IDENTIFYING SYSTEMIC BARRIERS TO CO-DEVELOPING INDIGENOUS FOOD SYSTEMS RESEARCH WITHIN COLONIAL INSTITUTIONS: A CASE STUDY OF AGRICULTURE AND AGRI-FOOD CANADA

by

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ABSTRACT

This study aimed to address how colonial research institutions can and should appropriately engage in food systems research and build relationships with Indigenous communities that go beyond tokenistic inclusion and engagement in co-developed research. The research was conducted as a case study with the Indigenous Science Liaison Office (ISLO) within Agriculture and Agri-Food Canada (AAFC). The study included nine semi-structured interviews and one focus group; thematic analysis of the transcripts was used to identify themes in the data.

This study found that front-line staff in ISLO identified three primary challenges with respect to co-developed food systems research between AAFC researchers and Indigenous communities: (1) Relationship Building, (2) Administrative Processes and (3) Intercultural Competence and Knowledge. Study participants emphasized that the three themes must be addressed in response to both the historical colonization of Indigenous Peoples in Canada and ongoing power inequalities within Indigenous-Government relations and inequities for Indigenous-led science and research initiatives within colonial institutions. This study includes recommendations for how non-Indigenous institutions can and should address systemic barriers to culturally safe research related to Indigenous food systems. While conversations were specific to ISLO staff, the resulting recommendations are broadly applicable to colonial research institutions at large, such as the AAFC. Ultimately the goal of this study was to support Indigenous food systems research that contributes to Indigenous food security and sovereignty.

LAY SUMMARY

This study was designed to identify ways for researchers from colonial research institutions to appropriately engage with Indigenous communities for the co-development of Indigenous food systems research. Nine interviews and one focus group were conducted with staff members affiliated with the Indigenous Science Liaison Office (ISLO) of Agriculture and Agri-Food Canada (AAFC). AAFC is a federal institution that governs national agriculture and agri-food policies, programming, and research in Canada. Participants identified three themes surrounding the challenges to the co-development of Indigenous food system research: Relationship Building, Administrative Processes and Intercultural Competence and Knowledge. Recommendations were developed to address the identified challenges. Ultimately the goal of this study was to support Indigenous food systems research that contributes to Indigenous food security and sovereignty.

PREFACE

This thesis is an original work written by me, Aleesha Jones. I received research guidance from Dr. Hannah Wittman, Dr. Emily McAuley, Dr. Tabitha Robin, and Dr. Kent Mullinix, who, in their roles as supervisory committee members, provided feedback on the research design, methodology, analysis, and preparation of this thesis. With this guidance I developed the research questions and design, conducted data collection and analysis, and wrote and edited all written content in this thesis. All supervisory committee members assisted with the editing of the thesis manuscript.

The fieldwork reported in this study was conducted under the UBC Behavioural Research Ethics Board (BREB) Certificate File Number: H21-01939; and Agriculture and Agri-Food Canada's (AAFC) Human Research Ethics Committee (HREC) Certificate Reference Number 2021-D-007.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AAFC: Agriculture and Agri-Food Canada

BREB: Behavioural Research Ethics Board

ECCC: Environment and Climate Change Canada

HREC: Human Research Ethics Committee

IFSR: Indigenous Food Systems Research

ISLO: Indigenous Science Liaison Office

ISAO: Indigenous Support and Awareness Office

KTT: Knowledge and Technology Transfer

NRCan: Natural Resource Canada

RDCs: Research and Development Centres

STB: Science and Technology Branch

UBC: University of British Columbia

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My journey would not have been possible without my supervisory committee and their offerings of support, advice, and experience. The supervisory committee was composed of diverse individuals of both settler and Indigenous ancestry. The following individuals made up the supervisory committee for this thesis study: Dr. Hannah Wittman, Dr. Emily Missyabit McAuley, Dr. Tabitha Robin, and Dr. Kent Mullinix.

Dr. Hannah Wittman is a professor with the Institute of Resources, Environment and Sustainability as well as the Faculty of Land and Food Systems at the University of British Columbia.

Dr. Emily Missyabit McAuley, a mixed-raced Ojibwa and settler Canadian woman, is a member of Lake Manitoba First Nation, born and raised in Algonquin territory. Dr. McAuley is the Director of the Indigenous Science Liaison Office in Agriculture and Agri-Food Canada's (AAFC) Science and Technology Branch, and Director of the federal interdepartmental Indigenous STEM (I-STEM) Cluster hosted by AAFC.

Dr. Tabitha Robin is Cree and Métis. Dr. Robin is an Assistant Professor in the Faculty of Land and Food Systems at the University of British Columbia.

