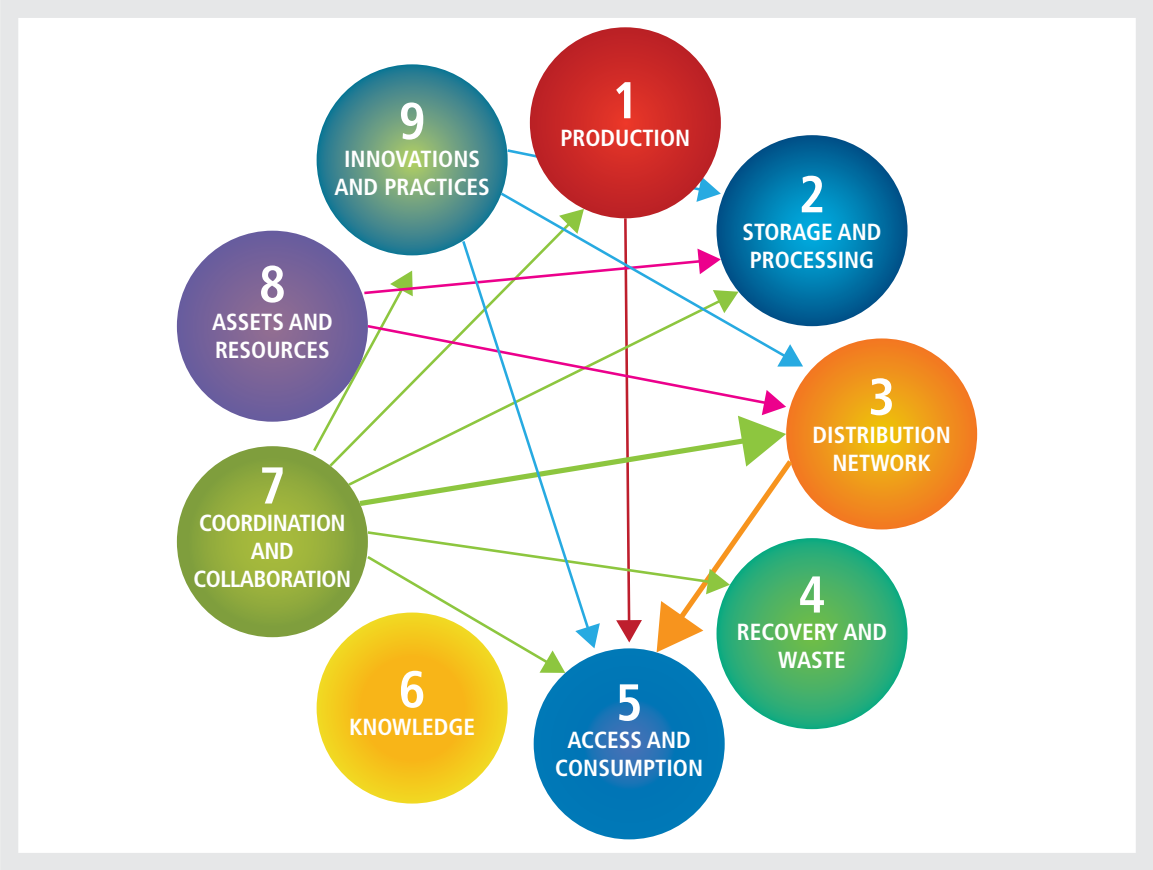


Diagram 10. **Links most studied in the publications surveyed**

Since one of the reasons the ecosystem approach is appropriate is that it allows us to consider the interactions inherent to a given ecosystem, the synthesis matrix captures the links studied in the publications between the functions of our initial framework. One link was studied much more than others: the impact of the "distribution network" function on the "access and consumption" function.

We see links between the "coordination and collaboration" function and the rest of the ecosystem but none of them has been more extensively studied and is better known than the others. Lastly, two functions are rarely studied in relation to the others: "knowledge" and "recovery and waste."

HIGHLIGHTS OF THE QUALITATIVE ANALYSIS

Results of the keyword analysis

Table 1 shows the occurrence of each component of the food security definition (Pageau et al., 2008) in the publications surveyed.

> The most represented components are physical access (65%), healthy eating (65%) and equitable availability of food resources (58%). This can be explained mainly by the emphasis placed on the study of the food environment in the last two decades.

> The least represented components are personal and cultural satisfaction with food (29%), the availability of easy-to-understand, reliable and objective information to make informed choices about ealthy foods (31%), and the issue of dignified food security (29%).

One possible explanation is the way the issue of food security was first approached and studied, i.e. through a top-down approach, limited involvement of study subjects and the use of secondary quantitative data. Aspects related to personal and qualitative criteria are difficult to address with these methodological choices. Recently, researchers have been favouring primary qualitative data collection methods such as interviews and focus groups (Roncarolo et al., 2016, Rodier et al., 2017 and Pérez et al., 2017), broadening the spectrum of knowledge on the food security issue.

Table 1. **Occurrences of food security components in the publications**

Food Security Component	Number of Occurrences
Physical access	31
Nutritious food	31
Available to all	28
Fair, equitable and ethical consumption and production	20
Affordability	19
Sustainable agri-food system	16
Easy-to-understand, reliable and objective information to make informed choices	15
Satisfaction (personal and cultural)	14
Respect for human dignity	14

Table 2 shows the occurrence of each component of a community food security assessment (CFSA). The purpose of this analysis is to get an idea of how much knowledge we have in order to conduct a CFSA on the island of Montréal.

- The profile of the community's food resources and its socioeconomic and demographic characteristics are the most represented, appearing in 73% and 71% of the publications respectively.
- The least represented components are assessment of affordability (23%) and food production resources (21%)

Table 2. **Occurrences of CFSA components in the publications**

CFSA Component	Number of Occurrences
Profile of food resources	35
Profile of socioeconomic and demographic characteristics	34
Assessment of household food security	22
Assessment of food resource accessibility	20
Assessment of food availability	18
Assessment of affordability	11
Assessment of food production resources	10

The keyword analysis reveals that certain components of food security, although an integral part of the concept, have not been explicitly explored as much as others. In particular, the establishment of a sustainable agri-food system is rarely linked to the food insecurity problem in Montréal. Although access to healthy and unhealthy foods has been the focus of food security research for 20 years, few publications explore the role of multi-sectoral agri-food actors. Similarly, the assessment of food production resources on the territory is rarely linked to the issue of food security, whereas the CFSA assigns it an important role in the search for integrated, transformative food security solutions.

