

THE ROLE OF VARIOUS ACTORS IN SUSTAINABILITY UPTAKE IN CANADIAN
HIGHER EDUCATION POLICY AND PRACTICE: A COMPARATIVE CASE STUDY

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By

Naomi Mumbi Maina

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Executive Director
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117 Science Place
Saskatoon, Saskatchewan S7N 5C8
Canada

OR

Dean
College of Graduate and
Postdoctoral Studies
University of Saskatchewan
116 Thorvaldson Building
110 Science Place
Saskatoon, Saskatchewan S7N 5C9
Canada

ABSTRACT

Higher education institutions (HEIs) are increasingly recognized for their role in contributing towards a sustainable future, and understanding how various stakeholders are influencing uptake in sustainability is crucial to realizing this goal. This study examined the role of actors, including that of networks and organizations, and the extent to which historically marginalized groups are influencing sustainability uptake in Canadian higher education policy and practice. Informed by critical education policy, organizational change, intersectionality, and a whole-institutional approach, data were collected from a sample of six HEIs using interviews, focus groups, document collection, and observations. Study participants included Board of Governors members, administrators, faculty, staff, students, and community members. Findings showed significant ways that various actors champion and collaborate within and across institutions and sectors to enact bottom-up and top-down sustainability initiatives. Student activism was found to be a key sustainability domain in which students champion sustainability uptake, including holding their administrators accountable, a group that was often found to resist meaningful sustainability action. Diversity of actors was described in terms of race and gender and there were a few considerations of intersecting social and environmental issues, including Indigenous land practices in sustainability uptake. This study has implications for how HEIs can move towards more transformative change for sustainability through supporting champions and strengthening collaboration within and across sectors. An intersectionality framework offers a new approach to researching sustainability in higher education; this approach provided insights on how HEIs can embody and center the values of social justice and equity in policy and practice, such as creating safe spaces for historically marginalized groups to be involved and using language that frames sustainability to include social justice and Indigenous perspectives.

Future research is needed to examine how HEIs can better support administrators to navigate the neoliberal demands and contexts of their institutions and how to meaningfully build connections with Indigenous communities to inform sustainability initiatives in higher education.

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DEDICATION

I dedicate this thesis to my parents who have sacrificed everything to ensure that my siblings and I received a quality education. Your compassion, humility, sacrifice, and hard work have inspired me to become a better human being and to pursue a path of service to others.

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CHAPTER ONE: INTRODUCTION

As society began to recognize the negative consequences of limitless development, a number of international discussions have taken place to deliberate on the next steps towards creating a more sustainable future. For instance, the 1987 United Nations World Commission on Environment and Development popularized the need for a move towards sustainable development (Du Pisani, 2006). The resulting report from this commission, widely known as the Brundtland Report (1987), articulated the need for intergenerational accountability and responsible development to ensure a habitable planet for future generations. This report defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (n.p.) and included economic, social, and environmental considerations. Since then, the Brundtland Report has informed the uptake of sustainable development across various realms of society.

Subsequent international initiatives have specifically identified the need to incorporate sustainable development into education. For example, the United Nations Conference on Environment and Development (UNCED) (1992) discussed the role of education in contributing to sustainable development. Chapter 36 of Agenda 21, the report from the UNCED, argued that both formal and non-formal education were crucial in creating awareness and building capacity for people to address issues of the environment and development. In addition, the United Nations Decade of Education for Sustainable Development (UNDESD) (2005-2014) dedicated an entire decade towards incorporating sustainable development in education. More recently, the Global Action Programme for ESD (GAP) and the Sustainable Development Goals (SDGs), including Goal 4 on Education, have also provided international guidelines for the integration of sustainability into education (UNESCO, 2014; United Nations, 2015). It is within these

international contexts that education institutions are increasingly incorporating sustainable development or sustainability into their mandates (Khalifa & Sandholz, 2012).

Higher education institutions (HEIs) are among education institutions that are considered able to lead the way to a sustainable future through their role as knowledge producers, innovators, and collaborators with communities, and through shaping future sustainability conscious leaders (Tilbury, 2004). Sustainability in higher education (SHE) researchers have examined how various groups of actors, both within and outside higher education, have been involved in sustainability, especially across the whole-institution domains of overall governance, curriculum, campus operations, research, and community outreach (Vaughter et al., 2013). Sustainability is often conceptualized as being comprised of intertwined social, economic, and environmental dimensions (McKenzie et al., 2015). For the purposes of this study, sustainability is considered to include, at the very least, consideration of the natural environment; it also includes uptake using other terminology as long as it is concerned at least in part with the sustainability of the natural environment. It is important to acknowledge that the framing of sustainability in this study may be limiting and highlights some of the complexities and negotiations that were necessary in working within a broader research project.

Based in Canada, this research provides a comparative analysis of the influences of various actors in the uptake of sustainability in HE policy and practice. The roles of internal actors, including students, faculty, staff, and administrators, and external actors such as community members and organizations, is examined. Additionally, this research seeks to understand to what extent historically marginalized groups - on the basis of gender, race, ethnicity, class, sexuality, ability, religion, nationality, and so on - are involved in sustainability initiatives across six Canadian HEIs.

This thesis research is part of a broader comparative case study undertaken by the Sustainability and Education Policy Network (SEPN). The methodology and methods were developed collaboratively with the SEPN team, while the central focus on a range of SHE actors is the key area of consideration in this thesis. The overall objective of the site analyses phase of the SEPN project is to examine the engagement of sustainability in education policy and practice, including the degree of uptake, the areas of focus, and the influences of each degree of uptake. Drawing from this overall objective, sustainability uptake in this thesis means initiatives that are developed and enacted as part of efforts to integrate sustainability across various domains of higher education. In addition, to be an actor means to be involved in initiatives that have an impact on sustainability uptake, either positively or negatively. Through these initiatives various sustainability actors play different roles that contribute towards the overall goal of advancing sustainability in higher education.

Theoretical Underpinnings

This thesis research draws on various theoretical frameworks to examine the roles of actors in the uptake of SHE policy and practice. These frameworks are organizational change, a whole-institutional approach, critical education policy, and intersectionality. Organizational change and a whole-institutional approach inform this thesis's understanding of both how HEIs are integrating sustainability into their entire systems and what factors are influencing the process of change for sustainability within these institutions. A critical education policy approach informs this study's conceptualization of policy development and enactment, and the influences of unique contexts on policy. Lastly, an intersectionality approach informs the analysis of how historically marginalized groups are involved in SHE and how power relations

influence the role of various actors in SHE. A description and application of each of these approaches are outlined below.

The organizational change framework has its origins in the field of business and is concerned with understanding the nature of organizations, exploring how they change, and investigating the role of change agents and other factors in influencing this change (Hall, 2010; Mahoney & Thelen, 2010; North, 1993; Weick & Quinn, 1999). Discussions have focused on two types of change processes: those that are radical or abrupt, mostly resulting from external forces, and those that are incremental or gradual, often caused by endogenous factors such as actors within an institution (Hall, 2010; Weick & Quinn, 1999). This change is sometimes planned, as part of an organization's management, and at other times is unplanned, possibly as a result of an employee's failure to perform their duties correctly (Armenakis & Bedeian, 1999; Weick & Quinn, 1999). The organizational change framework has been taken up in other disciplines such as sociology, psychology, and political science, and, more recently, in SHE.

Because SHE is a relatively new field, spanning about two decades, theorizing in SHE has not been fully developed. Research in this area has been characterized as descriptive and prescriptive, with few studies engaging with theory (Stephens & Graham, 2010), and most offering strategies and recommendations rather than developing models for understanding SHE (Hoover & Harder, 2015). Only a few studies examine theoretical approaches that might inform how SHE research is conducted and have sought to understand how the process of change in SHE happens. A review of these studies indicates that many agree on the complex and dynamic nature of both HEIs and sustainability and argue that for change to happen, sustainability needs to be fully integrated into the HE system (Blanco-Portela et al., 2017; Hoover & Harder, 2015; Posner & Stuart, 2013; Stephens & Graham, 2010; Trowler et al., 2013). In particular,

organizational change frameworks seem to be prevalent among SHE scholars, who draw on these frameworks to examine and articulate how change happens and how this process may be better supported to realize a sustainable future.

A key tenet of an organizational change framework is that for change toward sustainability to happen, there needs to be a shift from technical fixes to a focus on “‘soft’ organizational issues, which include values, visions, philosophies, policies [,]” worldviews, and assumptions (Blanco-Portela et al., 2017, p. 564). These ‘soft’ organizational issues form the culture of an organization, a common element that seems to have a huge impact on SHE, is context specific, and impacts the type of change possible. While the culture of an institution may support sustainability in some cases (James & Card, 2012), culture has predominantly been described as a barrier to institutional change towards sustainability (Blanco-Portela et al., 2017; Hoover & Harder, 2015). For instance in their case studies of three HEIs in the United States, James and Card (2012) found that the culture of “shared governance, transparency, and open communication,” helped drive sustainability uptake. They also indicate that a culture of criticism results in unhealthy competition and that expectation to do more with less can be a barrier to realizing change towards SHE.

Change agents are a crucial part of the organizational change process and can inform this study’s understanding of actors’ influence on sustainability uptake. Scholars contend that examining how change agents influence change within an institution contributes to a better understanding of the “role of individual agency, relationships, institutional cultures and power on campus” (Hoover & Harder, 2015, p. 176). It is the alignment of these elements that makes possible organizational changes. In discussing the role of power among change agents, Hoover and Harder (2015) maintain that real or perceived power has implications for how change

happens. They indicate that institutional arrangements accord power to certain individuals or groups of people, observing, as well, that perceptions of who has power influences who can be involved in the change process. Similarly, in sustainability, an understanding of the various roles that actors play and their power in driving sustainability can help empower others to be change agents.

Another approach that informs this study's understanding of how sustainability is integrated into HEIs is a whole-institution or systems' perspective (Posner & Stuart, 2013). This approach takes into account an entire system, as opposed to individual segments of an institution, which, in the case of HEIs, is complex and multi-layered, with competing influences from within and outside these institutions. Studies have found that a key barrier to integrating sustainability is that many initiatives are aimed at individual issues, with little coordination of these initiatives at the institutional level (Posner & Stuart, 2013). As a result, "a systems understanding of (HEIs) can enhance the effectiveness of programs that manage campus sustainability by helping to identify key leverage points for action to improve the system" (Posner & Stuart, 2013, p. 267). Therefore, to understand the uptake of sustainability within these complex systems, this study focuses on key whole-institution domains of overall governance, operations, curriculum, research, and community engagement (Tilbury, 2004; Vaughter et al., 2016).

The role of HEIs in creating and sharing knowledge, developing innovations, and educating future leaders has been widely discussed (Hoover & Harder, 2015). Although this responsibility for producing knowledge is widely agreed upon, some have challenged the notion of HEIs as a key location of knowledge experts (Mbah, 2018). They have argued, for example, that community members, particularly Indigenous peoples, have extensive expertise in their local environment from millennia of lived experiences and can use this knowledge to co-create

sustainability strategies in collaboration with HEIs (Mbah, 2018; Vizina, 2018). The notion of experts and lay people is also central when discussing individual efforts to further sustainability in HEIs. Studies show that although champions are important to sustainability uptake, other people's perceptions of champions as "experts" may hinder those considered to have lay knowledge from getting involved (Hoover & Harder, 2015).

This thesis also draws on critical education policy, particularly to inform its conceptualization of policy. Critical education policy shifts from focusing on traditional conceptions of policy development as a linear process void of any subjective influences (Scheurich, 1994), to considering the impacts of contexts, histories, and evolving processes on policy development and enactment (Braun et al., 2010; Gowlett et al., 2015; Rizvi & Lingard, 2010). Education policy researchers draw on critical analysis to question existing power relations, the status quo, and the inequalities reproduced from framing a policy problem in a particular way (Rizvi & Lingard, 2010).

In critical education policy studies, policy is understood as a process as opposed to only a product, involving "negotiation, condensation or struggle between different groups who may lie outside the formal machinery of official policy making" (Ozga, 2000, p. 2). Ozga argues that conceptualizing policy as a process helps to create accessibility by researching outside of the traditional policy contexts such as government circles of policy making. Such accessibility, she proposes, may contribute to greater citizen engagement and eventually to the democratization of education policy. Similarly, Braun, Maguire, and Ball (2010) view policy as "a process that is diversely and repeatedly contested and/or subject to 'interpretation' as it is enacted in original and creative ways within institutions and classrooms" (p. 549). On the other hand, Stevenson (2013) and Lingard (2013) describe policy as both a process and a product.

While appreciating these varying views on policy, Ozga (2000) stresses that the definition of policy depends on the particular researcher or policy maker/practitioner. The shift from a traditional conception of policy - as linear in its development, implementation, and evaluation – to a contemporary conception of policy as a process and a product has implications for methodologies and theories in the education policy research field (Heimans, 2014; Rizvi & Lingard, 2010; Scheurich, 1994). This research draws on contemporary conceptualizations of policy as both a process and a product, that is as text, as well as the factors that influence the development and enactment of policy texts (Bowe et al., 1992; Braun et al., 2010; Ozga, 2000; Stevenson, 2013).

In addition to examining the development of policy in relation to the role of policy actors, this thesis investigates both how policies are enacted and the roles of policy actors in this enactment. The domain of ‘policy enactment’ moves beyond the content of the policies, or the development of policies, to consider the practices and contexts through which policy is interpreted and translated into practice (Heimans, 2014; Sin, 2014; Singh et al., 2014). In policy enactment, actors are not mere recipients of policy; they are active participants who use their situated knowledge and their institutional positions to engage with policy (Sin, 2014). This understanding of policy enactment has been described as more actor-centered and a bottom-up approach to policy implementation (Sin, 2014).

The role and type of policy actors are integral to the development and enactment of policy, and both have been impacted by the changes taking place in the global economy. Within the contexts of globalization, policy is described as “*multidimensional and multilayered and occur[ing] at multiple sites*” (Rizvi & Lingard, 2010 p. 14, italics in original). This means that international policies and transnational policy actors such as international government

organizations, corporations, and the private sector are influencing national education policies (Fowler, 2000; Rizvi & Lingard, 2010; Stevenson, 2013). These global influences on policy processes have implications for how education policies are developed and enacted at national and institutional levels and their impacts will be considered across the six research sites.

The final framework that informs this research is intersectionality, which originates from Black feminist scholarship (Crenshaw, 1989). Historically, Black feminists challenged dominant feminist ideas of universal sisterhood, which, they argued, failed to acknowledge the unique lived experiences of women of color resulting from their race and class (Carbado, Crenshaw, Mays, & Tomlinson, 2013; Crenshaw, 1991, 1989). Intersectionality has since been used as a framework of analysis in various fields (e.g., Carbado et al., 2013; Museus & Griffin, 2011; Ravera et al., 2016), including in environmental education, to examine how social and environmental issues are researched as interconnected (e.g., Maina-Okori, Koushik, & Wilson, 2018).

In researching the roles of actors in the uptake of SHE, an intersectionality framework informs the understanding of actors as having multiple intersecting subjectivities. In particular, this research is interested in understanding to what extent historically marginalized groups are involved in the uptake of SHE. Paying attention to historically marginalized groups helps to unveil the power dynamics inherent in HEIs and the uptake of sustainability, in particular. Similar to the critiques of Black feminists of the mainstream feminist movement, higher education, environmental, and sustainability movements have often privileged dominant western ideologies while subjugating and othering minority groups and ideas. Therefore, an intersectionality framework provides an important lens through which SHE can further engage with issues of social justice and equity.

Therefore, drawing from the theoretical frameworks outlined above, this thesis aims to undertake a critical analysis of how external and internal policy actors are implicated in effecting institutional change for sustainability. This investigation includes a focus on the extent to which HEIs are working to ensure the inclusion of historically marginalized groups in the uptake of sustainability in their entire systems in both policy and practice.

The following section is a statement of my positionality within this research. It entails the background and experiences that have led me to the current research on sustainability in higher education.

Situating Myself in this Research

Like many others, I left my home country (Kenya) to pursue further studies in North America. The promise of a better education and livelihood fuelled my excitement and anticipation for learning, adventure, and connection in this new place. Upon arrival at the university, located in a mid-sized Midwestern city, I was met with culture shock at multiple levels. The immediate challenge that I had to grapple with was the brutal winter, typical of the Midwest prairies. Coming from a tropical country, I had never experienced winter before, so I had to quickly learn the basics of layering up and adjusting during this season. The language barrier is another challenge that completely caught me off-guard. With a degree in English under my belt, I thought I knew what there was to know about the English language. This was not the case. During my initial days, I found that I had to repeat myself several times in order to be understood by those who found my accent to be quite different. This frustrated me as I attended classes and as I sought access to various services in campus and in the community. It is during this time that I began to understand the politics of difference.

As I was slowly getting settled, I was acquainted with other international students, through whom I was connected to the office of Community Anti-Racism Education Initiative (CARE). Mandated by the university President, this initiative was developed to lead anti-racist and cross-cultural education programs on campus and in the community and I was fortunate to be involved in this work during my time at this institution. Later on I enrolled in a Master's degree in social responsibility, an interdisciplinary program that focused on social justice, peace, human rights, the environment, and animals. These two programs were foundational to my developing critical thinking perspectives and have formed the basis for my life-long learning journey.

Through my learning and work with CARE and the social responsibility program, I began to deeply explore and understand of the root causes of the systemic inequalities evident in our society today. The interconnected nature of race and racism, patriarchy and gender oppression, capitalism and class inequalities, environmental degradation, mass extinction of species, and other systemic forms of oppression became quite evident. I began to see the parallels between our histories as Kenyan and African peoples, the histories and current state of Indigenous struggles for self-determination, and the inequalities alive in the Western countries today. The lingering consequences of colonialism and imperialism, such as poverty, appropriation of natural resources including dispossession from land, destruction of cultural practices and artefacts, were evident not only back home but also in the United States, Canada, and other Western countries. These critical perspectives piqued my curiosity and fuelled my current life and academic pursuits.

As an uninvited guest on these Indigenous lands, I felt a sense of responsibility to stand in solidarity with the First Peoples who have and continue to resist colonial legacies, and to work

towards forging a better future for those who will come after me. Through grassroots organizing, I collaborated with various communities and individuals to bring awareness to pressing social justice and environmental issues. Many of these individuals were international students, who despite being away from their home countries had a deep commitment to finding lasting solutions to deep-rooted intersectional issues. It was while working with these friends and mentors that I decided to explore ways that I could continue advocating for social justice and environmental issues.

Since coming to Canada, I have sought opportunities to educate myself on the issues that Canadians are grappling with at the local and national levels. Among these are the goals of reconciliation and decolonization, which seek to address the consequences of settler colonialism, struggles for Indigenous sovereignty, land rights, self-determination and governance, and access to equitable livelihoods. As a newcomer and an uninvited guest, I acknowledge the privilege that I am welcomed into, at times at the expense of the First peoples of Canada. While I am aware that I am also a ‘visible minority,’ both racially and in terms of gender, and that I experience systemic barriers across multiple social levels, I do recognize that I have privilege as a cisgender, able-bodied, and highly educated Christian individual. Because of this social positioning and my lived experience, these issues inform and are brought to bear on my everyday life and in my research.

The question of how education can be used as a vehicle to foster sustainability has been central to my doctoral work. Housed in the Sustainability and Education Policy Network (SEPN), this research has been part of an incredible journey made possible by the supportive colleagues who care so deeply about working to leave a habitable and equitable planet for future generations. Under the leadership of the PI, Dr. Marcia McKenzie, this project brings together a

network of students, academics, and environmental organizations to research and communicate ways that education policy and practice can support sustainability uptake. Within this project, my research was concerned with examining the influences that actors, including networks and organizations, have in advancing sustainability in higher education. Given my unique positionality as a Kenyan and racialized international researcher, my curiosity also lay in examining to what extent diverse actors are involved in SHE uptake. The aim was to suggest how HEIs could address barriers that impact historically marginalized groups' ability to bring their knowledge and experiences to bear in helping to create a sustainable and equitable future.

Statement of Research Purpose/Objectives

The purpose of this thesis research was to examine how various actors are involved in the development and enactment of SHE policy and practice in order to recommend ways in which institutions can effectively engage diverse actors in contributing to the shift to a more sustainable future. The earlier phases of the SEPN project focused on document analysis across Canadian institutions, including a content analysis of sustainability documents from 50 HEIs, as well as a national survey. A subsequent phase consisted of visits to institutions across the country, six of which were HEIs. My research was located within this latter phase, focusing on these six institutions. Another ongoing component is knowledge mobilization. In this phase of the research, we disseminate the findings from the project through various venues.

Research Questions

To achieve the objective of examining the influences of various actors in the uptake of SHE policy and practice, this research focused on the following questions:

1. What are the roles of actors in the uptake of sustainability in policy and practice across

the research sites?

2. What are the influences of networks and organizations in the uptake of sustainability across the research sites?
3. To what extent are historically marginalized groups involved in the uptake of sustainability in policy and practice across the research sites?

Significance of Contributions

This research aimed to provide a deeper understanding of the actors influencing the development and enactment of SHE policy and practice, their roles in these processes, and institutional supports that enhance their involvement in sustainability. This understanding contributes to the SHE literature and provides research-based insights on how institutions can engage different groups to integrate sustainability into their systems. In focusing on how marginalized groups are involved in SHE, this research aimed to fill a gap in the SHE literature, as few studies have focused on this important dimension.

The study aimed to provide strategies for responding to resistance that various actor groups may experience in engaging in sustainability initiatives. It also sought to reveal specific examples of how actors may be engaging with critical issues of social justice and the environment, to offer suggestions for how other actors within HEIs can take up these critical frameworks. The goal is to suggest ways that sustainability actors can influence systemic change for sustainability in their institutions, in helping society move towards a sustainable future.

The next chapter reviews the existing literature, starting with conceptualization of sustainability, SHE, and the roles of different actor groups. The third chapter describes the methodology and methods that were used to collect data, as well as the data analysis process.

Chapter four presents research findings from across the six research sites, focusing on three guiding questions. Chapter five is a discussion of these findings in relation to the existing literature, implications of the research findings, suggested areas for future research, limitations of the research, and concluding remarks. Appendices are provided following the references.

CHAPTER TWO: REVIEW OF THE LITERATURE

This research is informed by the literature on sustainability in higher education (SHE). In this review of the literature, I begin with a brief background on sustainability and then move to the origins of SHE. I focus on existing research on the reasons why HEIs initiate sustainability initiatives and which factors impact the success of these initiatives. Next, I review studies on the roles and involvement of various actors in the uptake of SHE policy and practice, including the roles of historically marginalized groups. I then review the factors identified as impacting the ability of various actors to effectively engage in sustainability.

Conceptualizing Sustainability

Sustainability is a complex term, with multiple and competing conceptualizations (Agyeman et al., 2002; Corcoran & Wals, 2004; Scott, 2015; Toman, 2006). Nevertheless, there are definitions that help to guide specific research and practice. The term ‘sustainability’ has been generally defined as the ability to sustain, nurture, or maintain a certain state (Kajikawa, 2008; Toman, 2006). While this definition provides a point of departure on which others can base their own interpretations of sustainability, the question of “what is to be sustained, by whom, for whom, and what is the most desirable means of achieving this goal” (Agyeman & Evans, 2004, p. 156) may help to elaborate on this concept. To answer these critical questions, I draw from the seminal report of the Brundtland (1987) commission. The report discusses broad conceptualizations of sustainability and mostly uses the term ‘sustainable development.’ The difference between these two terms – sustainability and sustainable development – is highly contested, and the two have been used interchangeably in some cases (Khalifa & Sandholz, 2012).

The widely quoted Brundtland Report (1987) defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (n.p.). Sustainability in this context involves meeting basic human needs such as food, shelter, clothing, healthcare, and education within the limits of the ecosystem, with considerations for future generations. This definition helps to answer the question posed above about what needs to be sustained, for whom, and by whom, as well as the best ways to achieve this goal. The report further shows the intricate relationship between social and environmental issues by arguing, “a world in which poverty and inequality are endemic will always be prone to ecological and other crises” (Brundtland, 1987, n.p.). The report emphasizes three pillars – economic, social, and environmental – that form the basis of sustainability. Furthermore, the report argues that sustainability policies should consider equity and access, when it comes both to resources and to the distribution of costs and benefits. Equity is to be considered within the current generation and across generations.

The Brundtland Report (1987) shows the connection between unmet basic human needs and environmental degradation. It states, “Many of the problems of resource depletion and environmental stress arise from disparities in economic and political power” (n.p.). This is an important connection as it links environmental crises to issues of power disparities evident mostly in marginalized communities, perspectives that are needed in the research and practice of sustainability. While the conceptualization of sustainability as described in the Brundtland Report (1987) may seem broad and all encompassing, it can be understood as advocating for a sustainability framework that is engrained in all societal spheres. What constitutes sustainability, then, is highly dependent on varied issues. As Kajikawa (2008) notes, the goals of sustainability

may vary “because different people have different aspirations in different time periods, over different time scales, and in different contexts” (p. 219).

Following the Brundtland Report (1987), the United Nations Conference on Environment and Development (UNCED, 1992) continued the discussions of sustainable development and environmental protection. Chapter 36 of Agenda 21, in particular, focused on the role of education in advancing the sustainability agenda, a discussion that has informed the reorientation of education, both formal and non-formal, towards sustainable development (Gough, 2013). Environmental education (EE) is now often referred to as sustainability education or education for sustainable development. This reorientation has not gone without criticism. Some authors have argued that education focused on a certain outcome, in this case sustainable development, is bound to limit people’s thinking and learning, leaving little room for reflexivity and self-determination (Gough, 2013; Jickling & Wals, 2008).

Within the realms of environmental and sustainability education (ESE), Moore (2005b) defines sustainability as “a concept, a goal, and a strategy...the reconciliation of social justice, ecological integrity and the well-being of all living systems on the planet” (p. 327). She describes sustainability as “the process or strategy of moving towards a sustainable future” (p. 327). Moore’s articulation of the need to reconcile the social and environmental dimensions helps to frame the discussion of how these two issues are interconnected and how this interconnection is critical to achieving sustainability. Although this research understands sustainability as constituting social and environmental dimensions, in considering SHE, participants in this study were asked, at a minimum, to consider the natural environment.

Sustainability Uptake in Higher Education

Higher education institutions are regarded in society as knowledge repositories, shapers

of future leaders, and drivers of innovations through research, but they are also seen as producers of inequality and unsustainable practices (Lozano et al., 2013; Okolie, 2003; Stephens et al., 2008). Researchers contend that HEIs are important players in advancing sustainable development and sustainability, both on campuses and in broader local and global communities (Alkahr & Avissar, 2018; Barth & Rieckmann, 2012; Cortese, 2003; Emanuel & Adams, 2011). In light of post-secondary education's key role in sustainability, higher education efforts towards the goal of integrating sustainability into their systems have taken different forms and have evolved significantly over the past two decades. Through these efforts, several factors have been found to enhance and/or impede the uptake of SHE. Some of these factors include the institutionalization of sustainability, incorporation of sustainability into the curriculum, external benchmarking and assessments, effective teaching methods, funding, and diverse and competing conceptions of sustainability.

The reviewed literature discusses the integration of sustainability in relation to the three pillars – social, economic and environmental – and in relation to entire institutional systems, including across governance, curriculum, operations, research, and community outreach (Sylvestre et al., 2013; Vaughter et al., 2013). The following section reviews the existing literature in these five domains, focusing both on the types of initiatives in each domain and on the factors that enhance and/or hinder uptake in these domains.

Governance. Governance refers to top leadership in institutions and guiding documents such as policies, plans, and strategies in relation to sustainability. Senior administrators, as well as Board of Governors members, academic leaders, student executives, and other departmental leadership hold these leadership positions. Sustainability in the domain of governance can entail a variety of initiatives such as signing sustainability declarations, implementing sustainability

assessments and evaluations, and developing policies and other sustainability mandates. According to the literature, signing sustainability declarations is one of the most visible commitments to sustainability in the governance domain (Elliott & Wright, 2013). Earlier studies indicated that signing sustainability declarations, such as the Talloires Declaration, has, in some cases, formed the basis through which universities incorporate sustainability into their campuses (Wright, 2002). Although recent studies have found that 45% of all accredited HEIs in Canada have signed at least one international or national declaration, they have also observed a weak relationship between signing a declaration and initiating sustainability policies (Beveridge et al., 2015).

In addition to signing declarations, research shows that other sustainability initiatives in the governance domain can include undertaking sustainability assessments such as Sustainability Tracking, Assessment, and Ratings System (STARS) managed by the Association for the Advancement of Sustainability in Higher Education (AASHE) (Beveridge et al., 2015; Lidstone et al., 2015a, 2015b). Evaluations of STARS-rated institutions in Canada show varying results. While a majority of these STARS-rated HEIs had a sustainability plan and/or a policy (Lidstone et al., 2015b), being STARS-rated did not influence the decision to sign a declaration or have a sustainability office (Beveridge et al., 2015). Other assessment tools include the Assessment Instrument for Sustainability in Higher Education (AISHE), Mainstreaming Environment and Sustainability into African Universities (MESA), Alternative University Appraisal (AUA), and Times Higher Education, which administers the University Impact Rankings to assess universities against the UN SDGs (Roorda & Martens, 2008; Times Higher Education, n.d.; Togo & Lotz-Sisitka, 2013).

Developing policies and plans is an integral part of institutional governance. As a result,

researchers have embarked on studies that evaluate the uptake of sustainability through the development of sustainability policies and plans, and/or the incorporation of sustainability concepts into institutional strategic plans (Beveridge et al., 2015; Vaughter et al., 2013, 2016). In considering sustainability policies in Canadian HEIs, studies have shown that 50% of institutions have some type of sustainability policy or plan (Beveridge et al., 2015). In relation to the five sustainability domains, many of these policies focus in detail on campus operations, with few policies on community outreach (Sylvestre et al., 2014; Vaughter et al., 2016). The policies have been described as lacking ‘teeth,’ or specifics, on how sustainability is to be engaged in relation to curriculum and research domains (Vaughter et al., 2016). At the national level, a UNESCO commissioned review of how culture is integrated in ESD policies showed inadequate representation of cultural groups in development of these policies, including in Canada, indicating an opportunity for HEIs to engage in intercultural dialogue in institutional governance (Tilbury & Mulà, 2009).

