

**Evaluating and
assessing food
system indicators
for the City of
Vancouver**

REPORT BY SHANNON LAMBIE
Greenest City Scholar 2019

Project mentored by Sarah Carten

Prepared for:
The City of Vancouver
Arts, Culture, and Community Services
Social Policy Division
August 12, 2019

This report was produced as part of the Greenest City or Healthy City Scholars Program, a partnership between the City of Vancouver and the University of British Columbia, in support of the Greenest City Action Plan and the Healthy City Strategy.

This project was conducted under the mentorship of City staff. The opinions and recommendations in this report, and any errors, are those of the author, and do not necessarily reflect the views of the City of Vancouver or The University of British Columbia.

The following are official partners and sponsors of the Greenest City or Healthy City Scholars Program:



THE UNIVERSITY OF BRITISH COLUMBIA
sustainability

Acknowledgements

I am very grateful for the support I received from the City of Vancouver's Social Policy Planning Team. In particular, my mentor Sarah Carten, Chashma Heinze, and Caitlin Dorward, for their continued guidance and insight throughout this project. Their knowledge, support, and willingness to engage with me and answer my many questions brought this project to life. Thank you for letting me join your team this summer. It has been a career highlight.

Thank you to Karen Taylor and Tina Barisky for the unwavering support, assistance, and organizational excellence throughout this project.

About the Author

Shannon Lambie is a recent graduate from the UBC School of Community in Regional Planning. She has a Master of Arts degree in International Studies, food security specialization, from Simon Fraser University and a Bachelor of Arts degree in Human Geography from the University of British Columbia. She has previously worked in communications, engagement, and farming.

Table of Contents

1.0 EXECUTIVE SUMMARY.....	4
1.1 OVERVIEW.....	4
1.2 PURPOSE.....	4
1.3 RECOMMENDATIONS.....	4
1.4 NEXT STEPS.....	4
2.0 INTRODUCTION.....	5
2.1 EXISTING FOOD INDICATORS FOR COV.....	5
3.0 CITY FOOD POLICY IMPACTS.....	6
3.1 HEALTH AND WELLBEING.....	6
3.2 ENVIRONMENTAL SUSTAINABILITY.....	6
3.3 GOVERNANCE.....	6
3.4 CULTURE.....	6
3.5 A ROLE FOR CITIES.....	6
4.0 FOOD POLICY TIMELINE AT CITY OF VANCOUVER.....	7
4.1 THE EVOLUTION OF FOOD POLICY AT COV.....	7
5.0 INDICATORS.....	9
5.1 WHAT ARE INDICATORS?.....	9
5.2 TYPES OF INDICATORS.....	10
5.3 IMPORTANCE OF ASSET BASED INDICATORS....	10
5.4 THE RELATIONSHIP OF INDICATORS TO DATA...	10
5.5 SELECTING INDICATORS FOR VANCOUVER.....	10
5.6 RECOMMENDATIONS.....	11
6.0 TOP INDICATORS.....	12
6.1 SOCIAL AND ECONOMIC EQUITY INDICATOR...	12
6.2 FOOD GOVERNANCE INDICATOR.....	12
6.3 FOOD SUPPLY AND DISTRIBUTION INDICATOR.	12
6.4 SUSTAINABILITY INDICATOR.....	12
7.0 CITY OF VANCOUVER FOOD STRATEGY INDICATORS....	13
8.0 FOOD ASSETS, EXPANDED.....	16
8.1 CULTURAL FOOD ASSETS.....	16
8.2 ACCESSIBILITY OF ASSETS.....	16
9.0 CONCLUSION.....	17
9.1 TOP INDICATORS.....	17
9.2 COV FOOD STRATEGY INDICATORS.....	17
9.3 FOOD ASSETS, EXPANDED.....	17
9.4 NEXT STEPS.....	17
WORKS CITED.....	18
APPENDIX.....	20

Few things are as interwoven with human existence and culture as food. At the most basic level, we need it to survive. Beyond sustenance, food can bring joy and takes a central place in cultures around the world, often as the centrepiece of celebrations and festivities.

- Ellen MacArthur Foundation, Cities and Circular Economy for Food (2019:8).

1.0 Executive Summary

1.1 Overview

In 2003, Vancouver City Council approved a motion supporting the development of a just and sustainable food system and a proposed Food Action Plan.

This milestone was preceded by decades of grassroots community efforts and ignited significant energy in the City to develop food programs and policies.

In recent years, food policy goals have been embedded in a number of City strategies and plans, including The Greenest City Action Plan, The Local Food Action Plan of the Vancouver Park Board, and the Healthy City Strategy.

As the City of Vancouver (CoV) approaches the culmination of the 2020 Greenest City Action Plan, an opportunity to assess and set new food policy targets is emerging.

As targets are measured by indicators, there is also an opportunity to review, evaluate, and select new indicators to inform the development of these emerging targets.

1.2 Purpose

The purpose of this report is to:

- i) Examine best practices and review relevant regional and international food system indicator monitoring frameworks; and
- ii) Make recommendations for food system indicators.

1.3 Recommendations

This report recommends food system indicators across three “scenarios”:

1. Top indicators: This scenario recommends indicators based on the areas of greatest impact emerging from the literature. These could be used

to spark a discussion of policy goals and assist in future decision-making processes;

2. CoV Food Strategy Indicators: The indicators recommended in the Existing Food Strategy scenario are designed to measure progress on the existing 2013 Vancouver Food Strategy goals; and
3. Expanded food asset-indicators: This scenario opens up a discussion for strategies to expand and improve upon the current existing food asset indicator.

1.4 Next steps

This report is a first step in the process of selecting new food system indicators for the CoV, and the recommendations are high-level.

Depending on which scenario is selected, a careful investigation would need to be carried out to fully understand the feasibility and process required to implement these indicators in Vancouver.

Important considerations for each indicator that are not included in the recommendations include:

- budget;
- possible synergies with other city teams;
- stakeholders and public consultations;
- timeline for implementation;
- the exact process for data gathering; and
- resources required.

These considerations would have to be specifically developed to suit the particularities of each indicator and this report serves only as a first step in the process.

2.0 Introduction

As the CoV approaches the culmination of the 2020 Greenest City Action Plan, there is an opportunity to assess and set new food policy targets. As targets are measured by indicators, there is also an opportunity to review, evaluate, and select new indicators to inform the development of these emerging targets.

This is an important moment. Carefully assessing potential indicators is critical in the policy development process; the process of developing indicators can serve as a catalyst for the public discussion of policy goals and can also drive the decision-making processes (Freudenberg 2018: 193).

2.1 Existing food indicators for the City of Vancouver

Currently, the food-systems goal in the Greenest City Action Plan is that “Vancouver will become a global leader in urban food systems” and the target is to “increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels”.

Thus, the primary indicator for tracking food systems progress in the City of Vancouver is the number of food assets identified in the city.

Food assets are defined as resources, facilities, services or spaces that are available to residents of the city, either at the city-wide or neighbourhood scale, and which are used to support the city’s food system.

These currently include: number of food hubs, number of community kitchens, number of farmers’ markets, number of community produce stands, food composting facilities and community composting programs, number of community garden plots/orchards, and number of urban farms (Vancouver Food Strategy 2013).

This framing of food assets emerged as the City sought to measure assets within their immediate control, for example assets on city land.

Recent policy reports, however, such as the 2017 Food Strategy Action Update, have stated that an expanded definition of food assets is required, as it has become apparent that the current definition is limiting and does not holistically capture Vancouver residents’ experience.

Further, a broader definition of food assets could demonstrate the value that diverse assets bring to communities, study the pressures facing them, monitor and respond to changes, and incorporate them into the planning processes.

With this context in mind, this report examines best practices and reviews relevant regional and international food system indicator monitoring frameworks in order to make recommendations for how the City of Vancouver can measure progress on food policy efforts.

This examination of the literature resulted in two frameworks being selected for further application to the Vancouver context:

The Milan Urban Food Policy Pact International Monitoring Framework (MUFPF) and

The Provincial Health Services Association of British Columbia’s Food Security Indicators Review of Literature 2018.

These frameworks ultimately informed indicator recommendations across three scenarios: i) top indicators, ii) existing food strategy indicators, and iii) a discussion regarding the expansion of the food asset-indicator.

Following this, the report concludes with a set of next steps in the process.

3.0 City food policy impacts

3.1 Health and wellbeing

A lack of food security or limited food choices can negatively affect an individual's mental and physical health, due to stress, anxiety, social stigma, disruptions in routine, and reduced nutritional intake (Slade, Baldwin, & Budge, 2016 and Booth & Smith, 2001). The connection between poor diet and health is well documented. A recent report issued by *EAT-Lancet* asserts that "unhealthy diets pose a greater risk to morbidity and mortality than does unsafe sex, and alcohol, drug, and tobacco use combined" (Willet et al. 2019:1).

The Vancouver Poverty Reduction "*What We Heard*" (2018) report illustrates how food insecurity can also damage wellbeing, creating oppressive poverty cycles: "[f]amilies are forced to make impossible choices between paying rent and bills and buying nutritious food. Difficulty accessing food can lead to physical and emotional exhaustion, which can lead to less healthy coping mechanisms. These vicious cycles result in family disintegration which sustains oppressive systems of poverty".

