

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program  
Student Research Report

**UBC Food Security: Interventions & Evaluation Scan**

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**FNH 473**

**Themes: Food, Climate, Procurement**

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## Executive Summary

Food insecurity is a major public health concern affecting 821 million people globally (FAO, 2018). However, only recently have university students been gaining more attention as a population that is vulnerable to food insecurity. A 2016 survey administered to undergraduate students in the Faculty of Land and Food Systems at the University of British Columbia (UBC) found 45% of the students who completed the survey were food insecure (Rideout et al., 2017). Despite this high number, food insecurity initiatives at UBC are limited. In order for our community partner, Student Housing and Hospitality Services (SHHS), to proceed with discussions on potential larger-scale food insecurity programs to be implemented at UBC, evidence from other universities of similar scale needs to be gathered. Therefore, our overall project goal was to research and evaluate campus-run initiatives aimed at reducing food insecurity at other university campuses to inform UBC's strategic plan on implementing future initiatives.

For our project, we compiled information on 42 food insecurity initiatives at various English speaking universities and framed our findings according to the Socio-Ecological Model (SEM). The compiled information from our environmental scan was one of the main outputs of our project and was used as a tool to communicate our findings to our community partner. We presented our findings and conducted an evaluation with our community partner to determine whether the information was useful and whether it helped to increase their knowledge on the topic. We also evaluated the appropriateness of using the SEM to frame our findings. We transcribed our community partner's responses to the evaluation questions and discussed this information verbally as a group to debrief and identify key lessons learned.

## Introduction

Food insecurity is a major public health concern affecting 821 million people globally (FAO, 2018). However, only recently have university students been gaining more attention as a population that is vulnerable to food insecurity. In Canada, one study found that nearly 2 out of 5 students experienced food insecurity, with 30.7% experiencing moderate food insecurity and 8.3% experiencing severe food insecurity (Silverthorn, 2016). UBC students are not immune to these statistics. In a 2016 UBC survey on undergraduate students from the Faculty of Land and Food Systems (LFS), 45% of the students who responded reported being food insecure (Rideout et al., 2017). Food insecurity among university students can have detrimental impacts such as reduced self-reported health and academic performance, higher prevalence of depression and anxiety, as well as sleep difficulties and headaches (Lee et al., 2018).

With increasing tuition fees, high living expenses, and numerous other financial responsibilities that students face, it is paramount that post-secondary institutions take steps to reduce campus food insecurity. Currently, there are limited food insecurity initiatives at UBC, with the primary resource being a food bank. Our community partner, along with many others, recognize the need to implement additional programs. However, the first step in this process is to gain an understanding of what other programs exist by conducting an environmental scan. This requires considerable time, of which our partner does not have. Therefore, the purpose of this project was to conduct an environmental scan and evaluation of food insecurity initiatives at post-secondary institutions. This will support our community partner in the decision-making regarding the implementation of food insecurity initiatives at UBC.

## **Situational Assessment and Planning Framework**

Our situational assessment included a review of food insecurity initiatives in the literature and at universities within and outside of Canada. We also conducted discussions with our other community partner, SEEDS, and the teaching team to guide our research. Though limited data, UBC's food security prevalence aligns with research conducted at other institutions that indicate levels of food insecurity is between 35-45% (Bruening, Argo, Payne-Sturges, & Laska, 2017). Using this information, collaboration between our community partner and teaching team, we decided what is the best approach to execute this project in order to obtain relevant, accurate, and specific information on university food security programs. In addition to conducting research, we created a spreadsheet with different university food security programs, allowing us to analyze and gain a deeper understanding of existing initiatives (see Appendix C).