Dr. Kent Mullinix is Director of Sustainable Agriculture and Food Security at Kwantlen Polytechnic University.

I want to give a special thank you to Dr. Kyle Bobiwash, who supported my research throughout the years with his insightful feedback and guidance, as well as all ISLO staff for providing additional support and feedback throughout this thesis.

I want to acknowledge all the people (both settler and Indigenous) that chose to participate in this study, all of whom I learned a lot from during our time together. Four participants requested to be identified with their words. I want to thank Sam David, Dan Benoit, Colleen Ahntholz and Jinxz Pollard-Flamand for sharing their words and contributing to the voices of Indigenous Peoples in academia.

I was provided a graduate student stipend by Agriculture and Agri-Food Canada's (AAFC) Indigenous Science Liaison Office (ISLO).

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DEDICATION

I would like to dedicate this thesis to my younger self who should have never endured what she did as an Indigenous scholar, and to all the past, present, and future Indigenous Peoples in academia who have, and will likely experience the same things.

FOREWORD

I am of the Nlaka'pamux Peoples, an Interior Salish First Nations group in British Columbia, but I have lived in Coast Salish Territory all my life. Over the last five years, I have been reconnecting with my community and traditional culture. Throughout the course of my graduate studies, I used reconnecting to land, language, and culture as self-care in the face of the often disheartening and troubling nature of being Indigenous in academia and when participating in research. Especially when faced with harassment and racial insensitivity early in my graduate program before switching research projects and teams, I used the experiences from my first year of graduate studies as a guide, or perhaps more realistically as the antithesis, of how to conduct research. My thesis became about making academia and research safer for Indigenous Peoples, about protecting fellow Indigenous Scholars from the unfortunate experiences I had within western science.

It is important for me to acknowledge that this study was done to fulfil the requirements to obtain a master's degree, that I benefitted and will continue to benefit from this study when it is entirely possible few others will. While it is my deep hope that my recommendations will be recognized and that changes will be made, I also know that I am certainly not the first person to make such recommendations, nor am I likely to be the last. While good intentioned, this thesis is still fundamentally a production and contribution to settler colonial knowledge due to the constraints of conducting this study within AAFC as a Research Affiliate Student. Even though I am First Nations, and my work surrounds Indigenous topics and concepts, and I have tried to indigenize my work, I am still confined by the limitations of an institution that does not understand our Indigenous worldviews and values.

Aboriginal (Australia) scholar Lester-Irabinna Rigney speaks to 'Indigenist research' within the context(s) of Australian academia which, I think, holds true in Canadian contexts as well; Rigney states that:

> Indigenist research is research by Indigenous Australians whose primary informants are Indigenous Australians and whose goals are to serve and inform the Indigenous struggle for self-determination. It rejects the notion that research on Indigenous people is for the sake of knowledge itself and is for the academy,

> by the academy and in the interest of the academy (As cited in Foley, 2018, pg. 23).

This study is not necessarily Indigenous knowledge *production*, but perhaps could be considered an attempt towards Indigenous knowledge *protection*. This study seeks to contribute to the security of Indigenous communities and reduce the burdens imposed by colonial institutions seeking collaborations without adequate protocols to ensure ethical spaces, adequate reciprocity, and genuine relationships. Yet still, Indigenous communities will not find answers to food systems problems in this thesis, they will instead find what they are already intimately familiar with. That is, the narrative of an Indigenous scholar waving neon-coloured flags in an attempt to gain the attention of the government and its agents. Trying to guide colonial institutions to the obvious truth that relationality extends beyond research agreements and the tokenistic inclusion of Indigenous knowledge for the sake of diversity representation.

CHAPTER 1: INTRODUCTION

Indigenous food systems were intentionally targeted by settler Canada to destabilize Indigenous Peoples as a tool of colonization (Bussidor & Bilgen-Reinart, 1997; Carter, 2019; Daschuk, 2018; Settee & Shukla, 2020). This resulted in significant disparities in food security and sovereignty among Indigenous communities in Canada. In response, Indigenous food security and sovereignty are concepts that have gained momentum in academia, especially among scholar-activists seeking to address the disparities between the health and wellness of Indigenous Peoples and settler-Canadian society (Coté, 2016; Grey & Patel, 2014; Robin, 2019; Wilson & Shukla, 2020). Food sovereignty is defined as the right for peoples to self-determine their food systems, organizing their food production, sourcing, and consumption in line with their cultural and community values (Grey & Patel, 2014; Robin, 2019). Food security

> exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. (FAO, 2010)

The rising prominence of food sovereignty and security is reflected further in the shift towards including and supporting more Indigenous programming and funding for food systems within universities and government institutions. Certainly, myself and other scholars I know noticed a shift since the Liberal (political party) federal government in Canada pledged to make advances towards reconciliation with Indigenous communities and Peoples (e.g. Rotz, 2017).

