**Vancouver Food Strategy:**

**Capturing Public Perceptions and Readiness**

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**Introduction**

Resilience and the Vancouver Food Strategy

Our community based learning project, part of a new series of “Vancouver Food Strategy and Resilience” initiatives, can serve as a tool for future studies investigating public perceptions of disaster resilience in Vancouver. Vancouver’s Food Strategy Implementation Team, creates resilience projects and policies supporting a just and sustainable food system (City of Vancouver, 2017c). While many cities recommend residents keep a three day supply of food in their emergency kits, food system disruptions can create significant food access issues that increase food insecurity over the long term (Zeuli & Nijhuis, 2017). Therefore, incorporating food systems into resiliency planning is critical in preparing communities to recover from disasters; a resilient food system will improve a city’s ability to return food to pre-disaster levels in an equitable and efficient manner (Zeuli & Nijhuis, 2017). Our study focuses specifically on public preparedness and resilience, through the perspective of Vancouver’s senior community (65+).

B.C. Geography Poses Significant Threats To Residents

The City of Vancouver is a west coast seaport found on the mainland of British Columbia. Water borders the city on three sides: to the north lies the Burrard Inlet, to the west, the Strait of Georgia, and the south is bound by the Fraser River. With a population of 631,486, Vancouver is the most populated city in British Columbia (Statistics Canada, 2017b). Due to its geography and population size, Vancouver is vulnerable to a multitude of natural and human induced disasters. Examples include earthquakes, severe weather, wildfires, flooding, gas leaks, tsunami waves, and disease outbreaks (City of Vancouver, 2017a; Emergency Management BC, 2016). However, as the Pacific Coast of British Columbia is the most seismically active region in the country, emergency planners and scientists agree that earthquakes pose the greatest risk to coastal communities in British Columbia (Natural Resources Canada, 2013)(Etkin et al 2004) (Schina, 2017). Additionally, residents of the City of Victoria, located 115 kilometers west of Vancouver on Vancouver Island, also perceive earthquakes to be the greatest risk to their community (Schina et al., 2017).

Public Perception Data: Why It’s Important

Data on public perceptions is critical for implementing stable, long term disaster reduction strategies through providing insight to emergency planners on individuals’ capacities and vulnerabilities (Schina, 2017)(Petkova et al., 2016)( Hartog & Harris, 2014). Additionally, it can identify inconsistencies between the perceptions of city officials and residents, with respect to disaster preparation and associated risks (Donahue, Eckel & Wilson, 2013).

The Aging Population

In 2016, 19% of Vancouver residents were over the age of 65, while 3% were over 85 (Statistics Canada, 2017a). Between 2011 and 2016, the number of Canadians over 85 years of age increased by 19.4% , nearly four times the growth rate of the entire Canadian population (Statistics Canada, 2017a). This trend is likely to continue in the coming decades as average life expectancy is increasing; the large baby boomer cohorts will begin to reach the age of 85 starting in 2031 (Statistics Canada, 2017a). This is significant, as data from catastrophic events around the world show that seniors are subject to disproportionate levels of suffering during times of crisis (Hartog & Harris, 2014). When Hurricane Katrina hit New Orleans in 2005, 75% of casualties were above the age of 60, despite this demographic only representing 16% of the city’s population (Hartog & Harris, 2014)(Wilson, 2006). Regardless of this evidence, an estimated 1 percent of disaster risk reduction studies have been targeted towards older people, representing a large gap in disaster risk management literature (Harris & Mihnovits, 2015). An aging population, coupled to increasing occurrence of extreme climatic events, will contribute to greater senior risk during times of crisis (Harris & Mihnovits, 2015). Therefore, improving seniors’ resilience through identifying elderly people's existing assets, vulnerabilities and capacities needs to be at the forefront of disaster risk reduction planning.

Our study aims to provide a space for seniors to communicate their strengths and vulnerabilities during times of disaster, in the context of food system resilience. A survey tool was designed to evaluate seniors’ resilience based on three criteria: 1) communication preferences for receiving disaster related information; 2) how and where residents are currently accessing food; and 3) how prepared seniors perceive themselves to be for recovering after an earthquake. Indicators for each criterion were identified through reviewing the literature; the indicators were used to format the survey questions. A pilot survey was conducted with a group of six senior volunteers at a local community centre; revisions were made based on group feedback. The survey was designed in the hope that it be implemented among a larger population of Vancouver seniors in the future.