### **Problems**

The food security problems UBC students face is based on how accessibility, affordability, and availability factors directly influence the daily decisions students make about food consumption. However, the problem this project highlights is the lack of innovative initiatives at UBC that address food insecurity. Currently, the main resources available are the AMS Food Bank, Sprouts, and Agora Cafe, which all fall in the common categories of food banks and community kitchens. At UBC, accessibility refers to the food or grocery options that are accessible on or near the campus. The affordability of food on or near campus can also impact students' accessibility to food. Availability refers to whether healthy, culturally-appropriate, and dietary-restriction appropriate food options are available. These three factors come together to

influence food consumption which impacts student life. In the long run, this may also affect a student's physical health, mental health, and academic performance (Lee et al., 2018). The focus of this project will be on the limited food insecurity initiatives on campus to alleviate issues with accessibility, affordability, and availability, and this project will explore which program type will be most suitable and beneficial for UBC.

## **Behaviours**

The aim of our project is to investigate what other universities' interventions look like and the various food-related behaviours that their programs are targeting. Food insecurity interventions target food-related behaviours which may include behaviours such as compromises on nutritional intake (Entz, Slater, & Desmarais, 2017) and the lack of food literacy (Sustain Ontario, 2013). These food-related behaviours contribute towards the food insecurity problems experienced by students but these behaviours are not exclusive to post-secondary students. On the other hand, student specific food-related behaviours may include the preference for convenience and unfamiliarity with the post-secondary environment after transitioning from high school. Ultimately, these food-related behaviours contribute towards the accessibility, affordability, and availability problems of food insecurity. Food-related behaviours are relevant to our project because food insecurity interventions and programs target different food-related behaviours of students. Through our investigation and compilation of other universities' food security interventions, we aim to link their intervention strategies with specific food-related behaviours.

To overcome our community partner's knowledge gap regarding on-campus food insecurity initiatives, our team conducted a comprehensive environmental scan and evaluation.

By performing this environmental scan, we compiled information on interventions and initiatives at other universities that could lead to potential program ideas that could be implemented at UBC in the future.

### **Mediating & Moderating Factors**

Through discussions with our community partner and group, we concluded that there are multiple mediating factors at the individual, interpersonal, organizational, community and public policy level regarding the lack of food security programs at UBC. At the individual level there is food knowledge, food values, perceptions of food security programs, and other commitments that impact a student's ability to participate in any food security programs. In relation to our community partner, their open attitude to helping students and knowledge of the UBC campus results in the creation of this project to support their research. At the interpersonal level, a student's living arrangements, social support network and social influence from peers can impact a student's choice to participate in food security programs. At the organizational level, the university's availability of foods, food costs, low-cost food options, and on-campus support impact food availability and accessibility for students. For our community partner, the support from faculty, upper-level management, and other units such as SEEDS on campus has provided an opportunity to gather information to inform future food security programs at UBC. At the community level, there is a lack of food security programs within Canadian universities resulting in us researching those outside of Canada. This can contribute to less generalizable interventions that UBC may adopt and lack of best practices within the Canadian context. At the public policy level, there is a lack of an overall food security policy for university students. Additionally, there is a lack of programs beyond food banks with unclear

evaluation measures (Maynard, 2016). This can make our research difficult and implementations of food security programs from our community partner lengthy as more protocols and processes must occur before a program may be approved. Some moderating factors that impact our community partner's increase in knowledge is the change in work positions and potential lack of time and resources to dedicate to this project. Overall, there are intersecting factors at multiple levels that will impact the success of the project outcomes to eradicating food insecurity at UBC.

Our community partner has multiple strengths that will increase the success of our project and beyond. UBC is increasingly interested in food insecurity experienced by UBC students so there is support from upper-level administration and collaboration between staff, faculty, and students to solve this problem. Our community partner's support, positive attitude, and strong belief towards using our project to inform decision-making for food security programs at UBC increase the likelihood of program implementation in the future.

