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# **The barriers environmentally sustainable food businesses face: A case study of Vancouver and Victoria, Canada**

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## Declaration

I, Laurel Wayne-Nixon, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

Signature.....LWN.....

Date.....May 12, 2019.....



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## **Abstract**

The food we eat, and our food systems have a huge impact on our environment. Many food businesses have attempted to reduce the impact food has on the environment. These businesses face increased challenges and barriers to being successful while also ensuring that the environment is protected. This thesis looks at the barriers that self-proclaimed environmentally sustainable food businesses face in Victoria and Vancouver, Canada. These two cities provide a great base for environmentally sustainable food businesses as popular food retail sectors and communities in Victoria and Vancouver have shown support for environmental sustainability. By interviewing environmentally sustainable food business owners and managers, an assessment of the barriers that exist for these businesses was done. Barriers were analyzed by looking at what they mean for the broader food system and their relation to other components in the value chain and food system. To understand better what these businesses were striving for, an assessment of what environmental sustainability is was done. The data collected demonstrated a high number of financial barriers that restricted growth of the businesses. There was also a trend of social barriers restricting these businesses such as a consensus among business owners that there was customer hesitation and a lack of education towards their business model and mission. Using the data collected the findings were assessed within the broader food system and the interactions between its components. This data also provides support for the suggestions to governing bodies and businesses for environmentally sustainable food systems.



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## Chapter 1: Introduction

### Research Questions

1. **What is environmental sustainability?**
2. **What barriers do food business face when striving for environmental sustainability?**
3. **How can these barriers be overcome?**

The food we eat, and our food systems have a major impact on the environment (FAO, 2010). In recent decades, there has been a push for the food industry to adopt environmentally sustainable practices, whether that be sourcing sustainable products or reducing waste (Pearson, Friel & Lawrence, 2014). Canada wastes over 873 pounds of food per person per year, which makes Canadians some of the biggest food wasters on the planet (Weber, 2018) and food businesses are some of the biggest culprits when it comes to food waste (Gooch, Felfel & Glasbey, 2010). The main problem is the environmental unsustainability of the Canadian food system. Many businesses, specifically in Vancouver and Victoria have made the effort to be environmentally sustainable food businesses, yet these food businesses face many barriers to running a successful business.

The objective of this thesis is to identify the barriers environmentally sustainable food businesses are facing in Victoria and Vancouver, Canada. Using the report *Food Systems and Nutrition* by The High-Level Panel of Experts on Food Security and Nutrition (HLPE) we can begin to better understand the relationship between food businesses and the food system (2017). Through this we can understand the overarching implications that this relationship can have and how one stage of the food system affects many other stages of the food system. Comparing barriers and experiences of multiple food businesses will highlight areas where improvement is needed. From this, ways to overcome these barriers and an exploration into the food system using Figure 1 the Conceptual framework of food systems for diets and nutrition (CFFS framework) will be used to understand the connections between components of food systems (HLPE, 2017, p. 26).

The purpose of this thesis stems from the need for a better understanding of the barriers that businesses who strive for environmental sustainability face. This thesis is important because although there is a lot of research done on food security and impacts of food on the environment, there is a gap in the academic literature on environmentally sustainable food businesses. Expansive research has not been conducted on the environmental impacts of restaurants, cooking schools or caterers and there is limited research done with a focus on grocery stores. This lack of research may be because it is very difficult and time consuming to track the environmental impacts of a variety of food businesses. Where in comparison, it is much easier to look at the environmental impact of one farm or a few farms that supply many people with food. On top of the limited academic literature in existence on the environmental impacts of food businesses, there is little information available on the barriers that these businesses face to be environmentally sustainable. It is generally accepted that the current food system, including the production and disposal of food, is harmful for the planet.

However, as value and supply chains work, what happens later in the supply chains, effects what happens at the earlier stages as well (HLPE, 2017). As pointed out by one of the interviewees in this thesis, as environmentally sustainable businesses are supported by customers, they begin to demand better practices up the supply chains, and at the same time enact better disposal systems further down the chain. It is important to highlight the barriers that these environmentally sustainable food businesses face because they impact the environmental sustainability of the entire food system and supply chain (HLPE, 2017). Almost all Canadians, as in most modern food systems, buy food from grocery stores, restaurants and other food businesses. Identifying what the barriers are for the environmentally sustainable food businesses allows for overcoming these barriers (HLPE, 2017). If there are solutions to the barriers that these businesses face and it becomes easier to be an environmentally sustainable food business, it is more likely that businesses will become increasingly environmentally sustainable. Mason & Lang (2017) claim that, “future environmental health is likely to hinge to a considerable extent on whether food consumption and production can be made sustainable” (p. 121). As highlighted in the CFFS framework (Figure 1 pg.18) there are many drivers of the food system and these drivers shape different components of the food system (HLPE, 2017, p.26). Drivers of the food system are factors that shape the food system, this includes barriers to sustainable food systems, but drivers can also be positive. It is easier to focus on other places of the supply chain and food system, but environmentally sustainable food businesses are also in the position where paying customers impact business decisions. Successful environmentally sustainable food businesses can make it easier for consumers to also make more environmentally sustainable decisions and choices. Although food businesses may be a small part of where changes are needed given the looming threat of climate change, no action is insignificant when a transformational change is needed in every aspect of our livelihoods.

## **Chapter 2: Background**

### **2.1 Food Businesses**

For the purpose of this thesis, a food business is any business that sells food. This includes grocery stores, grocery stores that deliver, restaurants, cooking schools and catering services. Focusing on all food businesses and not just one type, such as grocery stores, offered a diversity of perspectives and better represented this stage- retail and markets- of the food commodity chain. The people in these businesses are the last ones to have the food before consumers do and therefore represent an interesting perspective by being so close to consumers. These businesses have a unique set of circumstances depending on their business type, but because of the tie to food, there are overarching commonalities as well. The diverse perspectives create a better representation of the system rather than just focusing on one food business like a restaurant or grocery store. This concept of food businesses will be further explored in the later theory section.

## 2.2 Food and Environmental Impacts

Food provides humans with the nourishment essential for survival. As the population of the earth has grown exponentially in the past 50 years, the ways in which we produce and get our food has changed (Fan, n.d.). Food systems account for “70% of the world’s freshwater withdrawals and contribute around 19-29% of the world's greenhouse gas emissions” (Fan, n.d., para. 2). The direct relation between food systems and the environment makes it an important topic to analyze and improve. Much of the research around environmental sustainability and our food systems focuses on agriculture, and the production of our food while the research done on specific parts of the supply chain like food businesses is minimal. Although food businesses make up a small component of our entire food system, when analyzed on a global scale they are more significant than they initially seem. Making our food systems more environmentally sustainable and increasing food security means making the entire system more sustainable.

## 2.3 Vancouver and Victoria, BC

Studying both Vancouver and Victoria presents an interesting case for environmentally sustainable food businesses. Vancouver and Victoria are similar in geographical location and political culture, therefore the findings from both cities can be looked at together to draw conclusions. Vancouver and Victoria are the two central cities in the largest metropolitan regions in British Columbia and are located approximately 100 km apart. Both cities represent the most left-wing ridings in the province; although left-wing doesn't always mean an increase environmentalism, it is a huge discussion in every political election (McElroy, May 2017). Both cities have relatively progressive sustainability plans and strategies, demonstrating the importance of environmental sustainability.

They can also be compared because they are different cities with different policies, citizens and businesses. Although they both have progressive sustainability strategies, each one has different priorities and focuses. Every city has its distinct needs dependent on geography and many other factors.

## 2.4 Vancouver, BC

The City of Vancouver has set out to become the greenest city in the world by 2020. With the deadline of 2020 fast approaching it is interesting to look at their goals and plans in the context of Vancouver food businesses. The overall vision of Vancouver’s greenest city action plan includes “creating a strong local economy, vibrant and inclusive neighborhoods and an internationally recognized city that meets the needs of generations to come” (City of Vancouver, 2018, para. 3). The Greenest City Action Plan has 10 major goals and each goal has a target, which can be measured by 2020. The 10 goals include: climate and renewables, green buildings, green transportation, zero waste, access to nature, clean water, local food, clean air, green economy and lighter footprint (City of Vancouver, 2018). Each goal has a major target to hit, for example under green transportation the main target for 2020 is to “make the majority (over 50%) of trips by foot, bicycle, and public transit” and “reduce the

average distance driven per resident by 20% from 2007 levels” (2018, para. 5). The scope of this thesis will mainly focus on food and environmental sustainability. The city of Vancouver’s main target pertaining to food is to “increase city-wide and neighborhood food assets by a minimum of 50% over 2010 levels” (2018, para. 4). There has been a variety of different programs and actions organized by the City of Vancouver to achieve this goal, some examples include: design of urban farming bylaws, allowance for community kitchens, and food rescue programs.

## 2.5 Victoria, BC

The City of Victoria has a commitment to sustainability as evidenced by their Sustainability Framework which states that, “as a community and municipal corporation, (Victoria) is an urban sustainability leader inspiring innovation, pride and progress towards greater ecological integrity, livability, economic vitality, and community resiliency as we confront the challenges facing society and the planet today and for generations to come” (City of Victoria, 2019, p.1). The commitment to sustainability also includes commitments to ecological integrity and food systems. The city aims to protect the land, water and air - it also attempts to keep waste and climate change at a minimum and the city relies on “clean, renewable and efficient energy sources” (City of Victoria, 2019, p.1). The City of Victoria Sustainability Framework outlines that there should be a local food supply and that all citizens should have access and the ability to grow their own food. Food supplies should be local, “nourishing, that supplies most of Victoria's daily needs is sustainability grown, processed and packaged in the city, in surrounding agriculture areas, and on Vancouver Island” (City of Victoria, 2019, p.2). In the city’s 2019-2022 strategic plan, there is an environmental objectives section which includes: developing a waste reduction strategy, banning plastic straws, banning single use coffee cups and single use containers (all plastic bags are already banned), and the city plans to “encourage and move towards mandating food bearing plants, pollinator habitats and native species in landscape plans for private development” (City of Victoria, 2019, p. 19). It is clear from the objectives that environmentally sustainable food systems and food businesses are important to the City of Victoria and crucial to achieving environmental sustainability in Victoria. Urban agriculture is also a huge priority for the City of Victoria which could be incorporated into the food businesses (City of Victoria, 2019).

## 2.6 Food Businesses and Environmental Impacts

Although there are differences in the US food system and the Canadian food system, there are many similarities. Canada and the US are huge trading partners and according to Statistics Canada, “the United States is the source of more than half (57%) of imported food, and similarly 55% of domestic food exports from Canada are directed to the United States” (2016, para. 3). Both Canada and the US have large agricultural industries which are intensive on the ecosystems and environment (Nesheim, Oria & Tsai Yih, 2015). Nesheim et al. explain that the main environmental impacts from the food system can be grouped into three categories: environmental contaminants, depletion and replenishment of natural resources, and population and community disruption (2015, p.129). The totality of the effects of the food system are hard to quantify because of the vast indirect and direct impacts the



food system has on the environment (2015). The production of food is the most impactful on the environment - especially livestock production which can contaminate water resources, degrade the land and release a plethora of GHGs into the atmosphere (2015). The negative impact of food production explains why much of the research on the environmental impacts of our food systems focuses on the production aspect. It is valuable to understand the environmental aspects of other points in the food supply chain - especially when consumers can directly choose the food that they consume.

The impacts of the food industry on the environment are extensive and there is great research being done on the topic. Yet, the research on the environmental implications for food businesses and the food retail industry is lacking. The most appropriate study done on the topic was written in 2000 by Davies and Konisky. They look at the environmental effects of the food service and food retail industries in the US. Although this research is nearly 20 years old, they provide a compelling theory which divides environmental impacts into “direct, upstream and downstream” (2000, p.2). This analysis allows for the realization of the life cycle of food products from production to waste. Overall, the main environmental impacts that they outline, as coming from the industry, is energy consumption, waste generation (from food and packaging), air emissions, water emissions, and land-use impacts. They outline that these environmental impacts, when considered all together, are quite staggering, but tend to fall out of the spotlight due to other more polluting industries (2000). The authors provide advice from their research for the businesses as well as policy recommendations (2000). The majority of the research on environmental impacts and food businesses looks at particular business types like restaurants or grocery stores, but what makes Davies and Konisky’s research so important is that they look at the food industry as a whole (2000).

## **Chapter 3: Research Methods**

### **3.1 Study Area: Vancouver and Victoria, BC, Canada**

For the purpose of this thesis the study area is in Victoria and Vancouver, BC, Canada. There are three main reasons why Vancouver and Victoria were chosen. The first is that both cities have advantageous environmental and green plans. They both are looking at very strict environmental regulations over food businesses by taking actions such as banning single-use containers (Alvarez, December 2018 & Hennig, April 2019). The second reason is that both cities are in an area of Canada where environmentalism and sustainability are important to a high percentage of the citizens (McElroy, May 2017). This means that the citizens are receptive to environmentally sustainable businesses. The third reason was that I could easily travel to both cities and I had extensive networks that made securing a significant number of interviews possible. Another great reason to choose these cities is that they are two of the largest cities in British Columbia and can be easily compared.

### 3.2 Qualitative Research

A qualitative research method was used for this thesis. As Bryman (2012) outlines, the main reason for using a qualitative research method is because it will best help the author answer the research questions. In this thesis, interviews for data collection and research design were planned in advance to help answer the research questions. Quantitative research would not be helpful to gain further insight into the barriers faced by environmentally sustainable food businesses and current food systems, as I want to explain a particular phenomenon in the case of Vancouver and Victoria. Qualitative research was used to allow for a deep dive into the problem and issues. This also allowed for ideas and trends to be uncovered that I may have not thought of going into the study. For example, the open-endedness of interview questions in qualitative interviews allow for responses that were not anticipated by the researcher. In quantitative research these unanticipated responses might never be discovered. This thesis topic was also very specific to each food business and each business had a diversity in experiences on the topic. Allowing interviewees to dig deep and giving them the flexibility to answer questions from their experience highlighted interesting findings.

### 3.3 Data Collection

The primary data was collected using interviews. The interviews were semi-structured interviews in which the “interviewee has a great deal of leeway in how to reply” (Bryman, 2012, p. 468). The decision to conduct interviews instead of using other data collection methods was important as qualitative data is the best for answering the research questions in this thesis. If, for example, I was to use participant observation, I may not be able to answer my research questions. I also considered focus groups, but I wanted each participant to be able to focus on their experience and opinions when sometimes in focus groups certain perspectives can be lost.

The research design for the purpose of this study is cross-sectional, as these interviews were done “at a single point in time” (Bryman, 2012, p. 70). Purposive sampling was used - choosing many food businesses and then conducting 15 interviews with business owners/managers. Purposive sampling is a method of sampling in which cases or participants are “chosen in a strategic way, so that those sampled are relevant to the research questions that are being posed” (Bryman, 2012, p. 694). The reason for using purposive sampling is because not all businesses may be willing to participate in the study and there will not be enough time to interview each person in the industry. Another main reason for purposive sampling is that many businesses may not be relevant to the thesis topic making a random selection very difficult. Specifically, I will use generic purposive sampling. Bryman states that, “when using a generic purposive sampling approach with respect to the selection of cases or contexts, the researcher establishes criteria concerning the kinds of cases needed to address the research questions, identifies appropriate cases and then samples” from the cases identified (2012, p. 412).

The interviews were conducted in person or over the phone and typically lasted 20-30 minutes. The food businesses ranged from very environmentally sustainable to just recently

embarking on being more environmentally sustainable. Through internet research, I contacted many restaurants in both cities. I tried to contact a diversity of restaurants based on location, food origin (ethnic food, etc.), and price point. Over 150 restaurants were contacted in an attempt to interview a range of restaurants. One of the hurdles faced was that many food businesses that didn't promote environmental sustainability did not want to be interviewed. It was unclear if this was because they were embarrassed, didn't think it was important or didn't have time, but the result was that only food businesses that felt sustainability was important accepted interviews. It is not understood why so many restaurants did not return emails, phone calls or did not want to participate. After reaching out to over 150 businesses, 15 interviews were secured and performed.

