

University of British Columbia

Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Supporting the Climate-Friendly Food System (CFFS) Toolkit Framing

Prepared by: Lucy Bergeron, Diana Lee, Reese Lin, Lindsey Nguyen, and Devika Pillai

Prepared for: UBC SEEDS

Course Code: FNH 473

University of British Columbia

Date: April 3, 2023

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Executive Summary

As identified by the Climate Action Plan (CAP) 2030 published by the University of British Columbia (UBC), there is a need to develop Climate-Friendly Food Systems (CFFSs) on campus to reduce campus greenhouse gas (GHG) emissions (University of British Columbia, 2021). The UBC Social Ecological Economic Development Studies (UBC SEEDS) is developing a toolkit that can enhance awareness and drive action toward CFFSs among the UBC community. Factors influencing food choices at UBC should be taken into account by the CFFS Toolkit to maximize its impact. The main barrier to sustainable choices that will be addressed by the Toolkit is the lack of knowledge preventing people from making informed choices. However, many students have priorities besides sustainability when obtaining food that needs to be reconciled by the Toolkit (Chiam et al., 2021). Luckily, there are also many strengths at UBC that support sustainable food choices that can be highlighted by the Toolkit, including food asset maps, student initiatives, and sustainable food markets.

The overall goal of the current project is to support UBC SEEDS in the development of the CFFS Toolkit. The outputs of our group include the feedback from group members regarding the CFFS Student Survey and the CFFS Toolkit contents, as well as a final guidance document identifying effective communication methods and barriers of sustainable food choices to the UBC students. The outputs focus on maximizing the effectiveness of the CFFS Toolkit, based on the chosen theory framework, the Diffusion of Innovation Theory. Our outputs directly target the UBC SEEDS team to advance further the indirect output, the CFFS Toolkit, of which the UBC community is the target audience.

To evaluate the completion of our guidance document, we compared it to other sustainability guidelines already written for the UBC community. We also will meet with SEEDS to discuss if our deliverable met their expectations and if it was easy to implement and understand. Once the Toolkit is published, a comparison of the finished product to our guidance document will reveal the degree to which our recommendations are reflected in the Toolkit. Namely, if the identified barriers to sustainable eating are addressed by the Toolkit and if it uses the recommended language and messaging styles.

Introduction

The Climate Action Plan (CAP) 2030 is a collection of strategies and actions published by the University of British Columbia (UBC) to reach net zero greenhouse gas (GHG) emissions by the year 2050 (University of British Columbia, 2021). Currently, food systems are the second-highest contributor to GHG emissions at UBC of the activities that are influenced, but not fully controlled, by the university (University of British Columbia, 2021). Beyond UBC, global food systems are responsible for approximately 21-37% of all GHG emissions through the raising of crops and livestock, the global supply chain, and more (Mbow et al., 2019).

As part of CAP 2030, UBC has committed to transforming food systems on campus into climate-friendly food systems (CFFS). This commitment has manifested as a number of institution-level changes, such as increasing research on sustainable food systems and climate-friendly food procurement strategies (UBC Sustainability, n.d.-b). Furthermore, one of the short-term objectives of CAP 2030 is to develop a toolkit containing resources and knowledge to make more sustainable dietary choices in order to involve individuals toward achieving CFFSs on campus (University of British Columbia, 2021). The team that is responsible for the development of the CFFS Toolkit is UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program. Much work has already been done for the planning, research, and content development of the Toolkit, but UBC SEEDS has requested assistance in identifying barriers that students may face in making sustainable dietary choices and other areas of consideration when it comes to the language and messaging of the Toolkit.

The primary audience of this project is the staff and students of UBC SEEDS. Other stakeholders of this project include the diverse individuals at UBC, the intended audience of the final Toolkit, as well as policymakers at UBC. The impetus of this project is to enhance campus awareness and knowledge about CFFSs by showcasing the work that has been done so far on campus, as well as to motivate action towards a more sustainable food system at UBC.

Situational Assessment and Planning Framework

Strengths and Problems

The carbon footprint of food system

On a global scale, the food system accounts for 21-50% of GHG emissions (University of British Columbia, 2021). GHG stimulates many severe climate-related natural disasters, such as heat, floods, and drought (Cassia, 2018). The food system in UBC contributes over 29,000tCO_{2e} (tonnes of carbon dioxide equivalent) per year, just below the GHG emissions of commuting (UBC, 2021). The topic of environmental impacts is not a specific issue of the food system, yet the food system is one of the major contributors to different environmental issues. The carbon footprint is left at every stage of the food system, from production, distribution, consumption, and waste management. Consumption of animal-based products contributes to a massive portion of GHG emission from meat production. Food waste also contributes significantly to the GHG by accounting for 56.5 million tCO_{2e} (UBC Sustainability, n.d.).