3.2 Environmental sustainability

Food production is one of the largest causes of global environmental change. (Willet et al. 2019: 3). Agriculture occupies about 40% of global land (Foley, 2005), and food production is responsible for up to 30% of global GHG emissions (Vermeulen et al. 2012) and 70% of freshwater use (International Water Management Institute, 2007). At the urban scale, the C40 estimated that in 2017, member cities' emissions associated with food totalled 13% of total consumption based emissions across C40 cities. Roughly 75% of these emissions stem from consumption of animal based foods, with the remaining 25% from consumption of plant based foods (C40, 2019).

3.3 Governance

Municipal food governance is emerging as an essential component in food systems. Haysom explains, "[c]ities have a vital role to play in systemic governance interventions that seek to enable food availability as well as food access and adequate consumption within a stable food environment. Processes are necessary to facilitate agentic actions of a wider grouping of urban food system stakeholders" (2015: 277). Moragues-Faus & Morgan call this process "fashioning spaces of possibility in the city" (2015: 1569). "These new spaces of deliberation can take a number of different institutional forms...invariably, these spaces constitute a meeting place for civil society, private actors, and the local state to transition towards a more just and sustainable urban food system" (1558).

3.4 Culture

Food connects us to our culture and community. The Hua Foundation, in their 2017 Vancouver Chinatown Food Security Report emphasizes that "[c]ultural food assets serve as important spaces that facilitate the maintenance and transmission of cultural knowledge, often intergenerationally and interculturally... Cultural food assets hold the unique potential of promoting intercultural and intergenerational learning, as well as cultivating intangible values, such as the reaffirmation of cultural identity and sense of belonging" (2017: 15).

3.5 A role for cities

80% of all food is expected to be consumed in cities by 2050, thus cities will play a key role in transforming urban food systems. (Ellen MacArthur: 2019: 9.) Food plays a key part in everyone's daily life. It keeps us healthy, connects us to our community, and is fundamental for ensuring wellbeing. Municipal food policy matters because a thriving, just and healthy city cannot exist without the "basic essentials of human life, especially air, water and food" (Morgan, 2015).

4.0 Food policy timeline

4.1 The evolution of food policy at the City of Vancouver

The City of Vancouver's commitment to creating a just and sustainable food system builds on food system initiatives and grassroots community efforts that began decades ago.



Greenest City Action Plan (approved by Council 2011)

GCAP Goal 10 - Vancouver will become a global leader in food systems
Indicator - increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels.



Vancouver Food Strategy January 2013



(continued on next page)

The Local Food Action Plan of the Vancouver Parks Board July 2013

Target: Increase city and neighbourhood food assets by 50% over 2010 levels by the year 2020.

Goal 1. Support food friendly neighbourhoods. Strengthen physical food assets and infrastructure to create resilient neighbourhood food systems that are uniquely designed to respond to the context of each neighbourhood.

Goal 2. Empower residents to take action. Strengthen participation and knowledge of residents towards belonging and inclusion in the city through enhancing human capital and community capacity.

Goal 3. Improve access to healthy, affordable, culturally diverse food for all residents. Create communities and neighbourhoods that are food secure which includes: having access to basic and healthy goods; being socially inclusive; enhancing physical and mental wellbeing; and protecting natural ecology.

Goal 4. Make food a centerpiece of Vancouver's green economy. Support the creation of food related green jobs throughout the food system through localizing the supply chain and emphasizing skill building and job creation opportunities in the food sector.

Goal 5. Advocate for a just and sustainable food system with partners and at all levels of government. Strengthen relationships and partnerships at all scales of the food system including households, neighbourhoods, city, region, and beyond while using the unique tools and levers available at the municipal level.



Greenest City Action Plan 2015 - 2020 Part II

GCAP Goal 7 - Vancouver will become a global leader in food systems

2020 Target - increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels.

Indicator - total number of neighbourhood food assets in Vancouver

7.1 Adopt and implement urban farming policy to further enable commercial food production in the city and increase the number of urban farming businesses from 18 to 35

7.2 Increase the number of farmers markets from 11 to 22 and community food markets from 14 to 20

7.3 Increase number of community garden plots from 4,423 to 5,500 and community kitchens from 69 to 80 with particular emphasis on encouraging broader participation by ethno-cultural groups

7.4 Support the Food Bank in their relocation to a new facility and incorporate components of a food hub as envisioned in the Vancouver Food Strategy



Healthy City Strategy 2015 - 2018

HCS Goal 3 - Vancouver has a healthy, just, and sustainable food system.

Target - By 2020: Increase city-wide and neighbourhood food assets by a minimum of 50% over 2010 levels [Greenest City Action Plan/Food Strategy/Park Board Local Food Action Plan]

1. Food assets (#)

2. Neighbourhood Food Networks (NFNs) (#)

3. Cost of Health Canada's National Nutritious Food Basket (NNFB) (\$)



Vancouver Food Strategy Action Plan 2017 - 2020 (presented to council 2017)

<p>Action 1 Diversity of voices and inclusion</p> <p>1.1 Engage and build relationships with Musqueam 1.2 Engage and work with under represented groups</p>	<p>Action 2 Food access and financial availability</p> <p>2.1 Preserve/encourage healthy, low cost, culturally diverse retail 2.2 Revisit and broaden assets. Examine opportunities for preserving and incorporating these into planning 2.3 Examine business case for a food procurement system for non profits, childcare etc 2.4 Support relocation of GVFB and partners 2.5 Work with VCH to support implementation of DTES 2nd gen Action Plans</p>	<p>Action 3 Resilience</p> <p>3.1 Assess the City's Food Resiliency</p>	<p>Action 4 Enable food growing and harvesting</p> <p>4.1 Support urban farming activities, on city land and through development 4.2 Continue to work across departments with partners to create new urban ag/ gardens 4.3 continue to advocate for preservation of ALR and its use</p>	<p>Action 5 Facilitate the creation of cooking, processing and distribution infrastructure and capacity</p> <p>5.1 Expand the use of publicly accessible kitchens through training and through improvements in kitchen infrastructure, equipment, and food storage, and explore additional opportunities with community partners</p>	<p>Action 6 Increase food access and justice</p> <p>6.1 Continue to advocate for and work towards sustainable and adequate sources of income for all residents 6.2 Work with the Vancouver Board of Education and other stakeholders to best meet the food needs of children and families and increase food literacy opportunities 6.4 Support Neighbourhood Food Networks</p>	<p>Action 7 Encourage a zero waste culture</p> <p>7.1 Integrate actions into the Zero Waste Strategy that address food waste across all areas of the food system</p>	<p>Action 8 Incorporate a food systems lens in city initiatives and strategies</p> <p>8.1 Integrate just and sustainable food systems goals into existing and emerging City-wide strategies, policies and community plans, and ensure the use of an equity lens</p>	<p>Action 9 Create and support the development of complementary policies and processes</p> <p>9.1 Support the implementation of the Park Board Local Food Action Plan 9.2 Collaborate with Metro Vancouver and member municipalities to implement the Regional Food Systems Action Plan 9.3 Work collaboratively in national and international networks of cities to share practices and strategies in delivering sustainable food systems</p>
--	---	--	--	---	---	---	--	---