### **Health Behaviour Theory**

Our mediating and moderating factors originated from our use of the SEM and they include the intrapersonal (ie. individual), interpersonal, institutional (ie. organizational), community, and public policy levels (U.S. Department of Health & Human Services, 2005). We chose the SEM for the level of complexity it encompasses. This model also acknowledges the connections of influence between the individual and others underscoring the complex interactions between gathering information, translation of knowledge to our community partner and its feasibility in the UBC context. A systematic review concluded that within the SEM, post-secondary institution food insecurity interventions mainly focused on the



interpersonal (e.g. education, food donations among students, staff and faculty) and organizational levels (e.g. food pantries) but found recent interventions at all levels in the grey literature (Bruening et al., 2017). The authors also emphasized the need for more research on the effectiveness of food security programs long-term for post-secondary students (Bruening et al., 2017). By analyzing our intervention scan, we hope to discover what level programs address food insecurity and evaluate each program's effectiveness.

### **Limitations of Situational Assessment**

As institutions have more recently come to address food insecurity directly, there is limited literature on outcomes or impacts of interventions addressing the issue. Additionally, there is literature regarding the prevalence of food insecurity in post-secondary institutions, yet a lack of literature evaluating the effectiveness of interventions addressing this issue. There is also a lack of information regarding any previous interventions proposed by UBC, so our evaluation scan will pave the way to inform future food insecurity programs at UBC. Our community partner's knowledge extends from their work at SHHS and analysis of the Undergraduate Experience Survey (UES) that has a few food-related questions (e.g. cost & food insecurity). Thus, our situational assessment is limited to our community partner's knowledge, guidance from SEEDS, and discussion with the FNH 473 teaching team.

## **Project Goals and Objectives**

Our overall project goal was to research and evaluate campus-run initiatives aimed at reducing food insecurity on various university campuses (similar to UBC in size and in amenities) to inform UBC's strategic plan on implementing a program to reduce food insecurity.

### **Short-term Objectives**

- The FNH 473 team will compile information on food insecurity strategies and interventions at other universities and present this information as a verbal presentation and report by April 2019
- Our team will inform Melissa Baker, our on-campus dietitian and Student Housing and Hospitality (SHHS) employee, of programs aimed at reducing food insecurity at other universities around the world by the end of term (April 2019).

### **Mid-term Objectives**

- Inform the Director of SHHS and UBC Alumni Services of programs on other university campuses and start preliminary discussion about possible policies that are feasible for UBC to implement by the end of 2019.
- We will create a resource of program information used to help inform production of a program aimed at reducing student food insecurity at UBC by the end of 2019.

### **Long-term Objectives**

- Our community partner will use our research to reduce overall student food insecurity prevalence at UBC.

## **Description of Project Outputs**

### **Creation of Resources**

Our main project output includes a final report detailing our findings of our landscape analysis that is housed in a spreadsheet. The spreadsheet recorded the university, food security program name, description of the program, program goals, number of students served, program evaluation methods, success of the program and eligibility requirements (see Appendix C). The spreadsheet also incorporated the SEM model by classifying which level each program's implementation would fall under. The analysis of the spreadsheet is described in the report where both will be disseminated to our community partner and through SEEDS.

### **Results**

Through our environmental scan, we found the most common university-based food insecurity initiatives are food banks and their implementation fell into the organizational level of the SEM. We looked at 32 food programs across English speaking universities. Out of the 32 programs, 18 programs are student-run, 3 of the programs are funded by the university, 2 programs are funded by non-profit and 1 program is funded by the government. The remaining programs did not have a specific description of the program lead(s).

We found that most universities in Canada and the United States that were included in the environmental scan offer food bank services to students with financial needs and food security support. Food banks are a short-term and temporary intervention on a student's food insecurity so the focus for our intervention environmental scan was geared away from them. Universities also offered other programs including cooking classes or emergency food skills classes, redistribution of leftover foods, free/low-cost food program and food vouchers.