The availability of cultural foods on campus

UBC hosts a diverse student body with a wide range of cultural needs (Kruger, 2022), (Fu, 2020). This creates a challenge when advising students on food choices because the advice will need to be applicable to different diets. Resources on campus such as Sprouts, the Food Hub, and the Grocery Check-out that help make sustainable food accessible have limited inventory and lack the capacity to meet the needs of everyone in the diverse UBC student population. Therefore, listing these as good places to shop sustainably will not be equally helpful to all students. Although we still would recommend using existing resources and assets in the community to leverage change, our student food markets will be most useful to those whose needs are met by the limited inventory. In the future, this barrier could be addressed by creating more sustainable food initiatives on campus focused on cultural foods, but in the absence of that type of resource students will have to rely on their own ability to judge the sustainability of various cultural food items. For this reason, the Toolkit should have advice on distinguishing the sustainability of different types of cultural foods.

Access to sustainable food options on campus

Access to sustainable foods is a key barrier to choosing a sustainable food option. Often a demand for sustainable foods is not met by a supply of readily available options, which makes it harder for consumers to choose foods that support a more sustainable food system. A research conducted on Canadians living in lower income/food insecure households stated that based on a poll, 82% of the people wanted public institutions like schools and universities to buy and sell more local and sustainable grown foods (Kramer et al., 2022). UBC SEEDS should consider the access all students and staff will have to sustainable food options on campus when creating a toolkit that encourages the consumption of these foods. Improving the UBC community's knowledge and awareness of where to access sustainable food options is also vital in encouraging its consumption. For instance, UBC SEEDS can promote resources already available on campus, such as a published list of sustainable food outlets (UBC Sustainability, 2023-b) or create an up to date version of the 'Sustainable Campus Food Guide' (Baker-French, 2013), which provides many resources including a sustainable food map of the vancouver campus, UBC farm initiatives, sustainable community food delivery services and list of events that feature local and seasonal foods.

Time

Time constraint influences how rational food decisions are made (Maheshwari et al., 2022). Especially when university students are juggling between classes, assignments, and extracurriculars, food choice may not be a priority. When time is limited, decision-making on food is influenced by factors that lead to less informed and rational choices. For instance, convenience-oriented individuals may conduct more food waste behaviours (Aschemann-Witzel et al., 2018). These individuals may value their time over food or lack interest in food (Jabs & Devine, 2006), which becomes a barrier to consider when designing the Toolkit. A deeper understanding of these consumer behaviours would help UBC SEEDS better design the Toolkit for informing sustainable food choices to students.

Knowledge gaps and lack of awareness

Food system sustainability is a complex issue, especially for busy students trying to eat affordably and efficiently. For many students, attending university is a time when they are still navigating the skills associated with shopping and cooking independently

from their families. Given that students are often already juggling multiple considerations related to their personal lives when they enter a grocery store, it is somewhat unrealistic to expect them to also take on a complex understanding of food systems, ecology, and global issues. In order for the sustainability advice to be taken into consideration by students, it will need to be as simple, memorable, and intuitive as possible.

Food insecurity

Food insecurity on campus is a widespread issue (Wong, 2022) and may become a barrier because students struggling to obtain enough food have limited capacity to consider the environmental impact of the limited food options available. Even for students who are not food insecure, asking them to incur personal cost will make the Toolkit less attractive. In order for the Toolkit to be widely applicable to students, the advice must be affordable to follow. This is especially true when food insecurity intersects with the barriers of limited time and cultural diets. These barriers means the advice needs to be simple, applicable to many diets, and budget friendly at the same time, while still communicating accurate information about sustainability.

Behaviours That Contribute to Problems/Issues

A research on factors that determine food choices of UBC food system's participants indicated that environmental-related factors are not the priorities when it comes to making food choices (Chiam et al., 2021). Food consumers tend to choose foods that are flavourful and visually pleasant instead of considering the environmental-related factors of food items. The second preference identified in the study is the "nutrition" aspect of the food, which could influence food consumers' consideration of environmental impacts of food. These determinant factors overshadow the significance of a sustainable food choice.

Moreover, the lack of knowledge dissemination and limited sustainable food choices are the fundamental factors that interfere with the development of a sustainable food system. Underestimation of the importance of sustainable food systems from educators is a significant behaviour that leads to knowledge gaps in the consumers, of which students are the majority of within the UBC food systems. More than half of

UBC students reported that they learn about healthy eating and plant-based diets through social media rather than from the university's website or courses (Sutton et al., 2020). Insufficient information and instruction on practicing a climate-friendly diet also forms a misperception of food consumers, thinking plant-based foods are inadequate in nutrients and less tasty. Consequently, food consumers refuse to choose plant-based or environmental-friendly foods over animal-based products (Buchheister et al., 2020). Price concerns also lead to the hesitation in choosing plant-based foods as the price of plant-based options is nearly equal to animal-based options, which makes UBC food consumers lean toward choosing animal-based foods (Baron et al., 2022).

Mediating Factors

Individual Factors

Studies have shown that most university students in Western countries have a desire to improve their diet to become more environmentally sustainable (Figueiredo et al., 2021). However, additional factors can influence students' dietary decisions.