University organizational structures can also be a barrier to sustainability uptake. According to Velazquez, Munguia, and Sanchez (2005), universities are conservative institutions that are highly decentralized and bureaucratic. Although decentralization could allow for more autonomy to produce ideas by different entities, it may limit a consensus on the way forward regarding sustainability uptake. As societal needs change, the nature of HEIs has evolved to reflect and be able to respond to these changing needs of society, some of which have been associated with neoliberal restructuring practices (Brulé, 2015; McKenzie et al., 2015). In addition to the traditional universities, there are now professional universities, liberal arts universities, etc. This research focused on more traditional universities.

Curriculum. The curriculum domain refers to academic programs, curriculum, or

policies that incorporate sustainability (Beveridge et al., 2019). Although scholars articulate the importance of integrating sustainability into the curriculum, studies show that uptake of sustainability in this domain is lower compared to domains such as operations (Dyer & Dyer, 2017; Vaughter et al., 2013; Wood et al., 2016). According to Zimmerman and Halfacre-Hitchcock (2006), the inclusion of sustainability frameworks in the curriculum helps to equip students with skills in academic analysis and empowers them to increase their involvement. They suggest that this increased analytical ability and empowerment knowledge is effectively achieved through “holistic awareness, faculty support, and practical solutions with tangible results” (p. 9). These findings align with conceptions of interdisciplinarity, where students’ education is drawn from diverse disciplines and focuses on problem-based learning to address real world problems (Remington-Doucette & Musgrove, 2015).

The literature also suggests that other ways that the curriculum can enhance the engagement of students in sustainability is through presenting a holistic view of sustainability. This holistic conceptualization of sustainability helps students to acquire a broad understanding and see the interconnections among sustainability issues, helping to attract the attention of students who might not be interested in the environmental or economic aspects of sustainability (Kagawa, 2007; Zeegers & Francis Clark, 2014). In this regard, Christie, Miller, Cooke, and White (2013) emphasize the need for sustainability teaching to focus on the three pillars of sustainability to develop “a critical and active understanding from scientific environmental, sociocultural and economic-political perspectives” (p. 390).

In addition to the actual curriculum, teaching methods also impact students’ ability to acquire sustainability competencies. Interactive and hands-on teaching methods such as small group discussions, role-playing, case studies, community service-learning, group work, and

debates have been found to enhance sustainability learning (Christie et al., 2013; Cotton et al., 2007; Mulder et al., 2015; Portman & Teff-Seker, 2017; Radinger-Peer & Pflitsch, 2017; Remington-Doucette & Musgrove, 2015; VanWynsberghe & Andruske, 2007; Zeegers & Francis Clark, 2014). As Cotton et al. (2007) point out, well-facilitated class discussions can be good venues to enable sustainability learning; however, the authors warn that caution should be taken to prevent discussions from becoming arenas of disagreement and belittlement. On the other hand, role play has been found to create strong opportunities for teaching controversial and complex issues, creating a deeper understanding of key sustainability concepts (Cotton et al., 2007; Remington-Doucette & Musgrove, 2015). Further, teaching that focuses on community service-learning has been found to promote community engagement, providing students with opportunities to address real-world issues (VanWynsberghe & Andruske, 2007).

Embedding sustainability into the curriculum is more prevalent in some disciplines/faculties than in others. In a study that evaluated the integration of sustainability into Australian HE programs, Sherren (2006) found that science and technology had the highest levels of uptake, followed by arts, humanities, and social sciences. The lowest uptake was in the business discipline. At a Danish university in Denmark, geography, unsurprisingly, is considered a relevant fit for integrating sustainability due to its interdisciplinary connection between the natural and social sciences (Grindsted, 2015). Conversely, the engineering discipline has been observed to be especially resistant to engaging in sustainability in European HEIs because of this discipline's positivist paradigms and societal factors such as mainstream political ideas (Holmberg et al., 2008). A narrow disciplinary focus seems to hinder sustainability learning and inhibit interdisciplinary collaboration, a component that is important in addressing complex sustainability problems (Cebrián et al., 2015; Everett, 2008).

Some of the other factors that make sustainability uptake in the curriculum challenging include the lack of professional development training, insufficient time and incentives among faculty, and the inability to reach a common institutional definition of sustainability (Alkaher & Avissar, 2018; Bothun, 2016; Cotton et al., 2007; Holdsworth, Wyborn, Bekessy, & Thomas, 2008; Wood et al., 2016; Wright & Wilton, 2012).

Operations. The operations domain has been described as including “campus greening initiatives” that constitute formal policies to guide procurement, maintain buildings, or initiate informal student-led strategies and policies (Macgregor, 2015). Studies show that most uptake of SHE occurs in the operations domain (Beringer & Adom̄ent, 2008; Bothun, 2016; Christie et al., 2013; Dyer & Dyer, 2017; Sylvestre et al., 2014; Vaughter et al., 2016). According to the reviewed literature, sustainability initiatives in the operations domain include the following: building energy efficient buildings and/or retrofitting older ones to meet LEED standards; reducing carbon emissions; reducing and/or eliminating the use of harmful pesticides on the grounds; collecting rainwater to use in flushing toilets; developing responsible procurement practices; starting campus gardens, initiating sustainable transportation, recycling, and reducing waste (Beringer & Adom̄ent, 2008; Dyer & Dyer, 2017; Macgregor, 2015; Moore, 2005a).

Several factors have been identified as contributing to the implementation of sustainability in the operations domain. As Sylvestre et al. (2014) note, integrating sustainability in operations is common “owing to the straightforward nature of implementing technical fixes to problems of inefficient use of resources and the concomitant economic benefits these present” (p. 1522). On the other hand, Beringer and Adom̄ent (2008) hold the view that many North American institutions incorporate sustainability through their sustainability officers/staff, who are more likely to focus predominantly on operations. Additionally, researchers have found that

municipal policies influence building renovations on campuses, such as the Municipal College of Charleston in South Carolina (Zimmerman & Halfacre-Hitchcock, 2006). Because of this institution's location within the city, retrofits could only be done inside or behind the building in order to preserve the historical features.

Although the area of operations is said to be the best and easiest place to start, many researchers have critiqued this heavy focus on operations, while emphasizing the need to move sustainability beyond operations into research and teaching domains (Christie et al., 2013; Dyer & Dyer, 2017; Sylvestre et al., 2014).

Research. The research domain constitutes sustainability-focused research, including that which is conducted in collaboration with community and other research partnerships (Beveridge et al., 2019). Sustainability uptake in the research domain involves developing research centres, hiring research chairs, and conducting research on complex and uncertain sustainability issues within the broader society, as well as research on sustainability initiatives within HEIs. While sustainability research in some HEIs is initiated and conducted by individual faculty members, other institutions establish research centers where faculty, staff, and students undertake sustainability research (Lidstone et al., 2015a; Macgregor, 2015). Scholars have argued that for sustainability research to effectively address real-world problems it needs to include expertise from different disciplines including partnerships with communities and draw from various research methodologies; it needs to be inter/trans-disciplinary in nature and aim to realize transformation (Gaziulusoy & Boyle, 2013).

According to a literature review conducted by Gaziulusoy and Boyle (2013), sustainability research across HEIs has focused on topics such as “depletion of resources, maintaining biodiversity, managing municipal waste, disposal of nuclear waste, developing and

promoting organic agriculture, ... health governance, management of socio-ecological systems, and management of socio-technical transitions to sustainability” (p. 140). Similarly, an analysis of research articles published from 2000 to 2013 in the *International Journal of Sustainability in Higher Education* showed that researchers addressed such topics as “environmental management, university greening and the reduction of the university’s ecological footprint” (Leal Filho, Manolas, & Pace, 2015, p. 116).

A recent study of Canadian HEIs’ sustainability policies shows that research is one of the institutional domains where sustainability is least integrated (Vaughter et al., 2016). To explain the reasons for low uptake of sustainability in research, Beringer and Adomßent (2008) suggest that the autonomy of individual faculty to select their own research topic has hindered institutional mandates of sustainability research. According to these authors, the implications are that although sustainability research is occurring, it is isolated and confined within specific departments with little institutional-wide efforts to ensure an institutional mandate on sustainability research.

Community outreach. Community outreach is described as the “relationship and interaction between a university and its surrounding community (town as opposed to gown)” (White & Harder, 2013, p. 132) including “collaborations with individuals, governments, or organizations in relation to sustainability initiatives” (Beveridge et al., 2019). HEIs are said to have a social responsibility towards the broader community, a goal that has been emphasized in various declarations including the Talloires Declaration of 2005 (Karatzoglou, 2011; Zilahy et al., 2009). In addition to enhancing change in local societies, community outreach provides an avenue for institutions to implement their innovations, as well as an opportunity to act ‘local’ (Wells et al., 2009).

Community outreach is described as consisting of multi-stakeholder initiatives, which involve HEIs' academic staff, students, non-profit organizations, governments, and/or businesses (Dentoni & Bitzer, 2015; Mickwitz & Melanen, 2009). These outreach projects, often referred to as transdisciplinary collaborations, are carried out to enhance sustainability learning at both the institutional and community levels (Too & Bajracharya, 2015). At James Cook University for example, Macgregor (2015) describes the success of a community outreach symposium, the *Annual Sustainability Symposium and Fair*. Focusing on topics such as sustainable foods, sustainability, and consumerism, the symposium presented an opportunity for the university and local community to form collaborations. Other community outreach initiatives spanning from Hungary to Finland to the United States all articulate the value of co-creating knowledge among community and educational institutions, developing local capacities, building strong collaborations among the stakeholders, and examining local contexts that enhance sustainability uptake (Bodorkós & Pataki, 2009; Chalker-Scott & Tinnemore, 2009; Mickwitz & Melanen, 2009; Zilahy et al., 2009).

Research suggests that factors impacting community outreach initiatives include the following: adequate time for collaboration and relationship building; academic staff open to learning from community members while still maintaining analytical frameworks; well-established organizational structures; stakeholder training; incentives for academic staff; and regular sources of funding (Chalker-Scott & Tinnemore, 2009; Karatzoglou, 2011; Mickwitz & Melanen, 2009).

The Roles of Actors in Sustainability Uptake in Higher Education

Having briefly reviewed the literature on some of the factors impacting the uptake of sustainability in higher education generally, I now turn to the existing literature on the actors

involved in SHE and the roles they play in advancing sustainability, which is the specific focus of this study. SHE literature identifies many types of sustainability actors situated within HEIs and beyond, including groups such as students, faculty, staff, and administrators, organizations and networks, and social movements. I draw on Latour's (2005) work on actor-network-theory that defines an actor as “anything that does modify a state of affairs by making a difference” (p. 71). Therefore, for the purposes of this study, to be an actor means to impact (positively or negatively) the development or implementation of sustainability policy or practice in higher education.

Internal actors. Within HEIs, the reviewed literature identifies students (e.g., Sharma & Kelly, 2014; Zimmerman & Halfacre-Hitchcock, 2006), faculty (e.g., Holdsworth et al., 2008), administrators (e.g., Wright & Horst, 2013), and staff (e.g., Wright & Wilton, 2012) as key actors (also referred to as stakeholders) that are engaged in sustainability policy and practice initiatives. The literature suggests these actors play important and unique roles in initiating, implementing, and maintaining sustainability policies and practices in HEIs, as outlined further below.

Students. The reviewed literature identifies students as a group of actors internal to the university that are often involved in the uptake of SHE at institutions. According to existing research, students are mostly involved in bottom-up sustainability initiatives, or what has been referred to as change from below. Despite the important roles that students are said to play in advancing sustainability, some researchers have observed that few studies examine students' perspectives of sustainability in HEIs (Drupp et al., 2012; Helferty & Clarke, 2009b; Nejati & Nejati, 2013). Studies show that because students are alienated from decision-making circles in HEIs; their initiatives are mostly extracurricular activities organized through student

environmental clubs and youth networks (Banga Chhokar, 2010; Beringer & Adomßent, 2008; Drupp et al., 2012; Helferty & Clarke, 2009b).

The roles of students in sustainability has been described as change from below because students initiate sustainability-focused projects in their student groups and work to gain the support of fellow students, faculty, staff, administrators, and community members (Drupp et al., 2012; Helferty & Clarke, 2009b; Zimmerman & Halfacre-Hitchcock, 2006). An example of such a model is described in a German university, where students challenged their institution to address climate change and organized a two-day symposium inviting administrators, faculty, students, and community members to participate in discussions that helped put a policy in place (Drupp et al., 2012). The ability to draw different university staff and community members demonstrates the power of students to successfully take action on important issues. Another example of change from below is the fossil fuel divestment movement. Students have largely led this movement on their campuses and have over the past nine years garnered strong support from faculty, administrators, staff, and alumni (Grady-Benson & Sarathy, 2016; Maina, Murray, & McKenzie, 2019).

Helferty and Clarke (2009) summarize the various roles of students as sustainability actors:

Becoming leaders or volunteers in an on-campus club; coordinating or participating in a multi-stakeholder committee; engaging their student union or association and/or being a leader within it; initiating campus climate-related coursework with a faculty member; working with an administrative or student union, sustainability office or lobbying to create such an office; and creating and undertaking a work-study position. (p. 295)

These roles relate to the domains of governance, curriculum, and operations, and focus on

student collaborations with faculty, administrators, and staff. Other studies have shown that sustainability courses have sought to engage students in various projects within and outside their campus in partnership with community organizations and other stakeholders (Banga Chhokar, 2010; Harshfield et al., 2009; Remington-Doucette & Musgrove, 2015; VanWynsberghe & Andruske, 2007).

Factors impacting students' involvement in SHE. According to existing research, several factors impact students' involvement in sustainability in HEIs and can be categorized as internal and external. Internal factors are personal influences and external factors are influences from students' surroundings. The literature identifies some factors that could be considered internal such as internal gratification or self-fulfillment, the ability to connect with other students and partners, and making significant contributions to society (Mulder et al., 2015). It is suggested, for example, that initial interest in addressing sustainability ideas in a summer school or in other sustainability initiatives may stem from a sustainability course that students have previously taken (Mulder et al., 2015). This emphasizes the importance of sustainability courses in helping students to become further involved with sustainability (Portman & Teff-Seker, 2017; Remington-Doucette & Musgrove, 2015; Zeegers & Francis Clark, 2014).

Some examples from the literature of external factors that impact students' involvement in sustainability include sustainability practices within the broader university and local communities. According to Emanuel and Adams (2011), low commitment to sustainability among students is a reflection of low sustainability practices in the larger community. In addition, local contexts may impact how students from historically marginalized groups are able to engage in sustainability (Miller, 2018a), indicating the need for faculty members to consider the safety of students in community spaces. Addressing barriers to engagement in sustainability

is particularly important, given that literature shows that gender and racially diverse students are more likely to be involved in environmental behaviour in HEIs (Meyer, 2016). Other factors that impact student involvement in sustainability include alienation from decision-making circles, insufficient time, and inadequate institutional resources (Helferty & Clarke, 2009b; Velazquez et al., 2005; Zimmerman & Halfacre-Hitchcock, 2006).

Faculty. Faculty members are another group of actors identified as influential in advancing sustainability in higher education (Banga Chhokar, 2010; Cotton et al., 2007; Holdsworth et al., 2008; Holmberg et al., 2008; Wood et al., 2016). While most of the literature on faculty involvement in sustainability focuses on teaching, there are exceptions. For instance, faculty members have been found to act as role models to students. The literature shows that students consider exemplary faculty to play an important roles in their decision to become involved in sustainability initiatives (Emanuel & Adams, 2011). Visible activities among faculty such as biking to school, recycling, or buying fair trade goods motivate students to take similar actions (Emanuel & Adams, 2011; Kagawa, 2007; Leal Filho & Schwarz, 2008). Therefore, the literature suggests that in some cases faculty consider modeling good practice as a practical way of engaging with sustainability compared to integrating it into the curriculum (Cotton et al., 2007).

Studies show that faculty are also involved in establishing sustainability focused courses and programs of study. In Canada, for example, a study found that at Dalhousie University faculty founded the College of Sustainability, where students can take a double major in sustainability and a different program of their choosing (Sylvestre et al., 2013). In India, Banga Chhokar (2010) reports that faculty in various universities and colleges collaborate with non-profit organizations and the government to orient existing courses towards sustainability; in

addition to the development of sustainability-focused programs. According to Cebrián et al. (2015), decisions to start an entire program focused on sustainability or a course within a department are often made depending on the type of department, personal drive, and passion among the faculty. In terms of faculty development of sustainability-focused curriculum, studies show that while some faculty offer entire courses focused on sustainability, others choose to incorporate it into existing courses (Rusinko, 2010; Sharma & Kelly, 2014).

In addition, the literature emphasizes the significance of pedagogical tools used to engage students in sustainability courses. Researchers suggest that sustainability pedagogy needs to be interactive and motivational in order to capture students' attention, and project-based to help link theory and practice (Holdsworth et al., 2008; Holmberg et al., 2008; Mulder et al., 2015). Suggested sustainability courses include project based courses, and pedagogical tools include interactive methods such as role-play, debates, and case studies, as these help students experience first-hand some of the sustainability challenges and ways that they can help address them (Christie et al., 2013; Cotton et al., 2007; Mulder et al., 2015; Portman & Teff-Seker, 2017; Remington-Doucette & Musgrove, 2015; Zeegers & Francis Clark, 2014). Additional studies indicate that faculty involvement in sustainability includes supporting student initiatives, such as divestment campaigns, conducting inter/transdisciplinary research, and sitting on sustainability committees (Holdsworth et al., 2008; Maina et al., 2019; Portman & Teff-Seker, 2017; Velazquez et al., 2005).

Factors impacting faculty's involvement in SHE. In considering the factors that impact faculty's involvement in sustainability in HEIs, studies have shown that faculty members lack adequate training on how to teach sustainability (Boman & Andersson, 2013; Holdsworth et al., 2008). In Australia, for example, a study found that only one institution offered faculty an

introductory professional development course on sustainability (Holdsworth et al., 2008). To address this gap, scholars advocate for faculty-training programs that enhance their knowledge on sustainability, which will help them to facilitate students' learning and understanding of sustainability (Alkahrer & Avissar, 2018; Barth & Rieckmann, 2012; Cebrián et al., 2015; Holdsworth et al., 2008; Lozano et al., 2013; Velazquez et al., 2005). According to Holdsworth et al. (2008), such development programs should not be descriptive nor indoctrinating, rather they should introduce key sustainability concepts and approaches in ways that guide faculty to develop their own learning and understandings from their local contexts.

The literature suggests that another way to ensure that faculty members are engaged in sustainability is to institutionalize it; that is, to ensure a systemic integration of sustainability rather than isolated initiatives in select departments (Alkahrer & Avissar, 2018; Cebrián et al., 2015). Cebrián et al. (2015) are of the view that institutionalization of sustainability enables faculty to carry out sustainability as part of their existing workloads and not as a separate load that further burdens faculty. Furthermore, institutionalization helps to garner more support from senior administrators and ensures continuation of programs beyond individual mandates (Alkahrer & Avissar, 2018). In reference to their action research with faculty, Cebrián et al. (2015) appropriately suggest that such projects “need to be financially supported, incentivized and rewarded, because they generate interdisciplinary and transformative learning amongst academics, and empower academics to embed ESD” into the curriculum (p. 83).

Lack of a common definition of sustainability has been cited several times as one of the main barriers to implementing SHE (Owens & Legere, 2015; Sammalisto et al., 2015; Timmerman & Metcalfe, 2009; Wood et al., 2016). For instance, in their analysis of sustainability plans at their institution, researchers found that the loose and ambiguous language

used in reference to sustainability could hinder efforts to implement sustainability policy mandates: the lack of a “context for shared meaning-making closes the door on opportunities for debates that can serve as excellent learning processes by encouraging continual improvement and refinement of...understandings and strategies” (Timmerman & Metcalfe, 2009, p. 54). Although this ambiguity and lack of a common institutional definition is mostly presented as a barrier, some authors have maintained that it allows for various interpretations and therefore enhances creativity in the implementation of sustainability by different faculty (Christie et al., 2013; Owens & Legere, 2015; Sylvestre et al., 2013).

Staff. Staff members are employees that hold non-teaching and non-administrative positions in HEIs. These include but are not limited to sustainability officers/coordinators, facilities managers, department support staff, custodial staff, and research support staff. The reviewed literature focuses for the most part on the involvement of sustainability officers/staff, and also refers to faculty as academic staff; very few studies examine how non-teaching and non-administrative staff are involved in sustainability uptake in higher education (Beringer & Adomßent, 2008; Washington-Ottombre et al., 2018; Wright & Wilton, 2012). Most studies examine the combined roles of staff and students or that of faculty, or in some cases staff being involved in initiatives that are led by students, administrators, or faculty (Alkaher & Avissar, 2018; Brylinsky & Allen-Gil, 2009; Macgregor, 2015; Wood et al., 2016). Although there is little research on the roles of staff in sustainability uptake in HEIs, their support is critical to successful sustainability integration into institutions. Like students, staff involvement has been described as bottom-up, and as necessary to compliment and put pressure for more change from top to bottom (Macgregor, 2015).

In North America, Beringer and Adomßent (2008) contend that sustainability

officers/coordinators play a major role in integrating sustainability into campuses. This aligns with several studies that have found that the majority of sustainability uptake is in the operations domain, an area in which initiatives are often led up by sustainability staff (Beringer & Adomßent, 2008; Bothun, 2016; Christie et al., 2013; Dyer & Dyer, 2017; Sylvestre et al., 2014). Elsewhere, studies show that staff who are involved in sustainability do so largely on a part-time basis. These are often employees who have other appointments within a university, but are assigned additional sustainability responsibilities (Wright & Wilton, 2012). During initial efforts to embed sustainability in HEIs, staff members were considered change agents because of their knowledge of their institutions and were able to navigate any barriers. This was in comparison to senior management or administrators who tended to move to other institutions fairly regularly in the U.S. (Washington-Ottombre et al., 2018).

Factors impacting staff 's involvement in SHE. Busy schedules and other priorities limit the amount of time that staff can dedicate to sustainability planning, evaluation, and reporting processes (Harshfield et al., 2009). To address this issue, researchers advocate for the administration to hire enough staff to lead the implementation of sustainability initiatives in HEIs (Velazquez et al., 2005; Wright & Wilton, 2012; Zimmerman & Halfacre-Hitchcock, 2006), and provide adequate resources, support, and incentives needed to carry out this work. Cook and Khare (2015) reported on findings from a survey conducted by AASHE that found that the majority of sustainability work falls under facilities management, which typically does not include an upper administrator. They point out that besides the low pay among these staff, they are often also not in a position to make important decisions regarding sustainability.

Administrators. Several studies point to the critical roles that administrators have in championing integration of sustainability into all aspects of HEIs (Chambers, 2015; Dyer &

Dyer, 2017; Kanyimba et al., 2014; Owens & Legere, 2015; Vargas et al., 2019). According to sustainability scholars, this commitment spans from developing and ensuring implementation of sustainability policies/plans, providing institutional support, including funds, to staff, faculty, and students in their sustainability initiatives, and more (Chambers, 2015; Leal Filho, 2015).

As discussed earlier, one of the most visible ways that administrators show their commitment to sustainability is through signing national and international declarations on sustainability (Christie et al., 2013; Elliott & Wright, 2013). Since discussions to integrate sustainability in higher education began, university Presidents have signed various declarations, including the 1990 Talloires Declaration in France, the Halifax Declaration in Canada a year later, the 2009 Torino Declaration in Italy, and the 2014 Nagoya Declaration in Japan (Lozano et al., 2013; United Nations, 2014; Wright, 2004). More recently, following the launch of the United Nations SDGs in 2015, HE leaders and their partners signed the International Higher Education Declaration, committing to supporting the implementation of these goals (UNESCO, 2018).

Factors impacting administrators' involvement in SHE. Because of the significant roles that administrators have in advancing SHE, the literature maintains that lack of support and leadership from university administrators hinders the uptake of sustainability (Cebrián et al., 2015; Holdsworth et al., 2008; Kanyimba et al., 2014). One of the factors that has been found to inhibit strong leadership from administrators is increased corporatization of universities, where cost cutting and expectation of faculty and staff to do more with less impacts on sustainability (Velazquez et al., 2005; Wright & Horst, 2013). As a result, sustainability initiatives that are not considered profitable may not be prioritized (Bieler & McKenzie, 2017). It may be for this reason that sustainability uptake has been mostly focused on operations, as this helps to

potentially save on costs in energy and other operational areas (Sylvestre et al., 2014).

Another factor related to leadership is funding and studies have found that it determines how sustainability is implemented in higher education (Velazquez et al., 2005; Wright & Wilton, 2012). In their study of facilities management directors' conceptualizations of sustainability, Wright & Wilton (2012) found that funding was a huge barrier to achieving sustainability on campuses. In this study, many facilities managers voiced their concern regarding the limited funds that sustainability initiatives are allocated compared to other programs in the university. This lack of funding has been attributed to dwindling financial support from governments and other external funding agencies, leading administrators to prioritize other activities and not sustainability initiatives (Velazquez et al., 2005; Wright & Wilton, 2012).

External actors. In addition to internal actors, those within HEIs, the literature reviewed discusses the roles of external actors such as networks and organizations in influencing the uptake of SHE. These include networks and organizations at the national and international levels that are collaborating with HEIs to develop and share knowledge and innovations that enhance the advancement of SHE and in communities.

Networks and organizations. Studies indicate that because of the failure of national and international governments to coordinate sustainability efforts, networks between HEIs, industry, and local governments have been established to address this gap (Trencher et al., 2014). According to Karatzoglou (2011) networks “connect actors from...public and private sectors of society, sparking the prospect for creative ideas and innovative patterns of action but, simultaneously, increasing the challenge...of achieving synergy...among the participating actors” (p. 24). Despite the challenges that may arise in building partnerships, these networks are said to be integral in helping HEIs achieve their responsibility to the public in relation to

sustainability (Vargas et al., 2019; Zilahy et al., 2009). Some examples of sustainability networks identified in the literature include the Higher Education Partnership for Sustainability (HEPS) project in the UK, Higher Education Funding Council for England (HEFCE), Mainstreaming Environment and Sustainability into African Universities (MESA), and the Higher Education Academy (HEA) (Cotton et al., 2007; Kagawa, 2007; Togo & Lotz-Sisitka, 2013).

In North America, AASHE is identified as a prominent organization that was founded in 2005 to help HEIs, mostly in North America, to advance sustainability on their campuses (AASHE, n.d.; Bieler & McKenzie, 2017; Lidstone et al., 2015b). In the United States in particular, Dyer and Dyer (2017) identify the American College and University Presidents' Climate Commitment (ACUPCC) as another network that has played an important role in advancing sustainability initiatives from individual disconnected programs into high-level strategic imperatives. In Africa, Bothun (2016) describes the significant contributions that research and education (R&E) networks in partnership with the Network Startup Resource Center (NSRC) have made in providing infrastructure, training, and expertise for developing SHE curriculum.

External actors such as industry partners have been found to work in collaboration with HE actors to implement place-based initiatives that focus on built environments and energy conservation (Trencher et al., 2014). In examining the roles of actors in the “formation, coordination and implementation” of sustainability partnerships between external partners and universities, Trencher et al. (2014, p. 158) found that industry and other regional partners are working in collaboration with faculty, staff, and students to spearhead sustainability projects. Because many collaborations between faculty and external actors are happening on an individual basis rather than from an institutional standpoint, researchers caution that turnover could be

detrimental to these initiatives (Radinger-Peer & Pflitsch, 2017; Trencher et al., 2014). Nevertheless, Trencher et al., (2014) note that administrators and sustainability officers coordinate sustainability initiatives between their institutions and the community that are not scientific in nature and see this as an opportunity for more non-academic staff to foster collaborations with the community.

Regional Centers of Expertise. The Regional Centers of Expertise in Education for Sustainable Development (RCEs) are identified as another group of external actors that have been involved in supporting HEIs in developing and implementing sustainability initiatives globally (Kolenick, 2018; Mochizuki & Fadeeva, 2008). RCEs have been found to be hubs where education for sustainable development (ESD) can be disseminated to different audiences in formal and informal settings and enhance partnerships among HEIs and surrounding communities (Abidin Sanusi & Khelghat-Doost, 2008; Leal Filho & Schwarz, 2008; Ryan et al., 2010). Other international organizations such as UNESCO are said to play an important role in HEIs in the Asian-Pacific and other regions across the world (Ryan et al., 2010).

Summary

A common thread that emerges from examining the roles of various sustainability actors in higher education is the inevitability of working together with various groups on campus. While it may be possible for one group to work alone on a sustainability initiative, it is the support and input from other groups that seems to help make sustainability initiatives successful (Drupp et al., 2012). Transdisciplinary research on sustainability is one such area that pulls together expertise from faculty, students, staff, and community members to address real-world issues (Gaziulusoy & Boyle, 2013; Trummler et al., 2011).

On the other hand, the reviewed literature is silent regarding the need to intentionally

develop ways to include diverse actors in sustainability initiatives. There were few mentions of the ways in which historically marginalized groups and voices are involved in leadership and uptake of SHE. Few studies discuss the impact of gender on sustainability conceptualizations, while others examine the impact of gender on engagement in sustainability (Kilinc & Aydin, 2013; Leal Filho et al., 2015; Remington-Doucette & Musgrove, 2015). In light of this, my research in part aims to contribute to the SHE literature, examining to what extent marginalized groups are engaging in sustainability leadership in HEIs and how HEIs can create and maintain inclusive spaces where diverse groups make valued contributions towards advancing SHE. With the increased efforts to internationalize higher education and to focus on Indigenizing the academy across many Canadian institutions in conjunction with sustainability goals, it will be important to understand how to engage historically marginalized groups in sustainability. The following section is a discussion of the methodology and methods that were used to research actors' involvement in the uptake of SHE.

CHAPTER THREE: METHODOLOGY AND PROCEDURES

This research is situated within the site analysis component of the Sustainability and Education Policy Network (SEPN) project, including this thesis, and the methods that were used for data collection. Following the document collection and analysis from selected Canadian K-12 and HEIs, the site analyses part of the SEPN project is a community engagement element where selected education institutions were visited to collect data on the uptake of sustainability in policies and practices on the ground. Therefore, this section provides details of the project methodology, how the various sites and participants were selected, methods of data collection, and the analysis methods that were used.