### ***1. Cooking classes***

One of the food insecurity intervention types included cooking classes or food skills classes that are available two universities in our environmental scan (University of Alberta and Ryerson University). At the University of Alberta, their food bank cooking program is run by student volunteers and aims to provide cooking classes to expand food education as a part of their initiative to reduce food insecurity on their campus. Similarly, the “Eat up, Meet up” program at Ryerson University focuses on reducing the impacts of food insecurity by providing cooking classes to build cooking skills, food knowledge, and introduce recipes. The recipes in these programs are tailored towards managing time-constraints and on-the-go lifestyles of students. The aim of this program is to expand food education and skill building as a part of reducing food insecurity so the students are able to cook with food items from the food bank with different ingredients and recipes. Hence, this program can reduce campus food insecurity in the long run. This program’s implementation lies in the organizational level of the SEM because it works with the community groups and organizations.

### ***2. Redistribution of food***

Another intervention type is the redistribution of leftover foods that is operated in two universities in our environmental scan (Simon Fraser University (SFU) and the University of Victoria). At SFU, the “Food Rescue” program gathers and redistributes imperfect looking produce to the university community. On the other hand, an on-campus general store at the University of Victoria sells leftover soups and pasta at reduced prices. There is also an application that tells the user if there is leftover food after a banquet or event. The overarching goal of these programs is to not only reduce food insecurity on campus but also reduce food

waste and create a dialogue around food systems. Hence, this puts the program's implementation into the organizational level of the SEM.

### ***3. Free/low cost food program***

Some universities have programs that offer free or low cost foods for students. There is a total of six programs in this category, five of which are student-led. For example, the University of Melbourne runs a free breakfast program, and at Ryerson University, their Student Union runs a pay what you can program for soups. In addition, the University of Alberta campus food bank in partnership with a not-for profit organization, runs a WECAN program where the organization purchases bulk orders of meat and produce which their members can pay a small fee to pre-order and purchase (Campus Food Bank, 2018). Most of the programs in this category are run by student organizations and operate as nonprofits. Additionally, all California State Universities have implemented food pantries or food distribution programs for their students to increase food security among their student population (Western Center, 2018). On the whole, the implementation of free or low cost food programs at universities occurs on the organizational level within the SEM.

### ***4. Food Vouchers***

Some universities operate food security initiatives that give students financial support through vouchers, food stamps, or other food subsidies. In California State Universities, the CalFresh initiative provides students with financial needs with an electronic benefits transfer (EBT) card. This EBT card acts like as a debit card as it is reloaded monthly with money and the students can use it to purchase food at participating grocery stores (Uclahci, 2018). The CalFresh program receives government funding and is funded by the United States Department

of Agriculture under the federal Supplemental Nutrition Assistance Program (SNAP). The general implementation of food voucher or food stamp programs acts in the organizational level of the SEM but the scale of CalFresh extends its implementation beyond the organization level. The wide scale of CalFresh across multiple California State Universities, emphasis from the federal SNAP, and its government funding would place its implementation at a public policy level within the SEM.

### **SWOC Analysis**

To analyze the findings from our environmental scan, a Strengths, Weaknesses, Opportunities and Challenges (adapted from SWOT) analysis was performed (see Appendix D).

## Evaluation Plan

Creating an evaluation plan is an essential component of health promotion programs because they allow us to assess the impact of our project and whether our project achieved the desired targeted outcomes (DiClemente et al., 2013). As identified above in our objectives, our short term objectives include collecting and presenting information to our community partner and our mid-term objectives include using this information to start preliminary discussions about possible programs that could be implemented at UBC. Our evaluation will assess these objectives.

According to DiClemente et al. (2013), there are two methods for evaluating programs. One is to conduct a formative evaluation, which occurs before the program begins or while in progress, and the other is a summative evaluation, which occurs after the program ends (DiClemente et al., 2013). We conducted our evaluation after completing our environmental scan and after presenting our findings to our community partner thus, we conducted a summative evaluation. We assessed the process, impact and outcomes of our environmental scan. The process evaluation examined the inputs to conducting our environmental scan including the amount of time and resources we put in as a group. The impact was assessed by debriefing our findings to our community partner and evaluating whether it increased their knowledge. The impact evaluation was conducted after presenting the information to our community partner in the form of verbal questions at the end of our presentation. We recorded the responses on a computer and discussed this information afterwards as a group. Since the project was restricted to the length of the semester, we will not be present to assess any changes in future health outcomes that come from the research we conducted. However, we

assessed whether our community partner believes they now have enough information to begin preliminary discussions for future programs at UBC.