The only businesses I reached out to were non-chain food businesses or businesses that originated in one of the two cities. The reason for this was because I wanted policies and decisions to be made locally, rather than in a Head Office somewhere in North America. Additionally, speaking with locally owned businesses almost completely ensured that primary owners would be locals in the city and province. I also used non-chain businesses for data collection because many of the chain businesses had very limited reachability, and when I did get a hold of some early in my research, no one was willing to participate in the study. While chain food businesses play a huge role in environmental health and should be more environmentally sustainable, it was much more realistic to highlight the barriers when I could interview business owners who make all policy decisions in the cities which they reside.

A limitation of purposive sampling in this instance is that since my sampling is not random and the study area is relatively small, I cannot use my findings to make generalizations. Although generalizations cannot be made and applied to other regions, they can provide lessons learned and a starting off point for food businesses and governments.

### 3.4 Data Sources

Other data sources were also used to frame the research and compare the findings. Secondary data sources were used as additional research for the topic. These included academic articles about sustainability, environmental sustainability and policy research. Although the interviews were very helpful and supported many of the conclusions and findings of this research - it was important to use secondary data. This secondary data was important, because of the complex understandings of sustainability and in providing suggestions and conclusions to governments and businesses. Secondary data was also used in the background and theoretical sections of the thesis.

### 3.5 Data Analysis

The results were analyzed using the conceptual framework of food systems for diet and nutrition (CFFS framework) that best aligns with the barriers that emerged from the data collected (HLPE, 2017). Initially, the results could be broken down into specific barrier categories: financial, political, social, structural and other. After presenting the results and the initial categories that presented themselves (financial, social, political, structural and other) I

used the CFFS framework to analyze the results (2017). Analyzing the findings and framework resulted in these barriers being able to fit within the different drivers and technical drivers that are laid out in the CFFS framework (2017). Discussing the results within the framework allows for an in-depth look at the implications and explanations around their corresponding barriers. Through categorizing the barriers and discussing the implications of each category it reveals interesting findings. It also allows for particular suggestions to be made to governments and business owners in the specific categories. For example, if many businesses are facing similar social barriers, it makes sense to look at those barriers in the context of being a socio-cultural driver. It also is beneficial to make suggestions to overcome these barriers by looking at the other drivers and barriers that arise.

To be clear, for the analysis of the findings of this research there is a relation between “barriers” highlighted through the data collected and the “drivers” in the CFFS framework (2017). The CFFS explains that, “There are many drivers that impact the functionality of food systems and their ability to deliver healthy and sustainable diets” (HLPE, 2017, p. 67). The CFFS framework highlights that the drivers drive or change the food system or components further down (2017). The barriers highlighted in the research do the same thing and fall under the various drivers. A food business facing an economic barrier drives the food system in a specific way. These terms will be used at different times throughout the analysis but is important to understand the relationship between the two.

Prior to the data analysis my plan was to analyze the data by the three categories I hypothesized would emerge. These were financial, political and social. After collection of the data it was clear that there were two more categories of barriers that had emerged based on the research. It made sense to use the five barriers that emerged (during data collection) within the CFFS framework for the data analysis (HLPE, 2017).

Using the CFFS framework allows for an explanation of the relationship between the barriers that are presented (HLPE, 2017). When looking at one barrier that a food business faces within the framework, you can demonstrate the connections to other aspects of food systems and how this barrier can feed into other components of the food system. For example, if there is a political or economic barrier that a food business faces, this drives the food system in a specific way. Food prices may be a barrier for a food business, as price impacts food supply chains, food environments and consumer behavior. In turn, this barrier drives the entire food system affecting diets, nutrition, impacts (social, economic and environmental) and institutional actions (2017, p. 26). After going through these, the barrier will end up in a cycle impacting all of the drivers in the CFFS framework (2017). By taking an in-depth look at what the framework can explain about the data collected in this research, you can determine causal relationships and understand the impact of the barriers food businesses face. The data was also analyzed using the other theoretical frameworks including circular economy, neoliberal food regimes and food justice (Giménez & Shattuck, 2011; Jurgilevich, Birge, Kentala-Lehtonen, Korhonen-Kurki, Pietikainen, Saikku & Schosler, 2016). These theories were brought into data analysis when they served to explain findings or related to the findings.

### 3.6 Limitations

Since the interviews were voluntary and a random selection of businesses was not possible, the research results may be affected through selection bias or not gaining information from a wide enough selection of food businesses. The purpose of this research is to improve the situation for businesses and provide governments with suggestions that makes environmental sustainability in food businesses more feasible. To overcome this barrier, I opted to look at all food businesses, rather than just one type in particular to increase the selection.

As many studies do, this study had to be adapted from its original topic and questions. The original plan was to interview businesses who claimed to be environmentally sustainable and those who did not. The issue that arose was that many of the businesses that did not identify as environmentally sustainable did not want to participate in the study. I contacted hundreds of food businesses to give them a fair opportunity to participate and provide their input. While reasons for not wanting to participate cannot be generalized, one possible explanation is that food businesses may not want to participate in a study (even though it is anonymous) where they discuss their non-sustainable actions. There appeared to be a very clear divide between businesses who self-identified as 'environmentally sustainable' and those who did not. The majority of those food businesses that advertised sustainability somewhere on their website, social media or storefronts were eager to participate. It was reassuring to find that many of those businesses were not just using 'sustainability' as a buzzword, but actually cared about being more environmentally sustainable. It speaks volumes about those who did not participate and are not 'self-proclaimed' sustainable. It is worrisome that potentially those who aren't 'environmentally sustainable' are doing anything at all to become more sustainable. Although this barrier is particularly difficult to overcome, I hope that the findings in this research will inspire and make it easier for all food businesses to move towards more environmentally sustainable practices.

## Chapter 4: Theory

### 4.1 Conceptual Framework

This section will review literature to draw on key concepts used in this thesis. This includes reviewing literature on what environmentally sustainable food is. The majority of this section will be reviewing literature to define what sustainability, environmental sustainability and environmental sustainable food is and how it will be applied in this thesis. Major concepts to define and draw on throughout conceptual framework include: sustainability, environmental sustainability, environmentally sustainable food, and food businesses.

#### 4.1.2 Sustainability

The term 'sustainability' incorporates and encompasses many different definitions. Sustainability is often used as a catch-all term for social, economic and environmental sustainability (World Commission on Environment and Development, 1987). The definition laid out from the Brundtland Commission in its final report defines sustainability as

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (1987, Chapter 2). Environmental sustainability is often used interchangeably with sustainability incorrectly. The three pillars of sustainability as described by the US National Environmental Policy Act are environmental, economic and social (United States Environmental Protection Agency, 2015, para. 1). Each pillar covers different topics, but the most important aspect is that they are all interconnected (2015, para. 1). The overall definition of sustainability presented by EPA is “create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations” (2015, para. 1). The overall commonality between most of the sustainability definitions is the ability for future generations to meet their needs.

The term sustainability was first used in forestry, “where it means never harvesting more than what the forest yields in new growth” (Kuhlam & Farrington, 2010, p. 3437). When the Brundtland Commission reported on sustainable development in 1987, the term “sustainability” gained great popularity (2010). Now the definition of sustainability is “an open concept with a myriad of interpretations and context-specific understanding” (Purvis, Mao & Robinson, 2018, p. 1). Researching sustainability is very difficult with such an ubiquitous term where there are many definitions that exist. Purvis et al. argues that many of the definitions associated with sustainability, including environmental, social and economic sustainability, are all used interchangeably (2018). The three pillars of sustainability were brought together to agree on the need for sustainable development - which was a way to merge the ambitions of the environmental, social and economic sectors to achieve one goal (2018). Because of the early roots of sustainability being more focused on the environmental definitions, there seemed to be competing definitions after the Brundtland Report (2018). Many were critical of economic development and sustainability and still referred to sustainability with an environmental focus. Through the shifting understanding around the term sustainability, multiple schools of thought have been adopted and understood. Because of this, when using the term ‘sustainability’ outside an academic setting, many may understand it as environmental sustainability or as encompassing all three pillars as described in the Brundtland Report (2018). Purvis et al. explain, “it should be remembered that sustainability, through its complex and disparate historical origins, remains both context specific and ontologically open, and thus any rigorous operationalisation requires explicit description of how it is understood” (2018, p.12).

Due to the complex nature of the term “sustainability” it is important to define the way it will be used throughout this paper. During early stages of this thesis, it was clear that using the term sustainability would be convoluted and confusing to many readers and participants. The choice to use environmental sustainability made the topic of the thesis clearer, but still requires a definition of the context of its use. Sustainable food and environmentally sustainable food are two different things. The first, is outlined by the FAO who state that, “sustainable diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible,

economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources,” this definition includes sustainability for human health, the economy and culture (2010, p. 7). Though this definition is very important, due to the scope of the project we this thesis will only look at food, which is environmentally sustainable. On a basic level, as outlined by the European Commission, sustainability is based on “the use of resources at rates that do not exceed the capacity of the Earth to replace them” (European Commission, 2016, para. 6). Based on the definition of sustainability and an adaption of Pearson, Friel & Lawrence (2014) study on how consumers define environmentally sustainable, the definition of environmental sustainability that is used in this thesis is: food that is produced and sold in a way which limits greenhouse gases, sustainably uses resources, and limits waste.

#### 4.1.3 Environmental Sustainability

Environmental sustainability can be described as the preservation of the planets systems while ensuring future generations can meet their needs (Morelli, 2011). Moldan, Janousková & Hák explain that the “notion of sustainability was historically understood as mostly environmental sustainability” (2012, p. 5). The idea of environmental sustainability most importantly notes that there is a limit to growth and that growing indefinitely means environmental sustainability is not possible (2012). Morelli (2011) argues that regardless of considering only the environmental aspects in sustainability, or the three-part definition that encompasses both social and economic components as well, sustainability includes protecting ecosystems and the environment. Many professionals argue that environmental sustainability focuses on the environmental component of sustainability (2011). Morelli (2011) argues that environmental sustainability includes more than just “meeting human needs without compromising the health of ecosystems” (As cited in Morelli, 2011, p. 5). He explains that the definition must include the environment as this refers to human’s relationship and interaction with the ecosystems on the planet (2011). Since food is the main focus of this research, the relationship between humans and ecosystems is very important because the manipulation of the ecosystems for food purposes is one of the largest interactions between the planet and humans (Nesheim, Oria & Tsai Yih, 2015).

In 2001, the Organisation for Economic Co-operation and Development (OECD) defined four criteria for environmental sustainability, these included: “regeneration (renewable resources shall be used efficiently and their use shall not be permitted to exceed their long-term rates of natural regeneration), substitutability (non-renewable resources shall be used efficiently and their use limited to levels which can be offset by substitution with renewable resources or other forms of capital), assimilation (releases of hazardous or polluting substances into the environment shall not exceed their assimilative capacity) and avoiding irreversibility” (Moldan et al., 2012, p. 6). The idea of environmental sustainability was taken even further after the millennium ecosystem assessment (2012). Even though environmental sustainability wasn’t named, the idea of ecosystem services and their categories were proposed (2012). There was a shift from thinking we needed to protect the earth for its own well-being to, protecting the earth for our wellbeing. The idea of ecosystem services is that the planet does

us favours and helps our survival. Moldan et al. explain, “The ecosystem and nature’s services are jointly linked to human well-being because it depends on them. To secure well-being, it is essential to maintain the ecosystem and nature’s services at an appropriate standard. In other words, environmental sustainability may be defined as maintaining nature’s services at a suitable level. Pointing out the indivisible connection between these services and human well-being and indicating the many concrete expressions of this relationship is the fundamental contribution of the Millennium Ecosystem Assessment Project” (2012, p.6). The ecosystem service category directly related to food is provisioning, but it is important to note that there are connections between all categories (2012). For example, food production needs climate regulation, soil formation and food is often rooted in cultural notions (2012). How we have understood the concept of environmental sustainability has transformed over the years. The important agreement and definition now revolves around the preservation of the earth’s systems for human wellbeing.

#### 4.1.4 Environmentally Sustainable Food

As outlined in the last section, the FAO defines sustainable diets as “diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources” (FAO 2010, p. 7). This definition pulls in all three pillars of the typical sustainability definition, although very important, economic and social factors fall outside the scope of this thesis, but it is important to note that all three pillars of sustainability are inter-linked. Many of those who bare the weight of climate change also face social and economic disposition (Shepard & Corbin-Mark, 2009).

There are many factors that contribute to environmentally sustainable food and there are many ways to reduce the environmental impact of one's diet. Because there are so many options when it comes to reducing the carbon footprint of one's diet, it is hard to quantify what an environmentally sustainable diet is. Some of the key suggestions to reduce the environmental impacts of the food you choose include: reducing animal-based foods, reducing food waste, limiting food purchases with packaging or one-time use containers, reducing how far the food has travelled, eating in season, and recycling and composting where necessary (Ranganathan, Vennard, Waite, Dumas, Lipinski, & Searchinger, 2016). These options are not all of the choices to reduce the environmental impact an individual can make when choosing their food. It also makes a difference for food businesses because they are purchasing on a much larger-scale and may be given the opportunity for choices around environmentally sustainable products or actions more often. Another key factor about food businesses is that they are making an environmental choice (or not) for the individuals who buy their products.

Although many businesses advertise the positive environmental actions they take, those who aren't advertising positive environmental actions could be making very unsustainable options



and consumers would never know. There is a trust that has to exist between the businesses and consumers and for those businesses who have built a business on being environmentally sustainable, it may be difficult to prove this. For example, it is relatively easy to prove you are not using animal products in your food - but the amount of food you waste or how you dispose of it is a much harder action to prove. The existing mistrust of environmental sustainability (and what is truly sustainable) in combination with the difficulty of proving how environmentally sustainable you are as a business means that environmentally sustainable food businesses face an uphill battle to be successful. The complex nature of proving how environmentally sustainable you are as a business is likely why there are no set guidelines on how to be an environmentally sustainable food business. It also has to do with the difficulty of the options for being more sustainable - do you completely stop selling animal products? Or do you reduce your businesses carbon footprint in other ways? Currently there is no defined best approach and being strict with how to be an 'environmentally sustainable' food business may restrict more businesses from trying to limit their environmental impact.

Rather than a strict line of how to have an environmentally sustainable diet or run an environmentally sustainable food business, there are choices that individuals or businesses can make that will make their actions more environmentally sustainable. It is hard to quantify where this line would be, who would decide it? What would it be based on? More sustainable than the average? or what is needed to save the planet? With all the competing factors that go into our food system and what the environmental tipping points are, it makes it very difficult to quantify what combination of environmentally friendly food choices makes environmentally sustainable food.

Mason & Lang (2017) discuss sustainable diets and ecological nutrition and look at how this can affect the food system. Rather than the more popular definition of sustainability (the three pillars including environmental, social and economy), Mason & Lang discuss six broad headings in which sustainable food can be viewed under (2017). These include, "quality, health, environment, social values, economy and governance" (2017, p.22). Since the scope of this thesis focuses on environmentally sustainable food systems, diets and business, Mason & Lang's environmental category can be drawn on (2017). There are a lot of profound impacts of our food system on the environment. According to Mason & Lang, "food consumption has been identified as one of the most important drivers of environmental pressures" as "agriculture occupies about 38% of the earth's ice-free land, the largest use of land on the planet" (2017, p.120). Mason & Lang continue to discuss the many different environmental features that the food system has a profound impact on, including, "climate change, energy use, water, land use, soil, biodiversity and waste" (2017, p. 121). The authors continue to explain that the way we consume food needs to change and that both consumers and governments play a role in this (2017). "The food system contributes 20–30% of anthropogenic GHG emissions and is the leading cause of deforestation, land-use change, water-use and loss of biodiversity" (2017, p.154). Environmentally sustainable food will be a key component of solving the environmental problems we currently face and understanding

how food businesses are restricted in their ability to be environmentally sustainable is a key component of solving these problems.

#### 4.1.6 Food Business

Food businesses are one component of the entire food system, but they are very important in modern food systems as many consumers buy their food from them (HLPE, 2017).