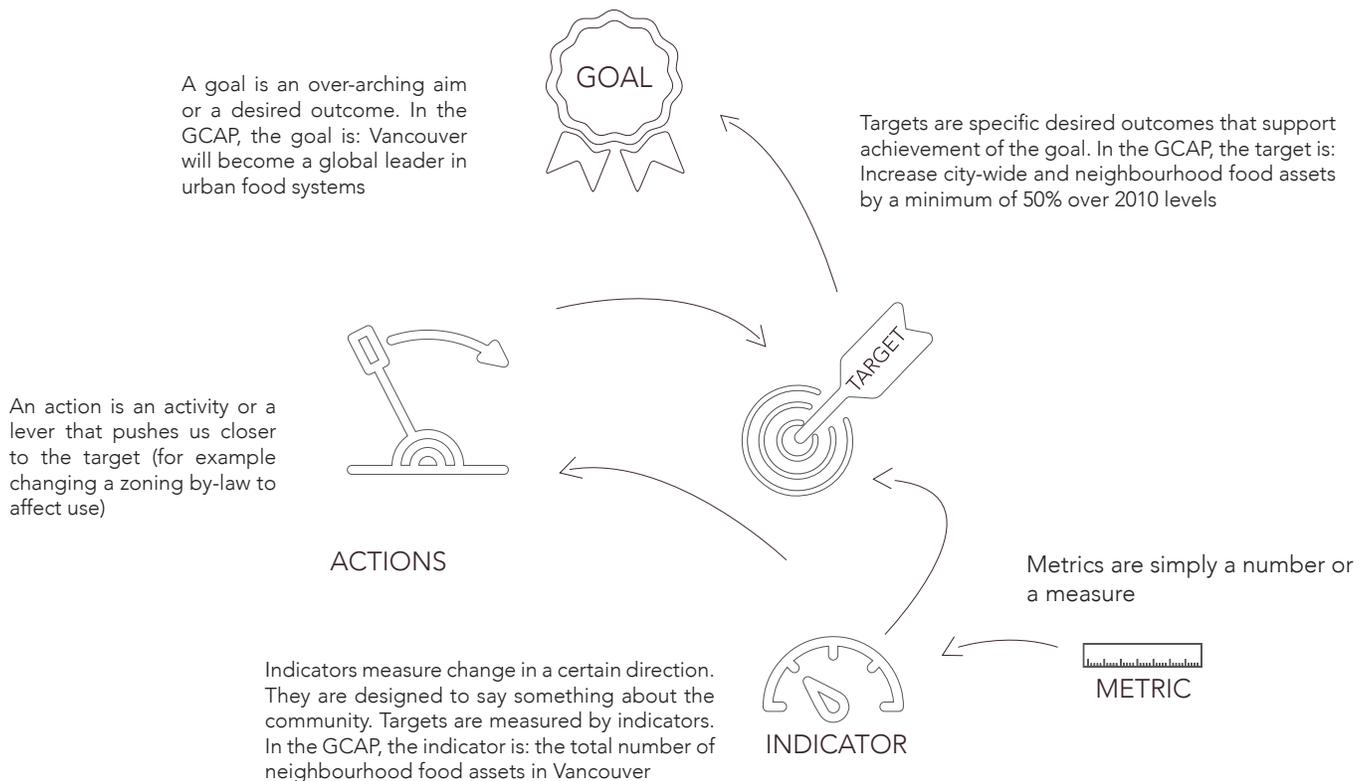
5.0 Indicators

5.1 What are indicators?

An indicator is a measure that tells us about the present state of something or about changes over time (Graham, 2008). Indicators can serve several different purposes in the policy process; generally speaking, indicators are used in the evaluation and assessment of policies by measuring activities and outcomes (Sébastien & Bauler, 2013). This is often done through a reduced or simplified set of variables that represent a more complex system (Freudenberg, 2018). In simple terms, indicators allow policies to be tracked and evaluated.

Indicators help explain what is and isn't working in a community, identify successes and additional needs and inform progress and service provision (Heggie, 2018). The development of indicators can serve as a catalyst for the public discussion of policy goals and can also drive the decision-making processes (Freudenberg, 2018).

Indicators generally exist as part of a framework, illustrated below:



5.2 Types of indicators

It is not always easy to measure complex social phenomena such as a food system. Freudenberg explains that indicators are a measure derived from observed facts that simplify and communicate the realities of a complex situation (in Burton 2015: 4). Indicators can be **more** or **less** direct in their relationship to the outcome they are intended to measure.

There are several types of indicators; these include: direct indicators, indirect (or proxy indicators) and composite indicators. Indicators can also be qualitative or quantitative; nominal, ordinal, or interval; and process or outcome oriented. For more information see Appendix 1.

5.3 The importance of asset-based indicators

Indicators are socially constructed, and the process of developing indicators can influence perceptions of policy “problems” and shape the approach to solving them (Barrett, 2010).

This has the potential to present a partial or distorted view. Traditional approaches have tended to focus on physical aspects, something that can be measured quantifiably. They also tended to measure something negative (for example, prevalence of disease or obesity). While this can be important in understanding progress and inform service provision and decision making, these indicators can reinforce a harmful narrative or become self-fulfilling for the community (Heggie, 2018). Additionally, by focusing attention on certain outcomes over others, some indicators can obscure realities and ultimately serve to exclude people.

Striving for asset-based (as opposed to deficit-based) indicators is considered a best practice. For example, in the development of the Healthy City Strategy, initially a metric that was available measured the number of children who were not developmentally ready for kindergarten. This is a deficit-based indicator. To improve upon this, the indicator was reversed, instead measuring the number of children who are developmentally ready for kindergarten. This allows it to become an asset-based indicator,

which has been shown in the literature to have a more positive and empowering impact on the community (Marriott, 2019).

5.4 The relationship of indicators to data

Finally, an important consideration when selecting an indicator is the availability, quality, and reproducibility of the data which informs the indicator. Generally, when selecting an indicator it is important to think about where the data is coming from and whether it will be available well into the foreseeable future.

5.5 Selecting indicators for Vancouver

Over the past two decades, much work was carried out by research institutions, governmental and non-governmental organizations to research and identify appropriate tools to assess the sustainability of food systems (Feenstra et al., 2005; DEFRA, 2009; FAO, 2013; UNSDSN, 2014). Despite this, there remains a lack of consensus regarding which indicators should be used to assess food security and food system sustainability. Identifying appropriate indicators is key for providing decision-makers and policy-makers with evidence-based knowledge (Fanzo, 2014).

In the pursuit of identifying new indicators for the City of Vancouver’s food policy, a number of existing food-system indicator frameworks and reviews were assessed. These included: 1) The Provincial Health Services Association of British Columbia’s Food Security Indicators Review of Literature 2018, 2) the Milan Urban Food Policy Pact International monitoring framework, 3) Toronto Food Strategy Indicator Framework, 4) The role of metrics in food policy: Lessons from a decade of experience in New York City, 5) Food & Agriculture Organization: City Region Food System Toolkit Assessing and planning sustainable city region food systems, and 6) Food Secure Vancouver’s 2009 Baseline report.

These six frameworks, by no means, represent the totality of the urban food system indicator landscape. However, they were selected for their relevance to the Vancouver/British

Columbia/Canada context and/or because they represent the most current/up to date information available.

After the review was completed, The Milan Urban Food Policy Pact International Monitoring Framework (MUFPF) framework and The Provincial Health Services Association (PHSA) of British Columbia's Food Security Indicators Review of Literature 2018 were selected as the two frameworks for application to the Vancouver context.

The MUFPF framework was selected because the City of Vancouver is a signatory of the Milan Urban Food Policy Pact, provided feedback in its development, and because it aligns with the UN Food and Agricultural Organization, and the UN Sustainable Development Goals. The PHSA Food Security Indicators Review of Literature was chosen for its academic rigour in assessing best practices. This will enhance the validity of selected indicators.

As an initial step, the indicators presented in the MUFPF Framework and the PHSA Literature review were mapped onto the City of Vancouver's food strategy goals. This process helped to identify which indicators were the most and least relevant, helping to shape the recommendations in this report.

5.6 Recommendations

Recommending indicators for the City of Vancouver's food policy presented a challenge given that any change to food policy goals or actions beyond 2020 have yet to be determined. There will be new food policy actions and targets identified in the City's next environment plan. Actions and indicators will also be incorporated in other City work, including City Plan, Neighbourhood post-occupancy surveys, Resilient City, among others.

Facing this uncertainty, recommendations have been made in a set of "scenarios". It is important to note that these recommendations are **high level**. Depending on which scenario is selected, careful investigation would need to

be carried out to fully understand the feasibility and process required to implement these on the ground in Vancouver. This serves only as a first step in the process.

This report recommends three food system indicator scenarios. All scenarios recommend asset-based indicators.

1 Top Indicators: Unattached to the existing policies and goals, this scenario recommends indicators based on the best practices emerging from the literature. These could be used to spark a discussion of policy goals and assist in future decision-making processes.

2 Existing Food Strategy Indicators: The indicators recommended in the Existing Food Strategy scenario are designed to measure progress on the existing 2013 Vancouver Food Strategy goals.

3 Expanded Food Asset-Indicator: This scenario opens up a discussion for strategies to expand and improve upon the primary existing food asset indicator.

A note on composite indicators: The sheer number of possible indicators available makes the development of a composite/index an attractive option and was carefully considered. However, the construction of composites is difficult and requires scaling, weighting or aggregating of indicators and data. There are also concerns related to the reproducibility of a composite indicator year after year, as the increased number of data sources lessens the likelihood that all data will be available (Marriott, 2019). As a result, the production of a composite indicator was considered a less favourable option and beyond the scope of this report.

6.0 Top indicators

These four recommendations which cover social and economic equity, governance, food supply, and sustainability are based on the areas of greatest impact emerging from the literature (and discussed on page 6) and should be used to generate a discussion of policy goals.

6.1 Social and economic equity

indicator: Number of community-based food assets in the city by distribution of race, income, population density, disability

This proxy indicator measures the number of community-based food assets by category (could include infrastructure, cultural, governance) and are mapped by geography and factors such as race, income, and disability. This indicator can be used to promote assets, identify current gaps in equitable distribution of assets and support activities that create social inclusion and provide food to marginalised individuals.

*This indicator incorporates MUFFP #22 and #25 and PHSA Theme 2: Food Environments - 2.2 Geographic Access (proximity, density, variety); 2.5 Community Food Programs and addresses 3.1 **health and wellbeing** in 3.0 City food policy impacts on page 6.*

6.2 Food governance indicator: Presence of an active multi-stakeholder food policy and planning structure (e.g. food policy councils; food partnerships; food coalitions)

This process indicator acknowledges that inclusive and equitable processes are a critical element of policy design. By comprehensively involving multiple stakeholders in planning and decision-making, it is more likely that policies will be developed that are inclusive and equitable. Measuring this is difficult, however. A self-assessment exercise, developed by MUFFP, is included in Appendix 4 as a recommended approach for measuring this indicator.