Methodology

The SEPN project uses a comparative case study methodology to examine the uptake of sustainability in education policy and practice. Drawing from critical policy research as described in the introduction chapter, this study examines the relationship between policy and practice and the varying influences on the development and enactment of policy (Ball et al., 2012; Bartlett & Vavrus, 2014; Cresswell, 2010; Heimans, 2014; McKenzie et al., 2015; Temenos & McCann, 2013). As part of this, my research examines the roles of actors in the enactment of SHE policy and practice. Within a critical policy framework, policy research is conducted with the aim of identifying how education policy may produce inequalities, including whose voice is heard, and helps to find ways to ensure the inclusion of all groups in the development and enactment of sustainability policy and practice (Heimans, 2012).

The critical grounding of policy enactment recognizes that policy actors are positioned within unique contexts that influence the strategies they use in policy making (Gale, 2003). In an increasingly global economy, sites of policy making are multiplied and policy actors diversified

to include actors at the local, national and international levels (Fowler, 2000; Rizvi & Lingard, 2010; Stevenson, 2013). Within these complex contexts, actors are understood to play active roles in the development and enactment of policy beyond being mere recipients of policy (Sin, 2014). The influence of these varying contexts and actors situated in multiple levels was included in this study, to better understand the roles of these actors in the advancement of sustainability in education policy and practice across six research sites.

Informed by critical policy conceptualizations of policy, policy actors, and the influences on policy development and enactment, this study used a case study methodology to examine how SHE policy and practice is developed and enacted across six Canadian HEIs. According to Corcoran, Walker, and Wals (2004, p. 7), critically reflexive case study is “the ideal research tool” to examine the uptake of SHE. They posit that it helps to provide a critical analysis of what is working and why it is working, aimed at providing a “holistic understanding of cultural systems of action” (p. 11). They define cultural systems of action as the collective activities undertaken by a group of actors within a system, including how these actors interact amongst themselves to influence various outcomes. While on one hand limited to the particular cases under study, “[T]ranslating case studies can serve broad social functions to describe the values of our society, explore contradictions in our lives, offer new insights on what has been and should be done, and present new perspectives and interpretations on events” (VanWynsberghe & Khan, 2007, p. 86-87).

Moving beyond predominantly used single case studies within the SHE literature, this research responds to calls for multiple case studies to enable comparisons of “trends, patterns and heuristics” that are evident in different institutional settings (Corcoran et al., 2004). To facilitate an understanding of the influences on policy development and enactment, a

comparative case study methodology was used as it enabled exploration of sustainability uptake across multiple sites (Bartlett & Vavrus, 2014, 2016). This methodology “expands the locations of research while showing how actors are related through specific historical contingencies that connect disparate social sites and social actors,” and blends together vertical, horizontal, and transversal elements in the exploration of these sites (Bartlett & Vavrus, 2014, p. 132). In this study, vertical comparison entailed examining the influences of international, national and local policies on sustainability uptake at the research sites, while horizontal comparison facilitated analysis across the six provinces to better understand how their unique contexts influenced sustainability uptake. Additionally, transversal comparison entailed examining the relationships and influences of organizational actors such as national and international networks, policy bodies, and associations on sustainability uptake across and through various levels.

Therefore, to facilitate analysis across locations and through scales, six HEIs were chosen, constituting a set of attributes such as geographical location and institutional size as indicated in Table 3.1 below. In order to have nuanced understandings of sustainability uptake and the relationships between and among actors, multiple data collection methods were used as described in detail in this section.

Site Selection

This section briefly outlines the process that the SEPN team used to select the six post-secondary institutions that were included in site analyses. In Canada at the time of site selection, there were 220 accredited universities and colleges (non-Cégep), and Cégep,¹ from which a sample of 50 institutions was selected for further analysis during the document analysis phase of

¹ In the Québec education system, Cégeps are general and vocational colleges that offer two or three year programs bridging secondary schools and university.

the SEPN project. Out of these 50 institutions, the SEPN team used the criteria outlined in Table 3.1 below titled “Post-Secondary Education Site Analysis Criteria” to select six post-secondary institutions for site analysis. Criteria such as institutional size, geographical location, STARS ratings and institutional type, ensured that a range of institution types were selected. As indicated in the table, the criteria of the “sustainability initiative (SI) score” evaluated the extent of several high level sustainability initiatives at the institutions. Ranging from 0 to 4 points, the SI score was based on whether an institution had conducted a sustainability assessment, signed a sustainability declaration, had a sustainability office or officer, and/or had a sustainability-specific policy or plan. Beveridge et al. (2015) provide more details on the SI score and how each of the 220 accredited institutions in Canada scored. Using the SI scores and other criteria listed above, the six institutions included in Table 3.2 were selected for the site analysis (comparative case study) phase of the research.

Prior to site visits at the six selected HEIs, the SEPN team conducted a pilot study at the University of Saskatchewan. This site was chosen because of its accessibility, given that the SEPN project is housed at this institution, providing the team an opportunity to practice and test data collection methods. Training of the team was conducted before undertaking the pilot study and feedback from this pilot was used to make necessary adjustments to the research protocols.

Research Participants Selection

Research participants in the site analyses included both internal and external participants associated with the six post-secondary education institutions. These included: Board of Governors members, university administrators, faculty members (including Indigenous faculty), Indigenous representatives/Elders/coordinators, sustainability officers or directors, facilities management staff, sustainability office staff, sustainability committee members, general staff, student leaders

(sustainability students, Indigenous students, international or student union leaders), students, community members, and other key informants.

Table 3.1.

Post-Secondary Education Site Analysis Criteria

<p>The following criteria were applied to the subsample of 50 PSE institutions selected for Theme 1 Content Analysis (see "Subsample from T1" spreadsheet). Five institutions have been proposed. The "PSE SA Site Selection" sheet outlines all the steps taken to select proposed sites.</p>	
Institution Type	<p>Propose excluding colleges and CEGEPs, which leaves 36 universities. Enables SEPN to demonstrate a comparative study across 6 Canadian Universities. Important issue: Using only universities excludes the North as they only have colleges. The team opted to include a Northern college as the 6th institution.</p>
Region	<p>Select one PSE institution per region. Propose the following 6 regions:</p> <ul style="list-style-type: none"> ● North: YK, NT, NU ● West: BC, AB ● Prairies: SK, MB ● Central West: ON ● Central East: QC ● Atlantic: NS, NB, NL, PEI
Sustainability Initiative (SI) Score	<p>A range of sustainability uptake levels will be represented. Sustainability uptake will be judged using SEPN's T1 Sustainability Initiative (SI) Scores:</p> <ul style="list-style-type: none"> - Possible scores range from 0-4, where 4 means the greatest amount of uptake. - Each institution received a point for having each of four sustainability initiatives in place (assessment, declaration, office(r), and policy).
Institution Size	<p>Include a variable representation of student populations. T1 defined the following student body sizes:</p> <ul style="list-style-type: none"> Small: <=5,000 students Medium: 5,001 to 20,000 students Large: Greater than 20,000 <p>Propose combining small and medium universities into one "small-medium" category, which means there would be 16 institutions in the "large" category and 20 institutions in the "small-medium" category:</p> <ul style="list-style-type: none"> Small-Medium: <=5,000 to 20,000 students Large: Greater than 20,000
Relationship/Expressed Interest	<p>SEPN team members may have an existing relationship, the institution or individual has expressed interest in being a site, and/or a champion has been identified.</p>

Table 3.2.*Post-Secondary Education Sites*

Region	Institution Name	Institution Type	Institution Size	SI Score	Relationship/ Expressed Interest	U15	STARS Rating	Language	Centre Population Size
West	University of British Columbia	University	Large	4	SEPN Relationship, Expressed Interest	Yes	Gold	English	Large
Prairie	University College of the North	University	Small-Medium	0	Expressed Interest from SEPN Team	No		English	Small
Central West	University of Toronto	University	Large	3	Relationship with OISE, Theme 1 – large endowment, student activism, research centres privatized, access could be an issue; no STARS	Yes		English	Large
Central East	Université Laval	University	Large	2		Yes	Gold	French	Large
Atlantic	Mount Allison University	University	Small-Medium	2	Expressed Interest from SEPN Team	No		English	Small
North	Nunavut Arctic College	College	Small-Medium	0	Theme 1 data - Inuit content integration	No		English	Small
Prairie	University of Saskatchewan (Pilot)	University	Large	4	SEPN Relationship	Yes	Bronze	English	Large

Following research ethics approval at the University of Saskatchewan and at each of the six research sites, the first step involved identifying the key participant types at each institution, populated through searching each institution's website. Research participant selection and recruitment processes included three steps, with criteria for participant selection including: (i) knowledge of institution's development and engagement with sustainability, (ii) an institutional understanding of sustainability initiatives, as opposed to only an individual department, and (iii) diversity in demographics and academic disciplines. For potential participants internal to the universities, we used key search words such as: "sustainability AND office, OR coordinator, OR officer," "environment AND committee, OR working group, OR student association, OR student club," "sustainability AND community outreach, OR community engagement," and "sustainability OR environment AND research." Additional searches were run on various participant types, such as facilities/operations manager, Board of Governors members, student union presidents, and faculty. For potential external participants, searches were conducted on sustainability focused community organizations and groups websites, using terms such as "province/city AND climate change," "province/city AND environmental advocacy," and "province/city AND Indigenous environmental group." For participants external to the university, we identified key contacts that provided additional names of active community members. We targeted groups such as community environmental groups, Indigenous advocacy groups, local chamber of commerce, and city councillors.

The second step involved making initial contact with individuals identified to determine their fit and availability to participate in the study. For potential university-based participants, this was done by phone and through email follow up, using approved phone and email script and relevant background documents. For external to the university participants, this was done by email

solicitation, as well as circulating posters advertising the community focus groups for anyone else interested in attending. Through these processes, we sought to recruit participants for interviews with various actor types, and focus groups with students and community members. Faculty members who were recruited to participate in interviews were requested to provide access to their classes in order for us to conduct a focus group where possible. In cases where faculty were not able to provide access to their classes, we contacted student environmental groups and/or clubs to request their participation in a focus group. This stage also involved snowball sampling, where we asked for referrals to other individuals who fit our participant criteria.

Depending on responses from our initial contact, in the third step we followed up by phone or email to schedule a date, time and location of the interview or focus group. Participants were informed of the researcher that would be leading these interviews and focus groups, and the contact information of that researcher was provided for coordination purposes. In cases where participants were not available during our site visits but were willing to participate, we scheduled phone interviews prior or after the site visits instead of face-to-face interviews.

In addition to recruiting participants for interviews and focus groups, we contacted sustainability officers and/or key contacts at the institutions to schedule walking interviews and acquire appropriate authorization to set up talking walls and conduct sidewalk interviews (key contacts included sustainability officers or a member of the sustainability working group/environmental student union for institutions without a sustainability officer. In some cases key contacts included individuals who had existing relationships with SEPN team members at various institutions). For walking interviews, we provided sustainability officers and/or key contacts more details pertaining to the walking interview and scheduled a time for the interview at the respective sites. We also provided them with information about setting up talking walls, that is,

identifying locations with adequate traffic, such as student union buildings and cafés, and requested to be connected with facilities management staff to seek authorization to set up at the sites. Lastly, we informed our key contacts at each site about the process of conducting sidewalk interviews and they facilitated the proper authorization that we needed once we arrived at the sites to carry out these interviews.

After setting up most of the meetings with the participants, two researchers travelled to each research site and spent at least one week collecting data and interacting with various participants. Having two researchers at each site was important for sharing the workload as well as providing support to each other during this process. In between interviews, the researchers followed up with suggested potential participants to provide information about the study and schedule interviews with them. To ensure safety and privacy of collected data at the end of each day, recorded interviews and consent forms were uploaded to a secure virtual data storage space, with backups uploaded to an external hard drive that was stored in a locked room. Preparation was done for the following day and this process was followed until all possible data were collected.

Table 3.3 below shows the number and participant type across the research sites. Various methods were used to engage a total of 511 participants in the study, including interviews with 27 Board of Governors members and senior administrators, 32 faculty members, 23 staff (including sustainability and facilities management staff), 26 student leaders (including union and sustainability student leaders) and one community member. Seven walking interviews were held with facilities management staff, faculty, students and administrators. In addition, focus groups were held with 107 students and 33 community members, and sidewalk interviews with 255 students, staff, faculty and visitors.

Table 3.3.*Number of Participant Types Across Methods and Six Research Sites*

Category Participant(s)	Method(s)	Final Numbers across Sites						
		BC	MB	NB	NU	ON	QC	Total
University Admin	Interview	2	3	3	7	2	1	18
Board of Governors	Interview	0	7	1	0	1	0	9
Faculty	Interview	6	4	6	3	7	5	32
Staff (e.g., non-sustainability, sustainability officers, facilities management)	Interview	7	2	1	0	8	5	23
Student leaders (sustainability and/or student union)	Interview	4	1	9	1	7	4	26
Students	Focus group	30	8	29	25	7	8	107
Community	Focus group	8	7	4	7	7	0	33
Sustainability committee members	Interview	5	0 (n/a)	7 (1 unique)	0 (n/a)	4	5	21 (1 unique)
Campus community	Sidewalk interviews	50	50	50	5	50	50	255
Various	Walking Interviews	1	2	2	1	0	1	7
Total								511

Note: Of the 21 sustainability committee members that we interviewed, only one was a unique participant and a member of the community; the other 20 members were part of other participant types such as students, faculty, and staff. Because these 20 members fit into two categories; sustainability committee members and staff/students/faculty, their interviews were accounted for in the latter category, bringing the total number of participants to 511.

Data Collection Methods

This section describes the methods that were used to collect data from the six post-

secondary institutions that were selected for site analysis; site visits took place between December 2015 and November 2016. The methods used included semi-structured interviews with various groups across the six campuses, walking interviews with sustainability officers/main contact, focus groups with students and community members, photo documentation showing evidence of sustainability uptake or lack thereof, document collection, sidewalk interviews, talking walls, and observations. Each of these methods is described in detail below, with the exception of talking walls, which I did not draw upon for this research for a lack of comparability across the sites.

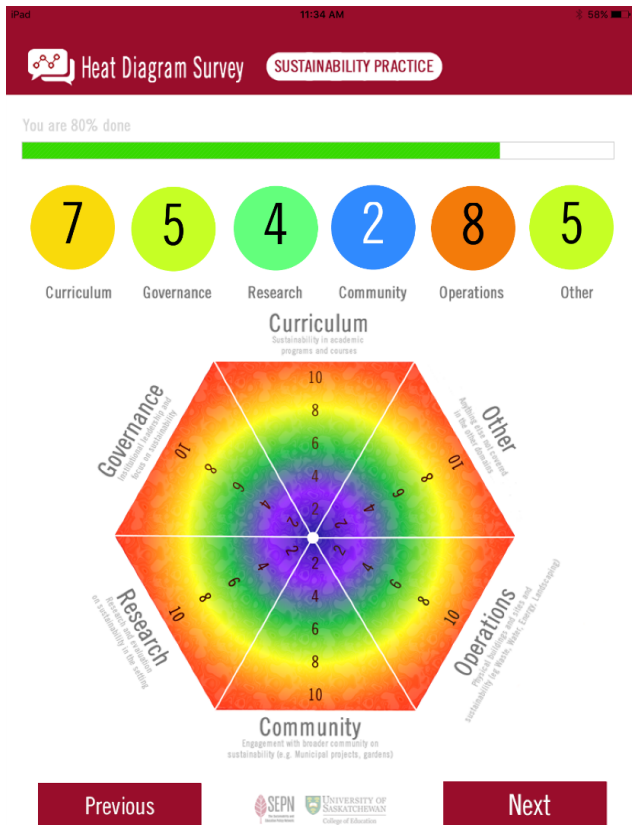
Interviews. Semi-structured interviews were carried out in locations that were convenient for the participants at each of the selected sites. After introductions and signing the consent forms (see Appendix A), the interviews were recorded for transcription purposes; each interview ranged between 1-2 hours. The interview protocol used (see Appendix B) included open-ended questions, as well as numerical data collected using a heat diagram. In the heat diagram, show in Figure 3.1 below, participants were asked to rate five sustainability domains on a scale of 1 to 10, with 1 being ‘cool’ or little to no sustainability initiatives, and 10 being ‘hot’ or high sustainability initiatives in a domain; as well as providing examples of the initiatives in their highest and lowest rated domains.

For interviews that were conducted remotely by phone, consent was given verbally and the interviews were also recorded. Across all six institutions, we conducted interviews with administrators, including Board of Governors members, faculty members, staff, including sustainability staff and facilities managers, student union leaders, and sustainability student leaders. Interviews were also conducted with sustainability committee members, consisting mainly of internal participants such as faculty, students, staff and sustainability staff, as well as

one community member at one of the institutions.

Figure 3.1.

Heat Diagram Used to Rate Institutional Sustainability Initiatives in Five Domains



Walking interviews. The purpose of walking interviews was to provide an opportunity for institutions to show us evidence of sustainability uptake around their campus. These interviews were designed to be conducted with a sustainability officer, for institutions that had one, or a member of the institution who was knowledgeable about sustainability initiatives taking place on their campuses.

Due to staff availability constraints at two institutions, students involved in sustainability undertook the walking interviews. In addition to recording the walking interviews, we took photos of various sustainability initiatives that our participants pointed out during the interview.

Each walking interview took between 1-2 hours (see Appendix C).

Sidewalk interviews. We conducted sidewalk interviews at each institution with students, faculty, staff, and community members visiting campus. Unlike the interviews and focus groups, the participants did not sign a consent form, but instead gave verbal consent by stopping to fill out a short survey on an iPad. The purpose of these sidewalk interviews was to understand participants' general knowledge on sustainability uptake on their campuses and facilitate a wider sampling of participants. Designed to take 5-10 minutes per survey, the focus was on the heat diagram, providing ratings on sustainability practice (see Appendix D).

Focus groups – students. We conducted two types of focus groups in each province that we visited: one with students and another with community members. Our goal was to have two student focus groups in each of the six institutions. These were either recruited through faculty giving us access to their classes or through reaching out to student environmental groups and/or clubs.

Conducted by two researchers where possible, each focus group ranged from one to one and a half hours. Each student in the focus groups signed a consent form (See Appendix E) before participating and the conversations were recorded. Except for one institution, the students were not compensated for their participation in the focus groups. In this one institution, one group of students was given an honorarium of \$40 each for their participation in accordance with the institution's research ethics (See Appendix F).

Focus groups – community. Focus groups were also carried out in the communities in which the site institutions were located. These were referred to as community cafés and their purpose was to examine the perspectives of community members regarding what the institutions were doing to address sustainability in policy and practice. Similar to the student focus groups,

community focus groups were conducted by two researchers. Each participant signed a consent form and each community café was also recorded. An average of eight community members attended each community focus group, with each discussion ranging from one and a half to two hours (see Appendix F). No honorarium was provided in the community focus group, but given that these discussions took place in the evening, healthy snacks were provided for participants.

Photo documentation. Photo documentation included taking photos with the aim of capturing visual indications of sustainability uptake or lack thereof across the research sites. We did this by identifying various categories for which we wanted to capture images related to the study focus. These categories included: food, waste, housing, outdoor and indoor common spaces, major natural spaces, sustainability reporting/data, transportation, emotion/affect, and others (see Appendix G). Target number of images for each category ranged from two to five photos for each research site and per category.

Document collection. Participants were asked about documents and policies related to the study focus that they thought would be important for us to review (see Appendix H for the document collection protocol). Researchers collected soft and hard copies of documents and in some cases participants provided links to websites where these documents could be found. As not all participants were aware of such documents, some did not provide any for further review.

Field notes. Each researcher took detailed notes of their observations through their visit at each research site. These notes included observations and reflections made during the interviews, focus groups, photo documentation, or sidewalk interviews, and any other aspects that stood out during the site visits (see Appendix I).

Data Analysis Methods

For the larger SEPN project, the data analysis process consisted of qualitative methods and analyses of numerical data from heat diagram ratings. A description of qualitative analysis will be included here as this was the only analysis method used for this thesis. As a team research project and given the large data set emerging from the six sites, it was appropriate to use NVivo 11, a qualitative data management software (Hilal & Alabri, 2013). In preparation for uploading the transcribed data sets from word document onto NVivo, researchers began by cleaning up the data and auto-coding, a process that involved assigning structured codes using the interview and focus group questions (DeCuir-Gunby et al., 2011; G. Ryan & Bernard, 2003). Data were then uploaded onto NVivo.

Analysis of the responses to the open-ended questions from interviews and focus groups was then done through inductive coding, with emerging themes identified across the research sites (Guest & McLellan, 2003). This process entailed reviewing matrix code query results, or content from previously auto-coded material sorted by a number of characteristics such as institutional size, STARS ratings, and location of research sites (Leech & Onwuegbuzie, 2011). For each of these query results, researchers then read through the references, keeping analysis memos that tracked emerging codes, subcategories, and categories across the sites. Researchers then pulled examples that stood out from reading the transcripts, including references that depicted various patterns and divergent participant perspectives. These examples were used in the reporting and discussion of the study results. This initial collective coding provided an opportunity for the research team to ask clarifying questions and align our analysis process.

For my thesis, I followed the inductive thematic analysis procedure outlined above, focusing on questions relating to sustainability champions, students, faculty and staff, diversity,

and national and international influences on policy and practice. This was an iterative process that involved reading the transcripts multiple times and running additional queries (text search and word frequency queries) to identify additional references that may not have been captured in research questions pertaining to the roles of actors. Throughout this iterative process, I followed the relationships evident in the emerging themes, across the research sites and among the actor types to understand how they informed data interpretation in relation to my three research questions (Ryan & Bernard, 2003).

While the existing literature has focused mostly on single case studies of sustainability initiatives in higher education, this research moved beyond a single case study to include a comparative analysis of sustainability uptake across six Canadian HEIs. This analysis focused on the roles of actors, including networks and organizations and the extent to which historically marginalized groups are involved in the uptake of SHE policies and practices. The main emerging themes included actors as drivers, participants and resisters to sustainability uptake, evidence of gender and racial diversity among sustainability actors, and evidence of intersectionality in discussing social justice and environmental issues in sustainability uptake. These themes are further discussed in the results and discussion chapters and informed the research implications and conclusions. Further as Ryan and Bernard (2003) explicate, I was attentive to missing data or silences pertaining to the roles of actors. In being cautious to ensure that these silences did not just confirm what I was looking for, I articulated these gaps in relation to the existing SHE literature, particularly in considering the involvement of historically marginalized groups.

Research Ethics

Prior to data collection, including the pilot study that was carried out at the University of Saskatchewan (U of S) the SEPN project, in which my research is embedded, applied and received ethics approval from the U of S and the six participating institutions. As part of the research ethics review process, the accompanying consent forms were approved and are included in Appendices A and E. Participants reviewed and signed these consent forms before each interview and focus group discussion.

CHAPTER FOUR: FINDINGS

This chapter presents research findings on the roles of actors in the uptake of sustainability in higher education (SHE) policy and practice at six institutions across five provinces and one territory in Canada. The findings are part of a Sustainability and Education Policy Network (SEPN) project, which examined the relationships between sustainability uptake in policy and practice in formal education. These findings emanate from data collected through interviews, walking interviews, sidewalk interviews, focus groups, talking walls, and observations of faculty, students, staff, administrators, community members, and key informants. The aim of this research was to undertake a comparative case study of the roles of SHE ‘actors,’ considered to include individuals but also larger networks and organizations that may play a role in driving or acting as a barrier to sustainability engagement in higher education. To examine this focus, three research questions guided the study:

1. What are the roles of various actors in the uptake of sustainability in policy and practice across the research sites?
2. What are the influences of networks and organizations in the uptake of sustainability in policy and practice across the research sites?
3. To what extent are historically marginalized groups involved in the uptake of sustainability in policy and practice across the research sites?

It is important to note that the contexts of higher education institutions (HEIs) differ substantially, and it would be expected that the roles of actors in sustainability be informed by their unique experiences and the varying contexts in which they are situated. The goal of this research, therefore, is not to encourage sameness across institutions, but, as Wals (2014) puts it in relation to SHE research, it is to stimulate future learning and innovations in the area of SHE

and beyond.

The format of this chapter entails comparison of results across all the six research sites, followed by identifying themes from specific sites. The first section focuses on the first research question, that is, on the roles various actors play in the uptake of sustainability in policy and practice. The next section addresses the second research question regarding the roles of networks and organizations in the uptake of sustainability in policy and practice. The last section presents findings on the extent to which marginalized groups are involved in SHE, particularly the diversity of the actors and groups that are not involved.

Roles of Actors in the Uptake of SHE Policy and Practice

In this research, to be an actor means to be involved in impacting the state of SHE, either positively or negatively. As such, three main themes emerged from analyzed data regarding the roles of actors: actors as drivers or champions of policy and practice; actors as participants in policy and practice; and actors as resisters to uptake of SHE policy and practice. Practices were defined as activities or initiatives across the sites that engaged with sustainability and were led by various groups such as students, faculty, administrators, etc. On the other hand, policy was defined as official texts produced or used by institutions that addressed sustainability. This could include, policy, plan, strategy, and/or documents that guide teaching practice, such as required curriculum. Using figures and direct quotes from participants, the following section provides details of the broader roles that different actors play as drivers/champions, participants, and/or resisters to sustainability initiatives.

Actors as drivers of SHE policy and practice.

Although many respondents were able to identify champions, a significant number

indicated that they were not aware of any sustainability champions at their institutions. Among respondents who were aware of champions across the six institutions, those at Mount Allison University indicated the highest number of champions in policy, and those at the University of Toronto indicated the highest number of champions in sustainability uptake in practice.

In terms of who identified champions were, across research sites, participants identified particular faculty, administrators, staff, and students as drivers in the uptake of SHE policy and practice. Comparison across actor types, as shown in Table 4.1, indicates that faculty champions were perceived to be more highly involved than other actor types in both policy and practice. In sites where faculty roles in SHE leadership were seen as weak, there were, nevertheless, pockets of deep commitment for sustainability over a long period of time from few faculty. Furthermore, the data suggest that individual faculty champions were spread across different departments and disciplines, such as The Ontario Institute for Studies in Education (OISE) at the University of Toronto, Natural Resources at the University of British Columbia, Environmental Studies in Mount Allison University, and The Department of Culture and Heritage at Nunavut Arctic College.

In addition to the individual champions described above, there were mentions of leadership from entire departments and external stakeholders. Examples of these include The Institute of Resources, Environment, and Sustainability at the University of British Columbia, local governments, Indigenous Elders, and community partners in sustainability uptake in policy and practice. The roles of external actors will be discussed in detail in subsequent sections. Across sites, participants indicated that actors championed sustainability initiatives in institutional leadership, in teaching and research, across facilities and operations, through student groups, and in institution-wide committees.

Table 4.1.

Comparison of Type and Number of Named Champions Advancing Sustainability in Institutional Policy and Practice Across Study Provinces/Territory

Actor Type	BC		MB		NB		NU		ON		QC		Total	
	Pol	Prac	Pol	Prac	Pol	Prac	Pol	Prac	Pol	Prac	Pol	Prac	Pol	Prac
Faculty	5	6	2	4	5	6	5	2	9	6	4	3	26	27
Admin	5	1	1	1	2	1	5	3	5	5	4	1	19	12
Students	0	1	0	0	7	8	0	0	2	6	4	0	13	15
Facilities staff	5	1	0	0	3	1	0	2	2	7	1	0	11	11
Total	15	9	3	5	17	16	3	7	18	24	13	4	69	65

Note. Pol stands for policy and prac stands for practice. The numbers indicate a tally of responses in each area.

Although administrators were most likely to be identified as resisters to sustainability uptake, there was agreement across all the research sites that they were involved in policy development as indicated in Figure 4.1 below. Teaching and research were identified as primarily faculty roles, with all institutions except Nunavut Arctic College indicating that faculty research informed policy development. Through their teaching, participants indicated that faculty members inspired and encouraged students to be involved in sustainability initiatives at the University of British Columbia, Nunavut Arctic College and Mount Allison University.

While staff members were seen as most likely to lead sustainability initiatives in operations, faculty and students provided input in this domain. In addition, students led sustainability initiatives through student groups at all institutions except at Nunavut Arctic College and University College of the North. Nevertheless, students at these two institutions were said to be involved in sustainability through their classes, within their institutions and in their communities. Lastly, institution-wide committees tended to have the most participation from all actor types across multiple sites. Figure 4.1 below is a summary of participants' perceptions of the specific roles of actors as drivers/champions and participants in SHE policy and practice at their institutions. Each actor type is then discussed in detail following the table.

Faculty and staff as drivers of SHE policy and practice. Data show that faculty and staff were involved in spearheading research, engaging students through teaching and conducting research, and in operations. The question of what roles faculty and staff play in the uptake of sustainability was framed as a single interview question and as a result, some participants referred to both faculty and staff in their responses, while others provided separate responses for each actor type. Therefore, to clarify, I indicate which actor type is being referred to where respondents specifically indicated this information. It is also important to note that participants

tended to have more to say about the roles of faculty, than they did about the roles of staff.

Faculty spearheading research projects. The roles of faculty in driving sustainability uptake in policy and practice was perceived as being mainly through their research, and was described as dependent on individual faculty and their particular research interests. At all institutions, with the exception of Nunavut Arctic College, participants indicated that faculty members use knowledge gained through their research to inform institutional policy development. For instance as a facilities management staff at the University of British Columbia member indicated, “appropriate faculty [are] often involved in a lot of our policy development. They’ve got some really great research backgrounds and knowledge, so yeah, they would always be involved.”

Faculty engaging students through research and teaching. Participants also emphasized the important role that faculty play in engaging students in their research projects and through teaching. Across five of the institutions, faculty and staff were identified as working closely with students on projects on campus and in the community, and were seen as important ways of bridging the gap between these two entities. As one student articulated, faculty and staff have a positive impact on students through the connections they make between sustainability and local communities:

We have obviously different professors that use their classes to help try and engage students with the community, which I think is really important. For example, last semester [name of faculty] gave a talk about place matters and it was all about place-based conscience and education. And sustainability is one of the main topics we went over. I mean, I got probably more involved with the community during that class than I think I had in my first two years. And I think that’s really important that we have classes

like that that gave us the opportunity to get involved and speak with educators and speak with professionals about different things (Student, Mount Allison University).