The following questions helped guide our process evaluation. We answered question 1 as a group after completing our environmental scan and questions 2-5 were for our community partner after presenting our findings.

- 1) Did we invest the appropriate amount of time and resources to compile a comprehensive report for our community partner?
- 2) Did we present the findings in a way that increased the knowledge of our community partner and was easy to understand?
- 3) Was this information valuable to our community partner?
- 4) Did our findings inform our community partner of information on food insecurity programs at other post-secondary institutions that could be used for future UBC food insecurity initiatives?
- 5) Does our community partner have enough information to move forward with discussions with the director of SHHS on food insecurity initiatives at UBC?

To evaluate the appropriateness of using the SEM to frame the findings of our environmental scan, we also asked the following additional question to our community partner:

- 1) Was the social-ecological model appropriate and useful for organizing the programs?

As identified by DiClemente and colleagues, “evaluation is theory driven” (DiClemente et al., 2013, p. 284) and thus it was important for us to include an evaluation of the usefulness of our chosen theory.



## Conclusion

Recently, more focus is put on university students as a population vulnerable to food insecurity. However, the UBC Vancouver campus still lacks significant food security initiatives that support students. This project used the SEM to frame and organize the information found on 42 food security programs at various English-speaking universities. Out of the 42 programs we examined, half are student-run while 15 programs have unknown program leads. This demonstrates the strong student interest for initiatives that address food insecurity. Since food banks are a common food security intervention across many universities, our focus was on other intervention strategies. The four types of interventions we found were cooking classes, redistribution of food, free or low cost food programs, and food vouchers. For our mid-term objectives, we have the opportunity to attend and present our project findings at a Food Insecurity dialogue session hosted by UBC Wellbeing, where other similar projects and key stakeholders will be present. This is an opportunity for students and decision-makers to exchange research findings, collaborate, and start the discussion about potential interventions that UBC can implement. We also recommend future students to use a different health behaviour model within the SEM levels to analyze the efficacy of food security initiatives. Through this project, we learned how to be receptive to the needs of our community partner and be flexible during the change in our community partner. We also learned how to capitalize on each team member's strengths and delegate tasks accordingly to ensure timely completion of this project.

## Author's Contribution

**Megan Clarke:** Contributed to the conducting of the literature search, contributed to the environmental scan of food insecurity programs for our community partner, drafted and completed project goals and helped draft the evaluation plan components of the paper, created the logic model and newsletter, and contributed to overall editing and revising of the paper.

**Mimi Kao:** Contributed to the initial literature search, contributed to the environmental scan of food security initiatives at different universities, drafted and completed the problems section and conclusion, contributed to overall editing of report

**Kathy Ma:** Conducted literature search; participated in environmental scan; drafted and revised health behaviour theory, introduction to section 3 and mediating/moderating factors section; drafted resource creation section in description of project outputs; edited entire paper; worked on SWOC analysis; input sections into powerpoint health behaviour theory

**Levania Zefanya:** Contributed to the literature search, contributed to the environmental scan of food insecurity programs, drafted and completed the introduction and description of project output component of the paper, contributed to overall editing and revising of the paper

**Alison Quinlan:** Contributed to the conducting of the literature search, contributed to the environmental scan of food insecurity programs for our community partner, drafted and revised the introduction, executive summary and evaluation plan components of the paper and contributed to overall paper reading, editing and revising.

**Ian Tang:** Contributed to literature search, contributed to the environmental scan of food insecurity programs for our community partner, contributed to problems section, drafted and completed behaviours, drafted and completed description of projects outputs, drafted an completed SWOC analysis, editing and revising of the paper.