The keyword analysis through the CFSA component filter refined our understanding of how much we know about food security by proposing a breakdown focused on the assessment of each determining component. Among other things, it made it easier to distinguish publications dealing directly with affordability from those using socioeconomic and demographic data to deepen our knowledge of other aspects of accessibility, including availability. In Cohen (2002), the author stresses the need, when conducting a CFSA, to carefully select the type of data to collect in order to ensure that besides gathering a large amount of quantitative and qualitative data, the necessary information is obtained to shed light on the process and required actions.

[1] *Note: The "Food resource accessibility" and "Affordability" components do not have the same definition in the context of a CFSA as they do for the component analysis of the selected definition. In the CFSA context, "Food resource accessibility" refers to the characterization of the food environment, excluding other components such as profile of food resources and availability. As for the CFSA's "Affordability" component, it includes publications that more explicitly assess the impact of affordability on food choices. Thus, it excludes publications that use data profiling the economic situation of a population in favour of the "socioeconomic and demographic characteristics" component. This explains the different results for seemingly similar themes.*

Results of the findings analysis

For the purposes of the meta-synthesis, the findings have been broken down into three categories, each of which presents the state of our local food security knowledge from a different angle:

> Determinants of food security
> Barriers to our knowledge of the issue
> Levers to increase our knowledge

Determinants of food security

The determinants can be either individual or collective. The following are some of the sociodemographic factors listed in the *Cadre de référence en matière de sécurité alimentaire* (DSP, 2008):

> Low income
> Low level of education
> Single parenthood
> Belonging to a minority ethnic community
> Being a member of a large household

Collective determinants include:

> The interpersonal environment, which includes the food culture and the family
> The physical environment
> The economic and social environments
> Public policies

There is strong scientific consensus on the main determinants of food security in Montréal. Divergence of opinions have more to do with the importance of one criterion over another and the combined effect of different factors due to the statistical challenge it presents (Daniel et al., 2009; Robitaille et al., 2013; Rodier and Durif, 2015; Perez et al., 2017). One aspect highlighted by several studies is the variation in these factors depending on individual criteria such as age, sex and socio-demographic factors (Lebel et al., 2012; Mercille et al., 2012; Clary et al., 2014).

These observations led many of these researchers to conclude that there is a need for longitudinal studies of specific segments of the population in order to better understand the effect of food security determinants on the most vulnerable populations.

In the reference framework adopted in 2008 by the MSSS, less emphasis was placed on one factor for food security — household food literacy, in other words, the knowledge and skills necessary to choose and prepare healthy meals. Yet recent studies suggest that much of this knowledge has been lost due to societal trends placing more distance between the consumer and the source of food, lack of time to prepare meals, and easy access to pre-processed foods (Florent, 2017, Rodier and Durif, 2015, Yorn et al., 2012).

Barriers to our knowledge of the issue

We used our analysis of the findings to compile a list of elements that explain our limited knowledge of the food security issue in Montréal. These elements are barriers to knowledge and the ability to take action. They are listed in chronological order in table 3.

Table 3. **Barriers to our knowledge of Montréal's food security issue**

Year	Description	Source
2007	Poor understanding of the mechanisms leading to unhealthy diets	Apparicio et al.
2008	Difficulty mobilizing and recruiting citizens for food security studies	Gaudet et al.
2008	Diversity of sociodemographic realities among and within Montréal neighbourhoods	Bertrand et al.
2009	Cautionary note on the limitations of methodologies used to characterize healthful and unhealthful diets	Daniel et al.
2013	Wide disparity in methodological approaches and variables used to measure good nutrition and the food environment	Bertrand et al.
2016	Insufficiently promoted and disseminated research; no shared vision within the research community	Rondeau
2018	Disparate methods used by organizations to collect data from the populations studied	Malek

Levers to advance collective ownership of the issue

The Collins dictionary defines the word "lever" as "a means to an end." Table 4 shows elements derived from the findings analysis that can be used as levers to further our understanding and response to the complex issue of food security in a city like Montréal. These levers are intended to foster reflection on the actions needed. They do not purport to be solutions to the problem of hunger or food insecurity.

Table 4. **Levers to foster knowledge and action**

Year	Description	Source
2009	Intervention through zoning bylaws	Daniel et al.
2010	Multifunctional urban agriculture (production, inclusion, mutual support, education, healthy diet)	Duchemin et al.
2011	New supply models based on solidarity, cooperation and community belonging	Enriquez and Klein
2012	A food policy with a shared vision for Montréal	Table sur la faim
2012	Alignment between programs and initiatives that address related aspects of food security; Offer longer funding periods (minimum 5 years) to give initiatives time to succeed and to test their viability; Review program monitoring tools	Gaudet et al.
2015	View the food environment around public schools as a relevant intervention target; Encourage municipalities to change the zoning bylaws in food environments	Robitaille et al.
2015	Create a food logistics cluster to make local supply more compatible with the social objectives of equity and food security	Audet et al.
2016	Pool resources (information and infrastructure) Create partnerships	Voghel Robert
2016	Measure impact to be able to properly assess the scope of the actions (at the organization level)	Fortin and Klein

Year	Description	Source
2017	Availability, experience, urban agriculture, education, accessibility and promotion are important factors in the selection of healthy food; Education has a greater impact than promotion and physical access	Rodier et al.
2017	Institutional recognition of neighbourhood markets to strengthen and spread their model	Audet et al.
2017	Map resources to see other models and create targeted partnerships	Florent
2017	The fact that alternative and conventional systems are inevitably interconnected should prompt the conventional sector and industry to start a conversation on the issue of food security	Brisebois
2017	Allow public health actors to adopt more health-driven public policies (provide them with the necessary levers)	Blouin et al.
2018	Institutional actors must work to better implement the right to food; Do more to politicize this issue; Provide funding for initiatives involving alternative food systems	Brisebois and Audet
2018	Set up a continuum of food security services	Aunio et al.

In summary, the analysis of these findings highlights the complexity of the food security issue due to its multiple components, influencing factors and determinants. The levers identified call for more coordinated, structured and targeted action involving greater representativeness of actors with the power to act on this issue.