**Methods**

Survey Design

A literature review was conducted on eight research papers, government documents and reports. Literature was selected based on the following themes: general resilience, food system resilience, assessments of public perceptions on disaster risk and effects of disaster on senior citizens. Based on the literature, the following criteria for evaluating resilience emerged: communication preferences, food access, and ease of recovery. Survey questions were designed based on these three criteria. A summary of the indicators used to assess each criterion is included in Table 1. The final draft of the survey tool constituted 14 questions and is provided under Supplementary Materials .

Focus Group and Survey Pilot

Focus group participants were recruited through a senior community center. The center coordinator reached out initially to participants asking them to participate. Participants eligible for inclusion were men and women age 65 and older that were residents of Vancouver and English speakers. The final group of participants (n = 6) were all women, and one participant dropped out of the study before completion due to a prior commitment.

 Signed written consent was obtained prior to participation in the study. A printed copy of the survey was distributed; 10-15 minutes was allowed for individual reading. Facilitators conducted a question-by-question discussion asking participants the following: “What did you think of this question?”, “Was anything about this question unclear?”, “Is there an answer you feel should be represented but is not there?”. The group discussion was recorded and verbal comments were transcribed. Finally, results from the focus group were used to revise the survey.

**Results**

Participants at the 411 Seniors’ Centre were responsive to survey questions and eager to engage in lively discussion. Many participants were open about their opinions of the survey and were knowledgeable of current events, making references to the 2017 Hurricanes in Puerto Rico. After participants read the survey individually, following comments found that the questions were clear and easy to understand.Participants provided suggestions to clarify the survey, such as providing examples of *disaster* types*,* defining *community* and rephrasing *government recommendations*. Participants suggested inclusion of *bicycle* as an answer option in question A-2 and *pets* in question C-4. Changes to the order of the questions B-1 and B-2 was recommended because participants felt that the content of B-2 was helpful in understanding B-1.

All participants gave their thoughts on the current state of Vancouver’s disaster strategy and voiced their concerns about the uncertainty they feel, caused partially by lack of information provided by city officials. As a consequence, all participants were in favour of more institutional support in the event of a disaster in Vancouver.

**Table 1** Food System Resilience Criteria and Indicators

|  |  |  |
| --- | --- | --- |
|  | **Criteria**  | **Indicators**  |
| **Resilience:** A food system perspective in resilience planning will prioritize the right strategies to ensure that the food system returns to normal as quickly as possible (Zeuli, 2017).  | 1. Communication preferences
 | * Prefered communication methods
* Past communication methods
* Do they feel informed
* Relevance of gvt recommendations
 |
|  | 1. Food access
 | * Physical disability
* How and where they currently get food
 |
|  | 1. Ease of Recovery
 | * Financial stability
* Disaster insurance
* Social support
* Emergency plan
* Personal concerns
 |

**Discussion**

What It All Means

The focus group with Vancouver seniors provided critical feedback on the efficacy of the questionnaire. In conjunction, it increased understanding of the current assets and preparation strategies possessed and deployed by this often vulnerable population (City of Vancouver, 2017c). Consultation with this community of Vancouver residents is a small, yet important step in initiating a dialogue between vulnerable populations in Vancouver and city planners. To build food resilience, issues of food justice must be addressed. This means, “ensuring that food system benefits and burdens are shared fairly; ensuring equal opportunities to participate in food system governance and decision-making; and ensuring that diverse perspectives and ways of knowing about the food system are recognised and respected” (Gibb and Wittman, 2013). The literature suggests that seniors are bearing a higher fraction of disaster costs than the rest of the population and are not given equal opportunity to participate in resilience planning (Hartog and Harris, 2014). It is important that seniors are included as they have a unique set of vulnerabilities, but also assets of which their communities can benefit in times of disaster (Hartog and Harris, 2014).

Study Limitations

All participants in the focus group were female, English speakers, active members in the community and did not suffer from any clear disabilities. This lack of diversity limits our study, as the views of the group may not be an accurate representation of the senior population in Vancouver. Our results would have been strengthened if multiple focus groups were held across Vancouver neighborhoods, gaining the views of a larger more diverse sample representing a range of ethnicities, income and health status.