According to the HLPE conceptual framework, there are four components within food supply chains (figure 1), these are: production systems, storage and distribution, processing and packaging, and retail and markets (2017, p. 26). Food businesses in this study, fall into the last category: retail and markets. Retail and markets include, “retailers, vendors, food outlet owners, traders, restaurateurs, wholesalers” (2017, p. 26). HLPE outlines that after food is processed it moves to markets (usually) closer to communities, “these markets and the retail of selling food, shape the food environment in which consumers make purchasing decisions” (2017, p. 27).

As noted in the background section of this thesis, the definition of a food business is any business which food is sold through. This includes grocery stores, grocery stores that deliver, restaurants, cooking schools and catering services. Usually, these food businesses are the last point-of-contact with food before reaching the consumer. Therefore, these businesses are chosen directly by consumers, unless restricted by geography or finances. A food business is, “any undertaking, whether carried out for profit or not, and whether public or private, involved in any of the following: preparation of food, processing of food, manufacture of food, packaging of food, storage of food, transportation/distribution of food, handling of food and offering food for sale” (Ashfield District Council, 2019, para. 1). This definition represents the all-encompassing nature of food businesses - their main commonality is their dealing with food. Although food businesses exist earlier in the value chain, for example a grocery store selling to a restaurant, for the purpose of this study, the businesses will only include the last step of the value chain and the food businesses that exist there - where consumers are making their choices.

#### 4.1.7 Food System

The definition of food system that used for the duration of this paper is pulled from the main theoretical text, *Nutrition and Food Systems from the High Level Panel of Experts on Food Security and Nutrition* (2017). The experts define food system by saying that, “a food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes. This report pays specific attention to nutrition and health outcomes of food systems. It identifies three constituent elements of food systems, as entry and exit points for nutrition: food supply chains; food environments; and consumer behavior” (HLPE, 2017, p. 11). This definition is important to understanding how the barriers that environmentally sustainable food businesses face impact the rest of the food system. The definition gives a holistic view of the food system showing the interconnectedness and

demonstrating that there are clear socio-economic and environmental outcomes from all food systems (2017).

## 4.2 Theoretical Framework

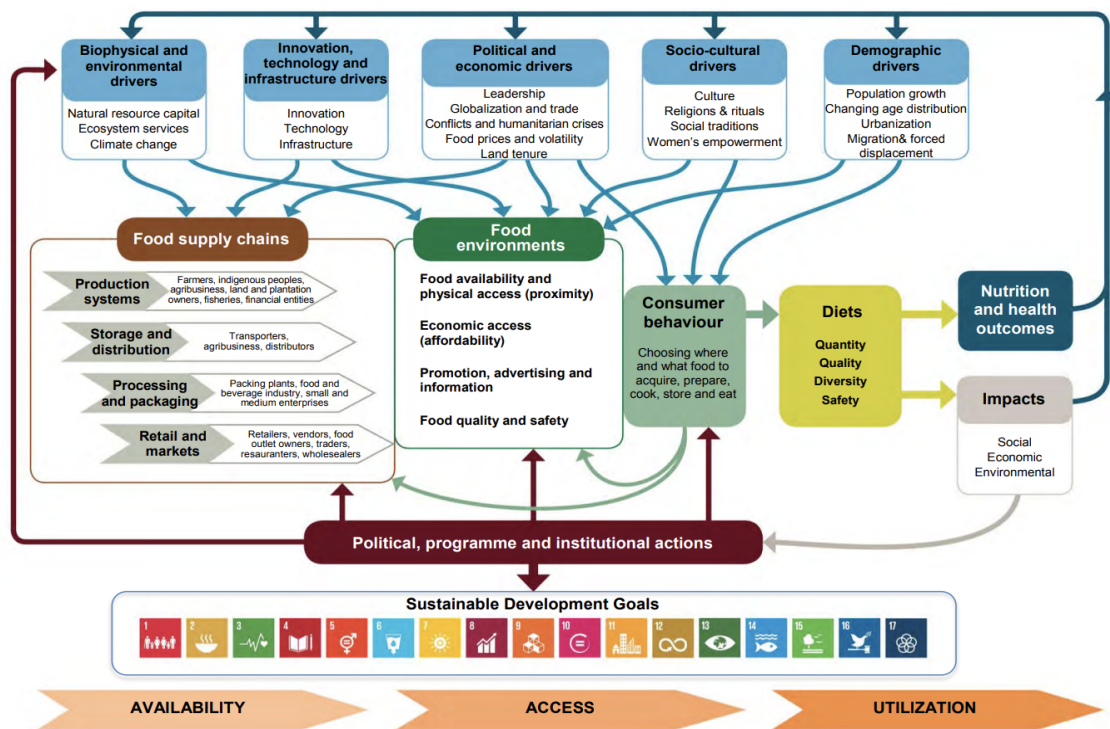
### 4.2.1 Sustainable Food Planning

The theoretical framework theory to be utilized in this thesis will be “Sustainable Food Planning,” this theory outlines the importance of increased urban planning for sustainable food production since many humans live within urban and city settings (Viljoen & Wiskerke, 2012). The theory focuses on four main components, which include 1) integrating health, 2) environment and society, 3) food in urban design and 4) planning and urban food governance (2012). This theory conveys the importance of food security and increased sustainable food accessibility in an urban setting. The utilization of this theory is important as it ties very closely to Vancouver and Victoria’s goals and targets for environmental sustainability.

Viljoen and Wiskerke explain that urban planning has mostly ignored food because of the industrialization of food and the large geographical distance between where food is produced and where it is consumed (2012, p.19). Another reason food is often ignored in the context of cities and communities is because many western countries take food for granted - it is just there (2012). The authors argue that there is a huge role for food as we plan our cities and communities in coming years (2012). As the population continues grow, so will the amount of people residing in urban areas making the ability to get food very important.

Both Victoria and Vancouver have taken a proactive role when considering Viljoen and Wiskerke’s argument that food policy should be focused on by cities and urban planning. The authors explain that, “food can play a central role in sustainable urban and regional development” (2012, p.20). With both the cities viewing environmental sustainability and food as an important part of their strategies and goals, they can further create a positive environment for this food planning from the recommendations Viljoen and Wiskere layout (2012). Using suggestions from Sustainable Food Planning, there can be better food planning which can reduce many of the food security issues communities face while also promoting more environmentally sustainable food.

Although this theory is grounded in the food planning and creating a method for providing food in urban areas with less of a focus on environmental sustainability, there are recommendations which can be incorporated into an environmental sustainable business framework. By taking an in-depth look at what Sustainable Food Planning says about environmental sustainability, meaningful advice can be outlined to create better urban planning for food and environmental sustainability.



**Figure 1.** Conceptual framework of food systems for diets and nutrition (HLPE, 2017, p.26)

### 4.3 Analytical Framework

#### 4.3.1 Framework of Food Systems for diets and nutrition

The major analytical framework used in this thesis will come from *Food Systems and Nutrition* and the HLPE's the Conceptual framework of food systems for diets and nutrition as demonstrated in figure 1 (HLPE 2017, p. 26). The use of some components of this framework is beneficial as it displays food security as a complex topic with many interwoven aspects. Looking at a select few components within this framework will convey the complexity and the need for increased accessibility and availability of environmentally sustainable food. This framework is guided by the idea that not only do people have the right to food for survival, but also a right to food that is “nutritionally adequate for health and well-being” (High Level Panel of Experts, 2017, p. 23). The authors detail that it is challenging for food systems to meet our changing needs in a sustainable way (2017). This framework is beneficial when looking at food businesses in Vancouver and Victoria because it makes connections between food systems and all the elements, which interact with each other (2017). “These systems are interlinked and in continual adaptive cycles of growth, restructuring and renewal” (2017, p. 23). This framework underlines these interactions as they determine more “complex links between food systems and their final outcomes” (2017, p. 23). By using this framework to analyze the barriers environmentally sustainable food businesses face also demonstrates that food systems are completely interwoven. As outlined by the HLPE, “decisions made by one group of actors at one stage of the chain have implications for the others” (2017, p. 24). Focusing on one environmentally sustainable

portion of the food system or supply chain will have direct implications on the environmental sustainability of the others.

HLPE explain that, “retailing of selling food shape the food environment in which consumers make purchasing decisions” (2017, p. 27). They explain that formal supermarkets and restaurants influence consumer behavior by taste, convenience, values, culture and beliefs. HLPE outline that in developed countries the major consumer decisions are made around cost, convenience, and culinary abilities whereas some can make choices based on health, animal welfare and the environment (2017, p. 32). HLPE calls for complex and multi-scale governance mechanisms to improve the sustainability of food systems - through research and analysis this thesis can determine which actions can drive environmentally sustainable food in Vancouver and Victoria. Based on this assessment, recommendations can be made to overcome these barriers and therefore encourage environmentally sustainable food.

The key components from HLPE’s conceptual framework that will be used in the analysis of the findings is the drivers of food systems changes (2017, p. 12). Although these ‘drivers’ have been utilized as barriers in the context of my research topic, they can also be framed as drivers of changing the food system. HLPE outlines 5 different drivers of the food system including: “biophysical and environmental; innovation, technology and infrastructure; political and economic; socio-cultural; and demographic drivers” (2017, p.14). The key drivers that are relevant to food businesses in this specific context are innovation, technology and infrastructure, political and economic and demographic (2017). The drivers and components that will be used to analyze the results will be those that clearly emerge through the data and research. From drawing on the data collected and pulling out the components of the conceptual framework of food systems for diet and nutrition that best represent and categorize, the results will be beneficial to see the effect of the barriers on the food system as a whole (2017).

The drivers which have direct relation to this study include, biophysical and environmental drivers, political and economic drivers, and socio-cultural drivers (HLPE 2017). Both demographic and innovation, technology and infrastructure drivers are connected as well, but not as directly connected to the same extent that the other three drivers are (2017). The theme of both demographic and innovation, technology and infrastructure drivers were present through research, but because of the place that food businesses take in the food-supply chain, they were not overly present in interviews.

As noted in HLPE (2017), biophysical and environmental drivers relate to the food system as ecosystems, biodiversity, climate change and many other factors all affect the food system. There are many environmental drivers that shape the way we can produce food but there are also many aspects of our food system that shape the environment (2017). For example, the monoculture that is heavily present in agriculture reduces biodiversity (2017). The environment and climate change affects all food produced. Many environmentally sustainable businesses push for environmental sustainability in an attempt to reduce the environmental impacts that the conventional food system has on the environment. This driver is related to

this thesis in many aspects, the main one being that many environmentally sustainable food businesses have started a business with the intention of breaking the negative cycle of harming ecosystems and biodiversity.

Political and economic drivers, as outlined by HLPE (2017) have a huge impact on the food system as they have the power to invest, design programs and create policies for sustainable food systems. HLPE outline leadership, as well as inclusive governance mechanisms, from global to local levels, is crucial; to invest in sustainable food systems; to design and implement policies and programmes to strengthen food systems, improve diets and enhance FSN (food systems and nutrition); and to overcome power imbalances” (2017, p. 14). The economic and political drivers are extremely present in environmentally sustainable food businesses. The businesses have the power to invest their money into more environmentally sustainable products. Governments have a huge impact on the food business in terms of what they are required to do, urban planning, assistance and capacity building and taxes/subsidies. The economic and political drivers have been barriers for some environmentally sustainable food businesses, but their actions can also drive a more sustainable food system.

Socio-cultural drivers are the social drivers that affect the food system, “individual food choices, although deeply personal, also reflect cultures, rituals and social traditions” (HLPE, 2017, p.14). There are many socio-cultural drivers that impact environmentally sustainable food businesses and the food system itself. Norms and traditions impact environmentally sustainable businesses as an emerging “new” type of business. In modern food systems, environmentally sustainable food is viewed as a luxury or very expensive (Monast, August 2016). The socially ingrained norm has a huge impact on environmentally sustainable businesses who try to be accessible by all income levels and cultures.

#### 4.3.2 Circular Economy

Circular economy is a theory that can be applied to many different sectors, but also provides a meaningful theory for environmentally sustainable food systems. Circular economy can be defined as, “an industrial economy that is restorative by design and mirrors nature in actively enhancing and optimizing the systems. It applies several principles from nature: production out of waste, resilience through diversity, the use of renewable energy sources, systems thinking, and cascading flows of materials and energy. Circular economy means reuse, repair, refurbishing, and recycling of the existing materials and products; what was earlier considered to be waste becomes a resource” (Jurgilevich et al., 2016, p. 2). As outlined by Jurgilevich et al. (2016), the current economic system we have follows a linear pathway that ends in waste disposal.

When looking at the food system, the circular economy is a relevant concept, especially for environmentally sustainable food businesses. Although there is a large quantity of waste throughout the food supply chain, food businesses in this study are at the end of the chain or close to it. This means many food businesses, including grocery stores, restaurants, and cooking schools, are responsible for the disposal of food waste. Jurgilevich et al. explain that

the, “circular economy regarding the food system implies reducing the amount of waste generated in the food system, re-use of food, utilization of by-products and food waste, nutrient recycling, and changes in diet toward more diverse and more efficient food patterns” (2016, p. 2). Many of the environmentally sustainable food businesses who participated in this thesis research attempted to close the loop of waste in the food system. Specifically, the zero waste grocery stores who participated were achieving this. It is important to note that closing the loop does not necessarily mean producing the same amount of waste as a conventional food business and then reusing all the waste back into the food system. As outlined by Jurgilevich et al. (2016), it includes changing the patterns of our food system as well, which can include reducing the amount of waste created in the first place. Circular economy offers an interesting and relevant theory for the food system; the majority of the food businesses interviewed discussed actions that would move their business towards a circular model.

#### 4.3.3 Food Regimes: Neoliberal

Food regime analysis “combines political economy, political ecology and historical analysis to explain how particular relations of food production and consumption are central to the functioning and reproduction of global capitalism” (Giménez & Shattuck, 2011, p. 110). According to Giménez & Shattuck (2011), food regime as a concept serves as an analytical lens to understand global food systems. There have been multiple food regimes throughout history that have led to our current food regime: the neoliberal food regime (2011). The neoliberal food regimes began in the 1980’s and is “characterized by the unprecedented market power and profits of monopoly agri-food corporations, globalized animal protein chains, growing links between food and fuel economies, a ‘supermarket revolution’, liberalized global trade in food, increasingly concentrated land ownership, a shrinking natural resource base, and growing opposition from food movements worldwide” (as cited in Giménez & Shattuck, 2011, p. 111). It is important to understand that the current corporate regime has resulted in responsive food movements that aim to change the current food regime. A movement and increase in more environmentally sustainable food businesses is an active food movement away from the neoliberal food regime.

#### 4.3.4 Food Movements

Food movements are responses to the food regimes that affect our food systems, attempting to move away from the current narrative (Giménez & Shattuck, 2011). Giménez & Shattuck outline that food movements, “advance practical alternatives to industrial agri-foods, such as sustainable, agroecological and organic agriculture and farmer–consumer community food networks – largely within the economic and political frameworks of existing capitalist food systems” (2011, p.115). The very existence of environmentally sustainable food businesses that promote and enact more environmentally sustainable practices while functioning within the capitalistic food system, is part of the progressive food movement (2011).

Food justice is the movement, originally started among marginalized groups, that calls for food system reforms where all groups are entitled to the right to food (Giménez & Shattuck,

2011). Gottlieb & Joshi simply describe food justice as, “ensuring that the benefits and risks of where, what, and how food is grown and produced, transported and distributed, and accessed are eaten are shared fairly” (2010, p. 6). Giménez & Shattuck (2011) outline the institutions and orientation of this progressive food movement. The institutions that make up the food justice movement include, “Alternative Fair Trade & many Slow Foods chapters; many organizations in the Community Food Security Movement; many Food Policy Councils & youth food and justice movements; Coalition of Immokalee Workers and other farmworker & labor organizations” (2011, p. 117). The orientation of the food justice movement is done through empowerment and includes “agro-ecologically-produced local food; investment in underserved communities; new business models and community benefit packages for production, processing & retail; better wages for agricultural workers; solidarity economies; land access; regulated markets & supply” as models (2011, p.117). Many of the institutions and models that fall under the food justice movement are present in the environmentally sustainable food businesses that this thesis focuses on. For example, new business models are very present and relevant to the environmentally sustainable food businesses; these food businesses are a fight against the current food system.