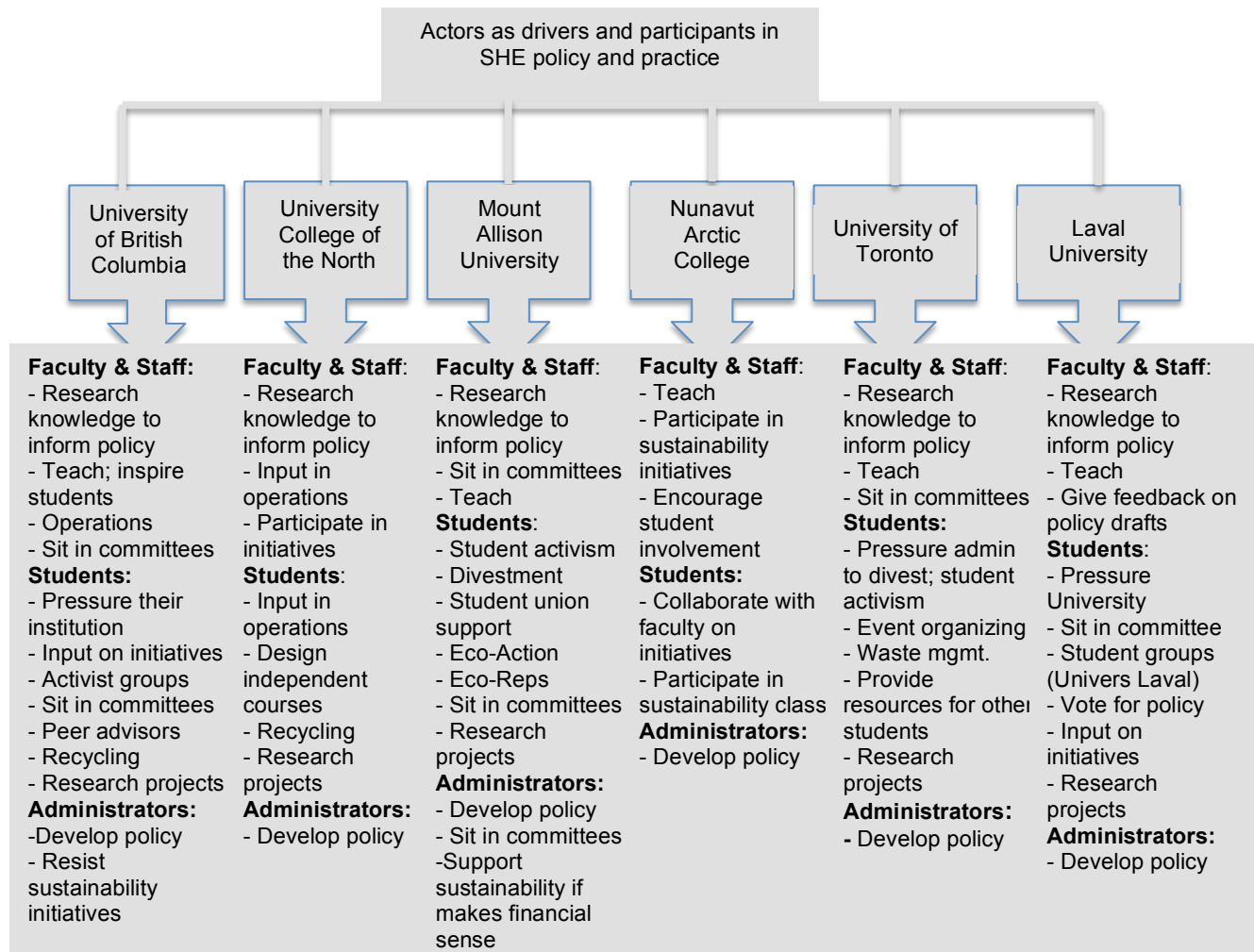
Connecting students to their local communities' sustainability initiatives is significant, as it has potential for building strong sustainability champions beyond their tenure as students.

Faculty commitment to engage students in sustainability through research and teaching was dependent on individual interests and departmental focus. Across the sites, several participants indicated that faculty initiatives in research and teaching were highly dependent on individual interests. They noted that faculty chose to champion sustainability because of their passion and a sense of responsibility, despite the perceived lack of support from administrators or other governing bodies in some cases. It is this commitment or "buy-in," as one community member at University College of the North described it, that fosters student involvement in sustainability: "It's the faculty that has to bring this into the programs and so the student involvement is directly correlated with the faculty buy-in."

Departmental commitment and support for sustainability were seen to influence faculty's engagement of students through teaching and research. At Mount Allison University and the University of British Columbia, some students reported that departments that would not typically address sustainability in their teaching, such as English, were focusing on these issues in their classrooms. Examples of departments in which faculty were seen as most involved in sustainability included Environmental Studies in at Mount Allison University, Geography at the University of British Columbia, Environmental Technology at Nunavut Arctic College, and Chemistry at the University of Toronto.

Figure 4.1.

Actors as Drivers and Participants in SHE Policy and Practice at Six Canadian Higher Education Institutions



Whereas the majority of participants agreed that faculty engage students in sustainability through research and teaching, others held the contrary view; that faculty did not adequately involve students. As one student indicated, some faculty members did not support student engagement in a way that they felt was meaningful to them:

It's faculty-led. Sometimes we don't even- lots of the students at Mount Allison University aren't involved in anything that...anything really. They don't actually help us create sustainability. They don't let us do things that will help sustainability. They just let us talk about it and research it, but that's about it. They don't get us involved with it, you know? (Student, Mount Allison University).

While this response suggests that students are involved in sustainability initiatives such as talks and research, the respondent felt that faculty could do more to encourage students to become involved in developing sustainability strategies and policies. Perhaps these sentiments point to a lack of opportunity for students to implement the concepts they discuss in their classrooms and research in real, practical ways.

Although teaching and research are primarily faculty responsibilities, staff members were also identified as engaging students in research projects. While this was not common, there was one case where a staff member was said to undertake significant sustainability research, outside their job requirement. They used research as a platform to engage students in their work:

We've had the last few years a lab technician who just happened to be engaged in environmental issues, so that's a nice coincidence, it's not like we planned it, and we don't pay them for the summer. ...[Name of staff] brings in an enormous amount of local environmental knowledge and sustainability and funding and interest...At the moment he's out doing core samples of old structures in the community to see what the impact of

climate change has been. That's just in his spare time, but he's got a student doing a special topics [course] with him. He's one of those quietly engaging students. They're out with chainsaws cutting old underground foundations, and dating them hundreds of years back (Faculty, Mount Allison University).

Whereas there were not many examples in which staff involved students in sustainability research projects, this case indicates an opportunity to do so. Given that knowledge and interest from individual staff seem to be key drivers to involvement in sustainability, if staff members can secure research funding and have allocated time within their primary responsibilities, they may be able to engage students in these initiatives.

Staff roles in operations. In relation to campus operations, participants shared that facilities management staff, including sustainability officers, championed sustainability at their institutions through developing policies and initiating practices. Figure 4.2 below is an example of operational initiatives that were visible during our site visits at the University of Toronto and the University of British Columbia, respectively. The image on the left shows signage about water conservation efforts, where rainwater is used to flush toilets; and the one on the right is a water refill station that encourages the use of reusable water bottles. Such graphic displays were evident across several of the research sites.

Staff-led initiatives focused primarily on campus operations such as energy efficiency programs, water conservation, and waste management initiatives. According to a facilities manager at the University of Toronto, "facilities...staff...are champions and they're on this... They do energy management in particular (to ensure) comfort." Similarly, an administrator described the collaborative role that staff members played in developing a policy on a green revolving fund with the goal of becoming more energy efficient. Having jurisdiction over

budgeting, they were able to plan accordingly to set up the fund. Students at this institution also shared that facilities staff were open to ideas from students on how to improve their learning environments. They identified one particular staff member who was instrumental in pushing for an efficient “ventilation system,” and added that his colleagues “have together been really instrumental on getting the acetone recycler and other such things” in their chemistry lab.

Figure 4.2.

Examples of Sustainability Initiatives at Universities of Toronto and British Columbia



Furthermore at the University of Toronto, facilities management staff indicated that they received significant support from both operations and academic leadership. Academic department heads supported sustainability projects that facilities management staff initiated in campus facilities and operations units. The facilities management directors also provided support for facilities staff to attend international conferences to learn about the latest innovations and technology in institutional operations. A facilities staff member explained that their facilities manager supported their endeavours to learn from others by providing funding to attend local

and international conferences. The hands-on experience and the interactive nature of these conferences was important to their work, versus merely reading about new developments in their field.

Administrative leadership. Across the six research sites, administrators were generally not seen as drivers of sustainability uptake in policy and practice, with the exception of a few institutions where they were described as heroes in driving sustainability uptake. At the University of British Columbia for example, a faculty member indicated: “There is no doubt in my mind that the... previous President...and also the Associate-Provosts... were the administrative heroes of the story of the University of British Columbia.” The sustainability story at UBC stemmed from the then President’s interest and support in forming an advisory committee to look into integrating sustainability in the institution. As one participant narrated, during this period faculty members from three disciplines were already curious to find ways to address sustainability in their programs. When these faculty learnt of their shared interest in sustainability, they secured funding from a kitty set aside for faculty innovation and invited a faculty champion to lecture about sustainability in their classes. Together with the support of the President’s Advisory Committee, they proceeded to strategize on how to integrate sustainability into the curriculum. This institution’s example demonstrates that overall support from administrators (Presidents, Provosts, and Board of Governors members) for sustainability, including providing funding and knowledge, together with dedication from faculty and other groups is crucial to integrating sustainability in HEIs.

At Nunavut Arctic College, participants indicated that the Vice-President was the sustainability champion in the area of green buildings. This administrator had a background in sustainability policy, and in using this expertise to lead the design of sustainable buildings.

Because of its location in a water scarce area, this institution's sustainability strategy needed to include a plan to redesign its buildings to conserve water and energy.

Having a sustainability office(r) and/or sustainability strategic plan seemed to impact the role of administrators in integrating sustainability in research sites. Institutions that had a sustainability office and/or a sustainability focus in their strategic plan were more likely to have leadership that steered their institutions towards integrating sustainability, for instance at the Universities of British Columbia, Toronto, and Laval. On the other hand, institutions that did not have sustainability commitments in their strategic plans seemed to have stronger leadership from students and faculty. For instance, stemming from faculty and student pressure, administrators at Mount Allison University formed the Environmental Issues Committee comprised of various campus and external stakeholders. Study participants were keen to point out that this committee reported directly to the President, but emphasized that its development was not initiated by administrators but by faculty and students. University College of the North and Nunavut Arctic College did not have a sustainability focus in their strategic plans. However, because of their locations and cultural values, sustainability was rooted in these institutions through Indigenous ways of knowing and practices.

Students as drivers of SHE policy and practice. In addition to faculty and staff, participants identified students as drivers of sustainability across the research sites. Out of the six institutions, student leadership in sustainability uptake was viewed as strongest at Mount Allison University, followed by Laval University, University of Toronto, University of British Columbia; with little student leadership on sustainability reported at University College of the North and Nunavut Arctic College. Overall student sustainability leadership was higher in relation to practice compared to policy engagement. The exception was Mount Allison

University, where student leadership was viewed as similar in relation to both in policy and practice, and Laval University where students were seen as more active in influencing policy than practice.

In what follows, I outline some of the key ways that students were engaging in sustainability leadership across the institutions. These included through leading and/or joining a sustainability student group and through activities such as educating students, providing resources and funding to campus groups, student activism on fossil fuel divestment, and collaborating with faculty on research projects through their courses. These factors and initiatives are each discussed further below.

Leading through student groups. Several participants considered student groups to play a key role in providing a platform for students to drive sustainability uptake in policy and practice across their institutions. Many of these were student-run environmental groups, which often received mentorship and support from faculty, staff, and community members. Examples of identified student groups included Green Chemistry, Eco-Reps, Eco-Action, Rewire student group, and Fossil Fuel Divestment groups. Participants indicated that with support from student government and the uptake of sustainability in the curriculum, students were mobilizing these groups to champion sustainability initiatives in their institutions through education, awareness building, and activism.

Both undergraduate and graduate student unions were described as integral to driving sustainability uptake in both policy and practice at different institutions. Participants expressed that these groups support students mainly through providing funding and other resources for them to undertake sustainability initiatives. At different institutions, student unions had various standing committees related to sustainability, including those focused on sustainability at Mount

Allison University, University of British Columbia and University of Toronto. Although most of the student unions mainly supported their student sustainability initiatives, some participants shared cases where union funding, such as the Green Investment Fund at Mount Allison University, was made available to both students and community members. The Mount Allison Green Investment Fund money came from student fees and was made available through a policy brought forward through the sustainability committee of the student union: “The Green Investment Fund... is with students as well as the community, and anyone can apply for it. It’s funding for green projects within the Sackville community.”

UBC and U of T had a similar fund that was levied from student fees and goes towards funding student sustainability initiatives.

Educating and building awareness. One of the key ways that student groups were said to drive sustainability uptake was through organizing events to educate others and bring awareness to sustainability issues. According to a community member at the University of British Columbia, “A lot of student groups like to put on events. That’s more of our raising awareness type of engagement.” These events targeted various issues on the campus such as institutional investment, waste management, climate change, transportation, and food. For instance, at Mount Allison University the group “Eco-Reps” organized to educate students in various residential halls on sustainability. As one student reported, “There’s also the Eco-Reps, which I believe is two in every house, and they’re responsible for rallying the people who are still in dormitories and trying to convince them to be more...environmentally sustainable” (Student, Mount Allison University).

Strong action from student groups was seen as part of a long legacy at Mount Allison University, perhaps explaining why leadership was strongest here compared to the other five

institutions. Student action was said to have begun in the early 1990s, when a student group called Blue-Green organized to create awareness on environmental issues of that time. The group received a grant from the university and converted a bus to run on vegetable oil to travel across the country creating awareness. Although the students who took part in the bus tour had long since graduated, their legacy and deep commitment to taking action on sustainability was still evident through the numerous student-led sustainability initiatives at this institution. Examples of current student-led awareness raising initiatives included composting workshops in collaboration with a local high school, panel discussions on eating locally sourced foods, climate change week, and other events that took place on a monthly basis on campus and in the community.

Student activism. Participants also explained that through student groups, students were involved in activism on various issues across the six research sites. Examples include water bottle ban campaigns, campaigns against deforestation, bike-to-work week, and the fossil fuel divestment campaign. In particular, the fossil fuel divestment movement was present at Mount Allison University, University of Toronto and the University of British Columbia, and stood out for various reasons. As participants elaborated, the movement was active for the past three and a half years and was considered a “major success” because it had strong and passionate leaders who pushed their mission and was widely publicized. The push for fossil fuel divestment involved students questioning the investment policies of their institutions, urging their administrations to stop investing in companies that contributed to climate change and instead reinvest in socially responsible companies.

Whereas findings show that a small group of students typically initiated fossil fuel divestment campaigns at the three institutions with a campaign, there was widespread support evident from other actors at these three institutions. At Mount Allison University for example,

the divestment student group was born out of an environmental activism course in which students were required to take action on a particular environmental issue. As one student observed, students in this class chose to focus on fossil fuel divestment and that since then had garnered “a lot of support from students who aren’t necessarily geography or environmental studies students. They’re pretty far-reaching across all programs and faculties.” This level of support was reported at all three institutions with a fossil fuel divestment group.

Student activism through the fossil fuel divestment movement, at the three institutions with a campaign, was strong because of sustained student commitment and care for each other. As one faculty member expressed below, the strength exemplified among the students was not only for the cause, but also in their accountability and support for each other within their campaign:

For example, the divest people... they’re hard-core, they’re smart, they’re motivated, but they’re also pretty strong. They provide the support group for themselves that protects the weaker ones. That’s my sense, that they’re there and if there were any real problems, they would intervene or they would know what to do. They’re smart and mature enough.

(Faculty, Mount Allison University)

The students’ resiliency and passion described above may be one of the reasons the campaigns persisted, despite resistance that was said to come from administrators.

Further, administrators’ response to student activism, evident mainly in fossil fuel divestment campaigns, impacted students’ perceptions of overall institutional commitment to sustainability. Despite strong organizing by fossil fuel divestment groups at the three institutions, at the time of this research, none of the institutions had agreed to divest. The situation has changed since data collection, when Laval University decided to fully divest in 2017, becoming

the first Canadian institution to do so, followed by Concordia University in November 2019. Prior to these decisions, our data showed that administrators' decisions to reject calls to divest at the three institutions seemed to influence students' perceptions of overall institutional governance and commitment to sustainability. Several participants across these three research sites indicated that they gave low ratings on a scale of 1 to 10 in the area of governance because their institution had refused to divest:

My low one was the investments of University of British Columbia endowment, which I gave [a score of] 2, because it's over 1.5 billion dollars currently, and they've refused to divest in fossil fuel. Fossil fuels in general. Despite petitions for them to do so.

(Community Member, University of British Columbia)

Lack of awareness of existing sustainability initiatives among the broader student population was identified as an impediment to student engagement in sustainability. As some participants noted, not many students in the general student population were aware of the available student union funding and resources available to carry out sustainability initiatives. For instance, at UBC, sustainability student union leaders shared that there were union sustainability funds left untouched at the end of each academic year. To address this challenge, study participants suggested that unions needed to improve on two fronts: communicating with the wider student body about available resources, and seeking the support of student leaders and the entire study body during development of such initiatives.

Students advocating for sustainability in curriculum and teaching. Study participants at several universities indicated that students led sustainability uptake through curriculum design. Students had urged faculty to develop programs and courses focusing on sustainability, and also designed their own independent study courses. For example, a Mount Allison University Faculty

said,

I think a lot of students...[show] a lot of leadership in sustainability. They actually design their own courses, so we have an independent studies.... And I've just noticed over the years, there's a significant number of students who are extremely engaged, want to do something, want to tie theory to practice. And dozens and dozens of students, at least in our department - Geography and Environment - have taken advantage of that. (Faculty, Mount Allison University)

At other times student leadership in sustainability involved working in collaboration with faculty on curriculum and teaching initiatives. Such collaboration was reported at the University of Toronto, Nunavut Arctic College, University College of the North, and the University of British Columbia. For instance at the University College of the North, participants noted that education students were involved in providing land-based education to younger students in their community:

In the summer time there's a program going into the wild or into the wild that's done by the education students but it takes the kids out onto the land and they teach kids about the environment and the land and then certainly water as well. (Community Member, University College of the North)

The *Into the Wild Camp* was seen as a successful program because it provided education students an opportunity to acquire hands-on experience in teaching elementary and high school students. According to participants, this was an important program to educate children during the summer months when regular school was on recess, and because the program was inexpensive, parents were able to enrol their children.

Other student-led initiatives. Additional student-driven sustainability initiatives were

reported in the areas of transportation across the research sites. At Mount Allison University and the University of Toronto, there were bike repair shops that served the campus community. Although participants noted that these initiatives were not well supported by their institutions and were run solely on a volunteer basis, the bike shops were still functional, especially in the summer months. In the initial days following its set up, the shop at the University of Toronto was said to be operating from an unheated trailer and as a result could not provide sufficient services for winter bikers on campus. Nevertheless, because of annual student funding and a dedicated team of volunteers, the bike shop is now adequately serving the community, helping to maintain biking as a sustainable mode of transportation.

Figure 4.3.

Student-run Restaurant at the University of British Columbia



Note. This photograph shows a sign at a student-run vegetarian restaurant at the University of

British Columbia. It highlights the intersections of food production and climate change.

Food was identified as another area of focus in student-led sustainability initiatives at Laval University and the University of British Columbia. At Laval University, a student group, le Collectif de Minuit (Midnight Collective), was engaged in collecting “food residues, or what is thrown in the grocery stores to then give free meals to the students, twice a week” (Student, Laval University). This initiative was seen as important to students because it provided them with opportunities to solve real life issues that they and other people experience. At the University of British Columbia, Figure 4.3 above shows an example of a student-led food initiative. The display was found at a student-run vegetarian restaurant that sold affordable and locally sourced food items where students brought their own plates and cutlery to eat here. As the signage indicates, students used this restaurant to create awareness about the connections between food production and climate change at UBC.

Networks and organizations as drivers of SHE uptake in policy and practice. Having discussed the roles of internal actors as drivers of SHE, this section now turns to the roles of networks and organizations as drivers in the uptake of sustainability. These groups can be described as external actors, and the research data indicate that they include local, regional and international partners such as governments, community members, industry partners, environmental organizations, professional bodies, and individual experts. A summary of each group and their roles is included in the table below. Their roles in driving sustainability uptake in governance, operations, curriculum, and research are discussed further following the table.

Table 4.2.*The Roles of Local, National and International Networks and Organizations in Sustainability**Uptake Across Six Canadian Post-Secondary Institutions*

Actor Type	Roles of Networks and Organizations in Sustainability Uptake	Institutions
Local Partnerships		
Government: City of Vancouver Government of Nunavut, Government of Quebec	<ul style="list-style-type: none"> • Mandating institutions to implement sustainability initiatives • Consulting on various sustainability projects • Supporting development of curriculum informed by Indigenous knowledge 	UBC, MTA, NAC, UofT, Laval
Industry partners: BC & Toronto Hydro,	<ul style="list-style-type: none"> • Supporting energy reduction projects • Providing energy related rebates to institutions • Influencing sustainability initiatives e.g. enhanced safety in handling chemicals • Providing input on policy development 	UBC, NAC, UofT, Laval
Indigenous partners: Elders & community	<ul style="list-style-type: none"> • Sharing ideas and input on sustainability initiatives • Using local knowledge to inform curriculum development • Pushing development of environmental programs • Sharing traditional knowledge to influence decision-making 	UBC, MTA, NAC, UofT, UCN
Environmental Organizations: David Suzuki Foundation, Canadian Wildlife Services, etc.	<ul style="list-style-type: none"> • Consulting and collaborating on sustainability initiatives • Providing resources to student groups • Tracking progress of sustainability initiatives –resulting to creation of sustainability courses in some cases • Organizing sustainability events, with student and faculty participation 	UBC, UCN, MTA, NAC, UofT, Laval
Regional Partnerships		
Individual experts: Thought leaders, Indigenous activists, Engineers	<ul style="list-style-type: none"> • Giving talks on environmental and sustainability topics – boosting support for student and faculty initiatives • Consulting on green buildings design • Influencing institutional facilities and management initiatives through national conferences e.g., Canadian Standards Association 	UBC, MTA, UofT, NAC
Universities & Networks: Council of Ontario Universities, Inter-University Network	<ul style="list-style-type: none"> • Participating in exchanges with staff and researchers from other universities e.g., First Nations University in Regina/Laval, University of Manitoba • Collaborating with government - Intergovernmental Affairs, Qaujimajatuqangit Katimajit (IQK), Inuit Uqausinginnik Taiguusiliuqtiit (IUT) 	UBC, UCN, NAC, UofT,
Organizations: Canadian Wildlife	<ul style="list-style-type: none"> • Consulting and collaborating with universities on climate change and other initiatives • Providing resources to fund particular projects within 	MTA, UofT, UCN

Service, Institute of Public Health of Quebec, Recycling Council of Ontario, Association of Physical Plant Administrators, Ontario Building Code, Canadian Council on Animal Care, Green Center Canada	institutions <ul style="list-style-type: none"> • Sharing best practices between organizations and universities – e.g. animal handling practices • Support in tracking performance in various initiatives • Providing support for various student group initiatives – e.g. Green Chemistry student group 	
Policies	<ul style="list-style-type: none"> • Aligning policy initiatives, e.g., Carbon Plan, Recycling Council of Ontario, The Ontario Building Code, Inter-University Network 	NAC, UofT, Laval
International Partnerships		
Organizations: Sierra Club, 350.org, US EPA	<ul style="list-style-type: none"> • Kick-starting campaigns, e.g. fossil fuel divestment • Providing resources and guidance on campaign leadership • Influence on curriculum development 	UBC, UCN, MTA, NAC, UofT, Laval
Conferences: Bike Bike, Environmental Education Congress, The International Geographical Union	<ul style="list-style-type: none"> • Collaborating and sharing best practices and innovations in sustainability – e.g. technologies in the operations domain • Provided platform for researchers in the social sciences to share latest research developments and approaches. 	UofT, UBC, UCN, MTA, NAC, Laval
Associations & Networks: AASHE, Int'l policies	<ul style="list-style-type: none"> • STARS² - tracking progress on sustainability initiatives • International policies influencing institutional policies e.g., European countries climate action plans 	UBC, MTA, UofT, Laval

Governance. Data suggest that national and international networks and organizations were drivers of overall sustainability policies, especially those pertaining to climate change. Participants indicated that their institutions try to align their sustainability policies with national and international policies such as the national carbon plan and European climate action plans and others around the world. One participant indicated that they looked at policies at European

² STARS stands for Sustainability Tracking, Assessment, and Ratings System, a sustainability assessments tool that was developed and is managed by the Association for the Advancement of Sustainability in Higher Education (AASHE).

universities that have provided good examples on climate action. An example of a national organization that works in collaboration with HEIs to address climate change is the National Institute of Public Health of Quebec, which was said to also focus on urban agriculture.

In addition, sustainability networks such as AASHE provided assessment tools for HEIs to evaluate their progress in institutional leadership in sustainability. Out of the six research sites, the University of British Columbia and Laval University participated in AASHE's STARS evaluation system, at the time of data collection, which was considered an important indicator of how an institution performed in various sustainability dimensions in relation to other institutions. (Information on AASHE's website indicates that University of British Columbia's accreditation with AASHE has currently expired). While looking at other institutions' performance was considered a good practice overall, some perceived it as restricting institutions' imagination of what sustainability innovations are possible:

No, I would have assumed they would have looked at other post-secondary institutions; it's a common practice to look at what's being done at other institutions. We're not up to snuff but I think the fundamental problem is that we're constantly looking at 'okay now all the other institutions are doing this, now we should to do it' there is not a lot of ambition to spear head any kind of real change. We want to fit the status quo. (Faculty, University of Toronto)

Since data collection, recent reports show that the University of Toronto is considering participation in the STARS evaluation program.

Operations. National and international conferences were considered important avenues of collaboration, particularly for spearheading initiatives in facilities and operations. Collaboration and sharing of best practices and innovative technologies in operations at conferences was

reported across all research sites. Conferences were perceived as key sites for learning current innovations in sustainability and sharing the experiences that different actors had in their own institutions. In speaking about the significance of one of the largest conferences in the biking community, *Bike Bike*, a staff member indicated that the “whole point of the conference is to share best practices and ideas and brainstorm about problems, so I think that’s the biggest kind of, large network that we’re connected to.”

Additionally, participants described the roles of other organizations in helping them track their performance in operational aspects of sustainability. For instance, a staff member indicated that they use the Recycling Council of Ontario to compare their recycling habits “and see...what else other people are doing.” The staff member further shared that they followed closely various sustainability standards to help them stay up to date on operational initiatives. Likewise, the following organizations influenced sustainability uptake at the University of Toronto: Council of Ontario Universities, the Association of Physical Plant Administrators, the Ontario Building Code, and Inter-University Network.

Curriculum. Local and international networks and partnerships were identified as driving sustainability uptake in curriculum across the research sites, with influences on programs such as language revitalization, animal management practices, and green chemistry. At Nunavut Arctic College, a language revitalization exchange program was established as part of sustainability engagement, in which shared learning was developed with other institutions. This initiative included administrators and staff members from Nunavut Arctic College, who visited a cultural center in Greenland to learn techniques of preserving “cultural products.” The aim of this program was to use the learned techniques to inform practices at their home institution:

And with Greenland, like this summer in August, our director and staff went to Nuuk, Greenland, visiting their cultural centre, not the school, but a centre, on how they preserve cultural products. If you're making sealskin kamiks, how do you move from preparation to completion and preservation for the future generation to see them, and feel them, and touch them, or find a book on how to make them? (Staff, Nunavut Arctic College)

Participants at Nunavut Arctic College also shared that their staff visited an education institution in Greenland to learn from their language program. Both institutions collaborated in creating a language program that was self-sustaining: graduates of this program went on to teach the language in their partner institution, continuing the exchange process.

In addition, participants indicated that partnerships with Indigenous Elders and communities influenced what faculty members taught in sustainability related courses. At Nunavut Arctic College, for example, instructors used fishing trends that were informed by Indigenous knowledge and practices to teach about fisheries in their classroom. To expand the focus beyond the local contexts, participants indicated that instructors brought in national discussions that foregrounded the complexity between local and international contexts, in terms of who had access to fishing and who had access to shrimp, for example. Participants indicated that these parallels highlighted the complexities of food security because whereas shrimp is fished from their community, it is shipped and sold in China and not in their local communities. Another example related to animal management practices at Nunavut Arctic College. As one participant indicated, part of the curriculum in an Environmental Management program focused on the polar bear management practices that are carried out in their Indigenous community. This participant indicated that whereas the polar bear is widely considered a friendly and an

endangered species by organizations such as WWF, courses at their institution taught about the community's experiences with polar bear management that were not romanticized as those evident in environmental discourses.

Elsewhere, national and international organizations such as the Canadian Council on Animal Care and the United States Environmental Protection Agency (US EPA) were said to provide useful information that influenced sustainability initiatives in the curriculum. At the University of Toronto, participants indicated that one of their instructors used data on carbon dioxide monitored through US EPA to teach students about the impacts of carbon dioxide on the planet. Other organizations such as the American Chemical Society and Green Center Canada were said to influence sustainability in the area of Green Chemistry and provided support to student initiatives in Green Chemistry. At the University College of the North, a faculty member consulted with the Canadian Center on Animal Care for information on how to handle animals in their teaching practice. Overall as one administrator at the University College of the North explained, their "programs align with national and international standards" so that when their students graduate, their credentials are recognized across the globe and they are able to find employment.