*This indicator incorporates MUFFP #2 and #3 and PHSA Theme 4: Influencing Policy - 4.2 Community capacity for advocacy and policy in community food action Initiative and addresses 3.3 **governance** in 3.0 City food policy impacts on page 6.*

6.3 Food supply and distribution

indicator: Number of fresh fruit and vegetable outlets per 1000 inhabitants

This direct indicator measures the number of shops by type and scale against the total population figures by neighbourhood. This is done in order to improve/optimize the access and infrastructure of food suppliers in the city. This indicator has been applied in a modified way in New York City, where the amount of grocery store space per person is measured, specifically calculated as the square footage of supermarket floor space per capita by community district (NYC Food Policy 2016: 20).

*This indicator incorporates MUFFP #36 and PHSA Theme 2: Food Environments - 2.4 Spatio-temporal access and addresses 3.1 **health and wellbeing** in 3.0 City food policy impacts on page 6.*

6.4 Sustainability indicator: Existence of policies or programs that address the reduction of GHG emissions in different parts of the food supply chain

The process indicator assesses the existence of policies and programs that address the reduction of GHG emissions in different parts of the food supply chain (e.g. processing, storage, transport, packaging, retail, cooking, waste disposal etc.). The unit of measurement could be actual GHG emission calculations or practical initiatives or clear policy guidelines to reach GHG reduction targets, depending on what is feasible. Appendix 5 offers a further discussion on measurement.

*This indicator incorporates MUFFP #2 and #3 and PHSA Theme 3: Food system resilience - 4.3 Production: Agricultural input sustainability, security or self-sufficiency and addresses 3.2 **environmental sustainability** in 3.0 City food policy impacts on page 6.*

7.0 City of Vancouver

Food Strategy indicators

This scenario recommends indicators that correspond to each of the goals in the 2013 Vancouver Food Strategy. This recognizes that there may not be capacity, or even a need at this time, to significantly alter the existing priorities. The table below lists the goal; a recommended indicator; and information on the current state of data availability.

VANCOUVER FOOD STRATEGY 2013		
Goal	Suggested indicator	Data status/availability
Goal 1 - Support Food Friendly Neighbourhoods	<ol style="list-style-type: none"> Number of community based food assets in the city by location/ distribution (combined MUFFP #22 and #25 and PHSA Theme 2: Food Environments - 2.2 Geographic Access; 2.5 Community Food Programs; Theme 2 Food Environments - 2.2 Geographic Access (proximity, density, variety); Theme 3: Food Systems Resilience - 3.4 Production Agriculture Input Sustainability, Security, or Self Sufficiency) Number of city-led activities to support sustainable diets (MUFFP #14; PHSA Theme 2: Food Environments - 2.5 Community Food Programs) Existence of a food supply/ emergency food resilience management plan (MUFFP #6; PHSA Theme 3: Food System Resilience - 3.2 System-wide vulnerability of food system infrastructure to rapid onset hazards) 	<ol style="list-style-type: none"> The 2017 report to council indicates that in 2016 there were 4740 assets, representing a 41% increase since 2010, though plateauing (only a 3% increase since 2015). Depending on expansion of categories for assets, the data source would need to evolve. See page 16 for further details. Not currently being tracked, but generally available. The indicator measures the number of City-led or supported activities to promote sustainable diets. Data might be disaggregated by type of activity and target audience. Activities could include campaigns (i.e. Meatless Monday), festivals, granting programs or projects, or policies. Related to food assets, as above, but more specifically geared towards sustainability or GHG reduction. This could be a yes/no question. Currently, an overall food supply/ resilience management plan does not exist for CoV. Restoring critical services in support of local food suppliers is a top priority, but CoV does not have a plan for how the food industry manages the supply chain (Benson, 2019).

<p>Goal 2 - Empower residents to take action</p>	<p>1. Budget allocated and number of opportunities for food system related learning and skill development in food literacy, employment training, and leadership (MUFFP #24; PHSA Theme 2: Food Environments - 2.5 Community Food Programs; Theme 3: Food Systems Resilience - 3.7 Province and System Wide Social Capital and Food System Planning)</p>	<p>1. Not currently being tracked, but generally available. Data would be required on types/number/budget allocated for opportunities within each category of learning/skills are needed: i) food and nutrition literacy, ii) employment training and iii) leadership. Data could be further disaggregated within each of those categories for the following sub categories: i) formal; informal learning or training; ii) type of food-related skills gained by beneficiaries; iii) type of provider. These could also be aggregated by race or income data.</p>
<p>Goal 3 - Improve access to healthy, affordable, and culturally diverse food for all</p>	<p>1. Number of fresh fruit/veg outlets per 400m or 1000 inhabitants (MUFFP #36; PHSA Theme 2: Food Environments - 2.2 Geographic Access)</p> <p>2. Percentage of food insecure residents (MUFFP #18; PHSA Theme 1 - Individual and Household Food Insecurity) and Cost of Health Canada's food basket (MUFFP #9; PHSA Theme 1: Individual and Household Food Insecurity - 1.4 Food Cost and Affordability; Theme 4: Influencing Policy - 4.1 Influencing policy using the National Nutritious Food Basket)</p> <p>3. Number of children/youth engaged in school food programs (MUFFP #20; Theme 2: Food Environments - 2.5 Community Food Programs)</p>	<p>1. Data is available. The 2017 report to council indicates that in 2017, 62% of Vancouverites were within 400m of a supermarket, or small or specialty grocery store. Further analysis required to assess distribution. There is a challenge defining who sells fruit/vegetables, i.e. pharmacies and gas stations and corner stores selling limited fresh fruit, should these be included?</p> <p>2. The 2017 report to council indicates that VCH level data shows food insecurity rates of 10%; BC of 12%. Data may be available every two years, the Canadian Community Health Survey (CCHS), administered by Statistics Canada, is a national, cross-sectional survey that collects health information on a sample of 130,000. Household food insecurity has been monitored with the CCHS since 2005. Content included on a given cycle of CCHS is classified as core or optional. Core content is asked of all respondents, while optional content is at the discretion of provinces and territories to include for their residents. The scale used to measure household food insecurity, the Household Food Security Survey Module (HFSSM), has been included as core content on some cycles of CCHS (2007-08, 2011-12, 2017-18) and as optional content on the intervening cycles. Another option for collecting this data includes VCH's My Community My Health (MCMH) survey, which collected data on food insecurity in 2014. It is unclear when the next MCMH survey will be administered</p> <p>3. MUFFP explains that there are many different types of school food programs with different objectives (education, health and nutrition, agriculture and community development). These can include meals, education, and others.</p>

<p>Goal 4 - Make food a centrepiece of Vancouver's economy</p>	<ol style="list-style-type: none"> 1. Presence of municipal policies/regulations that allow and promote agricultural/food production/processing in municipality (MUFFP #26; PHSA Theme 2 Food Environments - 2.1 Zoning; Theme 3: Food Systems Resilience - 3.6 Production: Capacity for local and regional production) 2. Number of municipal food processing and distribution infrastructure available to food processors in the municipality area (MUFFP #31; PHSA Theme 3: Food Systems Resilience - 3.5 Production: Economic Performance) 3. Number of jobs in the urban food system and the average wage (MUFFP #21; PHSA Theme 3: Food Systems Resilience - 3.5 Production: Economic Performance) 	<ol style="list-style-type: none"> 1. This would be a simple yes/no. 2. Not currently being tracked, but possibly available. 3. This data is available every 4 years through Stats Can and potentially every year through the Vancouver Economic Commission.
<p>Goal 5 - Advocate for a just and sustainable food system with all partners and all levels of government</p>	<ol style="list-style-type: none"> 1. Annual municipal investment in food markets or retail outlets (MUFFP #37; PHSA Theme 2: Food Environments - 2.5 Community Food Programs) 2. Number of food related policies that focus on socially vulnerable groups (MUFFP #23; PHSA Theme 2: Food Environments - 2.5 Community Food Programs) 3. Presence of an active multi-stakeholder food policy and planning structure and the presence of urban food policies and action plans (MUFFP #2 and #3; PHSA Theme 4: Influencing Policy - 4.2 Community Capacity for advocacy and policy in community food action Initiative) 	<ol style="list-style-type: none"> 1. See Appendix 7 for further discussion on this. 2. MUFFP acknowledges that every city will have a distinct context when it comes to this indicator. Some cities will have very clear and specific food-related policies that address vulnerable groups while others will not. 3. The assessment in Appendix 5 could be used to measure this.

8.0 Food assets, expanded

Food assets are defined by the Vancouver Food Strategy as “resources, facilities, services or spaces that are available to Vancouver residents, which are used to support the local food system” (2013: 3). This is a broad definition that can be interpreted widely. Currently, however, this indicator is only tracking the following: community garden plots, orchards, urban farms, farmers’ markets, community kitchens and community composting on public lands.

This framing of food assets emerged as the initial scope aimed to measure assets within the immediate control of the City, for example assets on City land. It is also important to note that it is difficult to count assets that the city has limited influence over. However, since the release of the Vancouver Food Strategy the discourse around food assets has begun to evolve.

8.1 Cultural food assets

In 2017, The Hua Foundation released a report with a number of recommendations for how to improve upon the existing definition of food assets, specifically by expanding the definition to include cultural food assets.