## **Chapter 5: Findings**

### 5.1 What is Environmental Sustainability?

As highlighted in the conceptual framework, sustainability and environmental sustainability have become convoluted “buzzwords” with many interchangeable definitions. Because of this confusion, each interview began with the interviewee explaining their definition of environmental sustainability. This was because those included in the study were “self-proclaimed” environmentally sustainable. To be able to gauge what this meant, since businesses could potentially have a different understand of environmental sustainability, asking for their definition could lay out what they considered to be environmentally sustainable. Almost all of those interviewed were owners or upper level management and all played a significant role in the environmentally sustainable actions of the businesses. That meant the definition the interviewees explained would also accurately depict what environmental sustainability meant to them and how it was understood for their business. Analyzing the definitions that were provided allows an analysis of what the standards for environmental sustainability are for these businesses. By examining similarities and differences in the definitions provided created a clear idea of the standards the businesses are abiding by. It also created a threshold and depicts if environmental sustainability is a consistently understood idea in the industry or if it is also understood differently like sustainability is. Measuring the environmental sustainability of a business is difficult and requires the creation of some kind of scoring system. Having all businesses that were interviewed be self-proclaimed as environmentally sustainable in one way or another, allows for the accumulation of the definitions to create a cohesive definition.

The findings from this thesis highlight issues that environmentally sustainable food businesses face. These included financial barriers and consumer-choice barriers. Both have



proved to be restricting to all businesses, but not to the extent that these businesses feel pressured to close or to resort to non-sustainable options.



**Figure 2.** This word cloud depicts the frequency in which words were mentioned in interviews when respondents were asked to define environmental sustainability

Environmental sustainability has different meanings to different people. Analyzing the word cloud in figure 2, demonstrates the frequency in which interviewees used certain words in their personal definitions of environmental sustainability. Business was the third most used word in all of the definitions that were provided by interviewees. This is a stark contrast to the definition of environmental sustainability pulled from academia. This finding shows that when the interviewees were defining environmental sustainability, they thought of their businesses. It is important to note that there could have been confusion among the interviewees, because the definition was asked for in the context of the interview about environmental sustainability and their food businesses.

The definitions provided by interviewees had commonalities throughout. First, 90% of the definitions revolved around some sort of understanding that reducing impacts on the environment and benefitting the planet are important. Some of the words and phrases used that represented this understanding included: harmful, impact, environment as a priority, reducing carbon footprint, benefit the planet, carbon neutrality, less/reduced impact, and “living in a world where the environment doesn't need saving” (Personal communication, November 2018). Additionally, all of the interviewees defined environmental sustainability with the environmental focus and did not bring in any of the other ‘sustainable’ pillars - like social or economic. Second, many of the definitions that referred to ‘business’ were not about economic sustainability, but rather doing business in an environmentally sustainable way. From 15 interviews, the word “business” was mentioned 9 times, and therefore represented over half of the definitions provided. Even in the definitions that didn't specifically address

businesses, there was a notion of the connection between environmental sustainability and businesses.

The third commonality was the notion that the current system of food businesses has a negative impact on the environment. The majority of the definitions made some reference to the food business sector being bad for the environment in some way or another. There was also a mention of moving forward or moving away from a destructive system and using the environment as the center of running the business.

One of the three R's (reduce, reuse and recycle) were mentioned in over half of the definitions. Those that went further than just the definition of environmental sustainability and commented on the current food business system, mentioned some specific problems or issues. These included: waste, carbon emissions, destroying natural resources and pollution. Waste was the biggest issue mentioned in all definitions in reference to environmental sustainability.

There were a few main differences across all of the definitions. One of the major differences among definitions was that some were very general, whereas, others were very detailed with examples of the issues or ways to overcome environmental issues. For example, one definition was, environmental sustainability is "about always thinking about your impact. Thinking about your impact of every decision you make and thinking back to what impact I'm having. If we knew that what we're doing is harmful, we would stop doing it, but how often do we just not ask or even lie to ourselves or we lie to other people about the true impact of our actions?" (Personal communication, November 2018). In comparison, a very detailed definition was "for us its (environmental sustainability) about sourcing as much as we can to reduce our carbon footprint. Helping local economy is a huge offshoot of that. Which personally goes hand-in-hand. Our environmental concerns, it's reducing waste as much as possible, like not, over-portioning to the guests so that we're bringing back food. We like our plates clean and there's not a lot of a waste that way. And then also using every bit that we can like root to tip, and nose to tail" (Personal communication, December 2018). Through these definitions one can see the portrayal of environmental sustainability differently. Both definitions have the same underlying themes of reducing impact and knowing your impact on the environment. The first looks at the impact of your decisions and the relation to the environment, and the second looks at what environmental sustainability means for that business and how it plays out in their everyday business. The level of detail in the definitions that were provided by the food businesses was one of the major differences.

The definitions provided could be grouped into three categories. The first are the definitions that specifically referenced a value or a moral that the business encompassed. These were the definitions that explored values like impact, harmony, responsibility, carbon neutral systems and advocacy. For example, this category of definitions would include a value their business had or tried to encompass and how it was connected to environmental sustainability. One response included how environmental sustainability meant advocacy, specifically using advocacy in the form of spending money on businesses or actions that are bettering the

planet. The second category is the definitions that specifically referenced what they thought environmental sustainability is and provided examples of what they were doing or how businesses could be bad. For example, these definitions often looked like “environmental sustainability means to me/our business \_\_\_\_ and food businesses are bad at \_\_\_\_ so we are aiming to do \_\_\_\_.” The third category were the definitions that explained one of their business values and then also provided examples.

Another difference in the definitions of environmental sustainability was that approximately 75% of the definitions referenced being more environmentally sustainable and actions you can take whereas the others discussed being fully environmentally sustainable and having no impact on the environment. One approach was looking at how to become more environmentally sustainable, the actions a business can do to be more sustainable. The latter approach discussed what is needed to be fully environmentally sustainable, having no impact on the environment. This creates two different categories one of “in progress” environmental sustainability and another of fully environmental sustainability. It is hard to draw the line of what is fully environmental sustainability and what is in progress. Due to the harmful impacts of the industry, movement towards environmental sustainability is the overall goal and this was portrayed in the majority of the interviews.

To create a definition that encompasses all of the responses would be to combine the values, understanding of environmental sustainability in the context and incorporate the most common examples. The definition that portrays all of these responses is: in the context of food businesses, environmental sustainability is when day-to-day business does not negatively impact the environment. This includes reducing waste, pollution, and carbon emissions while adopting responsible actions and truthfully reflecting on the impact of your actions. A few examples of what a food business can do to be more environmentally sustainable include wasting less, sourcing local, using fewer natural resources and reducing/reusing/recycling.

## 5.2 Why is environmental sustainability important?

The motivation behind environmental sustainability is important and it is important to know what motivated business owners and managers to adopt an environmentally sustainable business model. One major commonality among many responses included the idea that there was no other choice, an environmentally sustainable business was the only choice. Many of the reasons behind their environmentally sustainable business was grounded in the concern for the world and the environment. One common theme was the idea that we live on the planet and it gives us so much and we have a responsibility to protect it.

More than half of the interviewees saw environmental sustainability as ‘core’ to their business model or an internal connection to the notion of environmental sustainability. This theme of moral obligation was weaved into almost every motivation in each interview. One respondent said: “environmental sustainability is essentially at the core of our business, our mission and vision has to do with the reason why we started this business” (Personal

Communication, December 2018). Another said, “environmental sustainability is important to us as a business because that's our business model and it was planned that way” (Personal Communication, December 2018). For many of these businesses, there was a prominent connection to the idea of environmental sustainability that it seemed many could not imagine opening a business that wasn't environmentally sustainable. One respondent said, “We feel that sustainability fits in with our philosophy about how to live and actually the only real way to do business when we think about it deeply” (Personal Communication, January 2019) Many businesses also had this notion that their motivation behind being environmentally sustainable relied on the current state of things. A majority of the motivations referenced problems they saw in the world including plastic pollution, food waste, carbon emissions, conventional farming and the current food system. There were also connections to frightening climate change effects that really changed things. Some responses included mention of food shortages, strange harvesting years, and more storms as stark and clear reasons that food business must change their behavior.

Major themes that came out of the reasoning behind why environmental sustainability is important to their businesses included: the business being ground in environmental sustainability, feeling an internal obligation to protect the planet and people and the frightening effects of climate change.

Anomalies that stuck out included protecting the local economy and that buying local and supporting environmentally sustainable producers went hand-in-hand with environmental sustainability. Sustainability for the economy and socially was rarely mentioned at all aside from this anomaly. Another business owner saw the opportunity to open a business as a way to solve societal problems like health and nutrition. Many businesses believed environmentally sustainable food businesses are helping the planet and this was the right thing to do. In comparison, this business owner saw opening an environmentally sustainable business as a way to solve societal problems like getting healthier and that society as a whole is not in good physical shape.

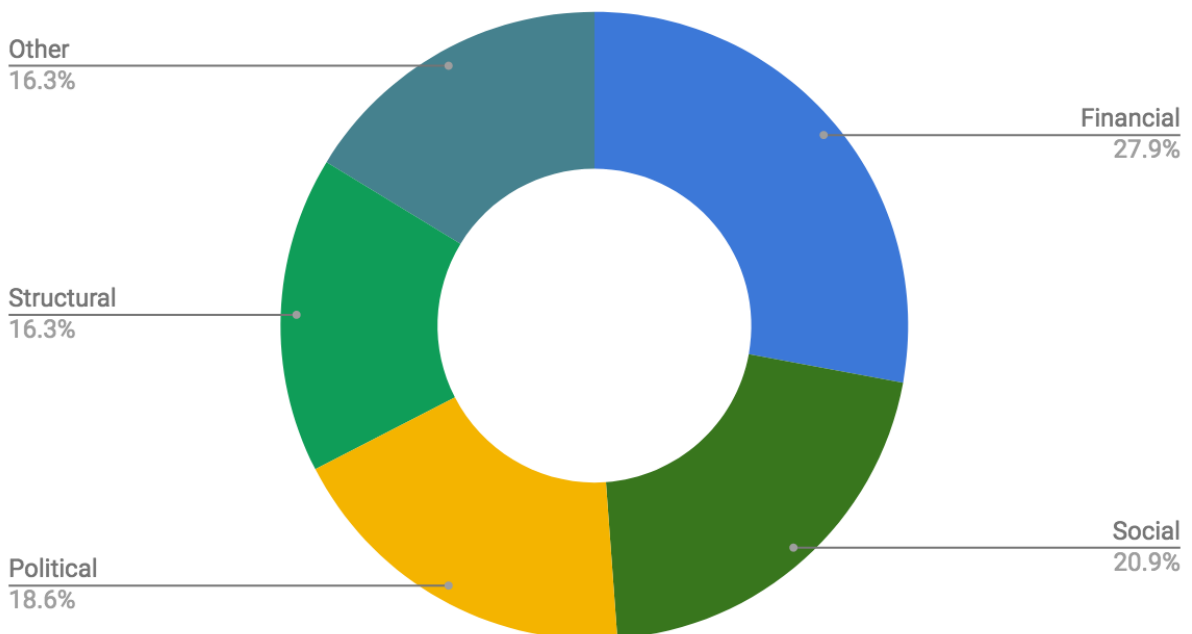
### 5.3 The barriers

Since the focus of this paper is about the barriers self-proclaimed environmentally sustainable food businesses face, the research was primarily focused on these barriers. The portion of the interview where barriers that food businesses faced were discussed, took up the majority of the interview. Many businesses faced a range of different barriers and there was a huge range from one business to the next. The experience of each food business was very unique to their situation, but there were still many similarities to other food businesses. One of the main similarities was that there were major financial barriers for all the businesses. Almost every single interviewee expressed that being environmentally sustainable is more expensive. Organic food, compostable take-out containers, local suppliers, and carbon offsets are all more expensive than the conventional alternatives. Many expressed that starting a business to begin with comes with a lot of financial barriers. Many also detailed that they took these extra financial barriers into consideration during the planning phase of their businesses. The

idea that this business venture would be more expensive was understood and expected by most respondents. Many respondents also did not stress the financial barriers as much as other barriers, maybe because it was expected from the beginning, but regardless of the reason, this was an interesting finding.

Also, as noted in the limitations section of this thesis, it is important to note that only 15 business owners or managers were interviewed in the two cities. They do not necessarily reflect the views of every business owner in these cities or in Canada. They also do not reflect every environmentally sustainable food business. It is interesting and important to reflect on this certain case study, but no generalization can be made.

### Barrier Breakdown



**Figure 3.** The categorized breakdown of the barriers reported from respondents

As seen in Figure 3, the barriers from interviewees could be categorized into 5 broad categories. These categories were financial, social, political, structural and other. During the interview, financial, social, and political barriers were explicitly asked about, but after reflecting and categorizing responses, it was clear there were more than just those three categories. Financial barriers are the barriers that restrict the business because of a lack of money or costs. Many of these barriers had to do with the higher cost of sustainable products and sustainable acts. The social barriers are barriers that restrict a business because of social understanding. Examples of these barriers were a lack of education on environmental sustainability or a lack of understanding why environmentally sustainable products cost more money. Political barriers were barriers that were placed upon a business due to a political

structure or system; these included city regulations or health authorities. Structural barriers emerged during the categorization of the barriers. Structural barriers were ones that did not fall in the other categories, but stemmed from the food system. These systemic issues included things like suppliers constantly including plastic packaging and how difficult it was to reduce this. It is not necessarily financial, political or social (although it does have its connections to all three), but rather it is a systemic issue in our food system. The other category includes the rest of the barriers reported and did not fall into any of the other four categories. Some of these barriers included transportation, time, or new business models.

The process of categorization and breakdown in Figure 3 was created by taking all of the barriers and synthesizing them into short phrases or keywords then categorizing them into the 5 categories. This was the first step and can be seen in Figure 4. Figure 4 is more specific and portrays the specific barrier that were explained by the interviewees. From here a second chart (figure 5, pg. 34) was created where the more specific barriers were reduced to their root barrier. For example, “local and higher quality products are more expensive” was reduced to “costs” because that is the root barrier and issue. Using the more specific chart, figure 4, is beneficial because it created more categories of barriers and shows a more specific picture of all of the barriers. Figure 5 is shown graphically in Figure 6 (pg. 35).

The specific financial barriers included predominantly the price of environmentally sustainable products. This included the food products themselves including meat, produce, and other food and it was expressed that buying local, organic and generally environmentally sustainable is much more expensive. Other financial barriers included the price of containers which as seen in Figure 4 was named three times. A lot of businesses felt the pressure to use take-out containers and single-use containers that were compostable. Other financial barriers include environmentally-friendly machines (like fridges, vents, eco-friendly vehicles and other appliances) because they are expensive. Some of the other financial barriers that were expressed included buying carbon offsets and paying a lot up front for environmentally sustainable products despite it paying off later (having a waiting period).