Research collaboration. National and international networks were also considered drivers of sustainability uptake in the research domain, from grant writing to research publications. Collaboration with external stakeholders seemed to strengthen funding applications and publications. As a faculty member from Mount Allison University explained: "We've had a lot of collaborations from outside. We've collaborated with a lot of people across Canada and internationally. Of course that's helped with publication and attracting funding and things like that". In addition, these collaborative research efforts promoted sharing of ideas and learning on

exemplary sustainability practices among researchers on a global scale. The faculty went on to say, “so again through some of the programs we belong to, there’s a lot of just exchange and interaction between our staff and researchers and other researchers at the universities. We have quite a good flow of information between peer groups.”

Further, national and international associations provided avenues for sharing research developments with a variety of stakeholders. Some identified networks included: World Environmental Education Congress, the American Educational Research Association, and Environmental Education and Communication. Similarly, The International Geographical Union had also created a platform that brought together geographers to discuss sustainability research.

Actors as participants in SHE policy and practice. Having discussed the roles of actors as *drivers/champions* of sustainability, this chapter now turns to the roles of actors as *participants* in SHE policy and practice. In this context, participation is understood as involvement in sustainability initiatives developed by others. Participation in SHE policy and practice was mostly reported to occur among faculty, staff, and students. Sustainability initiatives from each of these groups are discussed further below.

Faculty and staff as participants in sustainability uptake. In addition to driving sustainability in policy and practice, faculty and staff were described as active participants in existing sustainability initiatives in their institutions. The key activities in which faculty and staff participated include: sitting on sustainability committees, providing feedback during institution wide consultation, and attending and supporting student initiatives. Each of these roles is discussed below in detail.

Faculty and staff input on sustainability initiatives. In line with established protocols for consulting with various campus groups, faculty and staff participated in providing feedback on

strategic planning processes. At several research sites, faculty and staff were invited to sit on various committees and boards to provide feedback on initiatives such as sustainability policy drafts. As one administrator at Nunavut Arctic College noted, faculty and staff in their institution were consulted on sustainability priorities such as those related to “buildings practices and maintenance.”

Although faculty and staff felt that they were able to participate in sustainability initiatives, some were sceptical that their input was taken seriously by “the powers that be.” According to one participant, some faculty members felt unable to influence change and, in fact, shared that they were not encouraged to drive sustainability initiatives:

Many of us will, as both faculty and staff, will often try to instigate. We’ll say, ‘Why aren’t we working on low-flow toilets?’ And so many of us have played a quieter role, but the reality is we don’t drive those processes, the best we can do is provide suggestions. So I’ve made a number of suggestions here, and if it aligns with the powers that be, they often are very welcoming of them. And if it doesn’t align, then often they poo-poo them. They’re sort of like, ‘Oh, that’s a nice idea but we’re not doing that.’ So we certainly generate ideas for physical infrastructure improvements, but we can’t and we aren’t encouraged to lead or drive the processes. (Faculty, University of Toronto)

These sentiments were shared by several participants, including students, who perceived administrators or “the powers that be” as resisting initiatives coming from their groups at their institutions. Whereas some participants continued to push despite the lack of action from administrators, some faculty seemed discouraged and decided to play a “quieter role” as the above participant indicated.

Similarly, participants expressed that staff members, by virtue of working for the institution, were limited in the type of change they were able to effect. Although staff were involved in important sustainability initiatives across the research sites, some were perceived as only able to endorse or participate in top-down sustainability initiatives that were considered safe or “low-hanging fruit.” While the work of sustainability staff went beyond “low-hanging fruit,” such as changing light bulbs, so to speak, students at the University of Toronto felt that staff were not in a position to engage in “conversation about bigger implications of sustainability.” Students were concerned that because staff livelihoods depended on the institutions in which they worked, it was difficult for them to criticize their employer for fear of jeopardizing their employment.

Supporting students and other initiatives. Staff and faculty also participated in sustainability through supporting and mentoring students on various initiatives, and participating in other activities. As one participant explained, “a lot of the staff try to encourage students to join groups and to go somewhere and volunteer.” The support offered to students was not mandated by their institutions, but like many of the initiatives discussed so far, was seen as driven by individual interest. Additional faculty and staff initiatives were said to include recycling, biking to work, and choosing to work at institutions known to value sustainability. One participant emphasized the divide between higher-level staff and lower-level staff, indicating that lower-level staff members were very sustainability conscious compared to higher-level staff.

Students as participants in sustainability uptake. Across the research sites, students participated in various sustainability initiatives, including in curriculum and institution-wide strategic planning processes. Students participated through sitting on environmental committees,

providing input during campus-wide consultations organized by the university, taking sustainability-focused courses, conducting individual research projects, voting, and working as research assistants.

Students' participation in curriculum. Students participated in curriculum through taking courses as part of their degree programs, which in some cases included conducting collective or individual research projects. Through sustainability-focused courses, students learned key sustainability issues and were in some instances able to put their learning into action. At Nunavut Arctic College and University College of the North, sustainability focused courses were rooted in Indigenous knowledge and practices of living on the land, and included topics such as “Wilderness First Aid,” a “berry-picking project” and “hunting.” These courses were unique to institutions located in predominantly Indigenous communities. Student participation in sustainability-focused courses was largely dependent on sustainability interests of faculty members who taught these courses.

Sitting on committees. Student representation on various sustainability committees was reported across several of the research sites and included both undergraduate and graduate students. Students participated in committees whose mandate was mainly focused on environmental issues and in ad hoc committees that looked into various sustainability initiatives. For example at Laval University, student participation was mandated in broader institutional policies:

It should be understood that here in this institution, students are very present in the governance of the university at different levels. So on board, university board, executive. We have a governance structure that stimulates student participation in the institution's major initiatives like this one. (Administrator, Laval University)

Students were described as “custodians of sustainability” because they pushed other committee members and bring ideas to the table that helped the institution make better decisions on sustainability. Through consultation with their constituencies, students brought the concerns of the wider student body to these committees.

Despite mandated student representation on various committees, some participants expressed scepticism about students’ actual influence. Because of inherent power dynamics between faculty, administrators and students, participants questioned to what extent student voices influenced the decisions made in these committees. Additionally, some participants observed the lack of transparency in the process of choosing which students would sit on committees; in some cases those chosen to represent students were said to have little knowledge of the issues in question. As a result, some students were concerned that their interests were not adequately represented and that they were tokenized in these committees.

Other student participation. Students also participated in sustainability through student employment, student sustainability events and in facilities and operations initiatives. Various campus offices offered work placements for students, giving them opportunities to work on sustainability projects. Furthermore, there were increasing partnerships between institutions, civil society, and non-profit organizations that provided students with volunteer opportunities focused on sustainability. However, not all experiences during work placement were supportive of effecting deep changes for sustainability. At some institutions, participants were quick to point out that students had limitations on the type of issues they could bring up in their work placements. As one participant explained, some topics were taboo to talk about, so students did not feel comfortable to bring up these issues with their staff supervisors. Beyond work placements, students attended various sustainability events organized by other students or their

institutions, and participated in waste management initiatives in their campuses.

Resistors to uptake of SHE policy and practice. In addition to the roles of actors as drivers and participants in the uptake of SHE, there was considerable resistance to sustainability uptake reported across the research sites. Resistance was mostly reported from groups within campuses, with a few cases of resistance from external stakeholders. Among all actor types across the six institutions, administrators or higher-level staff members were most likely to be identified as resisters in the uptake of sustainability. Other resisters included a few faculty members, students and local governments.

Administrators as resisters. Leadership and support from administrators was described as significant to the success of sustainability initiatives across research sites, and as a result, participants were very critical of administrators whom they perceived as mainly paying lip service to sustainability uptake. Indeed, several participants across research sites indicated that overall institutional leadership in sustainability was lacking. As indicated by the community member below, administrators did not take intentional steps to address sustainability at Mount Allison University:

I don't think the administrative, the governance systems, like the Board... is particularly supportive of this type of work. They have never shown that. They may support the environmental policy, but they've never given any leadership to that. I don't know of any financial money that's come from the university to support this in any substantive way, not at all. They're pretty traditional... The President plays both sides of the street always. He says he's very supportive, but I don't think he ever pushes the Board...to say look, we need to do more than what we're doing. (Community Member, New Brunswick)

Several participants expressed frustration that their administrators and institutions

claimed to be committed to sustainability, yet they did not follow those claims with positive action. Criticism was highest among the three institutions that had a fossil fuel divestment group, particularly emanating from their leadership's refusal to divest from fossil fuels. At Mount Allison University for instance, a participant indicated there was misalignment in what their institution taught and researched and their refusal to divest from fossil fuel companies:

I think they really need to communicate the type of effort that they're willing to promote into environmental sustainability. I think the fact that we're so opposed to divesting from fossil fuels in our element shows that as an institution that teaches- I mean our research revolves around this paradigm that we understand that climate change is real, but then we refuse to divest from it. So it's really this hypocrisy of accepting climate change, yet not doing anything about it. (Student, Mount Allison University)

Participants at the University of Toronto expressed similar frustrations with their administrators in relation to a divestment campaign. According to a student leader, upon presenting their petition to the Board of Governors members, the process of deliberating on whether to divest was "admin heavy" and included only a few hand-picked students, who were not sufficiently knowledgeable about the divestment campaign and were given information that matched the administration's agenda. As a result, the student felt that they did not get a fair representation at the decision-making table.

Beyond fossil fuel divestment campaigns, the above student felt that limited student representation was the norm in other institution-wide consultation processes and that administrators prevented staff from supporting student initiatives: "There's always limited students, always, always. The magic number is one, maybe two on any committee." At Mount Allison University, a student saw administrators as hindering faculty support of students'

initiatives: “I think faculty really tries! But sometimes the administration will not let them try. While they may want to do more...they’re just frowned upon for participating and helping students move forward.” Despite perceived efforts to discourage faculty from supporting students’ sustainability initiatives, there was strong faculty support reported across the research sites.

Faculty as resisters. While faculty members were mostly described as drivers of sustainability in both policy and practice, some participants felt that in some cases, faculty resisted uptake of sustainability. Those who felt this way indicated that faculty resistance was mainly due to concerns about curriculum; some feared that their academic freedom would be undermined by a policy that would require them to teach sustainability-focused courses:

I mean it would be kind of resistance that exists in terms of curriculum is just that within a University setting, faculty members value their active freedoms and teach what they want to teach, so we don’t, it’s kind of impossible to have a very direct, I guess top-down policy, that would say all courses will have sustainability. (Faculty, Mount Allison University)

The response above is in line with other participants’ perceptions that faculty’s role in driving sustainability in their courses largely depends on individual interests. Given the great autonomy and freedom of expression that faculty enjoy, any mandate that would be perceived as limiting this freedom becomes suspicious.

Research participants also indicated that a few faculty at the University of Toronto resisted sustainability uptake by not supporting particular student activism and staff initiatives. In referencing the divestment campaign, a student sustainability leader explained that some faculty members were sceptical about the impact of this campaign, indicating; “it might be a waste of

time to be putting efforts into that.” At the same institution, some faculty members were opposed to operational staff initiatives that sought to spend money to cut back on greenhouse gas emissions; those opposed preferred to use those funds for academic research.

Students and staff as resistors. There were a few cases of resistance to sustainability uptake among students and staff members, mainly related to behaviour change. For example, the introduction of a new requirement that students recycle “non-hazardous laboratory waste glass and plastic” was met with resistance at the University of Toronto. While staff members in this case were concerned that the material could contain chemicals that might cause health risks, students were not willing to follow proposed protocol of rinsing out glass and plastic at least three times to ensure all chemicals were washed off before recycling. As a result, the glass recycling initiative in this laboratory did not succeed and was eventually discontinued. Similarly, there was pushback at University College of the North from instructors to a new initiative to separate chemicals, oil, and other cleaning products in their working space, as these procedures were deemed to be too time consuming.

Overall, resistance from staff and students seemed to stem from a certain level of comfort with existing institutional cultures. For instance, in efforts to reduce waste during events, an environmental student group at the University of Toronto introduced a new policy that required participants to bring their own plates and cups to events. As one student participant observed, students were used to having these items provided at all events, leading to significant pushback upon introduction of this new policy. Despite the resistance, the group was determined to enforce this policy and with time this process created a new institutional culture, a new way of reducing waste. From this example, it is clear that it requires time and persistence to effect change in institutional cultures, an important point to consider as actors seek to drive sustainability uptake

in higher education institutions.

External stakeholders as resisters. In addition to resistance from actors within HEIs, participants identified resistance from external stakeholders in the uptake of sustainability across five of the six research sites. External stakeholders who resisted sustainability uptake included vendors, contractors, and government (municipal and provincial). At the University of Toronto, there was a compliance issue with a new water-bottle ban that students had successfully campaigned for. Following the ban, as a sustainability staff narrated, vendors would still show up and continue selling their plastic products. To deal with the issue students notified food services that worked to enforce the ban.

In another instance, Nunavut Arctic College had close connections with the provincial government, relying on it to approve some of their sustainability initiatives. An administrator explained that there was government resistance to some initiatives because of the uncertainty of new technological innovations including in building insulation and the use of wind turbines. There was concern about the maintenance of these technologies and their potential risk. These uncertainties were perceived “to take over the willingness to explore those options.” This example elucidates on potential complexities that would need to be navigated when institutional decision making on sustainability is closely tied to external stakeholders such as governments.

Reasons for resistance. Varied reasons were identified for resistance to uptake of SHE in policy and practice among stakeholders across the research sites. Some of these reasons included high cost of sustainability initiatives, uncertainty about new institutional cultures, concerns for unexpected changes, and competing institutional priorities. Each of these reasons is described in detail below.

Cost effectiveness. Several participants shared that resistance, especially from

administrators, was related to concerns about the cost of implementing sustainability initiatives, particularly at Mount Allison University. While some institutions implemented sustainability initiatives because they made financial sense, many initiatives were not implemented because they were too costly. Although there were concerns about the cost of implementing sustainability across all six institutions, data suggested that administrators at Mount Allison University were the most resistant due to high costs. Participants noted that administrators looked at short-term returns versus the long-term benefits of implementing sustainability initiatives. According to a faculty member at this institution, “if it’s going to save them money or cost them nothing they would do it. But if it’s going to cost them money they won’t do it.” As a result, administrators were mostly concerned with sustainability initiatives in the area of facilities and operations.

In recognizing the significant influence that cost has on the types of sustainability initiatives that are implemented, actors were urged to address this in their proposals for sustainability uptake. In calling upon their institutions to implement various sustainability initiatives, one administrator urged sustainability actors to understand institutions’ bottom-lines and frame their strategies in a way that helps administrators realize it:

I think one way is to show the cost effectiveness of a decision...I always suggest to people we often obsess about the social and environmental parts of the triangle. But if you really want to see action there, spend more time in the economic part. If you can make it economic, you can make it sustainable, because you got to convince people.

(Administrator, University of British Columbia)

In addition to considering the economic aspects of sustainability, the quotation above can be seen as a call to actors to understand the responsibilities of their target audience to institutional priorities. Students, staff, faculty, and administrators all have duties to fulfill, and although

sustainability ought to be considered in fulfilling these duties, the reality is that people tend to prioritize initiatives that fall directly on their mandates. Therefore, in order to appeal to as many people as possible, sustainability actors would win more hearts by helping them visualize how sustainability can be an important aspect of fulfilling their duties.

Competing priorities. Related to costs, competing institutional priorities such as fundraising were identified as contributing to resistance in the uptake of sustainability. Other priorities such as keeping all campus operations running smoothly, attracting new students and faculty, while maintaining a good reputation were seen as competing with sustainability uptake. Participants felt that in many cases their leadership prioritized other objectives over those concerning sustainability. For instance, at Mount Allison University, a student leader noted that the priority to fundraise, including from oil companies, impacted the university's decision not to divest from fossil fuels. According to this student, administrators in their institution "did not want to ruin their relationship with those oil companies," hence the resistance.

At Laval University, a faculty member contextualized competing priorities within the larger society; that HEIs reflect societal focus on urgent issues such as jobs and the economy that can be solved in the shorter term. They indicated that sustainability and climate change require long-term solutions that may not necessarily have an immediate impact, and that may be the reason why institutions prioritize other areas that have immediate returns. Given the urgency of sustainability challenges and climate change, it is surprising, but not uncommon, that other issues are prioritized.

Economy over the environment. In describing the reason for resistance to sustainability uptake at their institution, a faculty member attributed it to the nature-society divide. He indicated that administrators find it difficult to make the case for sustainability because

institutions view economic goals as separate from sustainability goals. He indicated,

I think there is resistance because the concern for the environment, the recognition of the environment, as not something that should be considered separate from us, is not yet part of mainstream thinking. The way our society is set up is to think of nature as something separate from us that we use, and it's a resource, we're not part of it. That's how our whole economy is set up. That's how our institutions are set up with that assumption. I think there's often resistance to these policies, because our whole institutional set up or economic set up is resistant to what we need to do. (Faculty, Mount Allison University)

This response addresses one of the key principles at the root of sustainability, one that looks at the wider societal structures that have contributed to unsustainability such as our current economic models. Such a model may explain why institutions are seen as mainly focusing on initiatives that result in cost savings and more money for the institution. My interpretation is that a focus on the economy over the environment allows for a certain level of comfort that perhaps prevents urgent action to integrate sustainability into all aspects of HEIs and beyond.

The decentralized and futile university. Resistance to sustainability uptake was also attributed to HEIs' organizational structures that were described by one participant as decentralized and futile, with a culture that is hard to change. In reflecting on sustainability efforts at the Universities of Toronto and British Columbia, one faculty member, who had worked at both institutions, emphasized that although there were great sustainability initiatives happening at both places, the difference was that University of Toronto had not included sustainability into the strategic core of the institution. He explained that operational staff were concerned with cost saving initiatives, and academic staff with research and teaching. This disconnect resulted in this institution lagging behind others that had similar global ranking

academically. On the other hand, the University of British Columbia had made sustainability a part of its core agenda, invigorating operational staff to connect with faculty in what he called operational academics. For deep sustainability and transformation within higher education to be realized, this faculty member advocated that a fundamental shift is needed, one that prioritizes sustainability at the strategic level.

Historically Marginalized Actors in the Uptake of Sustainability

Having discussed the roles of actors in the uptake of sustainability, this section shifts focus to present findings on how historically marginalized actors were involved in sustainability across the research sites. Key themes emerging from data analysis showed sustainability actors' diversity as consisting of race, gender, intersectional identities, and as reflecting the broader institutional or community contexts. It is important to note here that gender is nuanced beyond the binaries of femininity and masculinity and is used in this research based on participant identification and not by sex. Similarly, race is also understood as a social construct but with real consequences on access to resources and opportunities and on experiences of people from various racial and/or ethnic groups. Details of each theme are discussed below.

Diversity in gender. Participants described the diversity of actors involved in SHE policy and practice at their institutions mainly in terms of gender, with many indicating that more women were involved. It is important to note that the level of involvement reported here is based on participants' perceptions rather than actual numbers of who is involved. Among the six institutions, women were mostly viewed as sustainability actors, with some participants identifying involvement from women and men. Yet a small number of participants indicated that there was no gender diversity among sustainability actors.

Few details were provided regarding gender diversity among sustainability actors, and those that were provided often offered contextualization within the broader environmental movement. For instance, within the context of higher education, one faculty member explained (below) that historically there were more men than women, implying that men mostly led initial sustainability initiatives. This faculty member further suggested that an increase in gender diversity in academia over the years, translated to more women being involved in sustainability initiatives:

The thing with the gender composition of this – I had an argument with someone over this quite recently actually. Somebody said, “All the faculty down there are White men.” And I’m just like, give me a break. If you were talking twenty years ago, yeah, for the most part. Since I’ve been here there’s been a very, not aggressive per se, but a very deliberate attempt to hire based on gender equality considerations. I’m virtually certain that if you looked at the data, you’re getting roughly equal numbers – roughly. But some departments are still more heavily men than others; some departments have become heavily women. But why I’m pointing this out is that the origins of the program came out of a time when the large majority of faculty were men. So it’s not surprising that the initiatives for the early foundations came from them. But over time, there’s been more women involved in it directly and indirectly. (Faculty, Mount Allison University)

In further pointing to similarities between gender diversity in SHE and the larger environmental movement, participants explained that both areas have been led and supported by more women than men. This leadership and support from women was attributed to their willingness to put in more work to achieve their goals. A faculty at University of British Columbia put it like this: “Oh, we were diverse in regards to gender. Not in terms of race. We

were a lot like the environmental movement, I suppose. More and more women are involved... A lot, and willing to put in time like to really, to work hard at it. That seems to be more women.”

In addition to overall perceptions of gender diversity in sustainability, some participants talked about gender in relation to participation in environmental courses at Nunavut Arctic College. Often taught by a female faculty member, this environmental course had a balance between female and male students, and according to the course instructor, she incorporated gender issues as they relate to sustainability in the course. The instructor saw the gender balance among her students as having influenced their approach to sustainability:

The idea that hunters are not always male, the idea that the stewards of the environment are not always male...I think that that idea of yes, this is a very gender equitable program, that did play a role into how we approached sustainability, because in Nunavut sometimes it is often the thought that men are hunters, men of the land, and you know, that kind of thing. So trying to change that. (Faculty, Nunavut Arctic College)

This faculty’s response suggests that diversity, in this case in gender, presents valuable opportunities for critical analyses of sustainability issues. It also strengthens Indigenous feminist critiques of essentializing Indigenous cultures as equal, without any gender inequalities.

Diversity in race. There were varied responses regarding racial diversity among sustainability actors at the research sites. Racial diversity was reported more in sustainability uptake in relation to practice than policy. While some participants gave more general responses such as “very diverse racially,” others provided examples of specific racial and ethnic groups that were involved in sustainability uptake. These included Indigenous, Inuit, African American, and White. On the other hand, a significant number of respondents indicated that there was no diversity among actors, describing those involved as homogenous.

A notable number of participants indicated that the racial diversity of actors involved in sustainability reflected the composition of their institution and the surrounding community. At the University of British Columbia, for instance, a faculty member indicated that, initially, sustainability actors were mostly White, but as the composition of the surrounding communities changed, the demographics of actors also diversified over time:

The demographics have changed quite dramatically in Vancouver over the past 20 years. So previously even though we had a lot of people from China and other parts of Asia, I would say the sustainability field was dominated by more White students until maybe five years ago. But today I would say it's quite evenly distributed. (Faculty, University of British Columbia)

Other examples of perceptions that sustainability actors' racial diversity reflected that of surrounding communities were Nunavut Arctic College and University College of the North. Participants at these two institutions indicated that because of their institutions' location in predominantly Indigenous communities, those involved in sustainability tended to be identified as Indigenous. Further, it is important to note that several participants were not certain of the diversity of those involved in SHE, but made inferences that may not necessarily match the reality of their institutions, as one administrator reflected:

Our student population is about 70% Indigenous origin. Our staff, depending on what area they're in, is anywhere from 40 - 60% and... there's not as many Indigenous faculty members, partially because they're in demand everywhere in Canada and it's growing because education is growing big time in First Nations communities and the Métis communities and Inuit communities but it takes time to get the doctorates out there and

they are in demand... I would say the majority [sustainability actors] would be Aboriginal and female. (Administrator, University College of the North)

In the two Indigenous institutions, the key roles that Indigenous actors were viewed as playing were to incorporate their culture and practices into their institutions' sustainability initiatives. Participants further explained that although there were some non-Indigenous people in their communities, their institution was committed to intentionally focusing on including Indigenous peoples who would attend to issues impacting their communities. Nunavut Arctic College and University College of the North participants noted that there were increased efforts to engage with First Nations and Inuit communities in sustainability initiatives.

In explaining why certain racial groups tend to be more involved in sustainability, some participants at Nunavut Arctic College highlighted how conceptualization of sustainability impacts what is considered sustainability and who is involved. They indicated that the "majority of people involved [in sustainability] are non-Inuit...because it's just not something Inuit historically have done." He went on to explain that a lot of Inuit people are involved in traditional harvesting activities such as fishing, clam digging, berry picking, but not growing and harvesting vegetables in a greenhouse. Similarly, during a focus group discussion at Nunavut Arctic College, a student noted, "White people here are more focused on that stuff, whereas Inuit we're not too educated about it." These two examples demonstrate the impact of framing sustainability from a western perspective. Although Inuit people engage in their traditional practices such as berry picking, that are sustainable, the institution's framing of sustainability seemed not to align with these practices and thus caused them to conclude that Inuit people were not very involved in sustainability. This disconnect between what is considered sustainability and Indigenous traditional practices is an important gap that needs to be addressed by institutions

as it has implications for who is empowered to take action towards creating change for sustainability.

Relatedly, a community member at the University of British Columbia described the potential of the language used in sustainability to exclude people from diverse racial backgrounds. He narrated that he taught a course at this institution in which half the students did not have a good command of the English language, noting that perhaps these students were engaged in sustainability in other ways than those championed at the institution. According to him, the language and discourses of SHE could hinder students from being involved if they were not fluent in English and did not understand sustainability jargon.

Contrary to participants who perceived that there was racial diversity among sustainability actors, at least one participant across all research sites indicated that actors were racially homogenous or that there was little to no racial diversity. Participants at Mount Allison University were more likely to identify those involved as White and not from other racial groups. They used terms such as “homogenous,” “not very diverse,” and “mostly White male.”

In explaining the reasons for the perceived lack of racial diversity among sustainability actors, participants presented two arguments: that there was little interest among racially diverse groups, and that institutions lacked racial diversity as a whole. A community member at the University of British Columbia expressed explicit bias that groups from other countries, such as immigrants, were not interested in sustainability issues, “they do not make the connection.” This participant’s views represent widely held biases that immigrants and other marginalized groups are not concerned about environmental issues and are based on dominant Western ideologies of superiority over other cultures. These perceptions are prejudiced and warrant critique especially within environmental circles.

In efforts to critique the comments above, a community member responded that in “defense of the immigrants,” newcomers are often preoccupied with other priorities, and they are sometimes working to overcome financial difficulties and become more familiar with English. Therefore, they perceived that sustainability is not their focus “at that particular moment in their history.” Whereas this may be the case from some individuals, there are several newcomers and immigrants who do engage in environmental and sustainability issues across HEI and in community. Similarly, a student from Mount Allison University explained that it was “not for lack of caring” among racially diverse groups, but rather a “lack of representation,” which was perceived as a reflection of a “wider problem of Mount Allison as a whole and higher education as a whole.” This student’s observation shifts the focus from individual people to contextualize the issue of racial diversity as a structural problem that gets to the systemic barriers to inclusion and equity in sustainability more broadly.

Intersectionality. In addition to describing diversity among SHE actors in relation to gender and race, participants discussed the intersections of gender, race, sexual orientation, class in relation to involvement in sustainability at their institutions. These discussions happened mainly among student participants at the University of Toronto and Mount Allison University. Given that student involvement in sustainability occurred predominantly through sustainability groups, students reflected on the diversity of their members, going beyond gender and race to discuss sexual orientation as an important element of diversity.

At Mount Allison University, for instance, participants indicated that Indigenous, racially diverse, transgender, and differently-abled students did not feel welcome or included in sustainability initiatives. They attributed this lack of diversity to White dominance in environmental groups in higher education and a narrow focus of sustainability at their institution:

Specifically, students of colour- and not to speak for students of colour and not to rob them of agency- but often in White-dominated spaces, White-dominated activist groups, White-dominated...environmental initiatives, students of colour don't really feel that welcome or that safe or that included. ...There is a barrier and it's a product of our White-dominated institution, which creates White-dominated activist groups, which are often quite narrow in their scope. (Student, Mount Allison University)

Further, the inaccessibility of the built environment was seen as a barrier that hindered differently-abled students from attending this institution more generally and by extension participating in sustainability initiatives.

In addition, students' socioeconomic status impacted their ability to be involved in sustainability initiatives. As one student at the University of British Columbia observed, "students who have to work either part time or full time to fund their education...don't have the luxury of having enough time to organize protests and sit-ins and sign petitions." These intersecting issues provide insights into why sustainability has remained an endeavour of the privileged few and offers possibilities for disrupting the status quo to advance sustainability uptake in higher education.

In further considering intersectionality, participants at the University of Toronto indicated that student groups were gender diverse, but lacked diversity in race and sexual orientation. They reflected on reasons why racially and sexually diverse students were not involved in their group, contextualizing this discussion within the larger environmental movement:

I would say there's more females than males, which is typical of environmental things.... We haven't had any trans or other gendered students. We've had some guy last year who was gay. We don't have a lot of Lesbian, Gay, Bisexual, Transgendered members coming

into that. I don't know why. In terms of race it is majority White, as it is with a lot of environmentalism sadly, because it's all nature and not like dealing with the impact on communities. Also the whole White males talk a lot and that tends to drive out participation. At the same meeting [an environmental student group at U of T] it's probably the same, five or six people of color, and they're super involved and we try to have more of a justice focus, but it doesn't always work. We get some push back, internal group tensions around that. (Student, University of Toronto)

The above student unpacks existing power dynamics between dominant and marginalized groups, pointing to the role that unchecked dominance can play in pushing away minority groups from participating in SHE. They point to the predominant focus on “nature” and disregard for social justice in sustainability discourses as a key reason why racially and sexually diverse students may not be as involved in these groups. The tension that emanates from attempts to center communities and justice in sustainability speaks to the work that needs to happen to make sustainability in higher education equitable, diverse, and inclusive.

We observed the tension between sustainability student groups and other social justice groups such as the *Black Lives Matter* at the University Toronto. The environmental activist group followed a protocol in which they began their meetings by acknowledging Indigenous peoples and the land on which they were situated, each member taking turns to chair a meeting. During this particular meeting, the group was awaiting a decision on whether their institution would divest from fossil fuels, that is, removing their endowment funds from fossil fuel companies and investing them in socially responsible alternatives. At the same time, there was a rally organized by the *Black Lives Matter* student group to bring awareness to the police brutality in their community, as shown in Figure 4.3. While some students saw the connections between

their group and *Black Lives Matter*, and felt they needed to join the rally to show their support, others felt that this was not their mandate as an environmental activist group. There was some trepidation that their involvement with the social justice group would jeopardise the relationship they had developed with some of the administrators, who were involved in making the decision on whether to divest from fossil fuels.