**Conclusion**

What To Do Next

The enthusiasm witnessed during the focus group demonstrates that Vancouver seniors are eager to share their opinions and insights on food resilience in Vancouver. In the effort to improve Vancouver’s food strategy, our CBEL project is a step toward including Vancouver’s vulnerable populations in this process. Future steps include deployment of the survey tool among a wider cross section of Vancouver seniors to gain a better understanding of not only their prior preparation for a disaster, but also an inventory of the assets the senior community has to offer. Given that in 2016, 19% of Vancouver’s residents were age 65+, it is crucial that the city include the senior community’s perspective in disaster planning.

**Critical Reflections**

**Student 1:**

At the conclusion of LFS 350, my understanding of food justice has changed in a significant way. Prior to this course, I would not have been able to clearly define what food justice means. I can now confidently say that I have a good working understanding of the principles of food justice and how they can be used as a lens to view everything else in the food system. This lens has caused me to always remember to ask the questions like, “Who does this benefit?”, “Who has a voice in this decision?” and “Why are we doing this?”. I’ll carry these underlying questions with me always and will use them to shape my understanding in not only the food system, but in other domains, too. I want to live in a food system that is always striving for justice in how resources are allocated; but the course has allowed me recognize that the actualization of justice will only occur if current inequities are brought to the surface and actively engaged. This makes the solutions to food systems problems much messier with additional layers of complexity. But I see now how a failure to implement a food justice framework in food system solutions can cause harm to subgroups in our communities.

**Student 2:**

At the beginning of this semester, we were presented with the concept *food justice* and were expected to apply a *food justice lens* to our thought process while working on our community project. Initially, I found the idea and its definition very confusing as it was extremely vague and very open-ended. Due to this, it was difficult to apply this way of thinking to my project. Additionally, we were taught to consider different aspects of food justice in our lecture material, namely: gender, race, and class; none of which related to the demographic this project studied. However, upon further reflection, I have come to realize that there are more than the three aforementioned sides to food justice and that, although we did not cover them in lecture, they are still very relevant in the goal of achieve food justice for all. In this project, I had the privilege of meeting with a group of senior citizens, who happened to be women, and spoke with them about their opinions on the resiliency of Vancouver’s food system. Through these discussions I learned that these women felt like they were unprepared for a disaster; something they felt, should have been pushed by the government. In a way, this is an injustice. An injustice that is probably felt by many of the elderly who live in the city.

**Student 3:**

Through the majority of the term, I had a really difficult time relating food justice with food system resilience. It was like the childhood game, where shaped objects fit into spaces, and I was set on placing the sphere into the cubic slot. I wrote out each definition, thought about their meanings, and relentlessly tried to relate the two. Ultimately it wasn’t through my own insight, but rather through conversation with a fellow group member, that it finally come through to me that the reason the topic is significant is because the two aren’t the least bit synonymous. Both are hot topics in current literature, but few research initiatives look at an issue through the lense of both. The enlightening question posed by my friend was: “For a food system to be resilient, does it have to be just?”; I realized with dismay that the answer completely depends on the context of “resilience for whom”. I left that conversation feeling less than optimistic about our current food system, and have come to the conclusion that resilience planning is about ensuring that our system in the future will be able to rebound from disturbance, while food justice highlights inequalities and injustices of our past and present day food system. While the process was a struggle, I feel I am exiting the course with a better understanding of both food justice and food systems resilience, along with a better ability to critically analyze the complex issues within our food system.

**Student 4:**

Recalling the beginning of the semester, I struggled the first quiz. I was confused between all the different terminology, such as food justice, food resilient, food security, and so on. Thought the experience of writing academic and experiential review paper and thirteen weeks of community based project. I finally found the distinguish and interconnection between those concepts. According to my AER paper which discuss the food resilience regarding to climate change, it comes to the question of food justice. Apparently, the answer of is everyone facing the same impact from environmental, socio- economic change is no. Vulnerable groups, such as disabilities, children, women, and residence in rural areas, are the ones with less capability of handling the environmental and socio-economic change, but dealing with the most tremendous life changing. Here, it comes to not only their resilience, but also the injustice that the less powerful people are coping with the most difficult issue. Drawing on our community project, public perspective of food resilience, we focus on the seniors as knowing they are one of the vulnerable group when a disaster hits. Based in their response, we can see the existing inequity. By digitalized public strategies and information, the elderly and people in low financial status have limited access to those information which supposed to be accessed to all. Therefore, to achieve food resilience for all population, food injustice has to be tackled first.