Financial Barriers	Social Barriers	Political Barriers	Structural barriers	Other Barriers
<ul style="list-style-type: none"> <li>-Cost</li> <li>-Local and higher quality are more expensive</li> <li>-ES (environmentally sustainable) takeout containers are more expensive than non-ES containers</li> <li>-Higher prices for the better environmentally sustainable products</li> <li>-Buying carbon offsets</li> <li>-Time (cost-benefit: pay a lot up front to save later)</li> <li>-Being ES is more expensive</li> <li>-Prices (keeping prices low while still staying profitable)</li> <li>-Compostable single use containers are expensive</li> <li>-Eco-friendly vehicles and machines are more expensive</li> <li>- organic ingredients are more expensive</li> <li>-Time and money</li> </ul>	<ul style="list-style-type: none"> <li>-Customers hesitant to try something out of the norm (think it's more expensive)</li> <li>-People/ Customers don't understand- (don't want to pay/understand the benefit)</li> <li>-Customers concerned about high price points (inherent barrier is education)</li> <li>-Customers not able to afford the higher prices</li> <li>-convincing customers to do something not the norm</li> <li>-Customers not understanding that local is more expensive</li> <li>-Buy-in from public</li> <li>-Customers don't properly dispose of compostable containers</li> <li>-Hesitation around eating less meat</li> </ul>	<ul style="list-style-type: none"> <li>-Rules and regulations in spaces/buildings that are unsustainable (machines etc.)</li> <li>-Getting a space (City owned space and were reluctant to rent it to them)</li> <li>-Getting a business license</li> <li>-Difference of opinion within city departments</li> <li>-City not able to compost all compostable single-use containers</li> <li>-Problems with health authority and reusing containers</li> <li>-Governments not acting fast enough to encourage ES</li> <li>-Misunderstood food safety rules</li> </ul>	<ul style="list-style-type: none"> <li>-Trying to convince suppliers to use less packaging or find suppliers that will not use packaging</li> <li>-Other business owners aren't willing to be environmentally sustainable and that keeps costs high for those that are</li> <li>-Packaging from suppliers</li> <li>-Businesses using the marketing of farm to table that are not farm to table</li> <li>-Catering often includes driving and single-use containers</li> <li>-Suppliers using plastic</li> <li>-Status quo</li> </ul>	<ul style="list-style-type: none"> <li>-No parking to encourage active transportation, but people complain</li> <li>-Could not find a space to lease because landlords didn't want them to test a new business model</li> <li>-Competing interests (packaging vs price)</li> <li>-Staff time for more innovative projects</li> <li>-Quality of single use containers</li> <li>-As business grows very difficult to use bikes for deliveries</li> <li>-Large corporations beat out smaller sustainable companies because they can produce and sell products at a lower cost.</li> </ul>

**Figure 4.** A chart which categorizes and summarizes all responses of the barriers that environmentally sustainable businesses face

There was a major theme in the social barriers of customers not understanding and being concerned about the high price point. A lack of education on environmentally sustainable food was alluded to eight times throughout all of the interviews. Sometimes this included not understanding why the products cost more than other food businesses. Customer hesitation on the price, trying something new, and the business model in general was reported seven times. A lot of customers were concerned about the higher price point and could not grasp the idea of paying more for environmentally sustainable. Repeatedly interviewees acknowledged that there was an educational gap. Surprisingly there is a lot of customer hesitation reported from business owners and managers. In one case, a business owner who owned a zero-waste grocery store explained that:

“People are hesitant, to come in to the shop because they don't know what it is. It is a different philosophy than a traditional grocery shop, you know, some people would rather just avoid it, than come in and check it out. For new people, it's easy for them to get cold feet and come up with reasons why not to give us a try. There is a stereotype that zero waste grocery stores are meant for privileged people, and that they are going to be really expensive. So I do find, at least from what I've seen on some of the social media platforms, that people have that expectation that we are going to be more expensive, so they're hesitant to even try it, or even, you know, come in and see. We have had a couple of instances where we've had to do a comparison with prices with other grocery stores right on the spot to show people that we are competitively priced and for most items were actually priced lower, but people are not used to buying in bulk. When you go to the grocery store, and you buy something that is packaged, you know that you're paying \$5 for 500 grams. But when you come to a bulk store, you just fill up your jar and you don't really have a concept of how much that jar is going to weigh. Sometimes people get a little surprised in the beginning. Once you start showing them that in comparison, you know, if you're comparing apples to apples, gram to gram, you're really paying a lot less. It takes lots of time to educate people on that” (Personal communication, January 2019).

This excerpt from one of the interviews demonstrates very clearly the kind of educational gap that still exists around the different environmentally sustainable businesses. Many of the businesses that did not have a conventional business plan or idea echoed this struggle around a lack of education, but also a hesitation to try something new. This example shows both the hesitation and lack of education that exist socially and results in barriers for environmentally sustainable food businesses. Some of the other social barriers reported included customers not disposing of compostable containers properly, which is rooted in an educational gap. Another social barrier that was explained was the hesitation around eating less meat and the polarizations between eating vegetarian vs non-vegetarian and people being worried about labels. One business owner explained that many people feel a reluctance to eat vegetarian or vegan because there are a lot of strict rules and there are these assumptions about these groups of people that customers are worried about being associated with. They explained that this divide and idea has emerged where either you are vegetarian, or you eat meat all the time and there is nothing in between. While this is true the “flexitarian” lifestyle is rarely promoted. A business owner explained that there needs to be more education and less



hesitation on eating less meat, but not looking down on people that eat meat occasionally because it further creates a divide and drives people away from eating less meat. This was explained as being unfortunate since reducing meat consumption is one of the top ways to reduce our carbon footprint (Frenette, Bahn & Vaillancourt, 2017). Overall, the social barriers were rooted in customer hesitation and an education gap about environmental sustainability, all of the social barriers reported could be broken down into these two categories.

There were eight political barriers in total and seven businesses acknowledged that they hadn't faced any political barriers. The political barriers were more diverse in comparison to the financial and social ones. There were no barriers that came from the federal government level and most were at the municipal level with a few within provincial jurisdiction. Three of the barriers were from health authorities and making sure that reusable containers were not contaminated. It is important to acknowledge that two businesses also clearly stated that the health authority came to meet with them, but were very supportive and encouraging. There were barriers with the rules and regulations in rental spaces, for example not being able to use more sustainable equipment or long waits to get a business license. Another barrier was governments not changing quick enough for transformational change and support for environmentally sustainable businesses. This business owner explained that systemically governments move very slowly and not at the pace that we need to deal with climate change.

One business had a very hard time securing a rental space from the city because their business plan was not the norm, and the city was very reluctant to rent the space. This is a very specific example because often times the city is not the owner or landlord of many spaces, but was in this specific case. Another barrier was that some departments within the city government were supportive of environmentally sustainable food business, but the departments more focused on money and economic development were the ones who dealt with the leases. Financial focused departments were not on-board for businesses to rent the space and this demonstrated a political disconnect between departments at the same municipality resulting in a huge barrier. It is difficult for a city to advertise themselves as being environmentally friendly and supportive of environmentally sustainable businesses, but then have another department more worried about the financial aspect. Another political barrier had to do with the waste disposal system in one of the cities. In this case, one of the business owners had found very high quality, expensive and compostable containers. The problem was with the specific waste disposal and compost system the municipality had; they could not accept these containers as compost as they took slightly longer to decompose compared to other compostable container. This meant that extra money was spent on compostable containers when they could not even be composted.

The structural barriers are barriers that are inherently built into our food system and have components that are social, financial and/or political. There were seven structural barriers identified by the business owners that were interviewed. It was mentioned three times that businesses struggled to convince suppliers to use less plastic and waste. Often times, this was difficult because it had to be conveyed further up the supply chain to curb this excessive use

of plastic and waste. Many of the businesses that mentioned this barrier explained how they had to either convince suppliers to curb the packaging or find new suppliers that didn't use packaging. One business owner mentioned that other businesses using buzzwords and phrases like "farm-to-table" were not actually "farm-to-table", and it is damaging to businesses who are. Another interviewee said that other business owners who aren't willing to be environmentally sustainable, kept the costs high for those that are. They explained that if all food businesses were environmentally sustainable, this may drive the overall costs down and increase the supply and availability of environmentally sustainable products. In similar fashion, an interviewee said that the status quo of the industry was a huge barrier to transition to being environmentally sustainable. Additionally, one of the business owners who did a lot of catering said this type of business inherently produces more waste and requires transportation which makes it difficult (and expensive) to be environmentally sustainable, therefore they had to come up with new and innovative ways around this.

The other barriers that were expressed by interviewees were ones that did not fit into the other four categories or were a mix of the other categories. All of the barriers that were expressed in this category were only expressed by one business owner/manager which signifies their specificity to the situation. As mentioned, some of the barriers could be identified as a combination of multiple barriers. For example, one of the barriers expressed was that the businesses could not find a space to lease because landlords didn't want them to be testing a new (or out of the norm) business model on a lease. This particular barrier has both financial and social components, but was a huge hurdle for the business to overcome. Another barrier was a business having no parking due to their location (downtown), but also wanting to encourage more sustainable modes of traffic. In this particular case, many customers complained about not being able to find parking and exclaiming that they wouldn't shop at the store because of this lack of parking. At this point, creating parking spots was completely impossible for the business owners. In a particular case, a manager that was interviewed outlined that often times the innovation that is needed for environmentally sustainable food businesses takes a lot of staff time which inherently costs money. They explained that there is a struggle because to encourage that innovation, you must pay a lot more money in wages for the innovation.

There were some smaller and more technical barriers that also fell into the other category. One of them was that overall the quality of many single-use containers is very low. In addition to the lack of quality, they are also very expensive, but this was expressed as a barrier independent of their cost. Another business really wanted to make all of their deliveries by bicycle, but as their business grew this was almost impossible as most deliveries are done at one time (for example lunch time). Due to large distances, space for bike storage and the delivery times it was impossible to use bikes for every delivery. Another barrier highlighted was the competing interests, specifically trying to decide where the priorities fall when comparing prices, packaging, quality, and if the products are local. One business expressed stress around trying to determine which factors were most important to them, but also what was more crucial for environmental sustainability. The last barrier that fell into the "other" category was that large corporations can easily beat out small and environmentally

sustainable businesses because they can do everything at a lower cost. The owner expressed that often times customers will always come back to the lower cost rather than coming back for other factors. Throughout the above section, it is clear that the variety of barriers were abundant, but there were commonalities throughout.

Figure 4 shows the specificity of barriers expressed by interviewees, but also preserves anonymity and allows for barriers to be generalized. As seen in figure 7, there were twelve financial barriers, nine social barriers, eight political barriers, seven structural barriers and seven other barriers and there was a huge range of how many barriers were named during each interview. Some businesses had two main barriers that really caused them difficulty, whereas, others would have about five smaller, yet significant barriers. This is also not to say that some respondents remembered or knew all of the barriers against them. In one specific case, one interviewee remembered a barrier after the interview and followed-up by email highlighting a research limitation that business owners and managers may not remember everything during an interview. Many interviewees did have the questions ahead of time so they could think the questions through and hopefully not forget any barriers.

Number of Barriers per Category

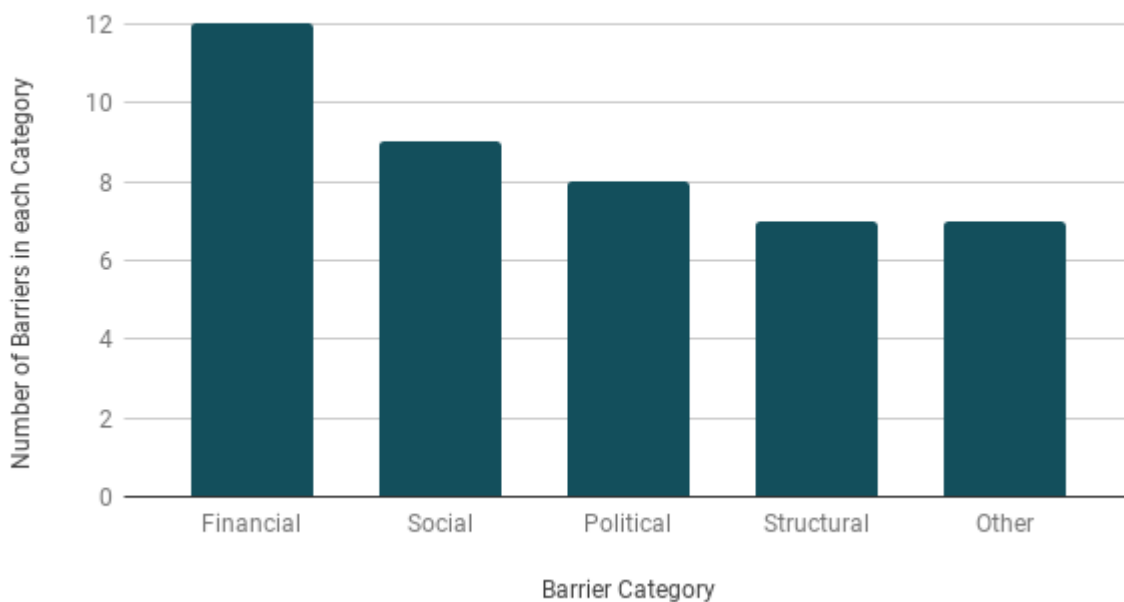


Figure 7. Number of barriers per category that were highlighted in the interviews

In total, out of fifteen businesses interviewed there were forty-three barriers named. The average amount of barriers named per business was 2.8. This means that 2-3 barriers were the average for each interview. As mentioned above, there was a huge range of how many barriers named in each interview. Some businesses named one or two where and some would name five. It was dependent on their specific situation and experience. A lot of business owners expressed that financial barriers were very common, but expected. This is supported by the fact that financial barriers were the most common. Of all the barriers named, twelve out of forty-three or 27.9% were financial representing over a ¼ of all the barriers expressed.

Business and entrepreneurial ventures naturally come with great financial barriers, regardless of being environmentally sustainable. When this factor is combined with environmentally sustainable businesses being much more expensive (products, machines and buildings), it makes starting an environmentally sustainable business quite costly.

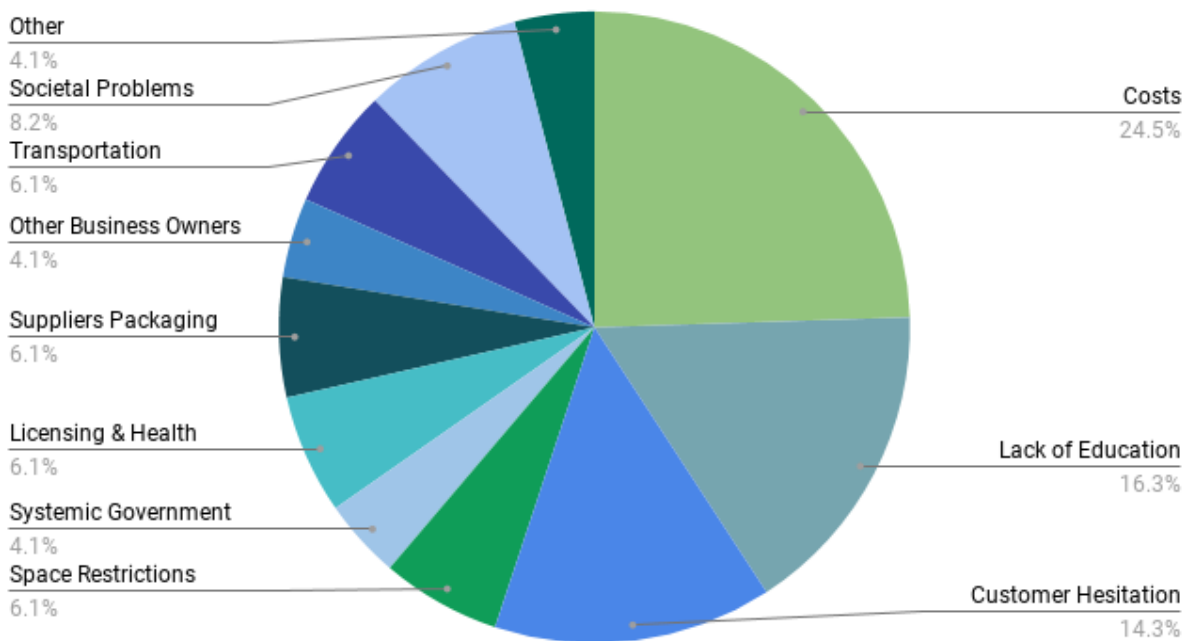
Financial Barriers: 12	Social Barriers: 9	Political Barriers: 8	Structural Barriers: 7	Other Barriers: 7
-Costs -Costs -Costs -Costs -Costs -Costs -Costs -Costs -Costs -Costs -Costs -Costs	-Customers hesitation & lack of education -Customers hesitation & lack of education -Customers hesitation & lack of education -Customers Hesitation -Customers hesitation & lack of education -Customers hesitation & lack of education -Customers hesitation & lack of education -Lack of education -Lack of education	-Space Restrictions -Leasing space in city -Getting a business license -Difference of opinion among city departments -Waste disposal -Health authority -Slow government change -Health authority	-Suppliers & packaging -Other business owners -Suppliers & packaging -Other business owners and mis-marketing -Catering inherently includes driving and single-use containers -Suppliers & packaging -Status quo	-Transportation -Leasing a space -Competing interests (packaging vs price) -Staff time for innovation -Quality of single use containers -Transportation -Big unsustainable companies tend to win because it costs them less

**Figure 5.** Detailed categorized barriers were reduced to identify their more general barrier.

In figure 5, where the more specific barriers were reduced to a core barrier, there is an interesting comparison between the categories. Directing the attention towards the financial and social barriers, there is a clear trend. All financial barriers could be reduced down to costs, and in social barriers, all could be reduced to either lack of education or customers hesitation. When you move into the other categories (political, structural and other barriers), there is a much greater diversity where they could not be further reduced. Health authority and suppliers & packaging where the only barriers that emerged multiple times in all three

categories. It is interesting to see what categories have easily explainable barriers that are common for many businesses.