While students and others involved in various campus initiatives are drawn to different causes for various reasons, the strength of these groups lies in their ability to form solidarity within and across groups. The hesitation to support the Black Lives Matter rally, as described in the example above, is an indication of our broader values system in which issues are compartmentalized and initiatives that are intricately connected are pitted against each other. The fact that some students felt that they had to distance themselves from the social justice-focused group in order to receive approval from their administration highlights the need to unpack the values, ideologies, beliefs, and assumptions embedded in our institutions, in order to reimagine a new way of being for SHE and the broader higher education system. Ultimately, the environmental student group agreed to leave the decision on whether to join the Black Lives Matter rally to each individual student.

The inclusive practices at a bike repair shop at the University of Toronto exemplify the intersections of social justice and sustainability. Mostly run by volunteers, the space was a *do-it-yourself* shop where people came to repair their bikes and could get help and support from volunteers at the shop. Whereas everyone was welcome to visit the shop at other times, this sustainability initiative had set special hours for women, trans, and non-binary individuals to visit the shop. The goal was to create an “environment where...people can feel more comfortable, so it feels more okay to ask questions...to try things out and to learn and there’s just

less pressure.” According to the participant, “this type of programming... is really beneficial in bringing folks into the space and making them feel comfortable so that they can then kind of become more involved.” The practice at this bike repair shop is an example of how sustainability initiatives can make intentional efforts to include historically marginalized groups, who would otherwise not feel comfortable participating in such initiatives. As earlier indicated by one of the student groups, this initiative tackled the challenge experienced in many environmental groups where White male voices dominate space, which “tends to drive out participation.”

Figure 4.4.

Black Lives Matter Rally at the University of Toronto



Note. This photograph was taken at one of the research institutions and it showcases a rally that was attended by some of the student groups that we observed.

Two examples of cultural sustainability were reported at the University College of the North and Mount Allison University. At the former institution, a cultural proficiency program

initiated at the school district level was transferred there, and was moulded after a similar program in the United States that was designed to address racial relations between African Americans and White groups. The school district borrowed this concept to help address concerns between Indigenous and non-Indigenous populations in the Northern Manitoba region. The program was viewed as a safe way to mutually learn about different cultures and create respectful relationships between Indigenous and non-Indigenous people. This cultural aspect of sustainability exemplifies the borrowing of practices from another region, and collaboration between different levels of education within the same region. It also shows how sustainability initiatives can constitute building cultural competency as a way of fostering mutual respect and working relations.

At Mount Allison University, one Indigenous student considered sustainability to include learning about the history of the First Nations who lived where their campus is now located and taking care of that land. Because neighbouring First Nations communities expressed that they felt their knowledge systems were not valued and preserved at this institution, students sought ways to foster relations with neighbouring communities. As they explained, “our involvement in that is getting the First Nations community involved; Indigenizing the campus and bringing in an Indigenous knowledge system into the practice.” A support group was started with a “small group of Indigenous students” that worked to reach out to more students and connect to First Nations communities who were already working on various environmental issues. This support group helped create a safe space for Indigenous students overall and enhanced the relations between the First Nations communities and Mouth Allison University.

Summary

In summary, actors within and outside of HEIs are engaged in various ways in the uptake of sustainability in policy and practice across the research sites. Within HEIs, faculty, students, and staff members are driving and participating in sustainability initiatives in research, curriculum, operations, and through student groups. Leadership from administrators was identified as key to the uptake of sustainability, and participants critiqued the perceived lack of commitment from several administrators across the research sites.

Furthermore, findings showed that actors outside of HEIs influenced the uptake of sustainability. Identified external actors included regional partners such as governments, Indigenous groups, industry partners, environmental groups and individual experts. These actors were involved in promoting and supporting the development of sustainability initiatives in policies and practices across research sites. At the national and international levels, professional networks and associations, other HEIs, environmental organizations, and governments informed sustainability initiatives and provided significant spaces for collaboration.

Finally, the diversity of actors involved in sustainability uptake was described in terms of gender and race, and as a reflection of institutional and community contexts. In several cases, women were said to be more involved in sustainability uptake, with some indicating that both women and men were involved. In terms of racial diversity, participants indicated that there was some diversity among sustainability actors, with Indigenous actors being mostly involved in the institutions that were located in predominantly Indigenous communities. In non-Indigenous institutions, although there was some racial diversity, most of the actors were identified as White. Data also showed exciting and exemplary pockets within the research sites where actors, especially students, critiqued the status quo and disrupted institutional norms to create safe

spaces where historically marginalized groups could have their voices heard. These conversations showed uptake of intertwined social and sustainability issues, a reflection of how HEIs can begin to integrate an intersectionality lens within sustainability initiatives in higher education.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

Having presented key findings on the influences on the uptake of sustainability across six Canadian higher education institutions (HEIs), this chapter provides further discussion of the main themes in relation to the existing research literature. Specifically, the chapter returns to the three research questions on the roles of actors, the roles of networks and organizations, and the extent to which historically marginalized groups were involved in the engagement of sustainability at the study sites, and connects the study findings back to the prior research literature. The chapter critically reflects on key findings to interrogate current efforts to integrate sustainability in higher education and suggests how actors can leverage their unique contexts and collective power to push for holistic and inclusive engagement in sustainability. I conclude the thesis with identifying implications for SHE policy and practice research, limitations of the study, and suggestions for future research.

Roles of Actors in the Uptake of Sustainability in Higher Education

This research responds to calls for a better understanding of the roles that actors play in implementing sustainability in HEIs (Barth, 2013). Whereas research has previously shown that actors are involved, individually and collectively, in developing, implementing, and maintaining sustainability across HEIs more broadly (Berchin, Jonck, et al., 2018; Radinger-Peer & Pflitsch, 2017; Sylvestre et al., 2014; Wals, 2014), this study builds on this literature to reveal the specific ways in which various actors are involved. These include nuanced understanding of the roles of actors as drivers, participants, and, in some cases, resisters to sustainability uptake, and the influences of various contexts on these roles.

In considering the roles of actors in advancing sustainability in higher education, this

study has demonstrated that it is collaboration between various actors that drives strong sustainability uptake in policy and practice. While the roles of individual actors is crucial to advancing sustainability in various contexts, study findings suggest that it is through working together and influencing each other that actors can embed sustainability within the whole institution. The study found significant ways in which faculty, students, staff, and in some cases administrators, collaborated to drive sustainability uptake across the research sites. For instance, there was strong sustainability leadership and influence among faculty members in both policy and practice, suggesting that faculty often act as exemplars that model how others can engage in SHE. This study builds on existing studies that have recognized the value of collaboration among stakeholders to educate and implement sustainability initiatives more broadly (Drupp et al., 2012; Helferty & Clarke, 2009a; Holdsworth et al., 2008; Velazquez et al., 2006; Zimmerman & Halfacre-Hitchcock, 2006), to show the types of collaboration and influence that actors had on each other in enacting sustainability. A closer examination of institutional structures can enhance our understanding of actors' contexts and positioning in enabling and/or impeding on their ability to lead and collaborate in the uptake of sustainability.

Identified as the strongest drivers of sustainability uptake among various actor types, faculty members and their roles in sustainability seemed to be considerably tied to their institutional mandates as educators and researchers. As educators, the study showed that faculty members lead sustainability through individual courses and in entire departments, and as researchers they use research knowledge to inform institution-wide policy development and engage in community-based sustainability projects. SHE scholars agree that the core purpose of HEIs is to teach and address societal challenges through research, and these two areas are key domains within which sustainability ought to be integrated (Berchin, Jonck, et al., 2018; Christie

et al., 2013; Macgregor, 2015). With the overall goal of contributing to the public good, HEIs hire faculty with mandates to teach and carry out research in their fields of expertise; in this regard, faculty have a responsibility to students and the communities in which they work, and their efforts are more visible and influential to students compared to other actors. Therefore, it is not surprising that faculty were more likely to be viewed as the most active in sustainability uptake in policy and practice across all six institutions.

In their mandate as educators, teaching is an important area in which sustainability is integrated; this study found that by rethinking their pedagogical methods in sustainability courses, faculty members challenged students to act on real world issues within their institutions and beyond. Participants articulated the significance of research projects undertaken with students in sustainability courses in bridging the gap that often exists between HEIs and the community. Key elements such as dialogue and collaboration between students and community members were considered valuable to addressing local sustainability issues across the research sites, and existing literature highlights these elements as important pedagogical goals of sustainability education (Karlin et al., 2013; VanWynsberghe & Andruske, 2007). According to Cortes (2003), such collaborations that are conducted as part of the sustainability curriculum “greatly enhance their [faculty and students] education and promote a strong sense of connection to and caring for the local communities and to the ecosystems of which they are a part” (p. 19). These findings align with multiple studies that have emphasized the need for a shift from traditional teaching, which tends to be theory focused and lecture based, to interactive, hands-on, and action-oriented teaching, in addressing complex and interconnected sustainability challenges (Cotton et al., 2007; Holmberg et al., 2008; Macgregor, 2015; Mulder et al., 2015; Portman & Teff-Seker, 2017; Remington-Doucette & Musgrove, 2015; VanWynsberghe & Andruske, 2007;

Zeegers & Francis Clark, 2014).

Further to challenging students to address real world sustainability issues through their courses, findings demonstrated that faculty members influence students' long-term commitment to sustainability, consistent with other SHE literature on faculty role in students' involvement in sustainability (Portman & Teff-Seker, 2017; Remington-Doucette & Musgrove, 2015; Zeegers & Francis Clark, 2014). As this study affirmed, students' involvement and commitment to sustainability are often tied to, and at times a result of, faculty engagement in sustainability, with several examples of sustainability practices that began as class projects and developed into campus-wide initiatives that involved several students, staff, faculty, and community members. These findings emphasize the value of faculty commitment to embedding sustainability in curriculum, and strengthen the case for why faculty need to find creative and engaging ways to integrate sustainability into their teaching practices (Portman & Teff-Seker, 2017; Remington-Doucette & Musgrove, 2015; Zeegers & Francis Clark, 2014).

The perceived level of faculty leadership in sustainability engagement depended on factors such as the type of institution - whether more research or teaching focused - the strategic direction and priorities of institutional leadership, individual responsibility, expertise, and interest in sustainability. These factors had, in varying degrees, influence on how faculty integrated sustainability in their teaching and research. Study data show that a common factor that influenced faculty involvement in sustainability was individual interest, which when aligned with institutional support, seemed to have a significant impact on the institution and surrounding communities. Drawing from the literature on organizational change for sustainability, it is the alignment between individual agency, institutional culture, and relationships that makes change for sustainability possible (Hoover & Harder, 2015); and this was backed up by this study's

results. Where such alignment was lacking, due to resistance from administrators, for instance, as was the case in some institutions, faculty members' individual agency and support from other stakeholders were factors that strengthened faculty leadership in sustainability.

In addition to students' involvement in sustainability that stemmed from class projects, as indicated above, this study revealed that the roles of students as drivers of sustainability uptake were dynamic and spread across various areas of their institutions such as curriculum, research, university committees, and in numerous initiatives organized through student groups. These findings are consistent with SHE literature that discusses the roles of students in sustainability as 'bottom-up,' or as involving initiatives that are organized mainly through student groups, including environmental and student government clubs (Banga Chhokar, 2010; Beringer & Adom̄ent, 2008; Drupp et al., 2012; Helferty & Clarke, 2009a). Beyond these bottom-up initiatives, this research found that half the research sites had sustainability committees that required student representation, suggesting that students are also influencing top-down efforts to embed sustainability in institutional policies and practices. Contrary to previous research findings that students are involved in bottom-up initiatives because they are alienated from decision-making circles (Banga Chhokar, 2010; Drupp et al., 2012), this study showed that institutional leadership can no longer ignore student voices in sustainability. Therefore, students' roles in sustainability uptake can be seen as contributing to whole institutional change (Helferty & Clarke, 2009b; Murray, 2018).

In response to calls for further analysis of the impact of student-led action on institutional policies (e.g., Murray, 2018), this study found that bottom-up initiatives are driving policies to some extent. For instance, participants indicated that through students' organizing, institutional leaders were challenged to revisit their investment policies and take steps towards implementing

climate conscious policies. And in other cases, institutions without such policies were now said to be working towards developing policies to ensure their investments reflected current environmental realities. Therefore, these findings indicate that student initiatives are influencing institutional change for sustainability through policy development and pushing for accountability in implementing existing policies. Indeed, studies in Canada and Europe have articulated the influence that students have through their environmental groups on policy across HEIs (Maina et al., 2019; Mwaura et al., 2018).

Contrary to prior perceptions that students are only involved in sustainability initiatives that show short-term and tangible results (Zimmerman & Halfacre-Hitchcock, 2006), this research found that students are tackling long-term issues that require sustained organizing and action spanning several years. The fossil fuel divestment groups that were active at three of the six research sites are examples of sustainability initiatives that have continued for several years despite resistance from administrators. Students across these three institutions were organizing and recruiting more students to continue these projects after their graduation. This demonstrated that students are aware of the challenges they could potentially face in their organizing and worked strategically to institutionalize their initiatives to address this inevitable turnover. These findings align with a related recent study on the fossil fuel divestment movement in Canadian HEIs, showing the actors, actions, and tactics used to institutionalize sustainability through climate change action (Maina et al., 2019).

The roles of staff members - non-teaching and non-administrative staff - in driving sustainability uptake tended to be mostly focused on campus facilities and operations, a domain that had the most focus in initial efforts in SHE (Beringer & Adomβent, 2008; Christie et al., 2013; Leal Filho, 2019; Maina-Okori, 2019; Sylvestre et al., 2014). All except one of the

research sites had hardly any connection between operations and academic priorities in sustainability uptake, a separation that negatively impacted efforts to institutionalize sustainability. Commenting on this common divide in SHE uptake, some scholars explained that the location of sustainability office(r) within the institutional organizational structure influences the type of sustainability initiatives that are prioritized in facilities and operations (Ávila et al., 2017; Gudz, 2004). According to Ávila et al. (2017) and Gudz (2004), locating the sustainability office(r) in the facilities and operations departments tends to only promote technical aspects of sustainability such as waste management and energy initiatives.

On the other hand, allocating leadership of the sustainability office to a faculty member shifts sustainability priorities from operations to a focus on academics (Gudz, 2004). While this was a common finding in most of the research sites, data from one institution showed that the location of the sustainability office did not skew sustainability initiatives towards one domain. Led by a sustainability officer and facilities management staff, this institution created an initiative that fostered collaboration between faculty and staff and as a result was able to drive sustainability uptake in both operations and curriculum. This demonstrates that institutions can work to find a balance between operations, academics, and other institutional domains, regardless of who has leadership in the sustainability office.

In considering the roles of administrators in sustainability uptake, this study found that across sites, only a few administrators were considered champions of sustainability. The types of supports that were evident in the research sites and have been identified as key in existing literature include strengthening uptake through developing sustainability policies, providing funding, and overall support for sustainability initiatives (Chambers, 2015; Leal Filho, 2015). Strong institutional leadership is identified elsewhere as important in articulating the vision and

setting the path for which other actors can drive sustainability within HEIs (Ávila et al., 2017).

The roles of administrators as champions was not the norm across these research sites, however, and indeed many administrators were seen as lagging behind and resisting sustainability uptake.

There seemed to be agreement among participants that administrators' resistance to sustainability engagement was mainly attributable to concerns about costs associated with developing and implementing sustainability initiatives. This resistance to sustainability uptake is concerning as it influences other factors. For instance, scholars have argued that lack of support from administrators is highly tied to funding in two main ways: not availing funding for various sustainability initiatives and only supporting initiatives which result in short-term cost savings (Ávila et al., 2017; Velazquez et al., 2005). Administrators' resistance can be understood as a barrier to sustainability uptake, based upon factors such as profit mentality, resistance to change, and the corporatization of higher education (Elliott & Wright, 2013; Velazquez et al., 2005). As one scholar explained, their administration decided to focus on operational aspects of sustainability rather than academic initiatives, primarily because of concerns about costs, as the administration did not value spending money on a position that would help integrate sustainability into the curriculum (Gudz, 2004).

Given the significance of strong institutional leadership in SHE, it will be important for individual institutions, national and international organizations, and networks to investigate how to effectively navigate challenges associated with neoliberal contexts in order to lead sustainability efforts. Current international initiatives towards achieving sustainable development goals, such as through UNESCO, could create the impetus needed for administrators to make the case for prioritizing and institutionalizing SHE.

As external actors, the roles of networks and organizations in the uptake of SHE entailed

collaborations and influences on three main areas: knowledge production and sharing, provision of funding opportunities, and policy directions on various sustainability initiatives. These collaborations took place between HEIs, organizations, and networks at the local, regional, and international levels, influencing uptake of sustainability policy and practice in the domains of research, curriculum, facilities, and community engagement.

In considering the influence of other policies on sustainability uptake, this study revealed that local, regional and international policies, such as the United Nations' Agenda 21, created impetus and supportive environments for institutions to integrate sustainability across various institutional domains. Uptake resulting from such policies can constitute top-down and bottom-up sustainability strategies and practices (Dlouhá et al., 2018). For instance, participants indicated that municipal and provincial policies regulating building standards and greenhouse gas emissions targets were enforced at three HEIs in the study, and can be characterized as top-down initiatives. These findings align with others that have explained the value of government policy in motivating institutions to take bold steps to address sustainability within their boundaries and with surrounding communities (Bilodeau et al., 2014). On the other hand, some researchers have found that municipal building regulations can impede building renovations, which in turn impact other types of energy conservation that is possible (Zimmerman & Halfacre-Hitchcock, 2006). Scholars have argued that influences of municipal and provincial policies are increasing, perhaps due to lack of strong leadership from national and international governments (Trencher et al., 2014). Indeed few national and international policies were identified as influencing efforts to institutionalize sustainability across the research sites.

In addition to the influence of policies, this study revealed significant ways that collaborations between HEIs and local, regional, and international stakeholders were driving

sustainability uptake, particularly through knowledge production and sharing. Participants indicated that such collaborations were forged among individual experts, industry partners, networks and organizations, local communities, and HEIs. Existing literature describes the roles of national and international networks as particularly important in enabling sharing of “data, methods, technologies, experiences, good practices, and research results” (Berchin, Jonck, et al., 2018; Berchin, Sima, et al., 2018). At the local level, for instance, participants described working with Indigenous communities to embed their practices and ways of knowing in sustainability curriculum and pedagogy. While this influence was mostly evident in research sites located in predominantly Indigenous communities, there are opportunities for building relationships and working closely with these communities in multiple institutional domains. Indeed, moving towards transformative change for sustainability requires considering how Indigenous knowledge can be integrated in HEIs (Lowan-Trudeau, 2018).

There is a dearth of research examining the influence of Indigenous knowledge and practices on SHE (Vizina, 2018), and this study contributes to this area. According to Vizina (2018), Indigenous knowledge and practices share similar goals with sustainability in general and as a result need to be incorporated in sustainability education across the curriculum and in other institutional priorities. Indigenous peoples have accumulated knowledge of the land from their lived experiences and recognizing the value of these experiences and knowledge of sustainability is crucial to effecting institutional change for sustainability (Bieler & McKenzie, 2017; Mbah, 2018; Vizina, 2018). Also, understanding that what is today known as Canada is built on Indigenous ancestral territories, ongoing efforts to Indigenize and address sustainability in HEIs need to include connection to this land and the Indigenous communities who have owned and taken care of it for generations. This call comes with the recognition that HEIs are

implicated in the displacement and marginalization of Indigenous peoples and alternative knowledge bases (Meyerhoff & Thompsett, 2017), and finding ways to address these harms is crucial to creating transformative change for sustainability.

Other collaborations on sustainability uptake included those between environmental organizations and student groups in multiple research sites. Collaborations with environmental groups were more evident in student-led climate change action, mainly through the fossil fuel divestment movement and literature has shown that these groups provide resources, initial and ongoing training, and facilitate connection to other campaigns (Begos & Loviglio, n.d.; Bratman et al., 2016; Grady-Benson & Sarathy, 2016; Healy & Barry, 2017; Helferty & Clarke, 2009b; Mwaura et al., 2018). Examples of environmental groups that influenced the uptake of sustainability included 350.org, David Suzuki Foundation, and Sierra Club. Students considered the support received from these groups as a key factor to successful lobbying of their institution in divest from fossil fuels (Mwaura et al., 2018). The relationships fostered through collaborations between environmental groups and HEIs can benefit both groups and continue beyond individual projects to effect lasting change in institutions and communities.

Finally, this study showed the significant roles that networks and organizations play in driving sustainability uptake through funding various initiatives. Governments, industry partners, and networks between HEIs were all found to be funding initiatives such as research projects, energy conservation projects, building retrofits, and many more. Scholars agree that funding is one of the key factors to successfully integrating sustainability in higher education (Berchin, Sima, et al., 2018; Radinger-Peer & Pflitsch, 2017; Trencher et al., 2014), and is often a barrier to implementing all desired initiatives (Cebrián et al., 2015; Wright & Horst, 2013; Wright & Wilton, 2012). While funding from external actors is crucial to advancing sustainability, it also

brings unique challenges that are important to address. For instance, industry funding is often limited to research projects that have benefits for industry.

Historically marginalized actors in SHE policy and practice.

Having discussed the roles of internal and external actors in the uptake of sustainability across the research sites, this section discusses key contributions of this study in relation to the literature on historically marginalized groups involvement in sustainability in higher education. The question of diversity, in this case on the basis of race, gender, sexual orientation, age, nationality, and other subjectivities, is important because it relates to broader issues of equity and justice, that ought to be moved from the margins to be centered in discussions of environmental and sustainability education (Agyeman, 2013; Gough et al., 2017).

It is widely acknowledged that sustainability issues such as environmental degradation and climate change disproportionately impact historically marginalized and underserved communities, who, ironically, are the least responsible for contributing to these issues (Bullard, 1990; Stapleton, 2019). Therefore, it is inconceivable that discussions of how to address these sustainability challenges continue to happen without adequate inclusion and consideration of historically marginalized voices, knowledge systems, and diverse worldviews. A key concern about inadequate representation of historically excluded voices in sustainability discussions is that sustainability pathways will continue to lack serious considerations of how power dynamics work to privilege mainstream discourses and further disenfranchise communities relegated to the margins. Given these concerns, HEIs have a responsibility to grapple with how to address equity and justice in their efforts to integrate sustainability in policy and practice. In doing so, they ensure that everyone is heard and can contribute towards the systemic change needed to create an

equitable and sustainable future.

In discussing findings on the diversity of actors involved in the uptake of SHE, this section draws on Black and Indigenous feminist frameworks of intersectionality and interconnectivity (Carbado et al., 2013; Crenshaw, 1991; Maina-Okori et al., 2018; Wilson & Laing, 2019) to analyze the ways in which multiple and complex subjectivities such as gender, race, age, class, nationality, and sexual orientation coalesce to create unique lived experiences for various groups embodying these subjectivities. Beyond individual intersecting subjectivities, an intersectional framework is used to interpret how participants addressed intertwined social and environmental issues and worldviews as they relate to the roles of actors in sustainability uptake across the research sites. An intersectional analysis values alternative ways of knowing, including Indigenous worldviews and knowledge systems that take into account intertwined and holistic understanding of the world.

While the broader field of environmental education has sought, in recent years, to centre intertwined social and environmental issues in its research (Gough et al., 2017; Gough & Whitehouse, 2018; McKenzie, 2004; Russell et al., 2002), this study found few examples of this focus in the uptake of sustainability across the research sites. These findings are in agreement with recent work that has found that issues of social justice as they related to sustainability in higher education have received little attention in the existing literature (Miller, 2018b; Wright & Horst, 2013). For instance, in their study of faculty conceptualization of sustainable development, Wright and Horst (2013) found that participants would not mention cultural aspects of sustainability such as gender equality on top of their minds, but acknowledged the importance of these dimensions when prompted on a checklist. According to them, this “suggests that participants have a wider conceptualization of sustainability but would not think to include

those concepts until they are presented to them” (p. 215). A similar observation was made at the research sites where several participants had a difficult time responding to the question of diversity among sustainability actors. This suggests that equity, diversity, and inclusion may not be forefront in the uptake of SHE.

Similarly, in examining the engagement of sustainability in governance, Lidstone et al. (2015a) found that while Canadian institutions drew from the Brundtland Report’s definition of sustainability that includes social, economic, and environmental dimensions, all three conceptions were not reflected in their sustainability plans. This failure to consider social justice in sustainability has far reaching consequences: as Miller (2018) cautions in discussing teaching in HE, “failure to examine how race and nationality impacts our students’ participation may fail to uncover harmful discourses that serve to exclude some learners from equitable engagement in sustainability work” (p. 845). Building on these findings, this thesis sought to address this gap by considering the extent to which historically marginalized groups are involved in the uptake of SHE policy and practice in Canada.

In considering the diversity of actors involved in the uptake of sustainability in higher education, this study revealed that diversity was influenced by multiple factors such as, geographic location, institutional demographics, sustainability conceptualization and framing, dominant institutional contexts, and time availability among actors. Gender and race were identified as the main social identities that interacted with the factors above, to influence those who were involved in sustainability engagement across the research sites. Examining the diversity of actors is a process of unearthing the power dynamics that exist in institutional processes that seek to embed SHE and transform institutions. Because HEIs are institutions of accumulated and unequal power, questioning who is involved is indeed questioning who holds

the power to pivot these institutions towards an alternative way of being, one that is critical of the production and reproduction of colonial, capitalistic, patriarchal, and heteronormative, structures and processes that largely contribute to socioecological inequalities resulting from an unlimited growth paradigm (Brulé, 2015; Gaudry & Lorenz, 2019; Kromydas, 2017; Meyerhoff & Thompsett, 2017; Simpson, 2014).

Whereas there are many intersecting identities among individuals, this study found that gender and racial identity were the two most visible identities among those involved in sustainability uptake across the research sites. As evident in mainstream environmental movements in relation to gender, women were seen as more involved in the enactment of SHE. Embedding sustainability in all aspects of higher education is a process that requires time and resources, and one of the reasons why more women were often seen as more involved may be because of their willingness to put in time to do the work. As scholars have presented, one of the main barriers to incorporating sustainability in curriculum, particularly, is that it requires considerable time and work, much of which happens voluntarily with little incentives (Alkather & Avissar, 2018; Radinger-Peer & Pflitsch, 2017). As such, women's overwhelming involvement in sustainability can be said to be connected to their tendency and willingness to do more voluntary work associated with education, that often goes unrecognized and unsupported by their institutions (Lloro-Bidart & Semenko, 2017).

Discussions of the intersections of gender and the environment have been prominent in academic discourses, particularly within ecofeminism, a framework that draws parallels between the domination of nature and that of women (Gardner & Riley, 2007; Gough, 1999, 2004; Gough et al., 2017; Harvester & Blenkinsop, 2010; Hessing, 1993; Plumwood, 1986). This domination of women and nature is seen as part of a broader framework of dualism and hierarchy that

originates from classical philosophy and includes the divide between mind/body, society/nature, male/female, among others (Plumwood, 1986). In applying an ecofeminist perspective to their work, environmental education researchers have examined how patriarchy perpetuates the oppression of women and nature, and some have suggested this as an approach that can enhance non-hierarchical relationships that are needed to foster cultural and biological diversity (Harvester & Blenkinsop, 2010).

In sustainability in higher education, ecofeminism is identified as an approach that can inform shifts in research and pedagogy towards methodologies that center the lived experiences of women, racialized, and other marginalized groups and those that value alternative knowledge systems (Gough, 2004). This study found strong leadership and involvement from women in the uptake of sustainability across the research sites, suggesting that critical feminist perspectives may be informing various sustainability initiatives and these perspectives present an opportunity to shift how actors conceptualize and engage with sustainability in policy and practice. Nevertheless, ecofeminists have cautioned against essentialist portrayals of women and romanticization of nature (Henderson, 1997; Hessing, 1993; Plumwood, 1986, 2004), a caution that remains relevant for HEIs as they seek critical ways to integrate sustainability across various domains.

On the other hand, racial diversity among sustainability actors reflected institutional demographics and geographic locations: research sites situated in predominantly Indigenous communities tended to have more Indigenous actors, while those located in non-Indigenous communities tended to reflect the constitution of the broader community, which was in many cases said to be mostly White. However, there were cases in which institutions located in largely diverse and multicultural metropolitan areas were said to have little racial diversity among

sustainability actors. Participants attributed this lack of racial diversity in institutions located in multicultural cities to the Euro-centric nature of sustainability, noting that there is a cultural dimension to who is involved in sustainability. This idea is reflective of wider critiques of sustainability as privileging dominant Western discourses that are often void of expressions of non-western perspectives (Gough, 2013; Stapleton, 2019).

In addition to describing the diversity of sustainability actors in terms of gender and race, this study revealed a few but significant ways that interconnected social and environmental issues were examined in SHE. These intersectional considerations were evident in student groups, specifically within the fossil fuel divestment movement where students tackled issues of race, gender, sexual orientation, immigration, and sustainability. Further, interconnected Indigenous practices of living sustainably on the land were highlighted, although some did not see clear connections between these and sustainability initiatives in higher education.

Students' focus on intertwined social and environmental aspects of sustainability, as discussed in this study, exemplify the complex, yet significant considerations needed for holistic transformation of sustainability uptake in higher education. Whereas environmental clubs seemed committed to addressing the social aspects of sustainability more broadly, existing power dynamics relating to race and gender prevented safety and inclusion of all students and a broader scope of issues. Participants described pushback from some group members when they sought to incorporate social justice issues in these groups; participants explained that some male students dominated space in meetings, silencing and alienating racialized students. There was also resistance to supporting social justice issues, such as the cause of the Black Lives Matters movement, within one environmental student group. Studies have found that feeling unwelcome and encountering racist situations inherent in predominantly White institutions impedes on racial

minority students' engagement in sustainability (Miller, 2018b). Because diverse students bring lived experiences that strengthen the mandates of environmental groups, their alienation robs these groups of systemic analysis and possibilities of how to address injustices that are deeply rooted in institutional structures.