Climate-friendly foods such as plant-based alternatives to meat are often considered to be expensive; when taken in combination with the fact that 30-40% of UBC students are food insecure, students may feel that they do not have the financial ability to make sustainable food decisions (Lea et al., 2006; The Foodhub, n.d.). Additionally, students may be affected by the norms, traditions, and teachings of the cultures in which they grew up when making dietary choices (Nemec, 2020). Canada is a multicultural society, and 28.6% of UBC students at the Vancouver campus are international, so it is very likely that cultural factors can come into play (University of British Columbia, 2022). Lack of knowledge regarding various factors of sustainable eating, such as being unaware of its benefits, not knowing how to evaluate the climate-friendliness of various options, and low cooking ability can also affect students' dietary choices. Even if students are armed with this knowledge, as we hope they will be after reading the final CFFS Toolkit, it can be difficult for them to change their routines as it requires time and mental energy that they may not have. Personal preferences regarding taste and texture also play a role; many studies have found a preference for meat and animal-based products, which are associated with high levels of emissions, in the

general population to be a major barrier to eating sustainably (Reipurth et al., 2019; Lea & Worsley, 2003).

Interpersonal Factors

On an interpersonal level, social influence may play a role. Individuals who follow environmentally-friendly diets, such as vegan or vegetarian diets, sometimes encounter conflicts within their social networks when their dietary habits do not align with friends and family, and the perceived difficulties regarding such conflicts may dissuade students from making changes in their diets (Salmivaara et al., 2022). At the same time, students may also be influenced by peers who are willing to make changes alongside them or those who are already making sustainable dietary choices. University students are also generally heavy users of social media, making the influence of social media and online personalities important mediating factors (Perrin, 2015).

Environmental Factors

Environmental factors include the convenience or accessibility of sustainable food choices, food marketing, and the accessibility or promotion of the Toolkit that will be produced as a result of this project. Godfrey and Feng (2017) found that convenience and accessibility are the most important factors in students' dietary choices, ranking higher than taste, price, and environmental sustainability. Additionally, food marketing, both in the digital realm and as advertisements on the physical campus, can play a powerful role in the food decisions of students. A study conducted at the University of Sydney found that online marketing of foods to university students consists mostly of high-emissions, nutrient-poor foods like pizza and burgers, whereas vegetarian and vegan options consist of only 0.9-2.4% (Jayanetti et al., 2018). Finally, when the Toolkit is launched, how it will be distributed to the student population at UBC will play an important role in the ability of this project to achieve its objectives.

Theoretical Framework

The purpose of the CFFS Toolkit project is to influence UBC food consumers and alter the dietary choices of UBC food system participants. The impacts of the CFFS Toolkit and the support from the FNH 473 student team contribute to changes at a community

level. Hence, we choose the Diffusion of Innovation Theory. According to the Diffusion of Innovation Theory, the CFFS is an 'innovation' that highlights the climate aspects of the food system. The CFFS Toolkit is a communication channel through which CFFS is introduced and defined, and detailed practices toward the CFFS innovation are summarized and suggested. The CFFS Toolkit is a tool for the 'social system', the UBC food consumers, to access and use for adoption of new behaviours introduced by the CFFS. The goal of the CFFS Toolkit is to enhance the awareness of UBC students about the CFFS and suggest actions towards CFFS. Therefore, the Diffusion of Innovation Theory is an appropriate tool in this context where a new idea is addressed and information is transmitted within a population (Rimmer et al., 2005).

We acknowledge that limitations exist in our situational assessment. UBC is a large and dynamic community where there is a variety of lifestyles. Our suggested barriers might not fully cover all that students are facing when making sustainable dietary choices. The situational assessment explores the social aspect about cultural foods accessibility and time, the economic aspect about food security, the educational aspect about knowledge gap, but does not deeply illustrate the psychological factors of dietary choices. Psychological factors are a critical determinant of an individual's food choices, where social influence, habits, feelings, and other aspects play important roles (Habib et al, 2021).

Goals & Outcomes

Overall, this project intends to transform existing food systems and implement new food systems at the UBC campus so that they are climate-friendly and sustainable in efforts to reduce the university's GHG emissions as part of UBC's CAP 2030.

Project Goal

- To support the UBC SEEDS team in the development of a CFFS Toolkit designed to improve awareness, knowledge, and action toward Climate-Friendly Food Systems among UBC students.

Objectives

Short-Term Objectives

- Conduct a literature review to understand the common barriers, suitable language, and appropriate messaging around making sustainable food choices by February 28, 2023.
- Submit a guidance document for the UBC SEEDS team to consider to maximize efficacy and relatability with developing the CFFS Toolkit by April 7, 2023.

Medium-Term Objectives

- Develop and publish the CFFS Toolkit to inform on the relationship between food systems and the environment, current projects at UBC to reduce the environmental impact of food systems, and how to make more sustainable food choices on campus by August 31, 2023.
 - This objective will be completed by the UBC SEEDS team.

Long-Term Objectives

These objectives are not specific to this project as there are currently many projects on campus attempting to achieve these objectives.

- Reduce GHG emissions from food systems at UBC by 50% compared to 2020 levels by 2030 (University of British Columbia, 2021).