“Cultural food assets are businesses and services that provide a similar, if not identical function as food assets defined by City of Vancouver. Cultural food assets extend beyond the role of food assets identified by the City of Vancouver by providing spaces that support the maintenance and transmission of culture. While cultural food assets are not limited to a particular cultural group, [the] report identifies greengrocers, fishmongers, barbecue meat stores and butcher shops, Chinese dry goods stores, as well as traditional Cantonese bakeries and restaurants as strong examples of cultural food assets” (2017: 42).

As noted, it is difficult to count assets that the City has little control over. However, “the absence of cultural food assets from City of Vancouver’s official definitions of local food system actors results in their lack of recognition, protection, and mobilization” (Hua Foundation 2017: 9).

Currently, The City of Vancouver’s Hidden Gems

of Chinatown Team has been working with the community to identify and map intangible or cultural assets, i.e. “hidden gems”. This map will aid in long-term management by creating an inventory that could protect and sustain these assets. There is potential to adapt this approach to gathering information about food assets that are not on city land. This engagement could also be expanded to include dialogue with other rights-holders and stakeholder communities in Vancouver.

Depending on budget and capacity, this process could also include information gathering on topics beyond cultural food assets. For example, food governance assets (such as policies) and capacity building or knowledge holder assets. The MUFFP framework suggests that generating databases or inventories with governance and capacity building assets is helpful in establishing baseline data, and on providing information on gaps, needs, opportunities, and propelling further direction. See Appendix 7 for further discussion on this.

8.2 Accessibility of assets

The MUFFP framework stresses that it is important to not only count the number of food assets, but also to measure the accessibility of city residents (and specific target groups) to the assets.

The indicator will only reflect impact accurately if data is filtered by geo-spatial location, population density, race, income levels, etc. On its own, a number is not very revealing so it needs to be understood alongside a more detailed breakdown of assets by geography and subcategory, ideally presented visually. Mapping food assets against race, income, or disability could identify apparent gaps and quickly identify future policy directions.

Additionally, mapping intangible or cultural food-assets helps to create an inventory that will assist to protect and sustain these food assets, which will aid in long-term management. CoV is currently a partner on SFU researcher Tamara Soma’s project *Our Home, Our Food, Our Resilience: A Citizen Science Approach to Food Asset Mapping*, a SSHRC funded project. There is significant potential for overlap.

9.0 Conclusion

As CoV draws closer to the culmination of a number of influential strategies and plans, there is an opportunity to address an emerging question: How can we better measure food policy progress in the future?

This report aims to address this question, and undertook a review of existing food system indicator frameworks in order to develop a series of recommendations for the City. These recommendations include:

9.1 Top indicators

Social and Economic Equity Indicator: Number of community-based food assets in the city by distribution of race, income, population density, disability.

Food governance indicator: Presence of an active multi-stakeholder food policy and planning structure (e.g. food policy councils; food partnerships; food coalitions).

Food supply and distribution indicator: Number of fresh fruit and vegetable outlets per 1000 inhabitants.

Sustainability indicator: Existence of policies or programs that address the reduction of GHG emissions in different parts of the food supply chain.

9.2 City of Vancouver Food Strategy indicators

This scenario recommends indicators that correspond to each of the goals in the 2013 Vancouver Food Strategy. In total, this section recommended 13 possible indicators across the five goal areas. This scenario recognizes that there may not be capacity or even a need at this time to significantly alter the existing priorities, and there may be a desire to measure progress on each of the goals.

9.3 Food assets, expanded

Recent policy reports, such as the 2017 Food Strategy Action Update stated that an expanded definition of food assets is required. A broader definition for food assets could demonstrate the value that diverse assets bring to communities, study the pressures facing them, and incorporate them into multiple areas of the planning processes.

With this context in mind, this report also included a discussion regarding how to expand this definition, specifically to include cultural food assets along with a recommendation to geo-spatially map these assets in relationship to important social and economic factors such as race, income, density, and disability.

9.4 Next steps

This report is a contribution in the process of selecting new food system indicators for the City of Vancouver, and the recommendations are high-level.

Depending on which scenario is ultimately selected, careful investigation is needed to fully understand the feasibility and process required for implementing these indicators in Vancouver.

Important considerations for each indicator that are not extensively included in the recommendations include:

- consistent data availability;
- budget and/or resources required;
- possible synergies with other City teams;
- stakeholder feedback; and
- timeline for implementation.

It is hoped that the recommendations in this report will accelerate a discussion regarding the future direction of Vancouver's food policy - and ultimately - inform the selection of CoV's next food system indicator.

Works Cited

Barrett, C. B. (2010). Measuring food insecurity. *Science*, 327(5967), 825-828.

Becker, D., Schneiderbauer, S., Forrester, J. M., & Pedoth, L. (2015). Guidelines for development of indicators, indicator systems and provide challenges.

Benson, C. (2019) Personal Communication.

Booth, S., & Smith, A. (2001). Food security and poverty in Australia-challenges for dietitians. *Australian Journal of Nutrition and Dietetics*, 58(3), 150-156.

Burton, C.G. (2015): A Validation of Metrics for Community Resilience to Natural Hazards and Disasters Using the Recovery from Hurricane Katrina as a Case Study. *Annals of the Association of American Geographers*, 01/02; 2015/01, vol. 105, no. 1, pp. 67-86

C40 (2019). The Future of Urban Consumption in a 1.5°C World. Retrieved from: https://c40-productionimages.s3.amazonaws.com/press_releases/images/361_C40_CBE_MainReport_250719.original.pdf?1564075084

City of Vancouver (2013). Vancouver Food Strategy. Retrieved from: <https://vancouver.ca/files/cov/vancouver-food-strategy-final.PDF>

City of Vancouver (2019). Poverty Reduction Plan What We Heard: Phase 1. Retrieved from: <https://vancouver.ca/files/cov/poverty-reduction-plan-phase-one-engagement-what-we-heard.pdf>

Comprehensive Assessment of Water Management in Agriculture. *Water for food, water for life: a comprehensive assessment of water management in agriculture*. London: Earthscan and Colombo: International Water Management Institute, 2007.

Department for Environment Food and Rural Affairs. (2009). Indicators for a Sustainable Food System. DEFRA, London. http://www.scpknowledge.eu/sites/default/files/knowledge/attachments/Defra_2011_Indicators%20for%20a%20sustainable%20food%20system.pdf

Haysom, G. (2015, September). Food and the city: Urban scale food system governance. In *Urban Forum* (Vol. 26, No. 3, pp. 263-281). Springer Netherlands

Heggie, K. (2018) Including Urban Indigenous Wellness Indicators in the Healthy City Strategy

Ellen MacArthur Foundation (2019) Cities and Circular Economy for Food. Retrieved from: https://www.ellenmacarthurfoundation.org/assets/downloads/Cities-and-Circular-Economy-for-Food_280119.pdf

FAO (2013). Sustainability Assessment of Food and Agriculture Systems, SAFA Systems Indicators. FAO, Rome.

Fanzo, J., Cogill, B. and Mattei, F. (2012) Metrics of sustainable diets and food systems, Technical Brief-Madrid Roundtable, Biodiversity International, Rome.

Feenstra, G., Jaramillo, C., McGrath, S., Grunnell, A.N. (2005). Proposed Indicators for

Sustainable Food Systems. Ecotrust, Portland. <http://coloradofarmtoschool.org/wpcontent/uploads/downloads/2013/02/Proposed-indicators-for-sustainable-food-systems.pdf>

Foley, J. A., DeFries, R., Asner, G. P., Barford, C., Bonan, G., Carpenter, S. R., ... & Helkowski, J. H. (2005). Global consequences of land use. *science*, 309(5734), 570-574

Freudenberg, N., Willingham, C., & Cohen, N. (2018). The role of metrics in food policy: Lessons from a decade of experience in New York City. *Journal of Agriculture, Food Systems, and Community Development*, 8(B), 191-209

Fridman, J., & Lenters, L. (2013). Kitchen as food hub: adaptive food systems governance in the City of Toronto. *Local Environment*, 18(5), 543-556.

Geddes, B. (2015). *Measuring Wellness: An Indicator Development Guide for First Nations*. First Nations of British Columbia, held in trust by Ktunaxa Nation Council.

Graham, S. (2008). *Tools for Action Series: A Resource Guide for Designing a Community Indicator Project*. SPARC BC. Retrieved <http://www.sparc.bc.ca/community-development/sprout/>

Hua Foundation (2017). *Vancouver Chinatown Food Security Report*. Retrieved from: <https://hua-foundation.org/uploads/Vancouver-Chinatown-Food-Security-Report.pdf>

Marriott, P. (2019) Interview June 1.

Morgan, K. (2015). Nourishing the city: The rise of the urban food question in the Global North. *Urban Studies*, 52(8), 1379–1394.

Moragues-Faus, A., & Morgan, K. (2015). Reframing the foodscape: the emergent world of urban food policy. *Environment and Planning A: Economy and Space*, 47(7), 1558-1573.