> It is time for Canada to have a renewed, nation-to-nation relationship with Indigenous Peoples, based on recognition, rights, respect, co-operation, and partnership. This is both the right thing to do and a sure path to economic growth. (Liberal Party of Canada, 2015).

However, this increase in support and opportunity should also be accompanied by an increase in accountability and academic rigour from these same institutions; accountability to Indigenous communities by ensuring that engagement happens ‘in a good way’. The concept of doing anything ‘in a good way’ is something many Indigenous Peoples are likely familiar with; I have heard Elders in various communities teach youth how to live in good relationship with

community and land. Ball & Janyst (2008) emphasize that doing research 'in a good way' is rooted in "...ethical principles of inclusion, reciprocity, and relevance in partnership research with Indigenous communities..." (p. 48). Fundamentally, within the context of research, this means sustained relationship building and communication with partner communities about how to collectively define the 'good way'; this cannot be a standardized process, as there is no one framework that can be used pan-indigenously (Ball & Janyst, 2008). Conceptually, this is very similar to several Indigenous epistemologies, such as the Anishinaabe philosophy *mini-mnaamodzawin*, meaning "living well" or "the good life" (McGregor, 2018). To 'live well' or 'in a good way' all facets of one's life must be conducted 'in a good way', we cannot live in a good way if we do not care for relationships in a good way, including research relationships. This means there must be a collective awareness among research institutions that there is a significant disparity between intentions and impacts, that the intention behind creating more funding opportunities for food systems research with Indigenous communities can be overshadowed by the impacts of conducting research not 'in a good way'.

Since the Truth and Reconciliation Commission (TRC) report and subsequent 'Calls to Action' were released in 2015 (Rotz, 2017), the Government of Canada has committed to working towards reconciliation with Indigenous Peoples. While there has been some progress (13 calls completed by 2022) towards responding to the Truth and Reconciliation Commission's 94 'Calls to Action'; the majority have remained unaddressed (Indigenous Watchdog, 2023; Jewell & Mosby, 2022). The following statement was published under the title 'Moving Forward on Reconciliation' by the Department of Finance Canada (2022):

> The federal government is committed to a renewed nation-to-nation relationship with Indigenous Peoples based on recognition of rights, respect, truth, co-operation, and partnership.
>
> Budget 2022 proposes to invest an additional $11 billion over six years to continue to support Indigenous children and families, and to help Indigenous communities continue to grow and shape their futures.

Certainly, thus far in the 21st century far more resources than in years prior have been dedicated to Indigenous Peoples across Canada. This is true within many institutions that were founded by and for colonial bodies, such as universities, organizations, and government departments of

varying jurisdictions. These same institutions were complicit in the colonization of Indigenous Peoples, hence the need for reconciliation. Despite the Canadian Government entering an era of 'reconciliation', in my professional experience most institutions maintain the same mode of operation that is supported by a systemic colonial framework and mindset (see also, Grey & Patel, 2014; Robin et al., 2023; Rotz & Kepkiewicz, 2018). This study seeks to identify the basis for institutional self-reflection that could enable institutions seeking to engage with Indigenous communities and Peoples to prioritize a cessation of continuing 'colonial harm' under the guise of offering (colonized) 'help'. As a case study, my intention is to identify systemic barriers to the co-development of Indigenous food systems research (IFSR) within a colonial institution in which I was conducting a research internship, Agriculture and Agri-Food Canada (AAFC).

1.1 LITERATURE REVIEW

1.1.1 Indigenous Food Systems

There is some variation in how literature defines 'Indigenous food systems'. Some use the term interchangeably with 'traditional food systems,' which have been defined by Kuhnlein and Receveur (1996) as:

> ...all food within a particular culture available from local natural resources and culturally accepted. It also includes the sociocultural meaning, acquisition/processing techniques, use, composition, and nutritional consequences for the people using the food. (pg. 418)