Project Outputs

Structure

The CFFS Toolkit is the ultimate output of our community partner, which our group, unfortunately, could not support until the output completion. The target audience for this project is our community partner, UBC SEEDS, and our indirect audience is the larger UBC community (mainly students, but also including faculty and staff) who the Toolkit aims to reach.

The project outputs include feedback regarding the currently developed contents of the CFFS Toolkit and a guidance document recognizing influential languages to communicate to UBC students and barriers students face in making sustainable food choices. This project's outputs are in support of the Toolkit's goal, which is to raise awareness, bring knowledge and drive actions toward the CFFS among UBC Vancouver students and staff (Nanayakkara, 2021). To assist UBC SEEDS in achieving this goal, The Diffusion of Innovation Theory is utilized to develop the main project output. As mentioned in the Theoretical Framework, the CFFS Toolkit is an innovation to spread information. For the Toolkit to be more successfully adopted by the target audience, our team focused on incorporating components of the Diffusion of Innovations Theory into the project outputs. Firstly, the appropriate choice of communication channels is critical to communicate information to UBC students. More specifically, this will be achieved by centering the project output on two factors of innovation: compatibility and complexity (Rimer et al., 2005).

Despite not being directly involved in the CFFS Toolkit development process, our outputs play significant roles in the success of the CFFS Toolkit. The feedback we, the student team, provided contributes to increasing the compatibility of the CFFS Toolkit by making it more relevant to students' perspectives. Whereas the guidance document further supports the compatibility of CFFS by suggesting appropriate and relevant languages and messaging strategies and reduces the complexity of CFFS implementation by suggesting the barriers students may struggle with in making CFFS actions.

Content

After the initial meeting with the community partner, our group participated in giving feedback for the CFFS Survey provided by UBC SEEDS. We contributed to aspects such as grammatical errors, the order of questions to avoid bias, some languages that could be improved for clarification, and adjustments to increase accessibility. Through the first output, we had a more insightful comprehension of the CFFS and UBC CAP 2030, as well as the related initiative such as the UBC's Climate Friendly Food Label. Furthermore, we completed a user review of the CFFS Toolkit by giving opinions about the practical aspects (i.e., does the scoping brief represents a student's perspective; are the context and purposes clearly explained; is the Toolkit a valuable source for students; are there any missing parts) and its attractiveness.

Before developing the final guidance, we proposed to UBC SEEDS the following activities that we can potentially contribute to the CFFS Toolkit, which is to compile and organize a section to acknowledge and add resources for barriers that students may face when trying to make sustainable dietary choices regarding the recommendations of CFFS Toolkit. Literature research was conducted on the challenges and barriers university students may face when making sustainable food choices using different databases, such as the UBC Library. The identified barriers include the limited sustainable food initiatives on campus focused on cultural foods, the knowledge gap and the lack of awareness about the sustainable food system among UBC students, food insecurity despite existing initiatives, and the bounded time availability of university students.

The guidance document consists of three sections that UBC SEEDS can refer to when creating the CFFS Toolkit. The first section is Language, which includes suggestions to increase the acceptability and memorability of the Toolkit for the audience. The second section, Messaging, consists of strategies that UBC SEEDS can incorporate to increase audience engagement and behaviour adoption. The last section informs UBC SEEDS about the Potential Barriers, which are considerations of what might impede the UBC community from taking sustainable actions. For example, one of the potential barriers that we included in the guidance document is food insecurity. Some

members of the UBC community may face this barrier, which may affect their ability to make sustainable food choices. The guidance document profoundly provides evidence-based suggestions in languages for communicating with university students to catch their attention and how messages should be exposed to the community to drive and maintain actions. The guidance acts as a stepping-stone for UBC SEEDS to efficiently develop the Toolkit and contribute to the UBC CAP 2030.

Delivery

The format of the guidance document was decided upon several considerations. Mainly, the community partner's project guidelines requested the incorporation of visuals. Also, we want to keep our recommendations clear and concise so that they can be easily translated into the development of the Toolkit (L. Dupuy, personal communications, February 23, 2023). The guidance document consists of fourteen pages. It is in a PDF format to allow the ease of sending the deliverable electronically through email to UBC SEEDS.

Evaluation Plan

An evaluation plan is in place to assess the success of the present project in achieving the objectives stated in the “Goals & Objectives” section of this report. Unfortunately, we are only able to evaluate the short-term objectives for this project as our team is restricted to a timeline of January to April 2023 for the project’s completion; however, medium- and long-term objectives were developed so that they can be monitored and evaluated by our community partner, the UBC SEEDS Sustainability Program.

Short-Term Objectives

- *Conduct a literature review to understand the common barriers, suitable language, and appropriate messaging around making sustainable food choices by February 28, 2023.*
- *Submit a guidance document for the UBC SEEDS team to consider to maximize efficacy and relatability with developing the CFFS Toolkit by April 7, 2023.*

We developed both process and outcome evaluation methods for the short-term objectives of this project. To assess development and implementation throughout the process, we met regularly with UBC SEEDS to identify areas where further work was needed, if it was necessary for us to shift our focus, and to ensure that our work continued to be relevant and useful for our community partners. We also peer-reviewed our group members’ research and received feedback from the FNH 473 Professor and Teaching Assistant on our drafts. Finally, we compared our research to the sustainability messaging guidelines that UBC had previously produced.