New York City (2016) *Food Metrics Report*. Retrieved from: <https://www1.nyc.gov/assets/foodpolicy/downloads/pdf/2016-Food-Metrics-Report.pdf>

Prosperi, P.; Moragues-Faus, A.; Sonnino, R. and Devereux, C. (2015) *Measuring progress towards sustainable food cities: Sustainability and food security indicators Report of the ESRC financed Project "Enhancing the Impact of Sustainable Urban Food Strategies"*. Access: <http://sustainablefoodcities.org/getstarted/developingindicators>

Sébastien, L., & Bauler, T. (2013). Use and influence of composite indicators for sustainable development at the EU-level. *Ecological Indicators*, 35, 3–12. <https://doi.org/10.1016/j.ecolind.2013.04.014>

Slade, C., Baldwin, C., & Budge, T. (2016). Urban planning roles in responding to food security needs. *Journal of Agriculture, Food Systems, and Community Development*, 7(1), 33-48

UNSDSN (2014). *Indicators and a monitoring framework for Sustainable Development Goals*. UNSDSN, New York. <http://unsdsn.org/wp-content/uploads/2014/07/140724-Indicatorworking-draft1.pdf>

Vermeulen, S. J., Campbell, B. M., & Ingram, J. S. (2012). Climate change and food systems. *Annual review of environment and resources*, 37.

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., ... & Jonell, M. (2019). Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*, 393(10170), 447-492.

Appendix 1 - Indicator Overview

DIRECT INDICATOR

This is when the indicator is also the measurement. An example of a direct indicator is total rainfall amount as an indicator for annual precipitation.

INDIRECT INDICATOR

Also known proxy indicators, these are used when direct measurements are infeasible or inappropriate. An example is the use of income as a proxy for poverty. Caution must be used when applying a proxy indicator as they can obscure other causal factors affecting the outcome.

COMPOSITE INDICATOR

Also known as an index, composite indicators combine large amounts of information while reducing complexity. However, as the construction of composites is difficult and requires scaling, weighting or aggregating of indicator and data, those using composites face considerable challenges in developing them.

QUALITATIVE INDICATOR

Qualitative indicators can be understood as something that is intangible or unmeasurable. Perceptions, stories, and nominal indicators are considered qualitative.

QUANTITATIVE INDICATOR

Quantifiable indicators are objectively measurable such as an amount or a percent.

NOMINAL INDICATORS

Nominal scales are used for labelling variables, without any quantitative value. These categories do not overlap and they do not carry a quantifiable significance. For example, a nominal indicator may ask what neighbourhood you are from or what your gender is.

ORDINAL INDICATORS

Ordinal scales allow for a ranking, but the exact interval between categories is unknown. For example, economic status, with three categories (low, medium and high). It is unknown the amount of difference between the categories.

INTERVAL INDICATORS

Interval scales allow for creating equal, constant and quantifiable intervals between categories. They represent the most quantifiable level of Measurement. An example includes measuring the temperature in °C.

OUTCOME INDICATORS

This measure an effect or outcome at a defined point in time, for example, maternal mortality rates. Outcome indicators tend to be concrete and provide precise measurement.

PROCESS INDICATOR

This measures an interrelated series of activities, actions, events, mechanisms, or steps that transform inputs into outputs for a particular outcome. For example, the portion of residents that have received food literacy training could be considered a process outcome indicator.

Becker, 2015

Appendix 4 - Governance Indicator Scoresheet

This score sheet can be used for discussion and to help measure governance in food policy. MUFFP recommends that team can either first fill out the score sheet individually and then compare as a team, or alternatively, a facilitator can guide the group discussion and assessment in a participatory way. The score sheet is currently scored out of a total of 9 points, but MUFFP encourages cities to adjust any scoring weights as they see fit. For example, one city may decide that the allocation of a budget is a key qualifier to define the functioning and effectiveness of an active municipal interdepartmental government body - and thus more heavily weight this indicator.

This self assessment can be repeated annually to assess change.

Characteristics	Self-assessment and explanation			Total score	Disaggregation of information	Specific observations/ recommendations
Presence of an interdepartmental/sectoral body on urban food within the municipality						
Presence	Yes = 1 point	No = 0 points	X = A coordination body exists byt set up and managed by non-governmental stakeholders	Total score:	Provide information on the type of coordinating body and its focus (only urban agriculture, the broader urban food system)	
Multi-stakeholder representation and integration						
Representation: Representation in the coordinating body of different departments and sectors within the city government	Strong= 2 points Strong: The coordination mechanism has a large representation of different sectors, including a.o. agriculture, health/nutrition, social protection.	Moderate= 1 point Moderate: The coordination mechanism has representation of a couple of sectors	Low= 0 points Low: The coordination mechanism has quite limited representation of different sectors (very few sectors)	Total score:	- List and number of different sectors participating and their roles -List sectors not engaged that could be involved in future	
Vertical integration: The interdepartmental body coordinates actions with other governments at local, national and intergovernmental levels	Strong= 2 points Strong coordination with one or more other levels of government (neighbourhood, province, country) or other municipal governments in the city region	Moderate= 1 point Moderate coordination with one or more other levels of government (neighbourhood, province, country) or other municipal governments in the city region	Weak=0 points Weak coordination with one or more other levels of government (neighbourhood, province, country) or other municipal governments in the city region	Total score:	-List and number of other governments engaged and forms of coordination -List governments/ levels not engaged that could be involved in future	

Multi-stakeholder integration: The interdepartmental body coordinates actions with other non-governmental stakeholders (civil society groups, research, private sector)	Strong=2 points Strong coordination with one or more other non-government stakeholders (civil society, research, private sector)	Moderate= 1 point Moderate coordination with one or more other non-government stakeholders	Weak=0 points Weak coordination with other non-government stakeholders	Total score:	-List and number of other non-governmental stakeholders engaged and forms of coordination --List of other non-governmental stakeholders not engaged that could be involved in future (Note: See further Indicator 2 on Presence of an active multi-stakeholder food policy and planning structure)
--	---	---	---	--------------	---

Functioning and effectiveness:

Criteria:

1. It has a clear mandate
2. It is institutionalised in the local government structure
3. It has regular meetings during the year
4. Members actively participate in meetings and decision-making and contribute to the dialogue
5. The coordination body/mechanism has an adequate number of human resources dedicated to the functioning of the coordination mechanism
6. It has adequate financial resources allocated to the functioning of the coordination body/system (Note that funding for implementation of an urban food strategy or programme is covered under Indicator 3).
7. It has regular information exchange; information is widely shared within the city government and with a larger general public on the existence, role, activities and achievements of the coordinating food body
8. It engages in urban food policy/programme formulation; cross departmental/ city initiatives /policies have emerged from the coordinating food body
9. It has power over its members to enforce recommendations and hold them accountable
10. The functioning and activities of the coordination body are monitored, as are results and impacts of its activities to guide further planning and inform on its impacts and policy contributions.

Functioning and effectiveness: The coordinating body is well functioning, ensures coherence of urban food policy and programme interventions and collaborates in the formulation and implementation of cross- sectoral urban food policies and programmes.	Strong= 2 points A minimum of 6-10 criteria apply	Moderate = 1 point A minimum of 3-6 criteria apply	Low= 0 points Less than 3 criteria apply	Total score:	Provide information on: -Mandate/ Terms of Reference -Level of institutionalisation: Indicate the policy decision and/or law institutionalising the body and its current statute; indicate levels of integration in institutional budgets and programmes -Number and type of meetings held and agenda points discussed -Staff numbers and time dedicated -Amount and source of budget available for the functioning of the coordination body -Number and types of programmatic collaborations on food (between 2 or more departments) and other city initiatives/policies designed, implemented or planned. -Monitoring mechanisms, tools and reports - Information and outreach mechanisms and target groups
---	--	---	---	--------------	---

Total score: ___/9

Appendix 5 - Notes on developing a GHG reduction indicator for food systems

MUFFP notes that while some cities may have been able to quantify, monitor and reduce food system related GHG emissions in certain areas of the food system, most have not. The measurement and monitoring of GHG emissions in any single food business, let alone food sector, or indeed whole city food system presents significant challenges and there is no one agreed way to do this. Most cities would need to dedicate considerable resources to develop this indicator. Some options provided by MUFFP for options include counting the:

- Number (and types) of policies and regulations
- Number of city partnerships formed to specifically address GHG emissions
- Number and type of information and communication mechanisms and target groups
- Number of research studies
- Number of GHG emissions calculations relating to the food system (for example, impact of the last mile supplying system, total or specific food transport GHG emissions, organic waste related GHG emissions)
- Number of practical initiatives to support a low-carbon food system.

Appendix 6

MUFFP Indicator 37 - Annual municipal investment in food markets or retail outlets providing fresh food to city residents, as a proportion of total (investment) budget

Rationale/evidence: The overarching purpose of this area of work is to improve and optimise the functioning and infrastructure of food markets in the city. This indicator relates to municipal investment in improvements and expansion of infrastructure related to food market systems, and in particular to investment in food markets or retail outlets providing fresh food to city residents. While a single investment figure is on its own, not very informative, it does at least give a relative idea of the level of investment taking place compared with other areas of investment, or against total local municipal budget spend.

Investment in food supply-related infrastructure is crucial, whether for new developments or maintenance of existing infrastructure. This may be left entirely to the private sector, but the municipality may also invest as partners or may fund other kinds of support.