Analysis of suggested further research

Analyzing the elements mentioned by the authors as priorities for further research deepens our understanding of where knowledge is lacking. The suggestions were grouped into categories established empirically as the analysis progressed. Consistent with the results of the keyword analysis, food accessibility is the component that has been most studied and the one for which we have made the most suggestions to guide the production of knowledge.

Food accessibility

Table 5. **Further research suggested by the publications: food accessibility**

Year	Suggested further research	Source
2007	Advance understanding of the reasons leading to an unhealthy diet	Apparicio et al.
2008	Study the effect of fruit and vegetable prices	Bertrand et al.
2010	Deepen understanding of the social context leading to the food choices and practices of different populations	Engler-Stringer
2012	Further explore the link between individuals and their food environment	Lebel et al.
2012	Broaden understanding of consumer decisions to buy fruit and vegetables locally in order to encourage them to do so	Yorn et al.
2012	Delve deeper into the conclusions on the link between the food environment and diet of elderly people	Mercille et al.
2013	Identify other food supply sources; Analyze geographic accessibility using different thresholds; Conduct further research on geographic accessibility to food stores taking into account all means of transportation	Robitaille et al.
2013	Include the affordability component and take into account alternative initiatives in the food environment	Bertrand et al.
2014	Better understand the causes of variations related to gender and reference territory	Clary et al.
2014	Explore gaps in the understanding of the effect of subsidized school meals on diet and weight	Bergeron and Paquette
2017	Broaden the range of factors studied to understand what influences food choices by adopting a consumer perspective; Use a multimethod approach instead of focusing on qualitative primary data obtained from interviews; Conduct a longitudinal study	Rodier et al.
2017	Include all the dimensions of food accessibility in a study on links between the food environment and food insecurity	Perez et al.
2017	Analyze other facets of the foodscape such as food literacy or food affordability in relation to income	Florent
2018	Apply the food environment measurement tool (MEAC-S) to more supermarkets to shed light on local policies and put an end to the dichotomy in the classification of "healthy" and "unhealthy" stores	Jalbert-Asenault et al.

Food security interventions

Table 6. **Further research suggested by the publications: interventions**

Year	Suggested further research	Source
2014	Further action research, integrating initiatives for other forms of alternative marketing	Audet et al.
2015a	Further research on the link between social inequality and the effectiveness of food security interventions	Roncarolo et al.
2015b	The need to improve access to alternative food security interventions for the most vulnerable population	Roncarolo et al.
2016	Study the long-term effect of different types of food security interventions	Roncarolo et al.
2018	Identify solutions to structure food security resources to better meet needs in areas identified as most at risk	Cantine pour tous

Research, methodologies and metrics

Table 7. **Further research suggested by the publications: methodologies**

Year	Suggested further research	Source
2014	Expand action research to other alternative marketing initiatives	Audet et al.
2016	Deepen understanding of how research influences what is happening on the ground and promote the development of complementary ties between research teams	Rondeau
2017	Explore the potential use of political science models and frameworks	Blouin et al.
2018	Develop a standardized data collection methodology for frontline organizations to facilitate research and measure the impact of the actions	Malek

Policies, regulations and funding

Table 8. **Further research suggested by the publications: policies**

Year	Suggested further research	Source
2012	Review program monitoring tools	Gaudet et al.
2012	Conduct more research to enrich public policies on the food environment	Van Hulst et al.
2015	Encourage municipalities to apply zoning bylaws that will change the food environment	Robitaille et al.
2017	Evaluate public interventions and policies that promote a physically active lifestyle and a healthy diet	Blouin et al.
2018	Investigate how to structure funding for initiatives involving alternative food systems	Brisebois and Audet

Assets, infrastructure and logistics

Table 9. **Further research suggested by the publications: infrastructure**

Year	Suggested further research	Source
2014	Explore, with certain Montréal agri-food actors, ways to develop a local supply model suited to neighbourhood markets	Audet et al.
2016	Develop and implement strategies facilitating the emergence of joint initiatives in Montréal	Voghel Robert
2018	Strengthen relationships between organizations (partnerships, pooling)	Brisebois and Audet
2018	Assess the qualitative elements of successful food supply chain pooling	Arsenault-Hétu et al.

Geographic scale

Table 10. **Further research suggested by the publications: scale**

Year	Suggested further research	Source
2012	Advance understanding of local and regional characteristics (idiosyncrasies) and their influence on obesity and contextual risk factors	Lebel et al.
2012	Deepen understanding of the impact of the food environment at the neighbourhood scale	Van Hulst et al.
2018	Use all the data compiled for more in-depth analyses by neighbourhood, administrative geographical unit, CLSC, CSSS, clientele, etc.	Cantine pour tous
2018	Conduct studies at the neighbourhood scale to better understand and consider their specific characteristics	Frigault

Coordination and partnerships

Table 11. **Further research suggested by the publications: coordination**

Year	Suggested further research	Source
2012	Need to ensure cohesion and consistency among the Montréal departments, boroughs and ministries concerned (in urban agriculture)	OCPM
2018	Strengthen relationships among organizations	Brisebois and Audet
2018	Broadcast and multiply partnerships, training and monitoring of local partnerships	Aunio et al.

The chronological order in which future research is presented provides some insight into how knowledge has developed for each component. An interesting example in this regard is the sequence of publications on the issue of alternative food supply systems. From 2014 to 2018, a succession of projects has increasingly shed light on the supply needs of frontline actors (Audet et al., 2014, Voghel Robert, 2016) and then explored the viability of the proposed solutions and the key success factors (Audet et al., 2014, Audet et al., 2017, Arsenault-Hétu et al., 2018). Such a linear thread is not as evident for the most studied issue, that of food accessibility, mainly due to its multidimensional nature. That said, it is interesting to observe the change in the methodological approaches used to study this component.

- A shift towards approaches that increasingly involve the study subject (e.g. action research).
- A shift towards the generation and use of primary qualitative data to better understand individual characteristics (subject's viewpoint as a consumer).
- A shift in the study scale to emphasize certain target populations and neighbourhoods.
- A shift towards including more aspects of food accessibility, i.e. the initial focus on physical access has expanded to a broader perspective that includes affordability first, followed by the other components of accessibility such as food variety and quality, and cultural and personal preferences.