After completing a literature review, we summarized our findings into an infographic guidance document to be presented to UBC SEEDS. This is planned to be officially delivered via email to UBC SEEDS by April 7th 2023. After which the team has plans to meet with the community partner in an interview style setting to receive qualitative evaluation regarding the effectiveness of the guidance document in terms of its readability, content and relatability to the Toolkit project.

Medium-Term Objective

- *Develop and publish the CFFS Toolkit to inform on the relationship between food systems and the environment, current projects at UBC to reduce the*

environmental impact of food systems, and how to make more sustainable food choices on campus by August 31, 2023.

Evaluation for this objective will be done by the UBC SEEDS team. The success of this objective will be evaluated by whether or not the CFFS Toolkit was launched according to the project timeline. The success of the CFFS Toolkit launch can be evaluated by its reach, as indicated by the number of clicks or downloads of the CFFS Toolkit, the number of people that visit the website where the CFFS Toolkit will be housed, and the average amount of time that readers spend on the website where the CFFS Toolkit will be housed. UBC SEEDS may wish to launch a survey for readers of the Toolkit to provide feedback on the Toolkit's effectiveness in encouraging them to make more sustainable food choices.

Long-Term Objective

- *Reduce GHG emissions from food systems at UBC by 50% compared to 2020 levels by 2030 (University of British Columbia, 2021).*

The long-term objective of this project will be evaluated by UBC. Each year, UBC measures and reports on GHG emissions through the Climate Change Accountability Report by completing a GHG inventory (UBC Sustainability, n.d.-a). This process is carried out by a committee of staff, faculty, and student members using the World Resources Institute Greenhouse Gas Protocol to quantify all emissions on campus (World Resources Institute, n.d.). Data from all GHG Inventories have been available on the UBC Sustainability website since its inception in 2006 (UBC Sustainability, n.d.-a).

Conclusion

As a result of this project, a guidance document to support the development of the CFFS Toolkit was created and provided to UBC SEEDS. This document contained recommendations regarding appropriate language, messaging, and barriers to consider when writing the content of the Toolkit, and was developed while keeping the diversity of our population in mind.

Throughout this project, we learned that the intended population of the Toolkit is dynamic and diverse, as they face many considerations when making choices about their diet, but also are equipped with a number of resources to increase sustainability in their diet. We also learned the importance of communicating our questions and ideas early on so that we could receive feedback in a timely manner. Furthermore, we learned to take the initiative to make suggestions and plan our own direction, while also keeping in mind our community partner's needs. We had the opportunity to practice critical thinking, curiosity, and being comprehensive while completing the situational assessments and the literature search, recognizing the necessity of interventions that were evidence-based and logical.

A few limitations exist regarding our project. Unfortunately, we did not have the time or the resources to conduct primary research. It would have been beneficial to investigate food choices through a survey or a focus group of the UBC community; instead, we needed to rely on research that was conducted at other universities and extrapolate that data to our population. Similarly, most of the research in a university setting within this field of study has been conducted in students, whereas UBC SEEDS is planning for the Toolkit to reach the staff and faculty at UBC as well.

Next steps should include the implementation of our recommendations, as outlined in the provided guidance document, for development of the CFFS Toolkit. We also advise for UBC SEEDS to conduct focus groups or surveys within the target population of the CFFS Toolkit alongside the development of the Toolkit contents. We recommend for these research activities to reach UBC staff and faculty members as well, as our guidance document did not include recommendations specifically for this subgroup. This would help to increase the reach and efficacy of the Toolkit.

Authors' Contributions

Author Names	Contributions
All Members	<ul style="list-style-type: none"> ● Attended meetings and discussions with community partner ● Contributed to building the project logic model ● Participated in literature review and content development of guidance document
Lucy Bergeron	<ul style="list-style-type: none"> ● Wrote the executive summary as well as the strengths and problems section of the situational assessment in the report ● Prepared the newsletter brief ● Created and presented the introductory and background slides of the final presentation ● Created and presented the introductory and logic model overview slides of the draft logic model presentation
Diana Lee	<ul style="list-style-type: none"> ● Main point of contact with the community partner on behalf of the group ● Wrote the Introduction, Mediating Factors, Goals & Outcomes, and Conclusion segments of the final report ● Contributed to the Executive Summary and Evaluation Plan of the final report ● Formatted and designed presentation slides ● Presented the Situational Assessment and Outcomes segments of the Draft Logic Model ● Presented the Goals & Objectives and Lessons Learned (with Lindsey) segments of the final presentation ● Assisted in formatting and designing infographic guidance document
Reese Lin	<ul style="list-style-type: none"> ● Prepared slides and presented Inputs and Outputs for the Logic Model Presentation ● Created and presented the Outputs section of the final presentation ● Contributed to the Output action of the final report ● Contributed to the Messaging and Potential Barriers section of the guidance document ● Assisted in formatting and designing the two Powerpoint presentations, newsletter brief, final report, and guidance document
Lindsey Nguyen	<ul style="list-style-type: none"> ● Wrote the Theoretical Framework section of final report ● Contributed to the Output description section of final report ● Prepared slides and presented Theoretical Framework on the Logic Model Draft ● Presented the Theoretical Framework and Lessons

	Learned (with Diana) on final presentation
Devika Pillai	<ul style="list-style-type: none"> ● Created and presented the Process and Outcome Evaluation slides of the final presentation and draft logic presentation. ● Contributed to the Situational Assessment section and Evaluation section of the final written report. ● Contributed to the messaging guidelines and barriers to consider sections of the guidance document. ● Contributed to the editing and designing of the infographic guidance document.