### Detailed Breakdown of Barriers



**Figure 6.** Detailed breakdown of barriers

The spectrum of financial barriers ranged from being smaller barriers to major roadblocks to the success of their businesses. One of the responses about financial barriers was “I think everybody knows that a major financial barrier to environmental sustainability is price. Often it gets more expensive to serve the local and higher quality foods no matter what it is. That's something that is always a concern and will always be a barrier in the foodservice industry” (Personal Communication, January 2019). The idea of higher quality products that are local, organic and produced as environmentally sustainable being more expensive was a notion that was mentioned multiple times. One of the other barriers was that for a restaurant that was primarily take-out, take-out containers are very expensive. Many owners and managers also mentioned the struggle between keeping prices low and competitive while supplying high-quality food that is environmentally sustainable.

In one particular case, a business had opted to pay for the more sustainable compostable take out containers. These cost a lot more than your regular takeout containers, but are made from corn resin and breakdown a lot easier than the alternative. The struggle that arose was that some consumers weren't composting them because they thought they were plastic or did not have a compost. On the other hand, there was also trouble because the City of Vancouver would not compost these containers as they take a little extra time to decompose compared to your standard organics. This was an example of a business spending extra money to be environmentally sustainable, yet facing increasing barriers because of the waste management system.

Another example of a financial barrier is that often times for environmentally sustainable energy sources, appliances or products you have to pay a great deal of money upfront. This was something that arose for one of the businesses interviewed. There are many environmentally sustainable technologies that were very efficient that the interviewees expressed wanting to adopt but these options had a huge price tag upfront- for example large quantity of sustainable reusable containers. The employee explained that they started doing a cost benefit analysis to see how much money they would be saving in the long run by going the more sustainable route, and in the end, often times they would be saving money. However, small businesses or new businesses often don't have the ability to spend lots of money upfront even if money is saved in the long run. In this particular case, the employee explained that they opted to pay these high costs upfront to be more environmentally sustainable, but did a ton of research prior to any decisions and made sure to always do a cost benefit analysis. It is a risky move to pay a huge cost for something that may not work or be what you wanted, and this had to be taken into consideration ahead of time.

It is also important to note that a few respondents explained that they would not go as far to call certain things barriers, but rather hurdles that they had to get through. Many also expressed that starting a business that isn't environmentally sustainable comes with its own barriers. This thesis is only focused on the barriers that are related to being an environmental sustainable food business. Although some of these could be refuted, the respondents felt that the barriers they faced were specific to attempting to be environmentally sustainable. Many respondents also mentioned that since being environmentally sustainable was key to their business model, it made them have a different attitude about the barriers. For example, one respondent explained that although they faced barriers when starting an environmentally sustainable business, since the key of their business model was being environmentally sustainable, it was just a business barrier. They did acknowledge that without this attitude the barriers they faced are still tied to being environmentally sustainable.

#### 5.4 Comparing the barriers: Victoria vs Vancouver

In total, there were six businesses in Vancouver and nine businesses from Victoria interviewed. Figure 8, shows the breakdown of the barrier categories by city where the businesses resided. Splitting the barriers by city offers an interesting depiction of what the businesses in each city were predominantly facing. Out of the forty-three barriers in total that were identified, sixteen of those barriers were from Victoria businesses while the remaining twenty-seven were faced in Vancouver. It is also important to remember that six businesses in Vancouver were interviewed and nine in Victoria, resulting in the potential conclusion that Vancouver environmentally sustainable businesses are facing more barriers than Victoria environmentally sustainable businesses.

	Financial Barriers	Social Barriers	Political Barriers	Structural Barriers	Other Barriers
Vancouver	<ul style="list-style-type: none"> <li>-Time (cost-benefit: pay a lot up front to save later)</li> <li>-Being ES is more expensive</li> <li>-Compostable single use containers are expensive</li> <li>-Eco-friendly vehicles and machines expensive</li> <li>-Cost of organic ingredients</li> <li>-Time and money</li> </ul>	<ul style="list-style-type: none"> <li>-Customers not understanding that local is more expensive</li> <li>-Buy-in from public</li> <li>-Customers don't properly dispose of compostable containers</li> <li>-Hesitation around eating less meat</li> </ul>	<ul style="list-style-type: none"> <li>-Getting a space (City owned space and were reluctant to rent it to them)</li> <li>-Getting a business license</li> <li>-Difference of opinion among city departments</li> <li>-City not able to compost all compostable single-use containers</li> <li>-Problems with health authority and reusing containers</li> <li>-Governments not acting fast enough to encourage ES</li> <li>-Misunderstood food safety rules</li> </ul>	<ul style="list-style-type: none"> <li>-Trying to convince suppliers to use less practice or find suppliers that will not use packaging</li> <li>-Businesses using the marketing of "farm to table" that are not "farm to table"</li> <li>-Catering often includes driving and single-use containers</li> <li>-Suppliers using plastic</li> <li>-Status quo</li> </ul>	<ul style="list-style-type: none"> <li>-Staff time for more innovative projects</li> <li>-Quality of single use containers</li> <li>-As business grows very difficult to use bikes for deliveries</li> <li>-Large corporations beat out smaller sustainable companies because they can produce and sell products at a lower cost.</li> <li>-Competing interests (packaging vs price)</li> </ul>
Victoria	<ul style="list-style-type: none"> <li>-Costs</li> <li>-Local and higher quality are more expensive</li> <li>-ES takeout containers are very</li> <li>-Higher prices for the better environmentally sustainable products</li> <li>-Buying offsets</li> <li>-Prices (keeping prices low while still staying profitable)</li> </ul>	<ul style="list-style-type: none"> <li>-Customers hesitant to try something out of the norm (think it's more expensive)</li> <li>-People/Customers don't understand- think its extreme (don't want to pay understand the benefit)</li> <li>-Customers concerned about high price points (inherent barrier is education)</li> <li>-Customers not able to afford the higher prices</li> <li>-Convincing customers to do something not the norm</li> </ul>	<ul style="list-style-type: none"> <li>-Rules and regulations in spaces/buildings that are unsustainable (machines etc.)</li> </ul>	<ul style="list-style-type: none"> <li>-Packaging from suppliers</li> <li>-Other business owners aren't willing to be environmentally sustainable and that keeps costs high for those that are</li> <li>-Packaging from suppliers</li> </ul>	<ul style="list-style-type: none"> <li>-No parking to encourage active transportation but people complain</li> <li>-Could not find a space to lease because landlords didn't want them to test a new business model</li> </ul>

Figure 8. Breakdown of the barrier categories by city where the businesses resided

One limitation about the higher quantity of the businesses interviewed, is that two of the interviewees were the owners of two businesses in Victoria. This means that business owners and managers were the managers or owners of two businesses, and this happened twice. Although in both cases, the second business they owned was completely separate from the first, it can be hypothesized that since management and ownership was the same, both businesses would have the same values, goals and suppliers, meaning that those barriers could be easily duplicated in the results.

First, when looking at businesses in Vancouver, there were six businesses who identified costs as being a barrier. These costs included costs of ingredients, supplies and compostable containers. In Victoria, the six financial barriers included supplies and produce cost, expensive takeout containers and buying offsets.

In Vancouver, all social barriers could be reduced to a lack of customer education and customer hesitation. There were four businesses that reported these social barriers. In Victoria, there were five businesses that identified social barriers and similarly to Vancouver, they could all be summed up as a lack of education or customer hesitation.

Vancouver businesses faced many more political barriers compared to Victoria. Vancouver businesses identified seven political barriers where only one political barrier was acknowledged in Victoria. This is a significant difference for two cities with similar environmental sustainability contexts. The political barriers in Vancouver included barriers from the health authority, waste disposal, the speed government moves, and difference of priorities in city departments. In Victoria there was only one political barrier, and it was the rules and regulations that exist within buildings and spaces that are unsustainable. It was acknowledged multiple times during the interviews that were conducted with Victoria businesses that the City of Victoria has been very supportive of their environmentally sustainable businesses. Although this exists online for Vancouver as well, this was only mentioned once during the interviews with Vancouver business owners.

In terms of structural barriers, Vancouver business owners and managers pointed out four whereas in Victoria, three barriers were mentioned. The structural barriers in Vancouver included responses like packaging from suppliers, the status quo and food system marketing. The structural barriers in Victoria included packaging and actions of other businesses. Packaging was a problem for both Victoria and Vancouver businesses, which makes sense when you consider that this barrier is part of the inherent food system in Canada and much of North America.

The barriers that fell into the “other” category were split by five in Vancouver and two in Victoria. Many of the Vancouver interviewees had specific barriers that they felt restricted by that didn’t necessarily fall specifically into one of the categories. It is hard to determine whether this larger number of “other” barriers is significant to Vancouver businesses. The five other barriers in Vancouver included: not having enough time to allow staff to create innovative projects and initiatives, the quality of single-use containers, and trying to



determine what the most important factors are for environmentally sustainable food businesses. One Vancouver business owner felt that large corporations are a barrier because they act unsustainably and therefore have lower prices.

Overall, the Vancouver business owners faced more barriers overall than the Victoria business owners. The six Vancouver businesses interviewed highlighted twenty-seven barriers while the nine businesses in Victoria only highlighted sixteen barriers. As mentioned prior, part of this imbalance could come from four of the businesses in Victoria having the same two business owners. However, even when you take this into consideration, Vancouver business owners still presented more overall barriers than Victoria. Another limitation to the significance of this imbalance is that each interviewee could report as many barriers as they felt. All interviewees were prompted the exact same way, but the interview guide and questions allowed for each interviewee to detail as many barriers as they wanted. Although the purpose was to highlight all barriers that were being faced by these businesses, some businesses presented many more barriers compared to others. Some business managers and owners only highlighted 1-2 barriers, but others mentioned five. It is also crucial to remember that this was not an in-depth look into the barrier each business was facing, and although they received the interview guide at least a week ahead of the interview, it still allows for interviewees forget every barrier or not realize some. The results of this study are largely dependent on the awareness of the interviewees, and their own assessment of what was holding their business back.

### 5.5 Most restricting barrier

All of the barriers that were outlined restricted the businesses ability to exist and grow as an environmentally sustainable food business. Within the interview guide was a question about the barrier these business owners and managers felt was the most restrictive. This question is important to look at because it outlines the barrier businesses struggle the most with and needs the most attention for solutions. Six businesses had a most restrictive barrier that fell within the social category. Some of these most restrictive barriers included customer hesitation, lack of education, education and human connection to the cause, common awareness, buy-in from the public, and status quo. Six businesses also identified their most restrictive barrier as one that fell within the financial category. These included cost of compostable containers (mentioned twice), more general costs (mentioned four times). Other barriers that interviewees labelled as the most restrictive included, not wanting to use cars, finding a rental space, time, and packaging of products received. The packaging of products received falls into the structural barrier category. The other three fall within the other category, but have connections to all of the categories.

### 5.6 Solutions suggestion

Each interviewee was given the opportunity to make suggestions for solutions to overcome the barriers they face. They were asked if they had any ideas for overcoming the barriers that they faced or just solutions in general for making it easier for food businesses to be environmentally sustainable. The reason they were asked about suggestions is because they

are so immersed in the situation. The most common suggestions were a government method or mechanism for raising awareness with citizens about the importance of environmentally sustainable food. A raising awareness campaign or more education in general was mentioned four times as a potential solution. Other suggestions included tax breaks or incentives; one respondent suggest that there should be grants for buying new environmentally sustainable technology. Other financial solutions were based on taxes or incentives for green businesses. These financial solutions were mentioned four times. Alternatively, in three other interviews it was mentioned that government subsidies, or ‘hand-holding’ and incentives would not be beneficial for businesses. Most of the reasoning against financial solutions was the dependence it would create on governments for businesses survival. Importantly to note, respondents were never prompted about if they thought financial solutions would be helpful; they brought up their beliefs on their own.

One respondent explained that they had a small neighborhood association that included environmentally sustainable food businesses. Their suggestion was that this association (or ones like it) could use their power in numbers and order environmentally sustainable products in bulk to reduce costs for small businesses. Another interviewee suggested that governments should increase regulation, specifically for businesses that say they are environmentally sustainable, serving organic and local, or other certifications. Their suggestion was that there should be a body or authority that verifies claims to reduce the number of businesses using these ‘buzzwords’ for marketing. Similarly, a business owner suggested a guideline or rubric for businesses striving to be environmentally sustainable so they could have guidance. The suggestion also included drawing on advice and lessons learned from established businesses. Another solution was for governments and people to move quicker - the interviewee said we should look to those environmentally sustainable food businesses that are leaders and draw on best practices. Lastly, one interviewee suggested that they don't believe in political or financial solutions at all.

### 5.7 Future plans and aspirations

It is very important to see where businesses currently sit and the environmental actions they are currently taking, and what is stopping them. It is also important to look into the future and see where these leaders are headed. Looking at their future plans and ideas can help inspire new businesses and businesses that want to be environmentally sustainable see where they are heading and what they can also achieve. Many of the businesses had high hopes for the future and the environmental sustainability they wanted to achieve in the future. The aspirations and future plans were tied to the type of food business they had and the values they had from the beginning; this was especially noticeable when comparing their answers of why environmental sustainability was important to them. A couple interviewees discussed how the process was forever changing and they would be improving forever as new technology emerges and the world changes. Some responses were also quite general, like hoping to less waste and to be “completely environmentally sustainable,” whereas, others were very specific. A few of these responses included wanting to get all of their suppliers to get rid of plastic packaging, only operating under local suppliers, and using only local grain.

One business wanted to create a single-use container that all businesses could use and start an environmentally sustainable school centered around food. Other aspirations included wanting to grow their business and open more zero waste grocery stores and cafes. Another business is interested in being a fully curricular economic system. A carbon neutral business was interested in exploring the portfolio where they buy their carbon credits. They also wanted to encourage and get other businesses to buy carbon offsets.

Another business's aspiration was just to be able to stay open and running as a business as they had a very hard time staying afloat. As a social goal, a business owner explained they wanted to be able to make reducing meat consumption less daunting and polarizing. They were interested in spreading the idea of "flexitarian" to cut down on meat consumption. This means that people eat less meat, but don't completely cut it out which lessens the polarization between vegetarian and not. To help other businesses, one interviewee said their business was aiming to create a document about the best practices. This way they could layout a straight forward plan that could help businesses in creating environmentally sustainable businesses or transitioning. This goal was very similar to a solution that another interviewee proposed.

An owner that struggled with waste and takeout containers explained that they were really hoping to have everything they used be compostable in the near future. This also speaks to the timelines of these goals and visions. In the interview, there was no timeline prompt. All that was asked was what their future aspirations and goals were for being an environmentally sustainable business. It seemed that some goals provided would fall in next year's timeline, next five years or even next ten years. All interviewees appeared to believe that their aspirations were possible regardless of how ambitious their goals and future plans were. Although, there were many aspirational goals and future visions they were very diverse. No interviewee suggested the same goal that they were working towards. This demonstrates the diversity that can be applied to being an environmentally sustainable food business.

### 5.8 Knowledge and advice sharing

Every interviewee was asked if they were willing to share the knowledge and advice, they have learned with businesses that are just starting out or those that wanted to transition to being more environmentally sustainable. Overall the responses were very positive. A few (three) businesses said that they do already share what they have learned very often. Two mentioned that they even share advice and price points with other businesses that are already in existence. In one particular interview, the interviewee suggested that there should be less competition and instead support of other environmentally sustainable food businesses because of its importance and how hard it is to survive. Four respondents said yes, they would be very open to sharing and learning from each other. Four said that they want to, but time is a constraint and often times they barely have time for everything they already have to do. Four respondents said that they did not want to share information with other businesses. Some of their reasonings were because they were too busy or did not see it as a priority. Two businesses said they felt they did not know enough and were still in that learning phase as well. They thought other businesses would be better suited to share their knowledge.