CONCLUSIONS

This section presents a series of conclusions drawn from the analysis conducted for this meta-synthesis. Although it required us to take a step back, it is based on the findings of the literature review and is framed by the publications surveyed.

- A wide variety of actors are engaged in finding solutions.
- In the last decade, a dynamic research community has intensified the development of knowledge on the food security issue in Montréal.
- Collaborative ecosystem approaches are increasingly being used in food security projects.
- There is no integrated vision or definition, developed collectively and shared by the authors of the publications or, more broadly, in the food security ecosystem.
- There is no integrated, shared and replicated methodology in the geographical or functional areas of the ecosystem, making the creation of a complete metamap and comparisons difficult.
- Since research and strategies related to food security are not coordinated at the ecosystem level, there is little complementarity between publications and actions, and little follow-up over time.
- It would be worthwhile to conduct a more systematic assessment of projects and programs on the island of Montréal using a method that allows to compare, communicate and replicate the assessments.
- The state of our knowledge on food security in Montréal is affected by the particularly strong involvement of certain actors (sponsors and funders) such as the MSSS (health aspect).

A CERTAIN MEASURE OF CONSENSUS IN THE PUBLICATIONS

Despite the difficulties comparing the publications surveyed, we noted relative consensus in several areas:

- There is a direct and strong link between poverty and food insecurity;
- Food insecurity affects people's health;
- Government intervention is needed to improve food security;
- Further research is needed to advance understanding of the local situation and the components of and mechanisms influencing food security, including longitudinal studies, studies of targeted populations and multidimensional approaches;
- Many publications call for more consistent actions and funding through better coordination among the actors, more political will and the development of key partnerships.

AN INCOMPLETE PICTURE OF THE ECOSYSTEM

The ecosystem functions and links are far from equally represented in the publications. However, three points merit mention:

- The fact that a function or link has been widely studied or observed does not mean that its impact is greater than another. For example, the impact of the food environment on food consumption and food insecurity has been studied extensively but since there is no study that addresses all the dimensions of food accessibility and that has been replicated at the community level, it cannot be categorically concluded that it is the most effective lever. There is no data on the link between the other dimensions and household situation;
- Some functions, such as waste management, are carried out by a multitude of active actors but are not addressed in the publications that meet our criteria or are not consciously presented as an integral and major part of the food security ecosystem. There is therefore a great deal of tacit knowledge that this meta-synthesis cannot reflect but that the group sessions planned for the second phase of the Zero Hunger project will help to collect;
- From a geographic perspective, the meta-synthesis did not reveal a methodology that is systematically replicated at different scales (e.g. districts, neighbourhoods, boroughs) of the island of Montréal so as to offer a complete picture and comparable results.

FOUNDATIONS TO BUILD ON FOR A CFSA

Statistics Canada's periodic surveys allow the authors of the publications to accurately define the socio-demographic and economic characteristics of the "island of Montréal" community, as well as the level of individual food insecurity. The meta-synthesis, however, reveals gaps in data that should be collected by a CFSA.

- Some of these data are available on the territory but have not been published with a view to establishing an explicit link with food security and were therefore not reviewed for this meta-synthesis. Examples include reports from the Dispensaire diététique de Montréal on the cost of the average food basket or other reports relating to urban agriculture.
- There is insufficient qualitative information, especially on individual satisfaction with the food offer or food store opening hours, the perception of the value of food, etc., and while we know the actors and resources that fight against food insecurity, it is more difficult to draw conclusions as to whether they are aligned with the needs of their target clienteles or on how their situation changes over time;
- Statistics Canada's databases are very useful as they are based on a clear methodology and are replicated regularly; however, they do not allow researchers to drill down to very local scales or to pinpoint certain population subgroups on the island of Montreal;
- A CFSA requires that indicators relevant to the community be developed. The meta-synthesis did not identify a list of indicators in connection with food security in Montréal. However, the additional research and interventions of the taskforce indicate that some lists, drawn up by local actors, do exist. These could be used within a broader CFSA framework.

Beyond the data collection, a CFSA approach is also based on a methodology that involves local stakeholders, particularly through focus groups. The quantitative analysis showed that although a growing number of studies involve their subjects and primary beneficiaries, this is not the case for the majority. There is therefore a methodological gap between the trends observed in this meta-synthesis and the recommended CFSA framework. Future group sessions should help bridge this gap.

TOPICS FOR DISCUSSION

This aim of this section is to inform discussion during the coming phases. Its content is derived from the meta-synthesis but also from non-surveyed publications, discussions with local actors, and the authors' experience. It is therefore somewhat subjective and reflects only the opinions of the authors, Marina Jolly and Judith Colombo.

INTEGRATE FOOD INSECURITY INTO A BROADER VISION

Food insecurity seems to be a major concern in Montréal and Québec, where it is being tackled by many programs. However, it is often considered apart from food security. Although the two concepts are indeed distinct, it is counterproductive to view them in opposition. Individual and household food insecurity is a serious and pressing issue but one that should be placed in the broader context of food security and considered from a long-term perspective. In this way, strategies and actions can be aligned with a shared vision and objectives to create synergies and generate positive impacts in the long run. Linking these two concepts acknowledges the important role of organizations and programs whose mission is to fight hunger and their complementarity with other dimensions of food security, such as urban agriculture and education. Lastly, this perspective recognizes that the fight against hunger and the fight against poverty are interrelated and makes it possible to plan joint action as opposed to working in isolation.

INTEGRATE THE FOOD SECURITY ISSUE INTO TERRITORY PLANNING

The issue gained traction with the adoption of a biofood policy for Québec and the creation of a food policy council in Montréal in 2017, making the timing particularly favourable for the development of concerted solutions supported by all the stakeholders. However, food security is not presently viewed from an ecosystem perspective. Government actors often address the issue in silos, sometimes without even realizing that the programs they develop in connection with their mission (e.g. health, social development, environment) affect food security or insecurity (Martorell, 2017). Having designed its Fresh strategy (City of Edmonton, 2012) in clear alignment with its other plans, the city of Edmonton offers an inspirational example in this regard.

Since the CFSA is a tool developed to provide integrated, appropriate territory planning, it would be worthwhile for an actor in the Montréal region to take a macro-level or transversal approach and use the tool to push the process and finalize the Zero Hunger project.