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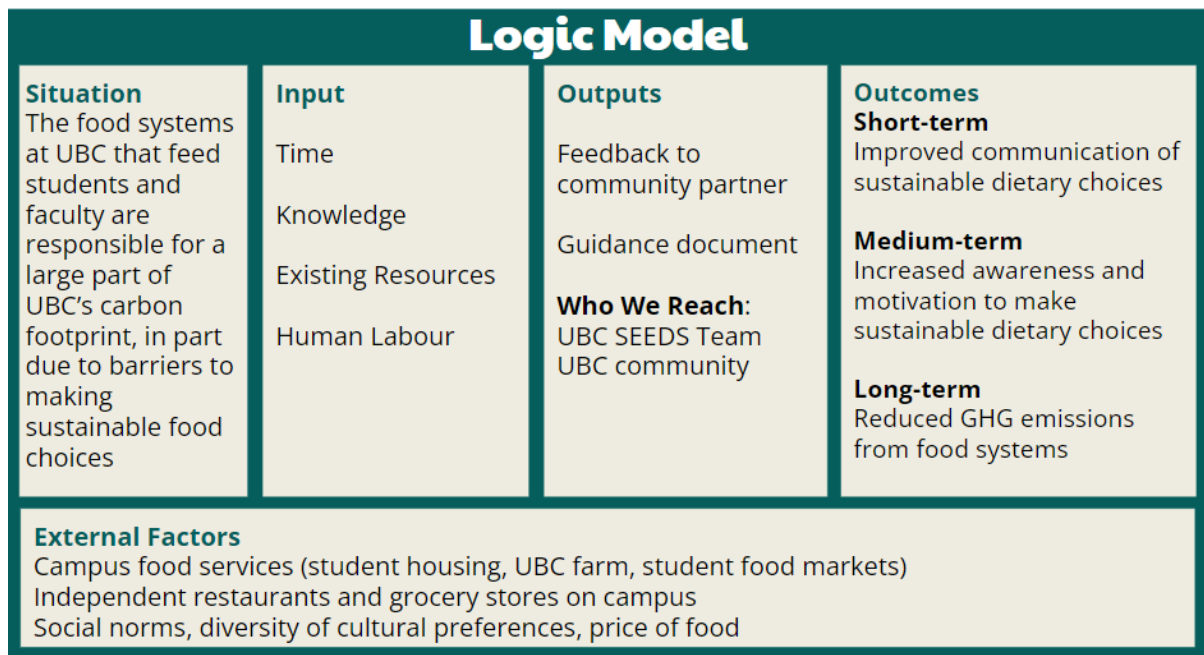
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Appendices

A. Project Logic Model



B. Newsletter Brief to UBC SEEDS

UBC SEEDS CLIMATE-FRIENDLY FOOD SYSTEMS TOOLKIT

FNH 473: Applied Public Health Nutrition
Devise Pillai, Reese Lin, Lucy Bergeron,
Lindsey Nguyen, Diana Lee

31%

Amount of extended emissions at UBC that come from food systems, estimated at 29,625 tonnes

45%

GHG emission reduction goal for 2030 set by the UBC CAPS 2030 document

100%

GHG reduction goal for 2050, establishing UBC as a net zero emission institution

PUBLIC HEALTH IN PRACTICE

In order to give effective advice, it's important to understand the full context of the target audience. We are members of the target audience ourselves and still learned a lot about the UBC community, impressing on us the importance of careful research. Through conducting our situational assessment, we learned to approach public health issues with curiosity and critical thinking, and to be comprehensive in our assessments. We discovered that UBC students face barriers to making sustainable choices, but that there are resources in the community that can be leveraged to minimize these barriers, creating an opportunity to enforce resilience in the community. We learned to apply change theory to our findings to inform the development of clear objectives and a logical plan progressing from one action to the next.



OUR PROJECT

We are a group of 5 LFS students who collaborated with UBC SEEDS in the development of a climate-friendly food systems toolkit aiming to highlight student environmental initiatives and to provide simple advice on making sustainable food choices at UBC. As a group, we conducted research on student food choice to understand what motivates students and how to gear our advice to meet both student needs and the CAP 2030 goals. We summarized our research in a guidance document along with findings on communication strategies applicable to the toolkit.