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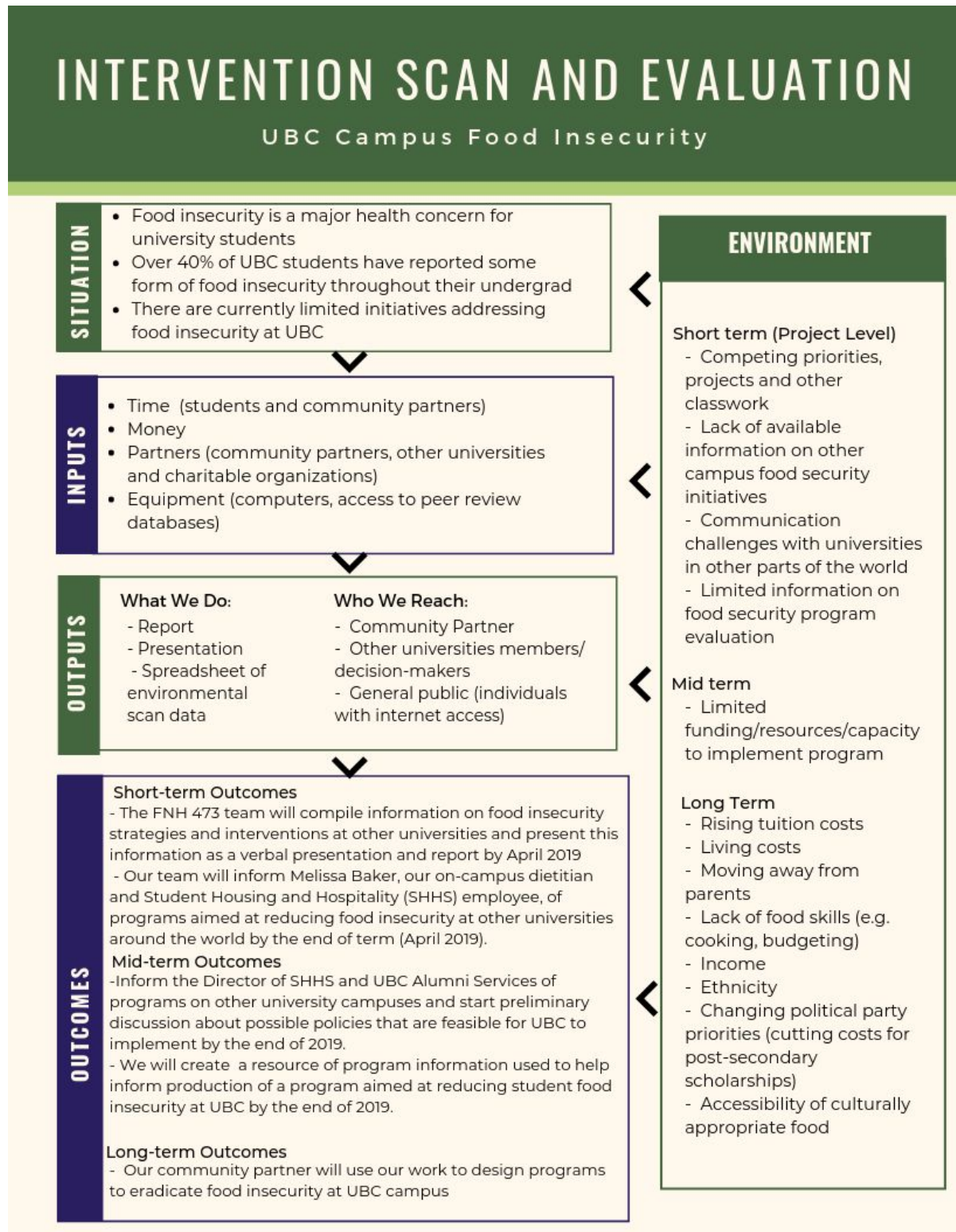
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# Appendix A

## Logic Model



## Appendix B

### Newsletter Report

APRIL 8TH, 2019

# UBC FOOD INSECURITY: INTERVENTION SCAN AND EVALUATION

*FNH 473, Public Health Nutrition*

## Our project

During the process of this project, our group investigated the various initiatives on university campuses that aimed to address food insecurity within the student population. We created an excel sheet filled with information on all the programs we found, and synthesized that data within our report. The findings were eventually communicated to UBC Student Housing and Hospitality Services.