VIEW FOOD SECURITY AS A MULTIDISCIPLINARY, MULTI-PARTNER RESEARCH TOPIC

The DSP's definition of food security used for this meta-synthesis illustrates the multidimensional nature of the issue (economic, social, cultural, etc.). It is normal that the insight provided by academics is based on their area of expertise; however, the only way to fully understand the issue as a whole is to create multidisciplinary teams that would adopt a shared definition and framework, and work together to develop multidimensional indicators (TEEB, 2018).

Although qualitative data are important to understand citizens' habits, challenges and preferences, as well as the dynamics at play on the territory (Cohen, 2002), designing and conducting detailed surveys on a regular basis is a mammoth task for governments and academics. To make it easier, universities and organizations need to join forces to leverage Montréal's frontline actors and receive support from dedicated funding programs in order to:

> Develop methods and tools that are easy for organizations to use to conduct surveys and impact assessments of beneficiaries;
> Make Geographic Information Systems (GIS) easily accessible to organizations in order to harmonize and systematize the production of territory maps (Pothukuchi, 2004).

Such partnerships could also help refine knowledge of population subgroups. Many researchers have endorsed this strategy. (Carter et al., 2013, National Research Council and Institute of Medicine, 2013).

FOSTERING SELF-SUFFICIENCY AND ORGANIZATIONAL AUTONOMY

In a recent study of the different types of alternative food supply in Montréal, René Audet and Éliane Brisebois (2018) found that two types of strategies stand out in the fight against food insecurity: [translation] "Those aimed at improving access by diversifying the types of services offered and those that seek to improve individual and household food self-sufficiency." From a long-term perspective, fostering self-sufficiency is an effective strategy to lift the most vulnerable out of dependency on food aid and perhaps remove some of the stigma associated with the use of food banks (a temporary solution while guiding beneficiaries towards other resources).

Ontario's first food security strategy recognizes the importance of food banks but stresses that they are short-term solutions (OPHA, 2017). However, to create such a pathway for beneficiaries would require that the relevant actors work together, that an integrated strategy with a long-term vision be defined and funded by various sources (Martorell, 2017, OPHA, 2017), and that appropriate assessment tools be developed.

Lastly, the suggestions concerning funding and research partnerships between academia and community organizations would help frontline actors develop longer-term projects, adjust them as needed, and better understand their beneficiaries, thus enabling them to make informed strategic choices more autonomously.

NEXT STEPS

Although measurement and research are essential, we do not need to wait to have the results of all the indicators and have resolved the mystery behind food insecurity in Montréal to move forward together (National Research Council and Institute of Medicine, 2013). It is our hope that this meta-synthesis will lead to new collaborations and new research projects in the medium term, bearing in mind that the results will not be published until 2020 at the earliest. That said, developing a shared vision of food security, seeking to capture tacit knowledge from the ecosystem actors and together demonstrating our will to make things happen are concrete actions that are attainable in the near term and that would have a lasting impact. The group sessions scheduled in the months ahead are a step in this direction. The hope is that institutional, academic and organizational actors will consider the results and buy into this ecosystem approach while respecting each other's missions.

APPENDICES

Appendix 1. **Food security programs, policies and reference frameworks from 2006 to date**

2004-2009	Government action plan to fight poverty and social exclusion
2006-2012	Government action plan to promote healthy lifestyles and prevent weight-related problems
2008	Food security reference framework (updated)
2008-2012	Support for the development of food security in the Montréal region
2009	Reference framework to help establishments in the health and social services network services develop appropriate food policies – *Miser sur une saine alimentation: une question de qualité*
2013	Québec food sovereignty policy
2013-2018	*Une ville et des quartiers qui favorisent l'accès aux aliments santé et leur consommation :* Programme de soutien aux initiatives locales
2016	Government health prevention policy
2018-2025	Québec biofood policy

Appendix 2. **Criteria used in the synthesis matrix**

Criterion	Choices (where applicable)
Type of publication	Dissertation Scientific article Research report – government Research report – community organization Research report – research centre Recurring survey Feasibility study Presentation
Year of publication	2006 to "in progress"
Purpose of publication	N/A
Scale considered	Area Administrative geographical unit Administrative region Neighbourhood Borough City Island Metropolitan community Province
Study area	Name of specific area (e.g. neighbourhood(s), borough, city
Sponsor	N/A
Funders	N/A
Definition of Food security	None United Nations (UN), 1996 MSSS reference framework (Pageau et al., 2008) Tarasuk, 2005 Anderson,1990 Ordre des diététistes (Bilodeau, 2006) Droit à l'alimentation (Marois, 2005) Développement durable (Direction de santé publique, 2008)
Keywords	N/A
Research subject	Individual Household Community organization Community Mixed
Principal data source	N/A
Secondary data source	N/A
Type of data	Primary Secondary Mixed
Subject level of involvement	None Information Consultation Involvement
Data characteristic	Quantitative Qualitative Mixed
Methodology	N/A Longitudinal Transversal Action research Case study
Ecosystem functions	Based on the ecosystem mapping by the Victoria Foundation
Links between functions	N/A
Main findings	N/A
Further research	N/A

Appendix 3. **Components of food security according to the two reference frameworks used in the meta-synthesis**

Classification according to the components of the food security definition (Pageau et al., 2008) addressed in each study

Component	Elements of the DSP Definition (2008)
Available to all	Access to food is guaranteed for all. Everyone has the…
Access (physical)	… physical…
Access (economic)	… and economic means…
Healthy diet	… at all times to access sufficient food to lead an active and healthy life
Satisfaction (personal and cultural)	Food is nutritious and is personally and culturally acceptable
Availability of information	Easy-to-understand, reliable and objective information is available to all in order to make informed choices
Human dignity	Food is obtained in a manner that respects human dignity
Consumption and just, equitable production	Food is produced and consumed in a manner consistent with just, equitable and moral social values
Sustainable	Food is produced and distributed in an environmentally sustainable way agri-food system

Classification according to the CFSA components addressed in each study:

Component	Description
Profile of community socioeconomic and demographic characteristics	What is the profile of the people/households in the community? What are their demographic characteristics? What is their socio-economic status?
Profile of food resources	What resources are available? > food retailers > public policies and programs > conventional food assistance programs (emergency assistance) > alternative food assistance programs (soup kitchens, urban agriculture, public markets and other formulas encouraging participant self-sufficiency and education) Are people in the community participating in food assistance programs?
Assessment of household food security	Canadian Community Health Survey (CCHS), a cross-sectional annual survey conducted by Statistics Canada that collects information on the health of about 60,000 Canadian households. > Marginal food insecurity: Worry about running out of food and/or limited food selection because of lack of money > Moderate food insecurity: Compromise in quality and/or quantity of food due to a lack of money for food. > Severe food insecurity: Miss meals, reduce food intake and at most extreme go day(s) without food.
Assessment of food resource accessibility	Types and variety of food stores, and access to food assistance programs nearby Key questions: > Are low-income neighbourhoods well served? (food deserts and swamps) > Is public and/or private transportation available between the resources and low-income neighbourhoods? > What barriers influence people's use of community food resources (inconvenient hours, poor customer service, lack of information, stigma, distance to resources, insufficient or poor quality of food offered) > Does the community have the infrastructure necessary to deliver food assistance effectively?
Assessment of food affordability	Buying power, income availability and affordable prices for healthy food
Assessment availability	Variety of food available to meet of food personal and cultural preferences
Assessment of community food production	Does the community have quality food production, processing and distribution production, processing and distribution resources? Do low-income households have the opportunity to participate in community gardens or other food sufficiency and education activities? Are there any school-based gardening and food education programs? Are locally produced foods sold through local food retailers and restaurants? Institutional food: Do schools and child care centres purchase food from local producers?

Appendix 4. **Maps Online**

- *Cartographie du système alimentaire de l'est de Montréal*, Luc Florent, Ecological Transition Research Chair, UQAM
- *Carte des banques alimentaires au Québec*
- *Biopolis* – Map of projects showcasing biodiversity in Montréal
- *Cultive ta ville* – Québec urban agriculture portal
- *211 – Grand Montréal*

Appendix 5. **Accessible Databases**

- Statistics Canada – *Portal*
- *Detailed food spending* (frequency: annual)
- *Canadian Community Health Survey* (CCHS) (annual component)
- Open data – Ville de Montréal – *Maps and other food - and urban agriculture-related data*
- MAPAQ – *Transformation et distribution alimentaire* and Producteurs agricoles
- *Enquête sur l'offre alimentaire et d'activité physique dans les écoles du Québec* (Université Sherbrooke)
- Institut de la statistique du Québec
- *Québec Health Survey of High School Students* (QHSHSS)
- Geolocation tools or geographic information systems (GIS)
- *Available software* (Wikipedia)
- *Répertoire des initiatives alternatives du système agroalimentaire montréalais,* Éliane Brisebois, Ecological transition research chair, UQAM

BIBLIOGRAPHY

Publications cited in the meta-synthesis

Apparicio, P., Cloutier, M. S., and Shearmur, R. (2007). "The case of Montreal's missing food deserts: evaluation of accessibility to food supermarkets." *International Journal of Health Geographics*, 6(1), 4.

Arsenault-Hétu, C., Audet, R. and Brisebois, É. (2018). "Pratiques, intérêts et défis de l'approvisionnement alimentaire. Étude de faisabilité sur la mise en place d'un regroupement d'achats régional de produits locaux ou d'un projet de mutualisation de l'approvisionnement pour des organismes solidaires et les réseaux alternatifs à Montréal." *Contributions de la Chaire de recherche UQAM sur la transition écologique*, nº 4.

Audet, R., Lefèvre, S. and El-Jed, M. (2014). "La démarche d'innovation des marchés de quartier de Montréal : Vers une transition socio-écologique du système agroalimentaire." *Les cahiers de la CRSDD*, collection Recherche, nº. 01-2014, 44 p.

Audet, R., Lefèvre, S. and El-Jed, M. (2015). "La mise en marché alternative de l'alimentation à Montréal et la transition socio-écologique du système agroalimentaire." *Les cahiers de recherche OSE*, nº. 1-2015.

Audet, R., Lefèvre, S., Brisebois, É. and El-Jed, M. (2017). "Structuring Tensions and Key Relations of Montreal Seasonal Food Markets in the Sustainability Transition of the Agri-Food Sector." *Sustainability*, 9(3), 320.

Food Banks of Quebec (2017). *Hunger Count* report.

Beaudry, E. (2011). "Portrait de la sécurité alimentaire dans le Nord-Ouest de l'Île de Montréal." Food security committee of the Table de quartier du nord-ouest de l'île de Montréal, for the Coopérative de travail Interface, 59 p.

Bergeron, P. and Paquette, M.-C. (2014). "Les mesures de repas scolaires subventionnés et leurs impacts sur l'alimentation et le poids corporel des jeunes." *Expériences étrangères et perspectives pour le Québec 2014*, Institut national de santé publique du Québec.

Bertrand, L., Thérien, F. and Cloutier, M. S. (2008). "Measuring and mapping disparities in access to fresh fruits and vegetables in Montreal." *Canadian Journal of Public Health/Revue canadienne de santé publique*, 6 -11.

Bertrand, L., Thérien F., Goudreau, S. and Fournier, M. (2013). "Étude sur l'accès aux aliments santé à Montréal, 2013." Agence de la santé et des services sociaux de Montréal.

Blouin, C., Robitaille, É., Le Bodo, Y., Dumas, N., De Wals, P. and Laguë, J. (2017). "Aménagement du territoire et politiques favorables à un mode de vie physiquement actif et à une saine alimentation au Québec." *Lien social et Politiques*, (78), 19-48.

Brisebois, É. (2017). "Répertoire des initiatives alternatives du système agroalimentaire montréalais." *Contributions de la Chaire de recherche UQAM sur la transiton écologique, Les cahiers de recherche OSE*, nº. 06-2017.

Brisebois, É. and Audet, R. (2018). "Portrait des systèmes alimentaires alternatifs au Québec : enjeux, organisation et défis." *Contributions de la Chaire de recherche UQAM sur la transition écologique*, nº. 3

Cantine pour tous (2018, février). "Étude de marché et inventaire des ressources." Créneau PAAPA. Rapport final, COOP Interface, February 2018, 50 p.

Clary, C. M., Ramos, Y., Shareck, M. and Kestens, Y. (2014). "Should we use absolute or relative measures when assessing foodscape exposure in relation to fruit and vegetable intake? Evidence from a wide-scale Canadian study." *Preventive Medicine*, 71, 83-87.