In mapping the application of intersectional analysis in various fields, Carbado et al. (2013) share insights that may foster solidarity and strengthen sustainability uptake in higher education. They submit that an intersectional approach broadens the scope for institutional transformation by addressing the complexities that lie in the intersection of multiple identities. According to them, single-issue approaches undermine “possibilities for sustaining solidarity by placing resistance movements at odds with each other” (p. 304); therefore, “intersectional interventions can facilitate cross-movement building” (p. 306). For SHE, this means acknowledging the differences that exist within different causes while identifying commonalities that can build stronger movements. Further, Carbado et al. (2013) posit that one of the ways to move towards transformation is to unearth the power dynamics inherent in a group in order to transform them. Intersectional analyses do this by “interrogating the inter-locking ways in which social structures produce and entrench power and marginalization, and by drawing attention to the ways that existing paradigms that produce knowledge and politics often function to normalize these dynamics” (p. 312).

Another significant finding is that conceptualization and framing of sustainability impact who is involved in sustainability uptake and the type of change that is possible in HEIs. While some participants directly pointed out that the use of sustainability jargon may hinder diverse students from being engaged in sustainability initiatives, others suggested that sustainability was not part of Indigenous culture and that other racialized groups were not interested in

sustainability. These views are deeply troubling but not surprising, as HEIs have been sites of Western knowledge hegemony and colonial reproduction that devalue the contributions of those who are “othered” (Batz, 2019; Gaudry & Lorenz, 2019; Meyerhoff & Thompsett, 2017; Settee, 2011; Wilson & Laing, 2019). While Indigenous knowledge and way of life are sustainable and have sustained Indigenous communities for millennia (Mbah, 2018; Settee, 2011; Vizina, 2018; Wilson & Laing, 2019), these practices did not seem to fit within the espoused ideas of sustainability at several research sites. Indeed, conceptualization of sustainability from a Western perspective seemed to skew participants’ perceptions of Indigenous and other racialized groups’ interest in sustainability, and was a barrier to their involvement.

The impact of framing and language on sustainability involvement is described elsewhere, depicting how dominant Western notions of language can be a barrier to sustainability engagement among international and other racialized students (Miller, 2018b; Stapleton, 2019). Miller describes a situation, during a presentation in a sustainability course, where a faculty member reprimanded a student and denied him full credit for having a non-American accent, appropriate for an American audience. In addition to the hurtful and discriminatory nature of this student’s experience, Miller rightfully indicates that he and others like him may decide not to be involved in sustainability in the future because their contributions are devalued. As demonstrated in this incident, there are multiple aspects of identity that have consequences for who is able to meaningfully contribute to sustainability initiatives in HEIs, including how language could be a barrier to engaging racial minority groups in sustainability. These are areas that need to be addressed to allow meaningful uptake of SHE.

The exclusion of Indigenous, people of color, differently abled individuals, and other marginalized groups in sustainability initiatives and spaces can also be understood within a

colonial context. In general, education has historically been used to assimilate Indigenous and other marginalized groups into dominant Western cultures (Batz, 2019; Gaudry & Lorenz, 2019; Meyerhoff & Thompsett, 2017; Simpson, 2014; St. Denis, 2009; Wilson & Laing, 2019). In particular, HEIs are colonial institutions whose structures are sustained by the reproduction and protection of whiteness and dominance. As a result, sustainability initiatives within these contexts are mainstreamed and are conceptualized and operationalized within neoliberal free market ideologies which offer inadequate tools for decolonization and anti-racism (Bieler & McKenzie, 2017; Brulé, 2015; Kromydas, 2017; Meyerhoff & Thompsett, 2017; Mwaura et al., 2018; Stapleton, 2019). The result of such initiatives is perpetuation of dominant policies and practices that often exclude perspectives of particular groups, as indicated in this study, that have the potential to offer alternative ways of envisioning and enacting SHE. Moving forward, discussions of sustainability must include decolonization, Indigenous sovereignty, justice and equity, and intentional inclusion of all historically marginalized groups and worldviews.

This study's findings that through their environmental groups students are beginning to focus on sustainability using an intersectional lens demonstrates that HEIs have an opportunity to expand their conceptualizations of sustainability to include social justice issues. Whereas research on student-led action for sustainability has had little focus on interconnected issues of sustainability, social justice, and Indigenous sovereignty (Murray, 2018), through student activism students can be empowered to address systemic injustices, a practice that Mwaura et al. (2018) argue has impacts not only in HEIs but also in the broader community. Also as observed in this study, there is a need to move beyond individual actions and single-issues to focus on collective action and systemic change in addressing sustainability more broadly. According to Maura et al. (2018), "in listening to student activist movements, colleges have the opportunity to

be progressive institutions...(and) students' clubs, in their multifarious actions, are important avenues for learning for sustainability in higher education" (p. 7).

Further, examining the involvement of historically marginalized voices expands our understanding of power dynamics within institutions, calls for inclusivity, and ensures that there are safe spaces for us to contribute to sustainability uptake in a just way (Skorek, 2018). Such an analysis challenges "dominant discourses, which are predominantly white, male, and heterosexual" (Miller, 2018, p. 847), and invites environmental educators and researchers to reflect on how their worldviews and conceptions of the environment impact how they develop curriculum and how and what they research (Stapleton, 2019). Therefore, considering actor identities and issues as interconnected has a strong potential to strengthen sustainability uptake in ensuring the dismantling of institutional barriers, intentional inclusion of historically marginalized groups and knowledge systems, development of diversity and equitable policies and practices, and just action towards tackling the complexities of SHE and beyond.

Summary

In sum, this study's findings demonstrate the significant roles that actors, including external networks and organizations play, individually and collaboratively, as drivers and participants of SHE policy and practice. These roles are crucial to sustainability uptake in the five domains of institutional governance, teaching, research, facilities management, and community engagement. Another domain that was found to be significant to sustainability uptake is student activism that facilitated learning among students and other institutional stakeholders. Students' environmental groups provided important spaces for holding institutional leadership accountable and taking systemic action towards change for sustainability.

The study also illuminates that diversity among sustainability actors is mainly focused on gender and race, and the complex issues that arise in efforts to create spaces for actors with multiple social identities. While there were few examples of intersectional analyses across the research sites, students' efforts to include people from diverse backgrounds and social justice issues constitute critical initial steps towards opening the dialogue on diverse, inclusive and equitable uptake of SHE policy and practice. There were also examples of Indigenous land-based practices that can inform sustainability uptake in teaching and research.

Finally, the study revealed important barriers that need to be addressed in order to support actors' roles in integrating and creating systemic change for sustainability in the HEIs. Examples of identified barriers include: lack of commitment and support from institutional leadership; lack of awareness of existing sustainability initiatives; failure to implement existing policies - talk and no action; and institutional structures that privilege dominant Western conceptualizations of sustainability that do not value alternative worldviews and other ways of knowing. Ultimately, these conceptualizations lend themselves to mainstream sustainability pathways that are silent about justice and equity.

Implications of the Study

Having discussed this study's findings in relation to existing literature, this section outlines the implications of these findings for future research and then implications for various actors involved in sustainability uptake in higher education. The section also identifies limitations of this study and concludes with closing reflections on the systemic changes needed for sustainability in higher education more generally, and how actors can be supported to drive this change.

Implications for Future Research:

- Findings from this study have revealed the significant roles that various actors play in the uptake of sustainability across several domains. What is clear is that both bottom-up and top-down initiatives and support is crucial to realizing systemic change needed to transform HEIs. A common challenge that was identified is the considerable resistance by administrators to commit to systemic changes needed to integrate sustainability across various institutional areas. Given that administrators were said to focus mainly on initiatives that cost little and those that resulted in short-term savings for their institutions, research is needed on how administrators can navigate the challenges of living in a climate crisis and the demands of the neoliberal institutions. This understanding may create the impetus for institutional leadership to take bold actions to address current sustainability challenges.
- Because of the active roles of students, particularly as evident through their student groups, future research could examine how student champions are involved beyond their tenure at an institution. This research could enhance the field's understanding of how students' involvement in sustainability impacts their lives and roles in the society more broadly. As leaders, students' commitment to sustainability influences the direction that society takes to address current and future societal challenges, therefore tracing their involvement as graduates may help direct more attention on their activism.
- Evaluations of the roles of governments and industry partners in the changing economic and political climate could be carried out to understand the influences of these changes on SHE. This study has shown that local and provincial governments and industries are

influencing the types of sustainability initiatives evident across the research sites, through policies, funding and direct involvement in planning in some cases. In recognition of the changing political landscapes and economic uncertainties, future research could investigate how HEIs can be adequately prepared to respond to these uncertainties. This could include evaluating the possibility of developing policies to solidify working relations between HEIs, governments, and industries and other measures to ensure long-term commitment to address sustainability.

- In extending this study's findings on the diversity of actors, the field of SHE would benefit from more in-depth research with and by historically marginalized groups. Drawing from their personal experiences, this evaluation could contribute to an understanding of how diverse groups could be better supported to bring their knowledge to bear in transformative change for sustainability. Also, given the findings about environmental student group's focus on social justice issues in relation to sustainability, future research could further explore these intersections, examining identity and sustainability among SHE actors.
- Further, Indigenous knowledge was found to influence sustainability uptake mainly in sites located in predominantly Indigenous communities, and is an area that needs further consideration. All Canadian HEIs are situated in Indigenous ancestral territories and many neighbouring Indigenous communities. While HEIs are seeking ways to Indigenize the academy and engage with Indigenous peoples and worldviews in one way or another, there is an opportunity for research into how institutions can foster meaningful and respectful ways of learning how to address sustainability.

Implications for Actors

In responding to calls to move beyond a single case study in researching SHE (Corcoran et al., 2004), this research has examined the roles of internal and external actors in the uptake of sustainability in policy and practice across six Canadian HEIs. As one of the few comparative case studies in SHE, this research has provided an in-depth analysis of how various actors are influencing sustainability uptake at six institutions and across various sustainability domains. Important influences on involvement in sustainability include: sustainability champions/drivers, collaboration and support between actor types, paying attention to institutional contexts and local sustainability needs, commitment and resilience, and setting up structures to ensure continuity of sustainability initiatives. These elements were evident to some extent across all six research sites and were said to be important to integrating sustainability by various participants.

Pertinent to this research was an exploration of the extent to which historically marginalized groups are involved in SHE uptake, to suggest ways that HEIs can work towards justice and equity in seeking transformative change for sustainability. Drawing from this study's findings, the following are recommendations for how those involved can work to holistically integrate sustainability into all aspects of their institutions, with emphasis on just and equitable sustainability uptake:

1. **In seeking to initiate or strengthen the development and enactment of sustainability in higher education, institutions should identify existing or potential champions to help drive sustainability uptake across various institutional domains:** sustainability champions need to be acknowledged and supported in order to strengthen their influence to the broader institutional contexts. This research has revealed that it is individual champions' dedication and commitment that have influenced others to be involved in

various sustainability initiatives across the six institutions. At every stage of an institution's journey towards integrating sustainability in all areas, champions remain an important part of this process.

2. **In order to address the challenge of decentralized and often isolated efforts to integrate SHE, it is crucial to seek collaboration across multiple levels:** effective collaboration between stakeholders, across departments, institutions, and sectors is needed to tackle the complexity of sustainability and that of HEIs. As sustainability actors seek to enhance their efforts, they should strategize on how to marshal the power and resources of different stakeholders to integrate sustainability. Effective communication was identified as a key element in strengthening collaborative efforts between internal and external stakeholders.
3. **To address the gap in leadership from administrators, it will be important, moving forward, for them to strengthen their commitment and support for sustainability uptake:** given the influence of top-down and bottom-up initiatives as identified in this study, administrators have an opportunity to lead and work in collaboration with other actor groups to seek ways to better integrate SHE. One way to do this would be to ensure that new policies are developed and existing ones are implemented to drive and strengthen actors' involvement in sustainability.
 - Additionally, sustainability champions and other actors could consider using language that helps administrators understand the business case for supporting sustainability initiatives. This may help address some of the resistance that was identified among institutional leadership, related to a desire to focus on initiatives that required minimal costs and/or promised to cut costs across the institution.

4. **To address the lack of awareness on various sustainability initiatives, effective communication needs to be developed:** while there were several sustainability initiatives across various institutional domains, several participants indicated that they were unaware of available opportunities for involvement. To ensure that all interested stakeholders can be involved, sustainability actors should develop and implement effective communication strategies. Further, those leading particular programs need to ensure that these opportunities are communicated adequately and in a timely manner. Indeed, effective communication could foster synergies within and across institutions and enhance sustainability uptake.
5. **An intersectional analysis is needed to ensure a strong focus on equity and justice in the uptake of sustainability in policy and practice:** actors should recognize and develop strategies to ensure that justice and equity are core values across all sustainability initiatives. For instance, there is need for policies to support intersectional practices that were evident among a few student groups. An intersectional analysis helps to ask important questions such as: Who is present and who is missing from the table? Who benefits from sustainability initiatives and why? What barriers may hinder historically marginalized groups from participating? How can these barriers be addressed? How can we move from a single-issue to considering issues as interconnected? And what tools are available to make this happen?
6. **In order to strengthen equity and justice, institutions need to critically reflect on their current practices and address systemic barriers that exist in various sustainability initiatives:** sustainability actors need to create safe spaces where diverse groups and voices feel welcome and feel a sense of belonging. In curriculum, for

instance, faculty members should be conscious of the challenges that minority students might face in conducting community-based projects. Having open conversations and developing departmental frameworks to guide these endeavors may ensure that all students have a positive and equitable learning experience and are confident that there would be a safe and supportive environment to address any challenges that may arise.

- 7. Relatedly, institutions need to rethink their conceptualizations of sustainability and the types of initiatives that are predominantly championed in efforts to advance sustainability uptake in higher education:** this study found that there seems to be a hesitation to move beyond ecology to explicitly address social and economic aspects of sustainability, hence reinforcing Western perspectives over other worldviews. As long as sustainability discourses continue to privilege ecology over society and the economy, they will continue to reflect the views of the privileged few. Therefore, drawing from diverse knowledge systems can enrich current institutional efforts towards sustainability in a way that honors and values the multiplicities of experiences among sustainability actors.

Research Limitations

This research sought to gather comparable data across six HEIs on the influences of actors on the uptake of sustainability. While this provided a large data set, the size, time, and financial constraints of this project limited the possibility of follow-up interviews on additional areas of interest. Particularly, it was not possible to have an in-depth discussion to understand the factors that might influence the roles of historically marginalized actors in sustainability uptake and supports that would be needed.

In addition, the distinction between sustainability uptake in policy and practice seemed problematic for some participants, with some discussing policy instead of practice and vice versa. Yet in other cases, some participants indicated that they did not see a difference between policy and practice. Perhaps in anticipation of this dilemma, this research asked about the relationship between policy and practice and while this question is beyond the scope of this thesis, it does provide insights into what participants understood to be the relationship between the two and possible impact on how the roles of actors was perceived.

Final Remarks

This study is grounded on the relatively new field of sustainability in higher education (SHE). In particular, it drew on the institutional change framework that envisions the entire higher education system in a holistic approach and constitutes five sustainability domains of governance, curriculum, research, facilities and operations, and community engagement. Situated within the Canadian HE system, the goal of this research was to examine: (i) the roles of internal actors, (ii) the roles of networks and organizations, (iii) and the extent to which historically marginalized groups are involved in the uptake of sustainability in policy and practice. While actors are understood as constituting human and non-human, living and non-living beings, this study focused on human actors, including internal actors such as students, faculty, staff, administrators, and external actors such as community members, networks and organizations.

To examine the extent to which historically marginalized groups are involved in SHE, this study drew on the intersectionality framework that acknowledges the unique experiences of people based on multiple and intertwined subjectivities such as gender, race, class, sexuality, religion, and age (Crenshaw, 1991). An intersectionality framework was useful in examining the extent to which marginalized groups are involved and suggesting how sustainability can use a

social justice focused framework to interrogate institutional contexts that impact how diverse groups are able to meaningfully contribute towards institutional change for sustainability.

Three main themes emerged from data analysis about the roles of actors in the uptake of SHE: actors as drivers, participants, and resisters to sustainability uptake. Participants indicated that faculty spearheaded sustainability initiatives in the curriculum and research domains, working, in many cases, in collaboration with students and other faculty members. Faculty and students also worked closely with community members to carry out research projects and as part of their learning process with local communities. In addition, students were said to be actively involved through various student environmental groups to create awareness and educate others on sustainability. They also pressure their institutions to address climate change and other sustainability issues by developing and implementing investment policies.

The roles of administrators was said to constitute mainly developing sustainability policies and financially supporting sustainability initiatives. Staff members were said to drive sustainability initiatives in the operations domain, and support student and faculty initiatives. Finally in relation to the roles of actors, participants indicated that administrators resisted several sustainability efforts brought forward by students, staff, and faculty members. Participants were concerned that administrators were only interested in sustainability initiatives that brought financial gains and were critiqued for their lack of support for other types of initiatives.

In addition, this study found crucial ways that partnerships with external stakeholders at the local, regional, and international levels are influencing sustainability uptake in SHE policy and practice. Organizations both in the public and private sectors were said to provide expertise in integrating sustainability in the domains of research, curriculum, facilities, and community engagement. At the local levels the roles of Indigenous Elders was crucial in ensuring that

traditional knowledge of the land and other cultural practices was included in the curriculum. The municipal and provincial governments also provided leadership on sustainability policies, for example, on building standards and greenhouse gas emissions. Collaboration with industry partners and individual experts was said to be crucial in supporting sustainability policy development and energy management practices. Similarly, national and international conferences and professional networks were found to provide sustainability staff and faculty with current sustainability innovations taking place around the world.

Considering the question of the extent to which historically marginalized groups are involved in SHE uptake, this study has found that women and a few actors from diverse racial/ethnic backgrounds are involved. A significant finding of this research included few but exemplary cases of sustainability initiatives where actors engaged with interconnections between sustainability and social justice. These initiatives were mostly student-led, where issues of Indigenous land rights, sexual orientation, class, gender, race, and immigration were considered an important aspect of sustainability policy and practice. Participants critiqued the power dynamics inherent in campus environmental and sustainability groups and called for the creation of safe spaces where people from marginalized backgrounds feel welcome. These examples are significant as they suggest ways that intersectionality in sustainability could be implemented in institution-wide initiatives and across other HEIs.

As HEIs do not exist in a vacuum, it will be important going forward for those seeking systemic changes for sustainability to nurture both internal and external partnerships and marshal available resources to strengthen their initiatives. Also, in order to transform HEIs into just and sustainable institutions, actors will need to rethink their conceptualizations and way of doing sustainability. Sustainability in policy and practice will need to be re-evaluated to ensure that it

moves beyond the ecology and to be founded on values of justice and equity. These values have to be embodied across the entire HE system and among all stakeholders. It is through such a paradigm shift that actors will move HEIs towards authentic and lasting transformation and create new opportunities for a just and sustainable future.

Personal Reflection

I am writing this reflection amidst ongoing action in solidarity with Wet'suwet'en hereditary chiefs who are opposed to the Coastal GasLink project. As I now reside on the ancestral and unceded homelands of the hən̓q̓əmin̓əm and Skwxwú7mesh speaking peoples, I am invited each day to reflect on my place as a newcomer/settler, my own Indigeneity as a woman from Kenya, and our intertwined relationship with the First peoples of Canada and Vancouver, in particular. Before moving here, I lived and studied on Treaty 6 territory and the Homeland of the Métis, the place where my PhD journey began.

As observed in several sustainability initiatives in higher education, my PhD journey has been a collaborative endeavour travelled with my family, colleagues, mentors, community and research participants. As the process of learning in higher education can be rather isolating and mentally complex, through this collaborative process I was grateful to have found caring and genuine relationships that have walked with me to this point. I was connected to individuals who shared a similar commitment to see and work towards a sustainable and equitable future for all, individuals who are representative of many others supporting and driving sustainability in various HEIs. Notwithstanding its numerous challenges, this collaborative journey has exemplified the type of collaboration needed to transform education and higher education, in particular.

I found that one of the challenges of researching in a collaborative project and exploring a complex topic such as sustainability in the bureaucratic environment that is higher education, is the difficulty to sometimes see the value and power of individual actions. I desired to have my voice heard, offer unique and meaningful contributions, all while navigating my intersecting identities as an international student and Black woman in a Canadian HEI. Informed by my previous roles in grassroots social and environmental movements and community organizing, I was keen to understand how others within HEIs are involved in the uptake of sustainability. Further, my positionality drew me to examine how individuals with multiple and often marginalized identities, similar to mine, were involved in sustainability initiatives in HEIs. The significance of this question became even more apparent, when I often found myself as the only Black person in conferences and other spaces focused on environmental and sustainability education.

The little to no attention on issues of social justice in sustainability in higher education literature further added to the need for a focus on this topic. Having completed data collection, analysis, and writing of findings and discussion, I continue to realize that the whole premise of higher education is predicated on colonial, capitalistic, and heteropatriarchal perspectives that are deeply rooted in every aspect of these institutions, making it extremely challenging to have spaces for diverse worldviews.

Despite these highly entrenched dominant structures, the story of the hummingbird gives me hope. Like the little hummingbird that was doing all it could to put out the enormous forest fire, we heard stories of dedicated champions in each of the six research sites that were doing the best they could to drive sustainability in their institutions. Together, these champions are creating a groundswell movement that HEIs can no longer ignore. With the looming climate crisis that is

intricately connected to rising social inequities, institutions are being challenged to rethink what and how they educate and research, and how they govern, operate and engage with the broader society. While the uncertainty of what it means to shift power and priorities is unsettling, the reality is that a fundamental shift is coming and HEIs have to transform to remain relevant. The national and international movements to address social and environmental inequities give me hope that we all can do all we can and combine our efforts to shape the society we want to leave for future generations. I am grateful that I have the opportunity to contribute towards this collective responsibility.

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APPENDICES

Appendix A – Interview Consent Form



PARTNER ORGANIZATIONS

Association for the Advancement of
Sustainability in Higher Education
Canadian Centre for Policy
Alternatives
David Suzuki Foundation
Learning for a Sustainable Future
Sierra Youth Coalition

CONTRIBUTING ORGANIZATIONS

Assembly of First Nations
Canadian Federation of Students
Global Youth Education Network
Métis National Council
Sustainability Solutions Group

The Sustainability and Education Policy Network (SEPN) is a network of researchers and organizations advancing sustainability in education policy and practice across Canada. Based at the University of Saskatchewan, SEPN is the first large-scale, national-level research collaboration to collect and analyze comparable data at all levels of education.

This study asks about the degree to which a sustainability focus is included in practices and policies in your work or study setting and about the drivers and barriers to sustainability uptake.

By participating in this study, you will help us identify how education policy and practice can better support the transition to more environmentally sustainable societies.

Project Title: Sustainability and Education Policy Network: Leading Through Multi-Sector Learning, funded by Social Sciences and Humanities Research Council

Researcher: Dr. Marcia McKenzie, Principal Investigator, Department of Educational Foundations; Director, Sustainability Education Research Institute, University of Saskatchewan, 306-966-2319, marcia.mckenzie@usask.ca

Procedure:

- This study will explore your experiences of sustainability in your setting
- We will start by asking you some general questions about sustainability and then we will ask you about sustainability policies and initiatives happening in your setting. You will be asked to rate your institution's sustainability initiatives
- This interview should take approximately 1 hour
- We will be audio-recording and creating transcripts from the

recordings

28 Campus Drive
College of Education
University of Saskatchewan
Saskatoon, SK, Canada
S7N 0X1
(306)966.2319
www.sepn.ca

Potential Risks:

- There are no anticipated risks to you by participating in this research

Benefits:

- Interested participants will be provided with a summary of the research results
- There are several possible benefits to participating in this study including contributing to the research on sustainability policy and practice in Canadian schools; connecting your school, school division, ministry, or institution with a national network that is on the cutting edge of school sustainability; and showcasing and celebrating your school's sustainability successes while highlighting areas for improvement

Confidentiality:

- Your identity and responses will be kept confidential
- You will be assigned a pseudonym by the researchers, which will be used for any quotations we use from you when reporting results. We will keep a list of participants and their pseudonyms that will only be accessible to the researchers
- Consent forms will be stored separately from data collected to ensure there will be no way to identify individual participants. Any identifying information you put on paper today will be removed when we enter it into our database
- Whether you choose to participate or not will have no effect on your position (e.g., employment, class standing, access to services) or how you will be treated

Right to Withdraw:

- Your participation is voluntary. You can choose to answer only those questions that you are comfortable with or knowledgeable about
- You may withdraw from the research project for any reason without explanation or penalty of any sort. Your right to withdraw will apply until we have disseminated the research results. If you wish to withdraw from the study, you may contact Nicola Chopin, Project Manager, at (306) 966-2319 or nicola.chopin@usask.ca

Storage of Data:

- The results of this study will remain confidential. The data will be entered into a database and stored until 2028 at which point it will be destroyed

Questions or Concerns:

- If you have questions during this process, please ask the researchers
- If you have questions afterwards, please contact Nicola Chopin, Project Manager, at (306) 966-2319 or nicola.chopin@usask.ca
- This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca, (306) 966-2975, or toll free (888) 966-2975

Signed Consent

My signature below indicates that I have read and understand the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project. A copy of this Consent Form has been given to me for my records

Name of Participant

Signature

Date

- Yes, I would like to receive the results of this study
- Yes, I would like to receive updates on other SEPN research

If yes to either, please provide your email address:

Researcher's Signature

Date

Appendix B – Interview Protocol



Researcher Note:

- *Maintain focus throughout interview on institution for PSE (e.g., sustainability research at institution more broadly vs that of faculty being interviewed, broader than curriculum in one program, etc.). Ministry, SD, and School participants at K-12 may focus on policies and practices across those levels from their position within any one of the three.*

Researcher Note:

- *Interview begins with introductions. Then move to consent form - give them a minute to review and then ask if they have any questions. After participant and researcher sign both copies (interviewee keeps one), let participants know you are turning on recorders.*
- *Note that most provinces should include a recognition of only First Nations and Métis, and territories should include Inuit and First Nations in some cases. In phone interviews, modify first sentence of interview to say ‘on which we are both located’ vs. ‘on which we are meeting.’*

Introduction

To open our discussion, we would like to acknowledge the traditional First Nations, Métis, and/or Inuit territories on which we are meeting.

We will start this interview with a survey that will ask you to evaluate your [setting’s] work regarding sustainability policy and practice. We will then ask you some follow up questions. Please note that we will be following a formal structure of questions, as this format needs to be consistent across our nation-wide study. Please answer to the best of your knowledge, there are no right or wrong answers.

Here is an iPad [document if app not available] on which we’d like you to answer some questions to start. At the beginning you will see some basic information about sustainability, as well as demographic information - if you’re able to take a few minutes now and complete this, that would be great.

In the next part, we’re going to use a heat diagram to ask you about your experiences of how policies and practices developed in your setting. Would you describe yourself as more familiar with policy or with practice in this setting?

Researcher Note: If participant describes themselves as more familiar with practice, go to section 1; if policy, go to section 2. For participants that are less familiar with practice, use only the questions (and prompts, as needed) within Box 1. For participants that are less familiar with policy, use only the questions (and prompts, as needed) within Box 2. If a participant is familiar with both practice AND policy within a setting (e.g. Sustainability Officer, others) and time allows, can use full protocol for each of practice and policy.

Section 1: Sustainability Practices

Introduction to Heat Diagram

Researcher Note: For phone interviews, please go through each domain at a time, beginning with governance, curriculum, research, community outreach, operations, and other to enter their ratings and get any short examples.

To start, please rate your setting's activity in relation to sustainability practice across several domains using this diagram.

To explain the task a bit, we are defining "sustainability" as including, at minimum, consideration of the natural environment. When we use the word "practice," we mean any practices or activities in your setting that engage with sustainability (be they led by administration, faculty/teachers, students, community, etc.).

We'd like you to please rate your setting's activity in relation to existing practices that address sustainability across the domains of: overall governance, curriculum and teaching, research, community outreach, facilities operations, and 'other' - explanations of these domains are included on the diagram.

Please assign a number from 1-10 for sustainability practices in each of these areas, with '0' indicating little to no sustainability practice in that domain, what we are referring to as 'cool,' and '10' indicating a 'hot' domain of sustainability practice for your setting. Please also add any details of what you have in mind in giving that rating. In other words, types of practice initiatives you may be thinking of in that area.

These are your own ratings based on your experiences and impressions. If you're really not sure, you can simply indicate 'don't know.' Do you have any questions? Would you like clarification on any of the categories?

Questions for those 'Less Familiar' with Practice [replaces questions 1-3]

Box 1. Researcher Note: If the participant has selected practice as the context with which they are LESS familiar, ask them the following questions. If the participant appears familiar with the practices described and time allows, include regular follow-up probes in relation to the questions below (from 'more familiar' section). If time allows, also include questions on 'cool' domain below; if time does not permit, move on directly to Section 3: General.

In your ratings diagram, can you please choose one of the 'hottest' rated domains to discuss in relation to practice? *[Ensure participant or researcher says out loud which domain they choose]*

- Can you tell us about your general impressions of practice in this domain?
- Is there a particular practice or practices that you were thinking of when you decided to give this rating?
- **Origins:** Do you know why your setting decided to begin this sustainability practice?
- **Mobility:** Are you aware of any practices or policies elsewhere that influenced its adoption (regionally, nationally, or internationally)?
- **Actors:** Can you tell us about any of the actors involved in this practice, champions or others?

- How successful has this practice been, in your estimation?

Can you now please choose one of the more ‘cool’ rated domains to discuss as an area with relatively low levels of practice?

- Can you tell us about your impressions of sustainability practice or lack thereof in this domain?
- What kinds of factors do you think have made the development of sustainability practice challenging in this domain?
- Do you have anything else to add on this topic, or otherwise in relation to practice, before we move on?

Questions for Domains with ‘Hot’ Ratings for those ‘More Familiar’ with Practice

Researcher Note: If the participant has selected practice as the context with which they are MORE familiar, please ask all of the following before moving on to Box 2 for policy.