Example: Vaslui, Romania - A new retail market was built from scratch on a former derelict market site, with local budget funds (approx. 3.5 million Euros) in the centre of the city as an energy efficient building. Work started in 2012, finished in September 2014, and the local authority administers the market. It is endowed with high European technical means needed to facilitate the direct sales of local products coming from the small-sized land holdings of Vaslui. The market is divided into 5 well-designed areas: quality control laboratories for food safety and security (which plays an important role in increasing consumer trust), fruits and vegetables, fish products, meat, and dairy products. The market's main target is local produce. Special designated areas and rent conditions are provided in order to encourage local producers to offer best quality products, shorten the food chain, and reduce CO2 emissions.

Appendix 7 - Case Study | Vancouver Cultural Spaces

Case Study prepared by Sarah Labhan, Greenest City Scholar 2018. [Full report available here.](#)

This case study can be used as an example for how to track assets that are not city owned. This approach could be adapted for food-related capacity building assets.

Background: The Culture Plan for Vancouver 2008-2018 aims to “develop, enliven, enhance, and promote arts, culture, and cultural diversity” in part through the pilot of a cultural spaces mapping project. The Cultural Spaces database was developed out of the City of Vancouver Cultural Spaces Map Pilot Project in 2013 following a mandate from Council to identify and protect cultural spaces in Vancouver. The City of Vancouver defines cultural spaces as “places where people come together to express themselves through art and culture.”

Defining cultural spaces: Prior to launching the cultural spaces map, different types of cultural spaces were defined by employees in the Cultural Services Department. This process laid the foundation for which cultural spaces were to be included and excluded from the map.

Data collection: Initial dataset was collected internally from public sources such as websites and brochures, and then crowdsourced through a month-long campaign which included public announcements, press releases, and social media advertisements.

Data validation: City staff contact each establishment to validate their information. If a space cannot be validated, it is not included in the map.

Data maintenance: Updated annually following a month-long crowdsourcing campaign which surveys stakeholders in the cultural community. The webpage allows users to add or update a space through an online forum indicating space name, website URL, primary use, address, cultural activity, and rationale.

Data analysis: Following the annual crowdsourcing campaign, an update is undertaken with some analysis. The results from this analysis are presented to Council and include information such as ownership type and number of spaces. The Cultural Spaces Map has been used to inform policy primarily by identifying existing cultural spaces and has led to increased city protection of these spaces through acquisition.

Takeaways: An annual month-long crowdsourcing campaign allows individuals to suggest additional spaces. Crowdsourcing is inexpensive and requires less staff time to update the map. Following the annual update, a report is presented to Council which includes information such as property ownership to inform policymakers about the ways in which cultural spaces are changing over time.

Appendix 9 - MUFFP information sheet on food policies for socially vulnerable groups



Food and Agriculture
Organization of the
United Nations



Milan Urban Food Policy Pact Monitoring Framework

Draft version, July 2018

Indicator 23: Presence of food-related policies and targets with a specific focus on socially vulnerable groups

MUFFP framework of actions' category: Social and economic equity

The indicator allows for (self) assessment of the presence, and the level of implementation of food-related municipal policies and targets, that either directly target vulnerable groups or do so indirectly by supporting and enabling the grass-root activities of community-based networks to increase social inclusion and provide food to marginalised individuals.

Overview table

MUFFP Work stream	Social and economic equity
MUFFP action	Promote networks and support grassroots activities that create social inclusion and provide food to marginalized individuals.
What the indicator measures	The indicator allows for (self) assessment of the presence (yes/no), and the level of implementation of food-related municipal policies and targets (with help of a scoring sheet), that either directly target vulnerable groups or do so indirectly by supporting and enabling the grass-root activities of community-based networks to increase social inclusion and provide food to marginalised individuals. The focus is on policies with a specific focus on vulnerable groups. If desired, critical assessment of the actual policy/ies may be implemented in addition. Both exercises help define areas for improvement.
Which variables need to be measured / what data are needed	First, information is collected on any existing food-related policies or strategies and targets that fit these criteria. A broad look may be needed across a number of different municipal policies and strategies, as there may not be any one that has a specific food focus – which policies, strategies and targets are relevant? Second, the specific focus on socially vulnerable groups needs to be clarified – which groups? Third, both the link within the policy/strategy to food and socially vulnerable groups needs to be clarified – which aspects? In order to complete the assessment, the next step is to investigate what is actually happening - the level of implementation, budget allocation, targets and monitoring of impact – as a result of the municipal policies, strategies and targets.

Unit of measurement <i>(i.e. Percentages, averages, number, etc.)</i>	Yes/No. This indicator will be assessed in a qualitative way.
Unit(s) of Analysis <i>(i.e people under 5 years old, etc.)</i>	The policy or programme. This indicator will be assessed in a qualitative way.
Possible sources of information of such data	Policies, strategies and planning documents from the municipality. Specific reports on the work. Key staff in the municipality. Key civil society groups, networks and NGO's involved with food work that targets socially vulnerable groups.
Possible methods/tools for data-collection	-Self assessment -Desk top research of documents -Interviews with relevant staff in the municipality who are involved with the implementation of relevant policy, strategy and targets; interviews with key stakeholders -External evaluation
Expertise required	Research and interview skills; expertise in policy formulation/strategic planning
Resources required/ estimated costs	
Specific observations	Every city will have a different situation. Some will have very clear and specific food-related policies that address vulnerable groups while others will not. However there may be other policies and strategies that have an impact on food provision to vulnerable groups, or on food-related activities if not actual food provision. Many cities will have food safety and food hygiene policy required by law. These may or may not be included, as deemed appropriate.
Examples of application	Bristol City Council officers from several different departments took part in an externally facilitated food and planning development review (see tools below.)

Rationale/evidence

Local governments that have signed the Milan Urban Food Policy Pact have all acknowledged and (re)claimed jurisdictional responsibility for food systems activities that directly impact the health and well-being of their residents. One way assess level of commitment is to examine i) the presence (or absence) of food-related policy or strategy, and the expected targets/outcomes, and ii) the specific target groups of people that should benefit from such policies. Most cities are unlikely to have done such an audit.

The significance of local government food-related policy and targets

The existence or absence of local government food related policies and targets potentially have a significant impact. A local government or municipality may have very clear food-related policies and targets. Some if not all of these may focus on addressing the issues faced by socially vulnerable groups. For example, household food security policy or school feeding programmes or mother and baby/child nutrition programmes. Some municipalities may have just one or two specific food policies, for example school meal provision or food safety legislation and procedure. While the presence of such policies and targets are crucial for any type of food system regulation or development, they are still only as effective as their implementation and ongoing development.

A comprehensive national survey on local governments' food-related activities was conducted in the US and found the following ways that local governments can address food systems.

- Policies supporting food access and production;
- Support of food-related projects or programs;
- Inclusion of food-related topics in official plans;
- Departments responsible for food issues;
- Coordination or collaboration with other stakeholders or communities on food system

- activities; and
- Awareness and use of federal resources available to local governments for funding food system development.

The report also noted the following: ‘Distinct from the distribution of emergency food, survey respondents reported far fewer activities more closely targeted toward systemically improving the health and security of vulnerable populations.’¹

Glossary/concepts/definitions used

Definition of ‘vulnerable populations’: In general, ‘vulnerability’ is accepted to mean susceptibility to harm or suffering. ‘Vulnerability’ is a regularly used word that means different things in different contexts. In the context of public health, the World Health Organisation (WHO) states: ‘Vulnerability is the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters. Children, pregnant women, elderly people, malnourished people, and people who are ill or immune-compromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability.’²

The Comune di Milano uses the definition of relative poverty (compared to an average situation) and absolute poverty (a condition of extreme poverty, so a condition characterized by severe deprivation of basic human needs).

Socially vulnerable groups: (See also definition notes for Indicator 19 “Percentage of people supported by food and/or social assistance programmes”). Social vulnerability is the result of an interaction of different personal, environmental and social factors that affect a person’s wellbeing or ability to cope with difficulties or disasters (as above). For example:

- Personal - age and health
- Environmental - availability of green space, quality of housing
- Social - levels of inequality and income, the strength of social networks, the cohesion of neighbourhoods.

Examples of different socially vulnerable groups could include:

- Very young children
- Older people
- People with poor mobility or access to adequate services
- People of various tenancy status and types of housing
- People who lack access to green space
- People experiencing social isolation
- People on low incomes.

While not all factors known to affect vulnerability can be easily measured, a number of them can be mapped using direct and proxy indicators such as those listed above.³

¹ Local Government Support for food Systems: themes and opportunities from national data, Laura Goddeeris, 2013, Michigan State University Centre for Regional Food Systems
<http://www.canr.msu.edu/foodsystems/uploads/files/local-govt-survey-brief.pdf>

² Environmental health in emergencies and disasters: a practical guide, WHO, 2002

³ Socially vulnerable groups sensitive to climate impacts, 2014; Climate Just <http://www.climatejust.org.uk/socially-vulnerable-groups-sensitive-climate-impacts>

Types of food-related policies and targets that focus on socially vulnerable groups: Each city will have different policies and targets. The starting point may be either the policy or the target group. Some examples are set out below.