LESSONS LEARNED

While developing a project as a team we learned the importance of close communication both internally as a group as well as with our community partner. Our community partner was busy and juggling different priorities, which created the risk of chaotic collaboration if we didn't proactively ensure everyone was on the same page. We took initiative with the direction of our project while staying clear on expectations. It was inspiring to work with SEEDS and see the behind the scenes process of their sustainability efforts. We want to offer special thanks to both Laure and Juan for being such supportive contacts and for all the important work they do with SEEDS.



U B C S E E D S

F N H 4 7 3 G R O U P 7

*GUIDANCE DOCUMENT
FOR THE CLIMATE-FRIENDLY FOOD
SYSTEM (CFFS) TOOLKIT*





Guidelines For Language



1) Use Positive and Actionable Language

Using positive language has been shown to increase behavioral change and promote positive attitudes toward that change. Focus on the benefit of an action rather than the negative consequences of its opposite action (Abrahamse, 2003).

Action-oriented language also provides a sense of empowerment, as it is clear and directs the reader to something they can do right away (Himsworth et al., 2020).

Instead of: "Don't choose foods that are high in emissions."

Try: "Choosing plant-based foods contributes to a healthier environment."

2) Use Relatable and Relevant Examples

The toolkit should aim to make sustainability personally relevant to the reader. This can be done by using language and examples that are relevant to the reader. Using narratives like personal anecdotes from reliable sources can be helpful. Locally-framed messages are also more effective than globally-framed messages (Scannell & Gifford, 2011).

Instead of: "Food waste worldwide"

Try: "Food waste in Vancouver/British Columbia"





3) Communicate the Larger Effort

Recommendations for individual sustainable food choices should be emphasized as part of a larger campaign at UBC.

- Highlighting sustainability efforts at UBC can help gather support
- Help the reader feel like a part of a community working toward a shared goal
- Build a relationship between UBC and the reader
- Increase commitment to the lifestyle changes recommended in the toolkit by illustrating the larger context

Research shows that messages aiming to inspire change are most persuasive when the desired change is perceived to be prevalent in a group that the audience identifies with (Bator & Cialdini, 2002).



4) Transparency Increases Trust

Being transparent about uncertainty, obstacles, and errors, as well as explaining what is being done to address these things can help build trust with the reader. This can encourage them to want to align themselves with the toolkit goals and act on the provided recommendations (Himsworth et al., 2020).





4) Keep it Clear, Consistent, & Catchy

Clearly define the terms that are used in the toolkit, as this builds a common understanding of the purpose of all of the terms. Consistently use the same terms when referring to the same concept to avoid confusion (Thoele et al., 2020).



Repetition of important terms may also help to increase memorability and emphasize their importance. It may be helpful to include a ***glossary*** defining any terms and abbreviations that are commonly used throughout the toolkit for the reader's easy reference (Thoele et al., 2020).

People who are reading the toolkit may not be in a position to immediately act on the toolkit's suggestions. Catchy messages tied to a visual or behavioural cue can prompt readers to remember to make sustainable choices at a later, more relevant moment (Cialdini, 2003).



Guidelines For Messaging

“Consumer-facing information about food sustainability must be visible and accessible, easy to understand, reliable, credible, and holistic.” - One Planet Network (2022)



1) Use Concise and Relevant Information

Provide clear and easily understandable information in the toolkit. It would be beneficial to be concise and stick to only the most relevant and salient information. Cite sources accurately and in a user-friendly manner as information regarding food sustainability must be accurate and credible to the readers. Providing reliable and accessible information regarding food sustainability will improve consumers' experience when choosing foods and not reduce their freedom during the food selection process (Pornpitakpan, 2006).

2) Avoid Information Over-load

It's important to balance providing information in the toolkit with simplicity. While it is necessary to provide information in the toolkit, information overload can decrease the reader's ability to process and act on the provided recommendations (Eppler & Mengis, 2004).





3) Include Visual Prompts

Consider including visual prompts in the toolkit that will be seen by students around campus, such as climate-friendly food labels. Visual prompts should act as a reminder or cue for the students to engage in the ideal behavior (Abrahamse, 2020).



A food meal labeled with the happy planet icon means that this food menu item has at least a 50% lower environmental footprint per 100 grams than other items. (UBC Campus & Community Planning, 2022).

4) Consider all the factors that impact food choices

Consider the fact that people's food choices are affected by a variety of personal and environmental factors (Bishop, J., 2022). When drafting the information in the toolkit, keep in mind that food choices are not always conscious or rational. Sustainability is one of the factors that impact food choices but it may not be the most important one to consumers. Other barriers to making sustainable food choices are described on page 9-11 of this document.



4) Include Nudging & Narrative Strategies

Explain how to make optimal choices in a manner that is most convenient and has the least barriers for the students. This can be done by suggesting what to cook, where to shop, and what to substitute.

Consider using emotion-laden stories about local food suppliers, feature human stories behind sustainable ingredients/meals, and inspiring accounts of efforts by UBC leaders to create a more sustainable food system (Zhang, J. 2020).

When describing current environmental impacts, avoid emphasizing that many students do not make sustainable food choices as it sends the message that not making sustainable food choices is a social norm. This may indicate that making sustainable choices may be a socially disapproved behavior and discourage this behavior (Cialdini, R. B. 2003).