1. In your ratings diagram, can you please choose one of the ‘hottest’ rated domains to discuss in relation to good practice? [Ensure participant or researcher says out loud which domain they choose]
 - (a) Can you tell us about your general impressions of practice in this domain?
 - (b) Is there a particular practice or practices that you were thinking of when you decided to give this rating?
2. **Practice Origins:** Can you please pick one of these practices to tell us about in some depth and I’ll ask you some further questions on it.
 - (a) **Drivers:**
 - a. To your knowledge why did your setting decide to begin this sustainability practice?
 - b. What influenced its development?
 - (b) **Mobility:**
 - a. Are you aware of any practices or policies elsewhere that influenced its adoption? For example, at another location or in another province or territory?
 - b. What about national or international influences, for example through various networks, associations, or policy bodies?
 - (c) **Actors:** Now I have some questions about any key people involved in developing this sustainability practice in your setting; people either based here or elsewhere:
 - Were there any champions or leaders in moving it forward?
 - Did anyone from outside your setting influence the development of the practice?
 - Were there any resistors to this practice? Or perhaps some that had hesitations? How so?
 - Do you know if students played a role in developing this practice? How so?
 - What about faculty and staff?
 - How would you describe the diversity of those involved, in terms of gender, race, or other forms of diversity?
 - (d) **Emotions:** What emotions, if any, would you say accompanied the uptake of this practice - for example, excitement, trepidation, feelings of competition, stress, or other emotions, if any?
 - (e) **Barriers:**
 - a. Are you aware of any tensions or challenges in initiating or maintaining this practice?
 - b. How about tensions or challenges in relation to any other, possibly competing, practices or policies?
 - (f) **Supports:** Aside from those you’ve already mentioned, were there any other supports or factors involved in the initiation of this practice?

- (g) **Funding:**
 - a. Do you know how this sustainability practice is funded, if applicable?
 - b. Have there been any resource limitations in carrying it out?
 - c. What would be needed to overcome these limitations?
- (h) **Temporal:** How long did it take to develop this practice?
- (i) **Outcomes:**
 - a. How would you describe the influence of this practice overall in your setting?
 - b. Who has been most and least affected or engaged by this practice?
 - c. Have you noticed any unintended consequences or outcomes?

Questions for Domains with ‘Cool’ Ratings for those ‘More Familiar’ with Practice

3. Can you now please choose one of the more ‘cool’ rated domains to discuss as an area with relatively low levels of practice?
 - (a) Can you tell us about your impressions of sustainability practice or lack thereof in this domain?
 - (b) What kinds of factors do you think have made the development of sustainability practice challenging in this domain?
 - (c) Do you have anything else to add on this topic, or otherwise in relation to practice, before we move on?

Section 2: Sustainability Policies

Introduction to Diagram

In this part of the interview, we’re going to use the heat diagram to discuss how policy developed in your setting. To start, please rate your setting’s activity in relation to sustainability policy across several domains using this diagram.

As a reminder, we are defining “sustainability” as including, at minimum, consideration of the natural environment. When we use the word “policy,” we mean official texts produced or used by your [setting] that address sustainability (be it a policy, plan, strategy, or mandate). This may also include documents that guide teaching practice, such as required curriculum.

These are your own ratings based on your experiences and impressions. If you’re really not sure, you can simply indicate ‘don’t know.’ Do you have any questions? Would you like clarification on any of the categories?

Researcher Note: For phone interviews, please go through each domain at a time, beginning with governance, curriculum, research, community outreach, operations, and other to enter their ratings and get any examples.

Questions for those ‘Less Familiar’ with Policy [replaces questions 4-6]

Box 2. Researcher Note: If the participant has selected policy as the context with which they are LESS familiar, ask them the following questions. If the participant appears familiar with the policies described and time allows, include regular follow-up probes in relation to the questions below (from ‘more

familiar' section). If time allows, also include questions on 'cool' domain below; if time does not permit, move on directly to Section 3: General.

In your ratings diagram, can you please choose one of the 'hottest' rated domains to discuss in relation to policy? [Ensure participant or researcher says out loud which domain they choose]

- Can you tell us about your general impressions of policy work in this domain?
- Is there a particular policy or policies that you were thinking of when you decided to give this rating?
- **Origins:** Do you know why your setting decided to create this sustainability policy?
- **Mobility:** Are you aware of any practices or policies elsewhere that influenced its adoption (regionally, nationally, or internationally)?
- **Actors:** Can you tell us about any of the actors involved, champions or others?
- How successful has this policy been, in your estimation?

In your ratings diagram, can you please choose one of the 'cool' rated domains to discuss as an area with relatively low levels of policy?

- Can you tell us about your impressions of policy work or lack thereof in this domain?
- What kinds of factors do you think have made the development of sustainability policy challenging in this domain?
- Anything else to add on this topic, or otherwise in relation to policy, before we move on?

Questions for Domains with 'Hot' Ratings for those 'More Familiar' with Policy

Researcher Note: If the participant has selected policy as the context with which they are MORE familiar, please ask all of the following before moving on to Box 1 for practice.

4. In your ratings diagram, can you please choose one of the hottest rated domains to discuss in relation to good policy?

- (a) Can you tell us about your general impressions of policy work in this domain?
- (b) Is there a particular policy or policies you were thinking of when you gave this rating?

5. **Policy Origins:** Can you pick one of these policies to tell us about in some depth and I'll ask you some further questions on it.

(a) **Drivers:**

- a. To your knowledge why did your setting decide to create this policy?
- b. What influenced its development?

(b) **Mobility:**

- a. Are you aware of any policies or practices elsewhere that influenced its adoption? For example, at another location or in another province or territory?
- b. What about national or international influences, for example through various networks, associations, or policy bodies?

(c) **Actors:** Now I have some questions about any key people involved in developing this sustainability policy in your setting; people either based here or elsewhere:

- a. Were there any champions or leaders in moving it forward?
- b. Did anyone from outside your setting influence the development of the policy?
- c. Were there any resistors to this policy? Or perhaps some that had hesitations? How so?
- d. Do you know if students played a role in developing the policy? How so?
- e. What about faculty and staff?

- f. How would you describe the diversity of those involved, in terms of gender, race, or other forms of diversity?
- (d) **Emotions:** What emotions, if any, would you say accompanied the uptake of this policy - for example, excitement, trepidation, feelings of competition, stress, or other emotions, if any?
- (e) **Barriers:**
 - a. Are you aware of any tensions or challenges in initiating or maintaining this practice?
 - b. How about tensions or challenges in relation to any other, possibly competing, practices or policies?
- (f) **Supports:** Aside from those you've already mentioned, were there any other supports or factors involved in the initiation of this policy?
- (g) **Funding:**
 - a. Do you know how this sustainability policy is funded, if applicable?
 - b. Have there been any resource limitations in carrying it out?
 - c. What would be needed to overcome these limitations?
- (h) **Temporal:** How long did it take to develop this policy?
- (i) **Outcomes:**
 - a. How would you describe the influence of this policy overall in your setting?
 - b. Who has been most and least affected or engaged by this policy?

Questions for Domains with 'Hot' Ratings for those 'More Familiar' with Policy

- 6. In your ratings diagram, can you please choose one of the 'cool' rated domains to discuss as an area with relatively low levels of policy?
 - (a) Can you tell us about your impressions of policy work or lack thereof in this domain?
 - (b) What kinds of factors do you think have made the development of sustainability policy challenging in this domain?
 - (c) Anything else to add on this topic, or otherwise in relation to policy, before we move on?

Researcher Note: Return to section 1 (Practice), if participant started with section 2 (Policy)

Section 3: General

Researcher Note: Work to have at least 10 minutes remaining in interview at this point, can skip over cool and/or hot in second policy/practice area if needed to discuss below

Relationship of Policy and Practice

- 7. To your knowledge, are there relationships between the sustainability policies and sustainability practices we have talked about? For example, have the policies been drivers or barriers to practice or vice versa?

Reporting: Sustainability Assessment and Certifications

- 8. Are you aware of any kind of sustainability assessment, evaluation, or certification that takes place in your [setting]?

9. Are these assessment or certification details currently communicated? If so, how and to whom?

Section 4: Relations of Local Place to Policy and Practice

10. Moving on to some questions about place, do you think physical aspects of place (within this city, province, or another relevant scale) have influenced the approach to sustainability policy or practice in your setting - for example, the land of the setting, the surrounding geography, or buildings or other objects?

11. Do you think local culture has influenced the approach to sustainability policy or practice in your setting? How so?

12. (a) How would you describe the relationship between sustainability and Indigenous perspectives and priorities in your setting?

(b) Can you provide examples of this relationship?

13. (a) What term do you think is most commonly used to refer to sustainability in your setting?

[Researcher note: If examples are needed for clarification, can provide examples of: environment, sustainability, sustainable development, land]

(b) Do you think the term commonly used is influenced by local context and/or more global influences?

Section 5: Moving Forward - Gaps and New Directions

14. And finally, some questions about new directions: what more do you think your [setting] should or could be doing to address sustainability practice or policy?

15. What resources and support do you think would be needed to address these gaps?

16. Is there anything else you would like to add in relation to sustainability policy or practice in your setting?

17. Are there any other key sustainability champions and/or critics of sustainability that we should be talking to as part of our study if possible?

(a) Do you feel comfortable sharing their names with us?

(b) If not, do you feel comfortable sharing our information with them?

18. Are there any documents or policies in particular that you think we should review as part of the study?

(a) If so, why?

(b) Can you provide them or direct us to where they can be found? *[Researcher note: Collect on memory stick at the time if possible]*

19. **ONLY** for student sustainability leader interviews:

To close the interview, can you please tell me why and how you became involved in sustainability efforts in your setting?

Thank you for your time and for participating in this research project!

Appendix C – Walking Interview Protocol



Researcher Notes:

- Ensure that the recorder is **only** turned on when discussing aspects of sustainability on site (paused while talking about nonrelated matters). Have participant hold recorder.
- Take photos of key locations, saying out loud in the recording the locations of these photos e.g. “We are at Building X and I am taking a photo. Can you tell us why you wanted to show us this location?”

1. Is there anything related to sustainability practice or policy (on campus/at your school) that you would like to show us?
2. Can you take us to any locations (on campus/at your school) that are lacking a sustainability focus? E.g. examples of less sustainable areas that could still use work.

Appendix D – Sidewalk Interview Protocol



Researcher note:

- *Target: a minimum of 30 per high school for K-12 (elementary and junior high excluded), 50 campus community members for PSE*
- *Identify busy areas, but able to hear each other:*
 - *School lobby/PSE institution student union building (near talking wall?)*
 - *Cafeterias*
 - *Lounges*
 - *Other common areas*
- *Approach passers-by using the introduction and questions below*
- *Use “university” or “school” as appropriate in the introduction and questions below.*

Introduction and questions:

Hi there! We’re completing a study on environment and sustainability in schools and universities across Canada. Can I chat with you for a couple of minutes?

[If answer is ‘yes’:]

I’m going to ask you a few questions about your experiences of sustainability here at your (school/university). All of your comments will remain confidential. Do you have any questions before beginning?

Here is a document/ipad on which I’d like you to answer some questions to start. On the first page you will see some basic information about sustainability, as well as demographic information - if you’re able to take a few minutes now and complete that first page that would be great.

[Give them a few minutes to complete first page]

Next, please rate your [settings’] activity in relation to sustainability practice across several domains using this “heat diagram.”

To explain the task, we are defining “sustainability” as including, at minimum, consideration of the natural environment. When we use the word “practice,” we mean any practices or activities in your setting that engage with sustainability (be they led by administration, faculty/teachers, students, community, etc.).

Please rate your [settings'] activity in relation to existing practices that address sustainability across the domains of overall governance, curriculum and teaching, research, community outreach, facilities operations, and 'other' - explanations of these domains are included on the diagram.

Please assign a number from 1-10 for sustainability practices in each of these areas, with '1' indicating little to no sustainability practice in that domain, what we are referring to as 'cool,' and '10' indicating a 'hot' domain of sustainability practice for your setting. Please also add any details of what you have in mind in giving that rating. In other words, types of practice initiatives you may be thinking of in that area.

These are your own ratings based on your experiences and impressions. If you're really not sure, you can simply indicate 'don't know.' Do you have any questions? Would you like clarification on any of the categories?

Final question:

To close our discussion, what more do you think your [setting] should or could be doing to address sustainability (practice or policy)?

Thank you so much for your time. If you're interested in following up with us and/or keeping track of this research, here's some information about the project [provide business card]. Our website is on there so you can check that out. We're also on Facebook and Twitter.

Appendix E – Focus Group Consent Form



PARTNER ORGANIZATIONS

Association for the Advancement of
Sustainability in Higher Education
Canadian Centre for Policy
Alternatives
David Suzuki Foundation
Learning for a Sustainable Future
Sierra Youth Coalition

CONTRIBUTING ORGANIZATIONS

Assembly of First Nations
Canadian Federation of Students
Global Youth Education Network
Métis National Council
Sustainability Solutions Group

The Sustainability and Education Policy Network (SEPN) is a network of researchers and organizations advancing sustainability in education policy and practice across Canada. Based at the University of Saskatchewan, SEPN is the first large-scale, national-level research collaboration to collect and analyze comparable data at all levels of education.

This study asks about the degree to which a sustainability focus is included in practices and policies in your work or study setting and about the drivers and barriers to sustainability uptake.

By participating in this study, you will help us identify how education policy and practice can better support the transition to more environmentally sustainable societies.

Project Title: Sustainability and Education Policy Network: Leading Through Multi-Sector Learning, funded by Social Sciences and Humanities Research Council

Researcher: Dr. Marcia McKenzie, Principal Investigator, Department of Educational Foundations; Director, Sustainability Education Research Institute, University of Saskatchewan, 306-966-2319, marcia.mckenzie@usask.ca

Procedure:

- Today, you will be participating in a focus group designed to explore *your* experience of sustainability in your setting
- We will start by asking you some general questions about sustainability and then we will ask you about sustainability policies and initiatives happening in your setting. You will be asked to rate your institution's sustainability initiatives
- The focus group should take approximately 1-1.5 hours
- We will be audio-recording and creating transcripts from the recordings
- We may also take photos of you during the focus group but you can decide if you want them included in our project. The photos will be used in our publications and presentations. Please indicate at the bottom of this form if you give SEPN permission to use photographs of you.

28 Campus Drive
College of Education
University of Saskatchewan
Saskatoon, SK, Canada
S7N 0X1
(306)966.2319
www.sepn.ca

- There are no right or wrong answers so don't be afraid to speak up. You also do not have to answer all of the questions we ask

Potential Risks:

- There are no known or anticipated risks to you by participating in this research

Potential Benefits:

- Interested participants will be provided with a summary of the research results
- There are several possible benefits to participating in this study, including contributing to the research on sustainability policy and practice in Canadian schools; connecting your school, school division, ministry, or institution with a national network that is on the cutting edge of school sustainability; and showcasing and celebrating your school's sustainability successes while highlighting areas for improvement

Confidentiality:

- Your identity and responses will be kept confidential
- Consent forms will be stored separately from data collected to ensure there will be no way to identify individual participants. Any identifying information you put on paper today will be removed when we enter it into our database
- The researchers will undertake to safeguard the confidentiality of the discussion, but cannot guarantee that other members of the group will do so. Please respect the confidentiality of the other members of the group by not disclosing the opinions of others outside of this group, and be aware that others may not respect your confidentiality
- Whether you choose to participate or not will have no effect on your position (e.g., employment, class standing, access to services) or how you will be treated

Right to Withdraw:

- Your participation is voluntary. You can choose to answer only those questions that you are comfortable with or knowledgeable about
- You may withdraw from the focus group for any reason without explanation or penalty of any sort. If you wish to withdraw from the study once the focus group is complete, it may not be possible to identify which data are yours to withdraw your responses

Storage of Data:

- The results of this study will remain confidential. The data will be entered into a database and stored until 2028 at which point it will be destroyed

Questions or Concerns:

- If you have questions during the interview process, please ask the researchers
- If you have questions after the focus group has ended, please contact Nicola Chopin, Project Manager, at (306)

966-2319 or nicola.chopin@usask.ca

- This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca, (306) 966-2975, or toll free (888) 966-2975

Signed Consent

My signature below indicates that I have read and understand the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project. A copy of this Consent Form has been given to me for my records.

Name of Participant

Signature

Date

Appendix F – Focus Group Protocol



Researcher note:

- Give participants a business card and a candy after they've completed the interview
- If a participant is particularly friendly, ask them if you can take a photo of them after interview for social media - get them to sign a photo consent form (adults only, only need maximum a few per site)

Researcher Note:

- Maintain focus throughout interview on institution for PSE (e.g., sustainability research at institution more broadly vs that of faculty being interviewed, broader than curriculum in one program, etc.). Ministry, SD, and School participants at K-12 more flexible may focus on policies and practices across those levels from their position within any one of the three.
- Anytime the term 'setting' is used in the protocol, replace with either 'school' for K-12 student focus groups, 'school, school division/board/district [use appropriate term for that area], and Ministry' for K-12 community focus groups, and 'university' or 'college' as appropriate for PSE focus groups.

Researcher Instructions for Student Focus Groups:

- If room and instructor are amenable to changing chair orientation into a circle, set this up before participants arrive
- Ask instructor not to participate in discussion if okay with them. If they prefer to, ask them to identify themselves as the instructor each time they speak.
- Affix printed heat diagram domains on the walls in various parts of the room
- Place one of audio recorders in centre of circle/group and have one researcher hold recorder and be responsible for moving it as a 'mic' to whoever is speaking to avoid inaudible portions for transcription. If only one researcher, ask for a volunteer at start to be the 'mic' person.
- Sign researcher signature in consent forms. Labels go on one of the consent forms, and each page of the heat diagram survey - do this in advance of participants' arrival.
- Upon arrival greet each participant and hand them **two** consent forms to complete, as well as **one** heat diagram survey, and one heat diagram survey example sheet. Ask them to review consent form, and that we will go over the other forms together. Ask them to take a seat.

Researcher Instructions for Community Focus Groups (Conversation Cafes) :

- *Set up chair orientation into a circle before participants arrive*
- *Affix printed heat diagram domains on the walls in various parts of the room*
- *Place one of audio recorders in centre of circle/group and have one researcher hold recorder and be responsible for moving it as a 'mic' to whoever is speaking to avoid inaudible portions for transcription. If only one researcher, ask for a volunteer at start to be the 'mic' person.*
- *Upon arrival greet each participant and ask them their role (Eg. City Councillor) and add to labels. Person who does this should be the note-taker for the session, so they can note down roles for their later note taking.*
- *Sign researcher signature in consent forms. Labels go on one of the consent forms, and each page of the heat diagram survey - do this in advance of participants' arrival.*
- *Hand participants **two** consent forms, **one** heat diagram survey, and one heat diagram survey example sheet. Ask them to review consent form, and that we will go over the other forms together. Ask them to take a seat.*

Introductions

Ask if there are any questions about the consent form. Have participants sign both copies of consent form. Participants retain the non-labelled copy. COLLECT CONSENT FORMS.

If you **did not** submit a consent form, please just listen rather than contributing comments.

Turn on both recorders.

For Community FG: ask each participant to briefly introduce themselves (name and role)

Introduction

To open, we would like to acknowledge the traditional First Nations, Métis, and/or Inuit [as appropriate] territories on which we are meeting. *[Researcher note: Most provinces should include a recognition of only First Nations and Métis, and territories should include Inuit and First Nations in some cases]*

We will start this focus group with a survey that will ask you to evaluate your [setting]'s work on environment and sustainability. Please answer to the best of your knowledge, there are no right or wrong answers

Section 1: Sustainability Practices

When you came in you received a form on which we'd like you to fill out some questions to start. On the first page you will see some basic information about sustainability, as well as demographic information, please complete this page first. When everyone has finished, we will explain the next page. If you have any questions, please don't hesitate to ask us. In some questions, we use the word 'Indigenous' - some people may be more familiar with the words "First Nations," "Métis," and Inuit.

Introduction to Heat Diagram

On the next page, please rate your [setting]'s work in environmental and sustainability practice across several domains using this "heat diagram."

To explain the task a bit, we are defining “sustainability” as including, at minimum, consideration of the natural environment. When we use the word “practice,” we mean any practices or activities at your setting that engage with sustainability. They can be led by students, teachers, principals, staff, community members, etc.

We’d like you to please rate your [setting’s] activity in relation to sustainability practice across the domains of: overall leadership, teaching and curriculum, research, community outreach, facilities operations, and ‘other’ - explanations of these domains are included on the diagram, but we are going to walk through each of the domains with you now:

- Overall leadership refers to sustainability activities or directives created by your [setting’s] leadership, for example your school principal.
- Research refers to information collection and evaluation around environment & sustainability, for example, a school audit or research on your use of energy at the school.
- Community refers to engagement with the broader community, such as working on projects with community members, or having environmental organizations work with the school on environmental projects
- Teaching and curriculum refers to teaching and course content related to environment and sustainability;
- Operations refers to the physical buildings of your [setting], and the operations of the [setting], such as waste diversion (recycling, composting), energy conservation, water conservation, etc.
- Other refers to any other type of sustainability activity that you can think of, which does not fit into the previous domains.

If you get confused on any of the categories during this activity, you can refer to the example sheet, which explains and gives examples for each domain.

We would like you to assign a number from 1-10 for sustainability practices in each of these areas, with ‘0’ indicating little to no sustainability practice in that domain, what we are referring to as ‘cool,’ and ‘10’ indicating a ‘hot’ domain of sustainability practice for your [setting]. In the boxes outside of each domain, please also list any details of what you have in mind in giving that rating. In other words, the kinds of environmental and sustainability practices you may be thinking of in that area. These are your own ratings based on your experiences and impressions. If you’re not sure, you can simply write ‘don’t know’ across the triangle for that category.

Before beginning, do you have any questions? Would you like clarification on any of the categories?

Researcher Note: Pause for questions and follow-up explanations of the domains as needed. If students do not understand the categories, they will not listen to the follow-up directions on rating, so assessment of their understanding before proceeding is key. Upper-level (Grades 11/12), sustainability-aware classrooms may not need this level of support to proceed; younger students (Grades 9/10) may need additional clarification. Be sure to circulate amongst students while they are completing their diagrams, so that you can follow-up one-on-one with student questions or confusions.

Around the room you’ll see that we have put up pieces of paper with each of the domains listed. When you are done, please go to the sign that matches up with your hottest rated domain. For example, if you

gave teaching a 10, you would go to that sign. If you have two domains with the same rating, choose one to go to. Please take your heat diagram with you.

Researcher Note: Researchers briefly describe the patterns suggested in the room (e.g., “It seems that X and Y domain tended to have the hottest ratings overall, whereas Z tended to be rated as ‘cool.’” Or, “There was a real mix of responses, with no domain clearing coming out more strongly than others).”

1. Why do you think that [name to hottest rated domain(s)] was rated the hottest overall?
2. Does anyone from other groups want to comment on why these didn't choose this domain, which has been rated as the hottest overall?
3. You were also asked to list some practices in each domain on your heat diagram.
 - (a) Can folks call out some of the practices they have written down in the domain where they're standing? *[get a few responses from each group]*
 - (b) Considering your responses and where people are grouped up in the room, what practices did you think were most associated with sustainability at your [setting]? In other words, what kinds of environmental and sustainability practices happen most often at your [setting]?
 - (c) Why do you think these particular practices are the most common?
4. We've talked about which practices you think are most common in your [setting]. Now can anyone share with us their impressions of who has been involved with these practices:
 - (a) How are students engaged in sustainability at your [setting]?
 - (b) What about teachers and staff?
 - (c) How would you describe the diversity of those involved, in terms of gender, race, nationality, etc.?
 - (d) Is there any group in this setting that you would describe as excluded from participation or unable to participate for any reason?

Now please go to the sign that matches up with your 'coolest' rated domain. For example, if you gave teaching a 1 or 0, you would go to that sign. If you have two domains with the same rating, choose one to go to. Please take your heat diagram with you.

5. Why do you think that [name coolest domain of practice] was rated the coolest overall?
6. Does anyone from other groups want to comment on why these didn't choose this domain as 'cool'?

Assess energy in the room; decide whether to ask participants to take their seats or to remain standing. COLLECT HEAT DIAGRAM FORMS AND EXAMPLE SHEETS.

Section 2: Sustainability Policy [15-20 minutes remaining]

We're now going to move on to talk specifically about policy. As a reminder, we are defining "sustainability" as including, at minimum, consideration of the natural environment. When we use the word "policy," we mean official texts produced or used in your [setting]. This may also include documents that guide teaching practice, such as required curriculum.

7. Are you aware of any sustainability policies at your [setting]? *[Researcher note: At the K-12 level, also ask about school division policy, and Ministry policy or curriculum, focused on sustainability? Do each of the three levels in turn – school, SD, Ministry.]*

Ask participants to name policies, compile a list of these on the whiteboard or paper roll.

Note: If participants are unaware of policies existing, and/or not familiar with the concept of ‘policy’, skip questions 8-10.

8. Do you think policies such as these help support practice around sustainability?
9. To your knowledge, are there relationships between the sustainability practices, as indicated in your heat diagrams, and sustainability policies you’ve listed in your [setting]? For example, have the policies driven or been barriers to practice or vice versa?
10. Can you think of other policies that are not focused on sustainability that have either helped support, or been barriers to the uptake of sustainability policy and practice in your [setting]? These could be other policies in your setting, or more broadly provincially, nationally, or internationally.

Section 3: Relations of Local Place to Policy and Practice

11. Do you think the local place - within this city, province, or other relevant scale, or local culture has influenced the approach to sustainability in your [setting]? If so, how? *(examples: local geography, FN and Métis cultures, newcomer perspectives, municipal policies...)*
12. (a) How would you describe the relationship between sustainability and Indigenous perspectives and priorities in your [setting]? When we use the word ‘Indigenous’ here, we are talking about “First Nations,” “Métis,” and “Inuit.”
(b) Can you provide examples of this relationship?

Section 4: Moving Forward - Gaps & New Directions

13. To close our discussion, some questions about new directions: what more do you think your [setting] should or could be doing to address sustainability?
14. What resources and support do you think would be needed to address these gaps?
15. Is there anything else you would like to add in relation to sustainability at your [setting]?

Thank you for your participation in this study!

Appendix G – Photo Documentation Protocol



Please upload to data storage 2-5 photos in each category (may take more photos and then edit down for final upload, avoid two researchers taking photos in same category to minimize redundancy in photo's foci)

****Take photos of evidence of 'sustainability,' but also of 'unsustainability' in each category.**

Observation Notes: *Remember to make observations about location of photos in your field notes

Ethics: Avoid photos with identifiable faces as we don't have consent for photos

Photo Quality: Please pay attention to photo lighting, creativity, composition ('rule of thirds' - https://en.wikipedia.org/wiki/Rule_of_thirds). Take a variety of larger scale background shots, as well as detailed shots.

Photo Categories: (2-5 photos per category uploaded to data storage)

1-2 top indoor common spaces - school lobby at K-12, student union building at PSE
1-2 top outdoor common spaces - school grounds at K-12, atrium or bowl at PSE (inquire if not sure what a main outdoor common space is)
1-2 major natural spaces (if not already covered, on site or within view; trees on site, etc.)
Transportation (e.g., parking lots, bus loops, bikes, walkways)
Housing (e.g., student residences, neighbouring houses within view)
Food - pictures of main cafeteria, including types of food available, examples of other available food vendors on site or nearby)
Waste (e.g., recycling, compost, examples of lack thereof, facilities re energy, waster, etc.)
Affect/emotion associated with sustainability issues or uptake (e.g., posters with doomsday messaging, motivating messages regarding particular practices, etc.)

Data (e.g., evidence posted in halls or elsewhere of ratings on sustainability assessments or certifications, metrics re energy use or water consumption in buildings, etc. if any)

Other (e.g., environment-related signage for clubs, activities, orientations to environment; what else?..)

Appendix H – Document Collection Protocol



PSE Document Search Process

Template for collection of documents:

For all new documents collected, please include file name as per naming system in “Data Code” column in “T2 SA K-12 Document Collection” spreadsheet.

1. Theme 1 Documents are indicated in the spreadsheet “T2 SA PSE Document Collection:”

Check dates of University Strategic Plans, Sustainability Policy or Plans, and Climate Action Plans. Any documents that are out of date have been highlighted.

2. Search for any sustainability documents (e.g. Sustainability Policy or Plans) that are out-of date, or were not available at the time of Theme 1 data collected (see instructions below). When new documents are found, save a copy on Google drive folder “T2 SA PSE Document Collection” and complete spreadsheet “T2 SA PSE Document Collection” on Google sheets.
 - a. Search through Environmental/Sustainability section of Institution website AND Sustainability Office website (if applicable). Browse website section to find updated policies or plans.
 - b. Collect any additional important **sustainability commitments**, such as climate action plans, and emissions targets.
 - c. If first search does not yield results, search “Institution name” + (environmental policy or sustainability policy or green policy); and “Institution name” + (environmental plan or sustainability plan or green plan).

**If all sustainability documents are up to date, simply complete step b. of the search process.*

3. Search for any general documents (e.g. Strategic Plans, Budgets) that are out-of date, or were not available at the time of Theme 1 data collection. When new documents are found, save a copy on Google drive folder “T2 SA PSE Document Collection” and complete spreadsheet “T2 SA PSE Document Collection” on Google sheets.
 - a. Complete a web search of “Institution name” + Strategic Plan (Check appropriate language from outdated doc, e.g. “Strategic Statement”)
 - b. If first search does not yield results, browse Governance/Administrative section of institutional website.

Appendix I – Field Notes Protocol



Researcher Name:

Date:

Location:

Key contacts identified during field research:

FILE NAMING CODE OR DATA TYPE	FIELD NOTES
<p>E.g., K12(MB)_I_UAd_01_[JM] Admin office at school 01/22/16, 2-3pm</p>	<p><i>E.g., Interviewee seemed anxious about the interview, having arrived a few minutes late. They relaxed as we got going. Noticed ...[reflecting a bit on process and impressions during data collection]. Documents mentioned included... Other key contacts raised included...</i></p>
<p>K12(MB)_I_MAd_01_[] Phone interview</p>	
<p>K12(MB)_I_MAd_02_[] Phone interview</p>	
<p>K12(MB)_SD1_I_Dir_01_[] Phone interview</p>	
<p>K12(MB)_SD1_I_SSt_01_[] Phone interview</p>	
<p>K12(MB)_SD1_I_Cco_01_[] Phone interview</p>	
<p>K12(MB)_SD1_PS School context</p>	