## Chapter 6: Analysis

In this section, the CFFS framework from the HLPE on Food Security and Nutrition will be used to analyze the data collected (2017). There are components of the theoretical frameworks outlined that can help with suggestions of overcoming the barriers. Specifically, the sustainable food system framework can help inform suggestions for cities and municipalities. Using the data gathered and the categories that presented themselves (political, financial, social, structural and other), I will analyze these categories and their findings with the CFFS framework (2017). For each component of data collected, I will use the CFFS framework to analyze what can be learned from these findings and its potential effect on the entire food system. Demonstrating the findings within the CFFS framework can uncover connections and assist in recommendations and suggestions for more environmentally sustainable food businesses and food systems.

Although environmentally sustainable food businesses are only one aspect of the food system, their impact can be felt throughout the system and change the way that the food system looks (HLPE, 2017). If a sustainable food business decided it would only buy from environmentally sustainable food producers, create zero waste and lobby the government to create support for sustainable businesses, there would be a lot of impact felt on the food system level. If we are to look at these actions in conjunction with the CFFS framework, you can see that these three actions have effects across the drivers, supply chains, and food environments potentially making substantial impacts. What the CFFS framework brings to this thesis is that one point in the food system or supply chain does not affect only the next point in the supply chain, but it can affect the entire food system (2017).

The most surprising finding from the interviews was that many of the businesses did not have as many barriers as expected when they started their environmentally sustainable businesses. A portion of the businesses exclaimed that being environmentally sustainable was the only way they could ever imagine their business running and that not being sustainable was never an option. Many had incorporated this into their business models from the very beginning and never looked back. It was exciting and enlightening to see that this type of stubborn take on environmental sustainability had not affected their business negatively, but helped it grow. It is important to refer back to the general political climate of the two cities - both being socially and environmentally forward overall. This culture and progressive nature means there isn't only an acceptance of these businesses, but a desire for them as well. At the beginning of the study, it was expected that these cities would be more accepting of these environmentally sustainable businesses, but that there would still be pushback and that businesses would still have many barriers to overcome.

### 6.1 Defining environmental sustainability

The differences in the responses to the question about the business owners and managers personal definitions of environmental sustainability showed the range of the definitions that exist. The first difference mentioned in the findings section, was about the specificity of the

definitions and that this specificity did not affect the underlying definition. The definitions did demonstrate that each respondent brought their experience into their definition. In the HLPE (2017) paper, there is no definition of environmental sustainability. They do however define a sustainable food system as “a food system that ensures food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition of future generations are not compromised” (2017, p.23). Although this definition draws more on sustainability (with the three economic, social and environmental pillars), it incorporates many of the environmental notes touched on in both the literature review and from the data collected.

Within the CFFS framework, there are many components that are related to underlying messages that emerged in the data collected. One of the relations is the mention of business in the interviewee’s personal definitions of environmental sustainability. As outlined in HLPE (2017), investment in environmental sustainability can create more sustainable food systems. The economy is directly related to the food system in many ways - businesses that attempt to change the relationship between the two can have a huge impact on environmental sustainability. Another finding was that many interviewees alluded to the current food system being bad for the environment; on multiple occasions it was mentioned that the food sector is bad for the environment and it has to change. This related to multiple drivers of the food system, but specifically, that there is an understanding that the food system is a cycle and what happens at one stage effects what happens at another stage, and can amplify the impacts (HLPE, 2017). With this understanding among food business owners, it is clear that they are seeing these impacts at other stages of the food system. There was also a huge connection to the biophysical and environmental drivers and how the food system affects the natural world. The interviewees mentioned many environmental drivers that are also references in HLPE (2017), including: waste, carbon emissions, destroying natural resources, and pollution. If all food businesses could not negatively impact the environment and ecosystems, this could change the current non-environmentally sustainable food system. There was a big reference to values or morals that the business or business owners held which alludes to the socio-cultural driver of the food system. One interviewee stated that being an environmentally sustainable business was what was right and that there was no other option. This demonstrates a value and this value was shared by many of these business owners.

An interesting finding was that some interviewees referenced always being in progress of being more environmentally sustainable. This relates to many of the food system drivers in HLPE (2017), but specifically the innovation, technology and infrastructure. As technology and innovation advances, so can the way in which food businesses be environmentally sustainable, but also the extent businesses can be environmentally sustainable. Also, as all of the drivers change due to climate change and other environmental causes, so will the food system and in response the way food businesses can be environmentally sustainable. The food system is always changing which means the ways in which businesses are sustainable are also always changing.

The first interesting component of the responses about what environmental sustainability meant is that many interviewees brought up businesses and the role that businesses play in environmental sustainability, although the interview question was not framed to the context of food businesses or the food system. The question asked was, “what is your personal definition of environmental sustainability?” Out of the fifteen interviews, the word business was used nine times. It is interesting to compare this to the standard definition that was presented in the conceptual framework, which entailed the preservation of the earth’s environmental systems for now and the future. Throughout the research on this topic, business never came up. The only time financial topics were included in the research around sustainability was when it was the 3-pillar definition of sustainability that entails economic sustainability. In the research around the environment, the economy and finances were non-existent. When business owners were asked the same question that research informed earlier in the study, the definitions were much different. This reaffirms that each person lets their context shape their definition of environmental sustainability. Another aspect that may have shaped their definitions is that all interviewees knew the topic of the research and were able to look over the questions for a week before. This may have had the interviewees thinking ahead of time about environmental sustainability in the context of food businesses. Regardless, it is clear that people are able to take environmental sustainability and apply it to their life, career and passions. It also shows that environmental sustainability is largely applicable in every sector and every aspect of life.

There are similarities between the definitions presented in existing literature and the definitions presented in the interviews. The first is the notion of reducing and protecting the earth’s systems. This came up frequently in the interviews and in the literature. The second is that both presented the idea that the way humans live now, the status quo, is bad for the environment and planet. This general understanding was presented in the interviews and in the literature. From this, one can gather that there is an understanding that humans have changed the earth’s systems. The interviewees also presented specific issues and problems that the environment was facing and existing data drew on these as well. Some of these issues included carbon emissions and pollution. Interestingly, the business owners and managers brought up waste, especially food waste, multiple times in their definitions. This also helps shape the argument that personal definitions of environmental sustainability definitely take on the context in which you exist. The definition that emerged when combining the findings from the interview is: environmental sustainability is the conservation of the planets systems, but specific components of environmental sustainability are flexible to the sector and situation the term is used in. Because environmental sustainability is a part of so many sectors and fields, the definition can be adapted and understood differently. What is brought into the definition as the ‘important’ aspects of environmental sustainability is situational. For example, if a professional in forestry was asked about environmental sustainability, we can predict they may inherently bring an aspect of forestry into their definition of environmental sustainability. The main component that should stay true throughout is the protection of the environment to the extent that human life can continue for future generations. This is not to say that every interviewee that answered this question was completely accurate about what environmental sustainability is, especially in comparison to existing literature, but how

someone understands environmental sustainability will affect how they are ‘environmentally sustainable’ and therefore is important to consider.

## 6.2 Why is Environmental Sustainability important?

The interviewees touched on why environmental sustainability was important to them and their businesses. Many of these reasonings are grounded in socio-cultural backgrounds that have to do with morality, traditions and culture. Many of the reasons did not pertain to economic or social drivers, rarely did an interviewee reference that the government or financial reasons were why they thought environmental sustainability was important. Two anomalies that stuck out included protecting local economy, buying local and supporting environmentally sustainable producers, which all tie into the economic drivers of the food system. As outlined in HLPE (2017), this investment and support for environmentally sustainable food and agriculture can impact food prices and trade. Economic and social sustainability were not specifically mentioned outright, but one business owner saw opening a business as an opportunity to solve societal problems.

The idea of values, norms and traditions shaping the food system, as outlined in the socio-cultural driver (HLPE, 2017), was very present when interviewees discussed why environmental sustainability was important. As mentioned in the findings, one of the common themes was that the planet gives us the ability to live and we have a responsibility to protect the planet. This morality and value even came up in terms of business, some of the interviewees stated that the business model was centered around being environmentally sustainable. Many of the environmentally sustainable food businesses that were interviewed also made connections to from climate change impacts to their reasoning of why they found it important to be environmentally sustainable. The scary impacts of climate change changed the way that they do their business and the producers that they support. The impact of choosing to support only environmentally sustainable agriculture and producers makes changes in the food system down and upstream.

## 6.3 Barrier Breakdown

The barriers and the quantity of their presence demonstrates interesting findings of the food system as a whole. Overall, most barriers were categorized as financial barriers and the second most were social barriers. Using the CFFS framework (HLPE, 2017), the biggest driver was the economic and political driver. The financial barriers being the most mentioned, demonstrate that there is a great financial struggle for food businesses to make the food system more environmentally sustainable. Having the financial barriers being the most prominent is in-line with the neoliberal food regime. The neoliberal food regime allows for food that can be created efficiently and in high quantities to be the most successful (Giménez & Shattuck, 2011). As demonstrated by the data, running an environmentally sustainable food business costs more money and therefore, consumers must pay more for food from these businesses. Many of the environmentally sustainable food businesses interviewed in this thesis spoke out against characteristics of the neoliberal food regime. There is a close relationship between the financial and economic barriers faced by environmentally

sustainable businesses and the neoliberal food regime. As explained by Giménez & Shattuck (2011), the neoliberal food regime allows for those products that can be sold at the cheapest price to be chosen by consumers. The cost of food is a big deal for consumers, and if food is more expensive, it is less likely to be chosen by consumers - as is the case for an environmentally sustainable food businesses.

As demonstrated in the CFFS framework (HLPE, 2017), economic drivers directly affect economic access and affordability for consumers. Using the characteristics of the neoliberal food regime (Giménez & Shattuck, 2011) and the CFFS framework (2017), it makes sense that environmentally sustainable food businesses face many financial barriers. The economic system and food regime are actively working against these types of businesses. The progressive food movement as a reaction to the neoliberal food regime and is trying to change the unsustainable actions within the current system (Giménez & Shattuck, 2011). As pointed out by one of the interviewees, as more and more environmentally sustainable food businesses emerge on the market and demand these products, the financial success of the businesses should grow. Financial barriers were the biggest barriers the interviewees expressed; using the theories from the CFFS framework and the neoliberal food regime the systemic reasons behind this and the interactions behind the barriers are explained (HLPE, 2017 & Giménez & Shattuck, 2011).

The barriers that fell within the 'social' category came were not originally hypothesized. First, it was surprising that social barriers were more prevalent than political barriers. Second, it was surprising that so many businesses outlined the exact same social barriers. The neoliberal food regimes can explain that these social barriers would be embedded in the current systems (Giménez & Shattuck, 2011). Since the food justice movement is against the norm, not all consumers are on board and not all consumers can afford the higher costs (2011). The overwhelming consensus on these barriers was that consumers did not understand why the food businesses were putting an importance on environmental sustainability. Environmentally sustainable food systems and businesses are not within the neoliberal regime (2011). Consumers can't always afford to buy environmentally sustainable food- it is more expensive because it deviates from the norm and does not adopt the same corporate food approaches (2011). Environmentally sustainable food businesses are a part of the food justice movement which can be seen as going against societal norms. Both the economy and governments shape consumer behavior and the current system is not in favour of environmentally sustainable food businesses.

In the CFFS framework (HLPE, 2017) consumer behavior has a close relationship to many of the food system drivers. Specifically, political and economic drivers shape consumer behavior which is shaped by the food regime (Giménez & Shattuck, 2011). Food justice is a socio-cultural movement against the current food regime and allows for consumers to change their behavior as well as the reasoning behind this behavior (Giménez & Shattuck, 2011 and HLPE, 2017). Social barriers are shaped from many different factors throughout the food system and society. These barriers are complex and require attention for environmentally sustainable food businesses to be more successful.



For a circular economy to be achieved there needs to be participation from consumers (Jurgilevich et al. 2016). A circular economy cannot be achieved by businesses alone because consumers make choices about waste even when these food businesses are at the end of the food supply chain. Consumers choose which food businesses to support, to bring their own bags and containers and how to dispose of food they take home. All of these factors affect the environmental sustainability of the food system, but they are shaped by socio-cultural drivers (HLPE, 2017).

Governmental and political barriers were very minimal overall. Many respondents had no issues politically or as a result of government laws/regulations. The two main government barriers had to do with health regulations and leasing space. Overall, only eight respondents expressed any political or government barriers which is lower compared to the financial and social barriers. As outlined in the CFFS framework (HLPE, 2017) food safety falls within the food environment and has a direct impact on institutional and political actions. Governments take food safety seriously, especially in North American food systems (HLPE, 2017). All of the businesses that faced the political barriers because of food safety were trying to implement a more circular economy and overall reduce waste whether it was from packaging or the food itself. Jurgilevich et al. explain, “food safety regulations should reconsider the balance between safeguarding public health and unnecessary food waste and, thus, remove barriers associated with legal liabilities during the redistribution of food surplus” (2016, p.11). As outlined by Jurgilevich et al. (2016) it is important that as technology and innovation increase for food safety, so do the rules and regulations around food safety so food businesses can be more environmentally sustainable without facing increased political barriers.

For the other political barriers that were outlined it was clear that even if governments acknowledge their support for environmentally sustainable businesses, there are institutional structures that are inherently limiting and must be overcome. Within the neoliberal food regime there are systems in place that restrict food movements (Giménez & Shattuck, 2011). Within the CFFS framework (HLPE, 2017) it is clear that political drivers and institutional actions have a prominent impact on the food system and in turn a prominent impact on the environmental sustainability of food systems.

Packaging from earlier places in the food supply chain was a big barrier in both cities; this restricts the ability of these businesses to adopt a circular economy. As mentioned in the theory section, circular economy is not just about reintroducing waste back into the food system, but have to change actions in other ways (Jurgilevich et al. 2016). For example, reducing packaging earlier in the food supply chain, can promote a circular economy because by reducing that waste in the first place, the waste does not need to be reused back into the food system. As outlined by Giménez & Shattuck (2011) the neoliberal food regime is very dependent on the packaging of food. Many businesses struggled with this movement away from packaging because it still exists in the system. As highlighted by Giménez & Shattuck (2011), the food justice movement aims to change the food regime by making changes within

the current economic and political system. Trying to change the food regime within an existing system that is very dependent on packaging is difficult. Some businesses expressed success with reducing this packaging by either only choosing suppliers that did not have packaging or directly reaching out to suppliers to reduce packaging. As seen in the CFFS framework (HLPE, 2017) processing and packaging comes right before retail and markets which allows for this communication to go on. Packaging is an embedded feature of the current food system structure; it also has a negative impact on the environment which explains why so many environmentally sustainable food businesses are pressuring suppliers to change this. As more food businesses demand this and consumers support these businesses this will grow the food movement up the supply chain to encourage more environmentally sustainable practices.

The barriers outlined by the interviewees that fell into the 'other' category were representative of the food system. First, one of the barriers in this category was parking, which restricted consumers from visiting one of the grocery stores. As detailed in the CFFS framework (HLPE, 2017) parking would fall under a demographic driver, specifically urbanization. Although it is environmentally friendly to reduce the amount you drive to the grocery store, it reduces accessibility of environmentally sustainable food options for consumers. The business didn't specifically seek out a location without parking, but that was what was available to them. This demonstrates the takeaway that when encouraging environmentally sustainable practices within food systems it must be accessible and available to all. This also brings in Viljoen & Wiskerke's sustainable food planning argument that planning of food systems must be included in urban planning (2012). As urbanization and the need for environmentally sustainable food systems increase there will have to be sustainable food planning among communities to ensure that accessibility and availability are all considered in conjunction with sustainability (2012).