## What we learned

We learned about our individual strengths, and how they could all be used to build an efficient and effective team. We also learned the importance of early communication and of not being afraid to ask clarifying questions. We were surprised to learn about the high prevalence of university food insecurity; a topic that we had not talked about in previous classes. In addition, the current lack of university-run initiatives that address student food insecurity all over the world was something we were unaware of before starting the project.

## "Doing" community health nutrition

Through this project we came to understand the importance of research and knowing the other programs that exist to better inform program planning. Though very few evaluations of previously run programs exist, reaching out to various universities and community-level organizations about their initiatives was a new experience that we appreciated. It was also an interesting dynamic to have two stakeholders and community partners; we found it streamlined communication and allowed for better flow of the project.



*(Scholars Catering, UBC, 2016)*

## THANK YOU TO

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*Sally Lin - SEEDS UBC*

*Natasha Moore - UBC Wellbeing*

*Melissa Baker - UBC SHHS*

*Gail Hammond - Instructor, FNH 473*

*Shannon Steele - TA, FNH 473*

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## Appendix C

### Link & Screenshot of Spreadsheet

<https://docs.google.com/spreadsheets/d/1yIm7gLfWvcZAanlpx-9mu6ti9BLW6tHZNtLPnBwYP8/edit?usp=sharing>

University	Country of University	Volunteer or University Lead?	How many food outlets do they have?	Program Name	Contracted or Self-Operated?	Program Description	Program Goals? (social connection? reduce food insecurity? feed certain number people?)	Socio-ecological level	How many students are served?	How many staff/faculty are served?	Program Evaluation?	Success of the program?	Eligibility requirements
University of Toronto	Canada	N/A		N/A	N/A	Tax-free meals mean no program available due to Canadian tax laws							
University of Toronto	Canada	University (Student Society)		Food Bank	Self-Operated by the Student Union	Food bank service offered to students with financial needs ran entirely by student volunteers; 3 in total, 1 for each campus	Reduce Food Insecurity of students on campus	Organizational					
Queens	Canada	Volunteer		Food Bank		AMS-run food bank on campus		Organizational					
Guelph	Canada	Volunteer		Meal Exchange		Skip a meal campaign (Meal Exchange)		Organizational					
UVic	Canada	University student society lead (UVSS)	12	Food bank/food store	Self-operated run	Students can drop in anytime during posted hours on campus. They do not need proof of financial need. Everything is confidential. There is a limit to each item but they are allowed to take what they need (i.e. limit 3 cans of beans per person)	To supplement basic food and supplies and to reduce stigma around food banks	Organizational	Over 100 students come through the store each week	Students only	No	N/A	
UVic	Canada	UVSS	12	Leftover soup and pasta sold in General Store	Self-operated	Leftover soup and pasta is sold for a reduced rate at the General Store. Also, any food items that don't get sold in the General Store an expire soon will be donated to the UVSS Food Bank (sandwiches, salads)	Note: They are in preliminary discussions to start a program such as Swipe It Forward	Organizational			No		
U of A	Canada	Sponsor lead?? U of A student society, U of A alumni, Student Union and undergraduate students	26	Campus Food Bank	Self-operated with volunteers	Distributes emergency food hampers for free to students, faculty and alumni in need. Must register in person first before access to hamper services. Need to provide information on income, demographics and dietary needs. Food hampers are based on Canada's Food Guide	*fun fact - U of A had the first university food bank to open in Canada	Organizational	May 1993 to April 1994: 289 hampers that fed 679 people. May 2005 to April 2006: 555 hampers that fed 1,030 adults and 447 children. Numbers have continued to increase			Must register in person first before access to hamper services. Need to provide information on income, demographics and dietary needs	
U of A	Canada	Non profit organization WE CAN Food Banket Society	28	Campus Food Bank WE CAN program	Non-profit organization	Members pay a small fee and receive a monthly meal and produce order (membership is \$0 per year, and meat order is \$15 per month, or produce order is \$10 per month)	To expand the campus food bank's programs to combat food insecurity	Organizational					
U of A	Canada	Sponsor lead?? U of A student society, U of A alumni, Student Union and undergraduate students	26	Food Bank Cooking Classes	Self-operated with volunteers	Cooking classes once monthly put on by volunteers.	Expanding food education, part of reducing food insecurity initiative	Organizational					
U of A	Canada		28	Grocery Bus Program	Self-operated	A shuttle bus picks students up on campus on Sundays and drives them to the Superstore.	To expand the campus food bank's programs to combat food insecurity	Organizational					
U of C	Canada	Student Union volunteers services	35	Student's Union Food Bank	Self-operated	Provides emergency relief food services through hampers. To be a client you have to be a member of campus community (students, staff, faculty and alumni up to 2 years graduation). Required to have valid campus ID and a pay stub. Also provide a cookbook that can be made using only ingredients provided in the food hamper		Organizational					To be a client you have to be a member of campus community (students, staff, faculty and alumni up to 2 years graduation). Required to have valid campus ID and a pay stub
U of C	Canada	Student Union volunteer services	35	Breakfast Program		Provides free breakfast to students in need twice a week		Organizational					