Comité mobilisation politique (2007). *Pour une politique nationale de l'alimentation au Québec*. Brief filed with the Commission sur l'avenir de l'agriculture et de l'agroalimentaire québécois, June 21, 2007.

Daniel, M., Kestens, Y. and Paquet, C. (2009). "Demographic and urban form correlates of healthful and unhealthful food availability in Montréal, Canada." *Canadian Journal of Public Health/Revue canadienne de santé publique*, 189-193.

Duchemin, É., Wegmuller, F. and Legault, A. M. (2010). "Agriculture urbaine : un outil multidimensionnel pour le développement des quartiers." *Vertigo*: 10(2).

Engler-Stringer, R. (2010). "The domestic foodscapes of young low-income women in Montreal: cooking practices in the context of an increasingly processed food supply." *Health Education & Behavior*, 37(2), 211-226.

Enriquez, D. and Klein, J.L. (2011). *Les déserts alimentaires et la réponse communautaire : Un cas dans un quartier précaire à Montréal.* Text presented at the XIIe Rencontres du RIUESS conference.

Florent, Luc (2017). "Cartographie du système alimentaire de l'est de Montréal. Repérer, catégoriser et analyser l'offre des dix quartiers du territoire du Réseau alimentaire de l'Est." Octobre 2017, *Contributions de la Chaire de recherche UQAM sur la transition écologique*, nº. 2.

Fortin, J. and Klein, J.-L. 2016. "Évaluation des actions en sécurité alimentaire de l'organisme Équipe mobile en alimentation dans la Petite-Bourgogne" *Cahiers du CRISES, UQAM-CRISES*.

Frigault, L.-R. (2018) *Portrait des jeunes montréalais de 6e année*. Results of the TOPO 2017 survey by the Direction de santé publique de Montréal, CIUSS du Centre-Sud-de-l'Île-de-Montréal, 2018.

Gaudet, J. and al. (2012). Document presented to the Direction de santé publique de Montréal of the Agence de la santé et des services sociaux de Montréal, 2012.

Jalbert-Arseneault, É., Robitaille, É. and Paquette, M.-C. (2017). "Development, reliability and use of a food environment assessment tool in supermarkets of four neighbourhoods in Montréal, Canada." *Health Promotion and Chronic Disease Prevention in Canada*: 37(9).

Lebel, A., Kestens, Y., Pampalon, R., Thériault, M., Daniel, M. and Subramanian, S. V. (2012) "Local Context Influence, Activity Space, and Foodscape Exposure in Two Canadian Metropolitan Settings: Is Daily Mobility Exposure Associated with Overweight?" *Journal of Obesity*, vol. 2012, Article ID 912645, 9 pages, 2012.

Maisonneuve, C., Blanchet, C. and Hamel, D. (2014). *L'insécurité alimentaire dans les ménages québécois : mise à jour et évolution de 2005 à 2012*. Institut national de santé publique du Québec.

Malek, M. A. (2018, février). *Rapport sur la situation concernant la sécurité alimentaire dans l'ouest de l'Île*. Report on the food security survey, Table de quartier Sud de l'Ouest de l'Île.

Mercille, G., Richard, L., Gauvin, L., Kestens, Y., Shatenstein, B., Daniel, M. and Payette, H. (2012). "Associations between residential food environment and dietary patterns in urban-dwelling older adults: results from the VoisiNuAge study." *Public Health Nutrition*, 15(11), 2026-2039.

OCPM (2012, octobre). *État de l'agriculture urbaine à Montréal, Rapport de consultation publique.* 157 p.

Páez, A., Gertes Mercado, R., Farber, S., Morency, C. and Roorda, M. (2010). "Relative accessibility deprivation indicators for urban settings: definitions and application to food deserts in Montreal." *Urban Studies*, 47(7), 1415-1438.

Pérez, E., Roncarolo, F. and Potvin, L. (2017). "Associations between the local food environment and the severity of food insecurity among new families using community food security interventions in Montreal." *Can J Public Health*, 108(1), 49-55.

Raynault, M. F., Tessier, S. and Thérien, F. (2015). *Pour des logements salubres et abordables*. Direction régionale de santé publique CIUSSS du Centre-Sud-de-l'Île-de-Montréal, Montréal, QC, Canada.
Robitaille, É., Bergeron, P., and Laguë, J. (2013). *Accessibilité géographique aux commerces alimentaires au Québec : analyse de situation et perspectives d'interventions*. Direction du développement des individus et des communautés, Institut national de santé publique Québec.
Robitaille, É., Paquette, M.-C., Cutumisu, N., Lalonde, B., Cazale, L., Traoré, I. and Camirand, H. (2015). *L'environnement alimentaire autour des écoles publiques et la consommation de malbouffe le midi par des élèves québécois du secondaire*. Institut national de santé publique, Gouvernement du Québec.
Rodier, F. and Durif, F. (2015). *Les habitudes de consommation et d'approvisionnement alimentaire des résidents de deux déserts alimentaires du quartier Hochelaga-Maisonneuve*. Montréal: ESG, UQAM.
Rodier, F., Durif, F. and Ertz, M., (2017). "Food deserts: is it only about a limited access?" *British Food Journal*, Vol. 119 Issue: 7, 1495-1510.
Roncarolo, F., Adam, C., Bisset, S. and Potvin, L. (2015a). "Food capacities and satisfaction in participants in food security community interventions in Montreal, Canada." *Health Promotion International*, 31(4), 879-887.
Roncarolo, F., Adam, C., Bisset, S., and Potvin, L. (2015b). "Traditional and alternative community food security interventions in Montreal, Quebec: different practices, different people." *Journal of Community Health*, 40(2), 199-207.
Roncarolo, F., Bisset, S. and Potvin, L. (2016). "Short-term effects of traditional and alternative community interventions to address food insecurity." PLOS ONE, 11(3), e0150250.
Rondeau, J. (2016). *Portrait montréalais des recherches sur le système alimentaire, Montréal Métropole en santé*. Système alimentaire montréalais [SAM]). 61 p., Retrieved from https://sam.montrealmetropoleensante.ca/ressources.
Table de concertation sur la faim (May 2012). *Pour un système alimentaire durable et équitable de la collectivité montréalaise, Mémoire de la Table de concertation sur la faim et le développement social du Montréal métropolitain*.
Van Hulst, A., Barnett, T. A., Gauvin, L., Daniel, M., Kestens, Y., Bird, M. and Lambert, M. (2012). "Associations between children's diets and features of their residential and school neighbourhood food environments." *Can J Public Health*, 103(9), 48-54.
Voghel Robert, M.-È. (March 2016) *Portrait de L'approvisionnement des initiatives alimentaires alternatives*. Réseau régional d'approvisionnement pour les initiatives solidaires et les réseaux alternatifs, 62 p.
Yorn, C., Bachand, N., Puskas, G. and Bisson, M. (2012). *Mangez frais, mangez près. Analyse transversale sur les circuits courts et les saines habitudes de vie au Québec*, Equiterre, 54 p.