One of the Vancouver business owners felt that large corporations are a barrier because they act unsustainably and therefore can sell their products for cheaper. This barrier directly relates to the neoliberal food system and the barriers that this puts on food businesses who are trying to change the narrative (Giménez & Shattuck, 2011). This demonstrates that the system restricts the ability of environmentally sustainable food businesses because they are pushing back against the neoliberal food regime (2011). Another barrier that fell into the 'other' category was a few businesses not being able to find a space to lease because landlords didn't want them to test a new business model. This directly relates to food justice and how these businesses are trying to make changes within the current economic system. This barrier highlights the inherent reservations landlords and investors have when taking risks away from the norm. Trying to make changes within the current system requires businesses to depend on characteristics of the current economic system that may work against them (2011). Trying to support a food movement within a system that works against brings up the possible argument for the radical and grassroots movements which want to destruct the current system (2011).

One of the ‘other’ barriers was the quality of compostable containers. Many businesses said there had been major strides in compostable container quality in recent years, but the performance of compostable containers was noticeably worse in comparison to plastic containers. Increasing quality of the containers would require innovation and technology to drive better packaging and therefore shape the food system (HLPE, 2017). As innovation and technology of compostable containers increase so will the ease of food businesses to be environmentally sustainable.

#### 6.4 Victoria vs Vancouver

To preface the analysis of the two cities, it is important to be upfront that this study and the number of participants, does not garner the ability to draw conclusions about the overall environmental sustainability of each city’s food system. As outlined in the background, there are many similarities between both cities. Because of this, the barriers that presented themselves across both cities and showed similarities and differences. As outlined in the findings, Vancouver food businesses face more barriers than the Victoria food businesses.

When comparing the two cities, Vancouver faced many more political barriers than Victoria faced. When interviewees were asked the question about specific political barriers there were, 4 businesses in Victoria that said the city and the overall political climate had been supportive of their businesses. This included support and help from the local health authority, city policies supporting the environmentally sustainable actions and general political support for what they were doing. In one instance, a business owner explained that the health authority went as far as bringing research to a particular business that claimed having consumers bring their own containers was actually better to stop germ and bacteria spreading. This was a stark contrast to the story told by a Vancouver business owner. The health authority that oversees the City of Vancouver is different than the health authority that oversees the City of Victoria. This is important because each health authority may have its own policies and general research that it follows, even though both authorities reside in the same province (with the same health regulation and food safety laws). This idea also demonstrates a relationship presented in the CFFS framework (HLPE, 2017, p. 26) that because of the connectedness of the food system, institutional actions have a direct impact on biophysical and environmental drivers and food supply chains. In this specific case, the institutional action would be allowing (or not) consumers to bring their own reusable containers. Not allowing reusable containers impacts the packaging of food and also creates more waste in the form of single-use containers - this has a negative impact on ecosystem services and climate change. Both of these businesses were trying to enact a form of circular economy for their businesses, and one was restricted by government. It is important to highlight that although businesses can enact their own form of circular economy within their business model, they can be restricted by government rules.

Businesses in both cities faced a similar number of financial barriers, but as noted earlier, there were more food businesses interviewed in Victoria. This could suggest that Vancouver businesses face more financial barriers; however, the difference was so small it is not

significant enough to draw this conclusion. Since the number of financial barriers were so similar, we can draw the conclusion that environmentally sustainable food businesses are facing financial barriers - regardless of the city they reside in. This can be explained by the neoliberal food regime as this “discourse is anchored in ideologies of economic liberalism and free-market fundamentalism” and these ideologies prevail in both cities (Giménez & Shattuck, 2011, p. 116). As outlined by Giménez & Shattuck, “the corporate food regimes persistent social and environmental failures have spurred the formation of tens of thousands of local, national and international social movements concerned with food” (2011, p. 114). The existence of environmentally sustainable food businesses is a food movement against the neoliberal food regime.

Social barriers and structural barriers were very similar in both cities. What was significant, was that many of the barriers in both of these categories were repeatedly expressed from businesses in both cities. For example, customer hesitation and lack of education plagued businesses in both cities. This suggests a similar finding as the financial barriers did in that both cities exist within the same province and therefore education and economic systems. Within the current neoliberal food regime, it is very difficult for consumers to shift their importance in cheap food to sustainable food systems (Giménez & Shattuck, 2011). The hope of the businesses is that food justice continues to move forward, and more consumers find importance in environmentally sustainable food systems.

There was a huge variety in the political barriers when comparing Victoria and Vancouver. As mentioned in the findings, Vancouver interviewees identified seven political barriers whereas Victoria businesses only mentioned one. On top of this stark contrast, in two of the interviews with Victoria businesses the interviewees went as far as saying that the city and municipality had been helpful and supportive. As outlined in the last section, food safety did play a large presence in many of these political barriers that were acknowledged. Vancouver food businesses faced more food safety political barriers whereas Victoria businesses had no problems.

### 6.5 Most Restricting Barrier

According to the interviewees, the two most restricting barriers to their environmentally sustainable food businesses were 1) lack of education and customer hesitation and 2) financial barriers. Both lack of education and customer hesitation fall under socio-cultural drivers of the food system which impact consumer behavior (HLPE, 2017). It makes sense that these were the biggest barriers for the interviewees because to make social changes, especially norms, values and traditions, can take a long time. Government and economic systems can move slow, but not as slow as socio-cultural drivers. Many of the businesses had already seen changes economically and politically in terms of supporting their businesses. The combination of demographic drivers changing, urbanization becoming more popular as younger generations age, may make a profound difference in the socio-cultural drivers of the food system.

The cost of compostable containers was named as the single biggest barrier two times which is quite profound. This brings into question the potential benefit of innovation and technology of compostable containers. There was hope among one of the interviewees that as these containers became more popular, or the government banned single-use containers, the costs would be driven down. The packaging of products was surprisingly impactful on all of the businesses whether they were avoiding it completely to be zero waste or if they were trying to use only compostable. Another major financial barrier highlighted by many of the interviewees was the costs of environmentally sustainable food and food products. As outlined in the CFFS framework, the price of food is an economic driver of the food system and this was readily apparent during the research phase of this thesis (HLPE, 2017). Other barriers that the businesses faced mostly fell at the distribution, processing and packaging stage of the food supply chains (2017). For example, one zero waste grocery store faced a major structural barrier as many products traditionally arrive in loads of packaging. They had to overcome this by directly asking suppliers to reduce their use of packaging or only source products from suppliers that had no packaging. The suppliers have an economic incentive to reduce their packaging, but it is also important to remember that the food business owners felt a moral responsibility to supply environmentally sustainable products.

## 6.6 Interviewee Solutions

Governments often turn to experts or professionals to help make decisions to solve the problems that businesses and citizens are facing, yet it is important that people working on the ground in the sector are consulted. Since they have such a close relationship to the problems and the solutions, business owners may consider something that the government wouldn't. "Analysis of these drivers shows that moving towards healthy diets and improved nutrition requires context specific changes not just in agriculture and food policy, but also in political leadership, economic policy and social norms" (HLPE, 2017, p. 81). This quote from HLPE (2017) demonstrates the importance of political leadership, economic policy and social norms in shaping sustainable food systems. The interviewees were able to come up with innovative solutions and these solutions are important to improving environmental sustainability of the food systems as improvements for sustainability are needed in all aspects of the CFFS framework (HLPE, 2017).

## 6.7 Future Plans and Aspirations

Since the food businesses cater to consumers, most of the future business plans were aimed at changing consuming behavior in one way or another. Conversely, many businesses also had motivation in their aspirations to better the environment and food systems. Many of the future aspirations and plans fell within the socio-cultural, innovation and environmental drivers. All of the future plans that the interviewees hoped to achieve and further in their businesses aimed to impact the food systems as a whole, but through different drivers. For example, one business wanted to change the way that people saw vegetarian and eating less meat by making this less polarizing. Within the CFFS framework in Figure 1, socio-cultural drivers directly affect consumer behavior and food environments (HLPE, 2017). Specifically, this

business wanted to change the polarization through information and promotion - a raising awareness campaign while also offering classes about what they call “flexitarian.” By changing the cultural and social norms around the polarization of being vegetarian (or vegan), it would affect consumer behavior as well. The business owners hoped it would affect the kind of food consumers would buy and eat - specifically less meat. The CFFS framework demonstrates an opportunity to change the cycle and impact the drivers positively (HLPE, 2017). In this specific example, eating less meat would be a change in consumer behavior and diets. It would have nutritional and health outcomes that are associated with eating less meat. It would also have social, economic and environmental impacts which could translate into institutional and political actions, and therefore, back into the drivers. Overall, the majority of the future plans reported by the interviewees focused on changing the current food system and wanting to continue to run their business in a way that positively affects the environment.

### 6.8 Knowledge sharing

As mentioned in the findings section (chapter 5.8), many interviewees were either already part of some sort of knowledge sharing circle or were willing to provide advice to new businesses. Knowledge sharing allows for more environmentally sustainable businesses which would change the food system and create more sustainability (HLPE, 2017). Providing advice to new businesses or businesses that want to be more environmentally sustainable, creates greater capacity for food businesses that want to be more environmentally sustainable by providing advice and lessons learned. Many of the environmentally sustainable businesses that were interviewed had undergone struggles to get where they were and learned many valuable lessons about running food businesses in a way that protects the environment. Having more environmentally sustainable food businesses could positively affect all of the food system drivers in the CFFS framework (2017). Additionally, having businesses and customers investing in environmentally sustainable practices could change economic drivers, socio-cultural, innovation, demographic and in the end, environmental ecosystem aspects of the food system.

## **Chapter 7: Conclusion**

From the data collected and the analysis of this data, suggestions for both businesses and governments have emerged. These suggestions are inspired from suggestions from interviewees, the literature and the analysis of data collected. The first suggestions for businesses, both “environmentally sustainable” and not, is to increase the sharing of knowledge and collaboration. There were a couple businesses that mentioned the importance of talking to other environmentally sustainable food businesses that were similar to their own in the beginning stages of their business. Many of them said that the advice and knowledge sharing was crucial to their success. Additionally, the interviewees expressed that many new businesses reached out to them with questions about their experience and for advice. It appears that the collaboration and information sharing was integral to many new businesses. One interviewee explained that rather than competing, businesses needed to work together. Overwhelmingly, the businesses had a goal of making food and the industry more

environmentally sustainable, rather than increasing their profit revenue. As proven through international agreements and research, protecting the environment and reducing climate change requires intense collaboration and cooperation (Espinosa, UN Climate Speech, 2017). The increase of sharing and collaboration among food businesses who are striving for environmental sustainability will increase the odds of achieving environmental sustainability. It will also increase the size of the community and make it easier for those wanting to start an environmentally sustainable business. Having the advice and knowledge from many businesses increases the likelihood of success. Not only is sharing of knowledge and collaboration important for environmental sustainability, it is also important for the success of the businesses. All of the businesses interviewed were interested in some form of knowledge sharing. Many cited a lack of time as a problem, but many outlined the collaboration they had already participated in. The interviews made it clear that knowledge sharing is something that is already being done and businesses are interested in increasing this in some capacity.

Food businesses should continue to keep their efforts up and through the food movement and food justice, the current food regime that degrades the environment can be changed. As more consumers and businesses push for a new regime environmental sustainability is much more likely to be achieved. Whether a new food regime emerges within the current economic system or not, it is only possible if there are food businesses that are willing to take this venture and inspire others to do the same.

Surprisingly, although the financial barriers were the biggest barriers outlined by businesses, many of them saw them as something that could not be aided by governments. A few interviewees even said they did not think that tax breaks or financial compensation for environmentally sustainable food businesses would be helpful long-term. One respondent said that if businesses were provided with compensation for being an environmentally sustainable, all food businesses might become environmentally sustainable and in that situation government's likely couldn't afford to keep providing financial incentives. The second potential outcome would be that the businesses become dependant on this financial assistance and not keep their business running if the compensation was taken away. This reduces the resiliency of businesses by increasing how much they rely on governments, which could be problematic with ever-changing governments. Another business owner agreed with the notion that financial solutions from the government are not the answer. They explained that financial compensation would not fix the underlying societal problem of the lack of urgency for environmental sustainability. This business owner proposed that the reason environmental sustainability is so expensive is because consumers value paying less for their food more than they value the environment. He explained that this has to do with the economic system we live in where the number one priority is paying less. Although these responses are business owner opinions, they all provide interesting considerations when governments are examining how to help all types of environmentally sustainable businesses. This may suggest to the government that social solutions or solutions that target the existing food system may be more helpful in overcoming the underlying barriers that environmentally sustainable food businesses face. As outlined throughout the analysis, neoliberal food

regimes and financial barriers are a problem, but they are primarily embedded in the current food regime and therefore this food regime must shift rather than more financial support being given to these businesses.

After initial research and familiarity on the topic, a big surprise was how many businesses explained that customer hesitation and lack of education was a huge barrier to their business. Many business owners also felt this was a barrier that could be targeted with a helpful solution for their businesses. As noted in the limitation section, there were many businesses that did not want to participate in the study - mainly those who were not self-proclaimed as environmentally sustainable. Although it is impossible to hypothesize why so many businesses (upwards of 50) did not want to participate, it shows a trend in which business don't feel comfortable discussing (or want to discuss) environmental sustainability. Through this process, a need for small changes and encouragement was revealed. Many cities, especially Vancouver and Victoria, have had campaigns for greater environmental sustainability among its citizens. The recommendation in this thesis for governments is to create engagement campaigns with businesses where they are encouraged to be more environmentally sustainable through advice, economic incentives and recommendations for non-overwhelming actions. To prevent food businesses from feeling overwhelmed by environmental sustainability, or that they have to choose between being fully environmentally sustainable or not (in-or-out scenario), there is a need for businesses to have the tools to make small steps. It is ok that they are not the most environmentally sustainable food business in the city, but it is better to make small changes than none at all. If there are campaigns for learning opportunities and tools, then businesses will be more likely to change their habits. It will also lessen the segregation between those doing well and those not doing well. Victoria has used a similar initiatives in attempting to persuade all businesses to being more sustainable (City of Victoria, n.d.). Although useful and many businesses participated, there is room for improvement. It may even make businesses feel less shameful or embarrassed to discuss their shortcomings and ask for advice on how they can make it better.

Another recommendation for governments, cities and communities is to be sure that sustainable food planning is taken into consideration when community plans are made (Viljoen & Wiskerke, 2012). An environmentally sustainable food system is much more feasible when initial steps are taken to make this easier (2012). Also, as climate change and growing environmental pressure is put on our food system it will be very important to have local sustainable food plans to ensure that there is food security for all communities. Many of the environmentally sustainable food businesses interviewed discussed the importance of supporting local farms and suppliers as this supports a local food system. With government support through increased sustainable food planning, these environmentally sustainable food businesses would face less barriers with a bigger network and environmentally sustainable food supply chain.

In conclusion, environmentally sustainable food businesses face increased barriers in comparison to conventional food businesses. Environmental sustainability, as defined by the literature, was similar, but not identical to the definitions given by food businesses. As



mentioned in the findings section, the definition of environmental sustainability that emerged from the data collected was: “in the context of food businesses, environmental sustainability is when day-to-day business does not negatively impact the environment. This includes reducing waste, pollution, and carbon emissions while adopting responsible actions and truthfully reflecting on the impact of your actions. A few examples of what a food business can do to be more environmentally sustainable include wasting less, sourcing local, using less natural resources and reducing/reusing/recycling.” Environmentally sustainable food businesses face financial, social, political, structural and other barriers. Financial barriers were the most prominent, but social and financial barriers tied as the most restricting barrier identified by business owners and managers. Interestingly, a consensus emerged, that the social barriers were all rooted in customer hesitation and lack of education. The financial barriers all came down to increased costs, and the political barriers were much less apparent than originally hypothesized. The common structural barrier that emerged was packaging and this was consistently something environmentally sustainable businesses struggled with. The CFFS framework, neoliberal food regimes, food justice movement, and circular economy allowed for an in-depth analysis of the data. This analysis prompted suggestions for how these barriers could be overcome and helped explain the relationship of these barriers to the food system as a whole. Environmentally sustainable businesses in Victoria and Vancouver are making strides in improving the environmental sustainability of the food system, there are many barriers they face, but there are also many methods to overcome these barriers. From these barriers, governments, businesses and consumers can make educated choices to create a more environmentally sustainable food system.

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