## Appendix D

### SWOC Analysis

A Strengths, Weaknesses, Opportunities and Challenges (adapted from SWOT) analysis was performed to analyze findings from our environmental scan.

#### **1. Strengths**

The strength of this environmental scan is that it covered multiple universities of various sizes and compositions across different English-speaking countries. Through this mixture of Canadian and international perspectives, we collected information from a variety of universities with different settings and social context. We found that a majority of the programs that we encountered were lead by students, thus showing the increasing student interest and student-led discussions in the areas of food insecurity within their university communities. In other words, food insecurity is shown to be a current and emerging field with growing interest among students at different universities.

#### **2. Weaknesses**

Due to the nature of how initiatives are implemented in the university setting, most of the interventions found from the scan ended up being at the organizational level of the SEM. From this limitation, we were unable to explore program implementation at a variety of levels within the SEM. Additionally, many universities are still in the early stages of program implementation so not all universities had well-established institution-wide goals and objectives to address campus food insecurity. As a result, many initiatives were operated by student organizations and volunteers where limited resources and funding for programs can impact longevity and efficacy. In addition, many of the existing initiatives lacked monitoring and

evaluation for their programs along with eligibility requirements, which made it difficult for our environmental scan to analyze the success of the programs.

### ***3. Opportunities for UBC***

From our environmental scan, UBC can look into implementing the innovative ideas that were found in other universities. Specifically, gaining insight into potential program ideas, eligibility criterias, and partnership opportunities. An example of an innovative idea that UBC can potentially incorporate is developing a mobile app to alert users about banquets or events on-campus that have leftover food. UBC can also look towards universities that have established partnerships with neighbouring grocery stores to develop new food security initiatives for students. Lastly, some of the programs, such as CalFresh, are government funded underscoring the potential for UBC to explore funding opportunities from the federal or provincial governments to support food security initiatives.

### ***4. Challenges***

The challenges with our environmental scan is that food security initiatives within a university context is a relatively new topic of research, so there is a lack of literature on specific interventions that have been previously conducted. The lack of literature makes it difficult to refer to what kind of theoretical model previous studies have used and what kind of outcomes were yielded from these studies. In addition, the data collection for our environmental scan was dependent on and limited by the responses from the universities and student organizations that we contacted. For example, it was difficult to obtain information on program success rate, evaluation data, and eligibility requirements for majority of the initiatives that we researched. This ultimately makes it difficult for UBC discern which type of intervention initiative to adopt.