At the point of purchase, the use of nudging can address the communication gap on the sustainability characteristics of products and services. This may influence consumers to make sustainable purchasing choices (Zhao, R. 2018).



5) Use social media & technology

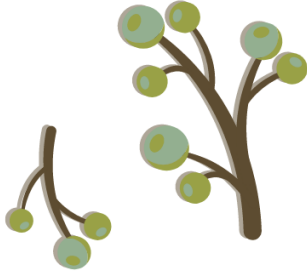
Social media and technology-based sources are the main ways for younger generations to access information. Social media platforms may be used to express some key messaging from the toolkit to the UBC student population.

Each social media platform has messaging strategies that are associated with higher engagement (Minton et al., 2012). The use of these strategies should be tailored to the specific social media platforms to increase awareness, but it should be noted that an increase in awareness may not necessarily lead to behavioural changes (Minton et al., 2012).



In addition, the user motive on social media needs to be considered (Minton et al., 2012). When using social media as a communication platform, adequate research should be done on the target audience to incorporate their motives into the messaging strategy.

The user motive related to sustainable behaviour varies between each platform (Minton et al., 2012). It was found that responsibility motives on Facebook are negatively associated with sustainable behaviours, whereas Twitter shows no correlation between the two. The motive also varies depending on the geographical location of the user ((Minton et al., 2012). When developing the Toolkit, it should be kept in mind the diverse backgrounds and locations of where the UBC community came from.





Student Barriers to Sustainable Food Choices

1) Cultural Diversity & Appropriateness


Despite efforts to increase the cultural diversity of food services at UBC, cultural food remains a controversial topic in making food-related decisions. Most first year students at UBC, who are also international students, reported that the foods at UBC do not taste as authentic as their cultural foods. The lack of “culturally appropriate” sustainable food options is an important factor to be considered for suggestions (Fu et al., 2020).



2) Knowledge Gap & Lack of Awareness

When making food-related decisions, consumers mostly prioritize taste, health, and affordability of food options. Only 10% of youth report often or always considering the environmental and ethical impacts of their food. Moreover, most consumers do not have an awareness of how much GHG emissions are associated with a single food item or their chosen meal. The lack of awareness among food consumers significantly contributes to environmental contamination by food systems (Gelinder et al., 2018).



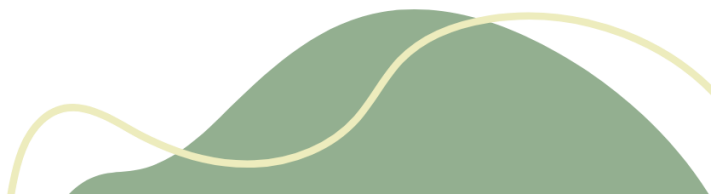


The majority of food consumers who are somewhat familiar with “sustainability” do not fully understand the term “sustainable food system”. Most consumers understand “sustainable food” as organic foods, locally or ethically produced foods, without actually being aware of the negative impact of livestock production. Without a comprehensive definition of “sustainability” and explicit measurements of the food system’s environmental impacts, consumers are not willing to prioritize sustainability over taste, price, and personal health (van Bussel et al., 2022).



3) Food Insecurity

Central to the topic of food systems, food insecurity also acts as a barrier to making sustainable food choices, including among university students. When asked about the cost of healthy and nutritious food on campus, the satisfaction rate of UBC students is only 10% (Chua et al., 2019). In most food service operations on campus, including UBC Food Service and private businesses, healthy food options are mostly overshadowed by packaged and conventional food items. These concerns are directly related to the food “availability” and “affordability” aspects of food security, as defined by the BC Centre for Disease Control (2022).



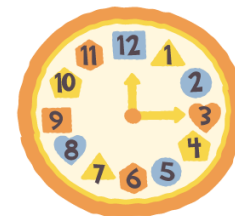


At UBC, 30-40% of students are food insecure and will be more concerned with obtaining food than with teasing apart the nuances in food systems and environmental degradation (The Foodhub by UBC, n.d.). Often, advice urging individuals to take responsibility for the environment asks them to invest their personal time or finances into the cause, which may not be realistic for busy students on a budget (Cohen, 2021).

The toolkit will not be widely applicable to the target audience of UBC students if it relies on personal sacrifice to address climate change. However, this presents the opportunity to make the toolkit particularly attractive to students by including strategies to save money alongside improving their sustainability. Students will have incentives to follow the advices that is financially beneficial to them instead of barriers. Whenever possible, the toolkit should highlight where sustainable behaviors can help with budgeting.

4) Limited Time

Given the workload of university students, limited free time can lead to choosing ready-prepared and convenient food, contributing to excessive packaging waste (Chen & Antonelli, 2020).



Any sustainability advice that is inconvenient should be accompanied by advice on how to manage the inconvenience. Strategies and heuristics around efficiently identifying and selecting sustainable foods should be included to minimize the risk of busy students running out of time and mental space to consider sustainability in their every day choices.





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