Health and food access/provision: The US survey mentioned above found that the area of community health and food security is the most obvious area that connects to socially vulnerable groups, e.g. zoning ordinances that enable the operation of farmers' markets to increase food access, direct support for farmers' market developments, support for organisations dealing with emergency food distribution programmes, improved siting of shops providing fresh food in under-served neighbourhoods, enabling food assistance recipients to use farmers markets.

Food production and infrastructure: Support for production and infrastructure activity is a second area that may in some cities directly support socially vulnerable groups, e.g. land and water provision for urban food production; land use tenancy agreements; permissions for composting, green roofs, bees, chickens, and other small livestock in non-traditional zones; use of buildings for food production or processing.⁴

Healthy eating: In some cities there may be policy or strategy (education and/or practical support for behaviour change) that relates to obesity, healthy weight or healthy eating, and which targets specific groups of people or geographic areas of the city.

Nutrition: There may be specific nutrition-based targets. The World Health Organisation has set six key global nutrition targets to improve maternal, infant and young child nutrition by 2025, each of which connects in some way to food: stunting in under 5yrs.; anaemia in women; low birth weight; childhood overweight; breastfeeding; wasting.⁵

Food storage & cooking facilities: There may be a requirement for a certain standard of kitchen or food preparation and storage spatial specifications in housing development policy. There may be specific programmes to support low-income households with improving food preparation and cooking facilities (including fuel costs or improved fuel types).

Food hygiene and food safety for vulnerable groups: (In many countries this is required by law.) National public health or food safety agencies, local government environmental health or public health departments may have food safety policy or strategy or guidance in place to help protect specific vulnerable groups whose immune systems may be weakened, and thus most at risk of infections caused by food-related bacteria. For example *L. monocytogenes* (listeriosis), which can be a problem with chilled ready-to-eat foods, if food is not stored at the correct temperatures or if hygienic procedures are not adhered to. The groups of people most at risk include cancer patients, patients undergoing immunosuppressive or cytotoxic treatment, unborn and newly delivered infants, pregnant women, people with diabetes, alcoholics (including those with alcoholic liver disease) and a variety of other conditions. Elderly people are also included in this higher risk group.⁶

⁴ Local Government Support for food Systems: themes and opportunities from national data, Laura Goddeeris, 2013, Michigan State University Centre for Regional Food Systems

<http://www.canr.msu.edu/foodsystems/uploads/files/local-govt-survey-brief.pdf>

⁵ WHO Global nutrition targets 2025 <http://www.who.int/nutrition/global-target-2025/en/>

⁶ Reducing the risk of vulnerable groups contracting listeriosis; guidance for healthcare and social care organisations; UK Food Standards Agency <https://www.food.gov.uk/sites/default/files/listeria-guidance-june2016.pdf>

Specific vulnerable groups: It may be more relevant to start with specific categories of vulnerable groups and investigate which specific policies or strategies target support at them, or have outcome targets that relate to addressing the needs of these groups. These could include, for example, policy or strategy to support homeless young people, or street children, or drug users, or people living in a particularly vulnerable neighbourhood. The focus should be on the extent to which any such policies or strategies relate to food issues.

Funding for community-based work on food issues: A local government may choose to make funding available to other community based organisations to carry out work that relates to all of the above issues. In this case the policy (in this case one related to funding, but likely to be linked to specific objectives) may be indirectly targeted at specific vulnerable groups.

Preparations

This indicator could be kept as simple as possible with the research team only doing a review of policy documents, or more in-depth data could be collected to fill in any gaps and get a sense of policy impacts on socially vulnerable groups.

The team responsible for monitoring this indicator should agree on:

1. Clear criteria for selecting which policies or strategies are relevant to this indicator
2. An approach for how to gather information on the relevant existing local government policies, strategies and targets
3. Clear criteria for defining 'socially vulnerable groups', as appropriate for the city
4. A clear methodology for analysing and recording the links between food-related policy and socially vulnerable groups, in order to identify the relevant policies (e.g. review of policy documents, local government officer roundtable discussion – see below)
5. Any information gaps that need follow up and further clarification.
6. How to identify the key stakeholders – the most relevant people to interview for further information. This may be people who create policy or oversee its implementation. It could also include representatives of the groups that are the focus of the policies.
7. If key stakeholder interviews or surveys are to be used, questions have to be designed. Training of interviewers may be needed.
8. If roundtables are needed, the process will need to be designed and run by experienced facilitator who can draw out the information that is needed from the participants.

In case rather than self-assessment/audit other evaluations methods are selected (external evaluation, key informant interviews) respective preparations should be taken.

Sampling

The need for sampling will depend on the required breadth and depth of understanding in relation to this indicator. For example, interviews with key people within the municipality will provide data about the policies themselves but not whether the policy has any actual impact on socially vulnerable people.

For local government officers: A roundtable or series of interviews with all food-related policy makers or implementers could be used to help clarify which policies and targets exist and to what extent they focus on socially vulnerable groups.

If more information is needed on the impact of these policies on socially vulnerable groups, data may be gathered using interviews with representatives from key target groups of the policies.

For a wider assessment: A randomly sampled number of external stakeholders could be asked in a survey if they are aware of the existence, content and results of a food-related municipal policies and targets, that, directly or indirectly focus on socially vulnerable groups. (Such questions could also be included in a broader urban food-related survey.)

An in-depth assessment: A smaller group of randomly sampled external stakeholders could be invited to participate in a structured roundtable discussion to collect their views and experiences of food-related policy that is specifically aimed at socially vulnerable groups.

Data collection and data disaggregation

Data collection for this indicator is qualitative and takes an audit approach. There are several steps to work through. The order may not be as set out below:

- Identify existing food-related policies or strategies and targets that fit the agreed criteria for this indicator. A broad look may be needed across a number of different municipal policies and strategies, as there may not be any one that has a specific food focus – which policies, strategies and targets are relevant?
- Identify which socially vulnerable groups are most relevant. This could be done from the perspective of existing policy that has already identified such groups. Alternatively, interviews with key stakeholders could help to develop the criteria and at the same time build interest and buy-in for the work.
- Analyse the policies/strategies and targets to identify which, if any, specifically focus on socially vulnerable groups and on which aspects of food.
- If this is a priority area for the city, further investigation could assess what is actually happening - the level of implementation, budget allocation, targets and monitoring of impact – as a result of the municipal policies, strategies and targets. This could be done through further interviews or roundtable meetings with key stakeholders.

Scoring sheet

Characteristics	Scoring			Total score	Disaggregation of information	Observations/ Recommendations
	Yes= 1 point	No= 0 points				
Presence of relevant policies/strategies/targets that fit agreed criteria for this indicator					-Number and type of policies and strategies -Specific targets set -Type of socially vulnerable groups addressed	
Level of implementation: is the policy/strategy actually implemented or enforced?	Yes, completely= 2 points	Partially= 1 point	No= 0 points		-Discuss for each of the policies or strategies. -Indicate reasons for partial or non-implementation/enforcement	
Socially vulnerable groups: The policy/strategy/targets specifically address socially vulnerable groups	Yes, completely= 2 points	Partially= 1 point	No= 0 points		-Distinguish for each of the policies or strategies or targets. -Note: Specific vulnerable groups may be identified depending on local context and policy priorities. The scoring sheet could monitor	

					targeting of each defined vulnerable groups by giving each of them for a score of 1 (this specific group is targeted) or 0 (this groups is not targeted).	
Information and communication: Are policies and regulations widely shared within city government and to potential beneficiaries	Yes, completely= 2 points	Partially= 1 point	No= 0 points		-Number and type of information and communication mechanisms and target groups	
Total score:						

Data analysis/calculation of the indicator

Based on the scoring and further information provided, participants in the monitoring/review process may identify gaps or areas for strengthening or improvement:

- How can existing policies and programmes be better implemented and communicated?
- How can better targets be set?
- What new or revised policies and programmes could be proposed?
- What process should be followed to implement these changes? Steps to be taken? Stakeholders to be involved? Critical time-lines? Resources required?

Note: If existing, it may be relevant to further critically assess the specific policies or programmes themselves in order to highlight areas for improvement. The critical policy analysis proposed for Food Governance Indicator 3 (*Presence of a municipal urban food policy or strategy and/or action plans*) may be used and adapted for this purpose. This approach could be adapted along the lines below.

Type of food-related policy/targets	Focus of the policy - type of vulnerable group(s)	Objective of focus on socially vulnerable groups	Actual impact on socially vulnerable groups

Ultimately, the purpose is to find out the extent to which food-related policies and targets are focussed at socially vulnerable groups. The analysis should identify which ones do that and in what way, or at least in which ways they attempt to do that. Assessing actual impact may be beyond the scope of this work, unless it is feasible to do stakeholder interviews or roundtable discussions.

References and links to reports/tools

City Council Food and planning developmental review: A report based on interviews with Bristol City Council staff about their work on food. A peer review team from the University of the West of England visited Bristol City Council on 17 March 2014 and interviewed 14 staff and one elected member about their roles in improving the health, sustainability and resilience of the food system that serves Bristol.

Although this particular review did not focus on any specific policy, this rapid appraisal approach could be adapted for the purposes of this indicator, and also provide other very useful data.

<http://bristolfoodpolicycouncil.org/food-and-planning-developmental-review-a-report-based-on-interviews-with-bristol-city-council-staff-about-their-work-on-food/>