Projects in progress (results not yet published)

Aunio, A.-L., Martorell, H. and Janvier, G., *Mobiliser des nouvelles technologies pour transformer les villes et bâtir des communautés de changement, Justice et durabilité alimentaire*. Collaborative research project, Dawson College, 2018-2020.
Moisson Montréal. *Diagnostic des pratiques en sécurité alimentaire sur l'île de Montréal*.
Potvin et al., *Que deviennent les personnes qui demandent de l'aide alimentaire? Des partenaires engagés*.

Other documentation

Anderson S. (1990). "Life sciences research office report: Core indicators of nutritional state for difficult-to-sample populations." *J Nutr* 1990;120:1555–600. PMID: 2243305.
Arnstein, S. R. (1969). "A Ladder of Citizen Participation." *JAIP*, Vol. 35, Nº 4, July 1969, 216-224.
Bilodeau, A. (2006). *Évaluation de la planification du programme de subventions en sécurité alimentaire. Comité de pilotage du projet*. Direction de Santé Publique. Agence de la santé et de services sociaux de Montréal.
Blanchet, C. and Rochette, L. (2014). "Les achats alimentaires des Québécois de 2006 à 2010 au regard de la saine alimentation." *Surveillance des saines habitudes de vie*, volume 2. Institut national de santé publique du Québec. Available online at https://www.inspq.qc.ca/sites/default/files/publications/1766_achats_aliments_quebecois.pdf.
Carter et al. (2013). "Place and food insecurity: a critical review and synthesis of the literature." *Public Health Nutrition*, 17(1), 94-112.
Cohen, B. (2002). *USDA Community Food Security Assessment Toolkit*. Available online at https://www.ers.usda.gov/webdocs/publications/43164/15809_efan02013fm_1_.pdf?v=41.
Cole, M. B. et al. (2018). "The Science of Food Security." *npj Science of Food* 2(14).
Direction de santé publique, Agence de la santé et des services sociaux de Montréal. (2008). *Cadre de référence pour le soutien au développement de la sécurité dans la région de Montréal 2008-2012*.
Ericksen, P.J. (2007). "Conceptualizing food systems for global environmental change research." *Global Environmental Change*, 18(1): p. 234–245
IUCN (2013). *Politiques de sécurité alimentaire : établir des liens avec les écosystèmes*.
Gland, Switzerland: IUCN.
Marois, P. (2005). "La pauvreté et l'exclusion : les plus importants problèmes de droits et libertés." Centraide Québec, Commission des droits de la personne et des droits de la jeunesse, May 11, 2005. Speech.
Martorell, Hugo. (2017). *The Evolution of City-Region Food Governance in Montreal Food Politics, Policy and Planning Under Quebec's Neoliberal Turn*. MA Thesis, Concordia University, Montréal, 137pp.
Miles, M. B. and Huberman, A. M. (2003). *Analyse des données qualitatives*. De Boeck Supérieur, 2nd edition, 626 p.
National Research Council and Institute of Medicine (2013). *Research Opportunities Concerning the Causes and Consequences of Child Food Insecurity and Hunger: A Workshop Summary. N. Kirkendall, C. House, and C.F. Citro, Rapporteurs*. Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Food and Nutrition Board, Institute of Medicine. Washington, DC: The National Academies Press.
OPHA (2017). *OPHA's Response to Ontario's First Food Security Strategy*. Available online at http://www.opha.on.ca/Events-News-and-Media/News/Ontario%E2%80%99s-First-Food-Security-Strategy.aspx.
Food and Agriculture Organization of the United Nations. (2006). Agricultural Development Economics Division (ESA) of FAO and the *Programme de sécurité alimentaire CE-FAO*: Sécurité alimentaire - notes d'orientation. 4p.
Pageau, M., Bertrand, L., Marier, C., Morrow, C. and St-Denis, A. (2008). *Cadre de référence en matière de sécurité alimentaire. Mise à jour 2008*. Département de santé publique, MSSS, Gouvernement du Québec, 39 pp.
Paquette, M. C. et al. (2016). *Cadre de référence des indicateurs d'achats pour caractériser l'alimentation et l'environnement alimentaire au Québec*. Institut national de santé publique du Québec, Direction des individus et des communautés.
Poppy, G.M. et al. (2014). " Food security in a perfect storm: using the ecosystem services framework to increase understanding." *Phil. Trans. R. Soc.* B 369: 20120288.
Pothukuchi, K. (2004). " Community Food Assessment: A First Step in Planning for Community Food Security." *Journal of Planning Education and Research*, 23: p. 356-377.
Tarasuk V. (2005). "Household food insecurity in Canada." *Topics in Clinical Nutrition*, 20, 299–312.
Tarasuk, V., Mitchell, A. and Dachner, N. (2016). *L'insécurité alimentaire des ménages au Canada, 2014*. Toronto: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from http://proof.utoronto.ca/.
Tarasuk, V. et al. (2018). " The case for more comprehensive data on household food insecurity." *Health Promotion and Chronic Disease Prevention in Canada*: 38(5).
TEEB (2018). *TEEB for Agriculture & Food: Scientific and Economic Foundations*. Geneva: UN Environment.
City of Edmonton (2012). *Fresh – Edmonton's Food and Urban Agriculture Strategy*. Available online at https://www.edmonton.ca/city_government/documents/FRESH_October_2012.pdf.
Winne, M. (1997). *Community food security – A guide to concept, design and implementation*. Community Food Security Coalition.

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