**Student 5:**

Beginning this project I had a general idea of the concepts of food resilience and food justice, but I was unsure about how to tackle the embedded issues. I now understand how the two topics are intertwined and that the internal issues cannot be addressed without giving a voice to the vulnerable populations who are the most affected. I’ve come to realize that reaching the most vulnerable and building relationships in which an open and meaningful dialogue can occur takes time and resources. Yet without this piece of the puzzle, effective progress cannot be made.

**Student 6:**

The community-based project I engaged in this term drew connections to the already multi-dimensional term of food justice in a convoluted manner. In our particular situation, the process of determining the purpose, scope and relevance of our topic was challenging, especially given the minimal input from the city of Vancouver. With that in mind, it seemed as though the majority of this term was spent determining a feasible project that aligned with City of Vancouver interests as well as term deadlines, and very little attention was given to the relevancy or connectedness of this project to course objectives. The concept of food justice was not clearly defined during this term so this made it extremely taxing to draw any connections to our community based project. In my opinion, our particular community-based project was a distraction as it diverged from course themes and discussions greatly. As interesting as I found the issues we discussed in class, this project consumed so much time just through it’s logistics that digging deeper into the meaning of our research and our findings was a secondary goal. Upon the completion of this term, I find myself frustrated that lecture topics were interesting but we barely skimmed the surface of these complex issues. I do think that the community based project could be a useful experience perhaps for those who were working with a different partner, but our project in particular did not serve to assist in creating a holistic understanding of food justice.

**Supplementary Materials**

**Survey Tool**

**Public Perceptions on Disaster Risk in Vancouver, BC**

1. **Food access**

**1. Do you agree with the following statement? I have physical disabilities that inhibits my ability to access food. (eg. vision, mobility, chronic disease)**

* Yes
* No

**2. Where do you currently access the majority of your food supply? Please check all that apply.**

* Grocery store
* Food delivery service
* Food is prepared for me in my living facility
* Dine out
* Food prepared by family / friends
* Community kitchen
* Food bank
* Other

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**3. How do you currently access the majority of your food?**

* Public transit
* Walk
* Driving
* Bicycle
* A friend or family member
* Delivery Service
* Other
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1. **Communication preferences**
2. **In the past, where have you received information regarding natural disaster risks? Please check all that apply.**
* Seminars / workshops
* Print media
* Radio
* Television
* Social Media (Facebook, Twitter, etc. )
* Government / emergency websites
* Friends or family
* Other
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. **What is your current preferred source of receiving information regarding natural disaster risks ? Please check all that apply.**
* Seminars / workshops
* Print media
* Radio
* Television
* Social Media (Facebook, Twitter, etc. )
* Government / emergency websites
* Friends or family
* Other
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3. Do you feel informed on what to do to prepare for a natural disaster?**

* Yes
* No

**4 a. Do you have a disaster preparation strategy?**

* Yes
* No

**4 b. If you responded “yes” to the above question:**

**On a scale of 1 - 5 (where 1 means no influence, and 5 means strong influence), To what extent does government information influence your disaster preparation strategy?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Recovering after a disaster**

**1 a. If you were unable to get groceries, how many days would your emergency food supply at home last?**

* 0 days
* 1-3 days
* 4-7 days
* 8-14 days
* More than 14 days

 **1 b. If you did not have electricity, how many days would your emergency food supply at home last?**

* 0 days
* 1-3 days
* 4-7 days
* 8-14 days
* More than 14 days

**2. What does your emergency plan include? Please check all that apply.**

* Evacuation routes from your home
* A meeting place for family and/or friends
* A family contact person that lives out of the city
* An emergency kit
* At least 3 days of food and drinking water
* Copies of information about prescriptions, medical equipment, and other health needs
* Purchased disaster insurance
* None of the above
* Other
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. On a scale of 1 - 5, (1 meaning strongly disagree, 5 meaning strongly agree) Do you agree with the following statement: I am confident in preparing food without access to electricity.**

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**4. Who do you live with?**

* Spouse / Partner
* Friend
* Family
* Live in caregiver
* Pet
* Other

**5. Rank the following in order of your concern during a disaster:**

Accessing food and/or medication

Safe drinking water

Limited mobility

Uniting with friends, family, or community

**6. If you were able to, would you be willing to volunteer or help out in your community after a disaster?**

* Yes
* No

**7. Have you ever experienced a disaster (E. g. Earthquake, flood, hurricane, fire) before?**

* Yes
* No

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