For the purpose of this study, I chose to combine the voices of several scholars to describe Indigenous food systems: 'Indigenous food systems' are holistic systems that honour the land and its inhabitants through practices rooted in respect and reciprocity; these systems surround the foods that come from the land(s) and traditions of Indigenous Peoples (Joseph and Turner, 2020). This includes the entire system surrounding the foods of those peoples, the knowledge, trade practices, harvesting practices, cultivation practices, processing practices and waste practices involved in eating that food (Kuhnlein and Receveur, 1996; Kuhnlein et al., 2019; Settee and Shukla, 2020). Indigenous food systems embody Indigenous knowledges and worldviews, which do not place humans and their interests above the land (Joseph and Turner, 2020). Values of respect, responsibility and reciprocity are deeply embedded within Indigenous Peoples'

relationships with the land, because of these values, Indigenous food systems do not prescribe to a hierarchy where humans sit at the top above all other organisms (Joseph and Turner, 2020; Kuhnlein et al., 2019; Settee and Shukla, 2020). Tseshaht/Nuu-chah-nulth scholar Charlotte Coté has written that human care and reciprocity are medicine for the earth, as the earth is medicine to the people (2016); the earth is not seen as a machine but a composition of non-human entities that must take care of each other. This emphasizes the need for reciprocity between the earth and its inhabitants, as a healthy land will nourish and care for its peoples, while a sick land cannot (Coté, 2016); the consequences of industrial contamination, deforestation, industrialized agriculture, and mining have all harmed the land and people's relationship to it (IPBES, 2019; Joseph and Turner, 2020).

For example, the 2019 'Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' (IPBES) report highlighted the devastating effects of resource extraction on the natural world. The report outlined issues such as the ongoing decline in global biodiversity, declining marine populations, shifts in land productivity trends etc. While much of the blame can be laid at the feet of the resource extraction industries (IPBES, 2019; UN, 2023), industrialized agriculture has also had severe consequences on the land and people's connections to the land itself (Norberg-Hodge, 2001; Settee & Shukla, 2020). The adoption of industrial agriculture has radically impacted food systems on a global scale, drastically reducing the ability for small-scale farmers to succeed (Norberg-Hodge, 2001); resulting in a disconnect between people and the land their food comes from. While western society faces a disconnect to land due to industrial agriculture, Indigenous Peoples have been fighting tooth and nail for centuries to maintain these connections to the land and subsequently their food systems. Further, this connection to land is imperative since despite representing less than 5% of global population, Indigenous Peoples act as stewards for 80% of Earth's remaining biodiversity (IPBES, 2019; Recio & Hestad, 2022; World Wildlife Fund, 2020).

1.1.2 Colonial impacts on Indigenous food systems

Indigenous food systems across the globe have been deeply impacted by colonization and ongoing resource extraction (Joseph and Turner, 2020; Settee and Shukla, 2020). The colonization of the Indigenous Peoples of Turtle Island has been going on for many generations; yet throughout these generational changes in the application of colonial practices, much of the

colonial regime was delivered through the disruption and outright destruction of Indigenous food systems (Bussidor & Bilgen-Reinart, 1997; Carter, 2019; Daschuk, 2018; Settee & Shukla, 2020).

Colonizers created and perpetuated many false narratives and myths about Indigenous people, such as the narrative that Indigenous Peoples did not practice food cultivation, leaving the land entirely "undisturbed" or "pristine" prior to European contact (Carter, 2019; Denevan, 1992; Deur et al., 2013). Some colonial authorities perpetuated the idea that Indigenous people had no agriculture to speak of and would even attribute this to what colonizers perceived to be laziness or a primitive nature (Carter, 2019; Deur et al., 2013).

The concept 'Terra Nullius' means unowned or unoccupied land and is the foundational concept that "legalized" and validated the theft of Indigenous lands (Asch, 2002; Benton & Straumann, 2010). The doctrine of *terra nullius* was utilized by the English legal system to legitimize the colonization of Indigenous Peoples globally (Asch, 2002; Buchan and Heath, 2006). The concept of *terra nullius* originated from the Roman legal concept of *res nullius* (things without owners); however, *terra nullius* was derived from *res nullius* as an analogy used within imperial discourse. Within European contexts the premise of *terra nullius* was that a land was considered unoccupied if its inhabitants were "uncivilized" or "primitive" in comparison to Eurocentric societies (Asch, 2002; Buchan and Heath, 2006); this was particularly evident with the European fixation on agriculture and agrarian superiority (Buchan & Heath, 2006; Carter, 2019). The metric of what was deemed to be civilized was modelled solely from European society of the time and ultimately reinforced the paradigm of European "superiority" in all aspects of society (Buchan and Heath, 2006). Indigenous Peoples historically and often until the present day have been seen as less than human and treated as an impediment to the pursuit of land and resources (Asch, 2002; Deur et al., 2013).

The basis of colonization surrounds the assumption and belief that Europeans were the only group possessing "valid religions, civilizations, governments, laws, and cultures" (Assembly of First Nations, 2018, p. 3; Buchan & Heath, 2006). Much like other colonization efforts globally, colonization was often justified through Christianity and a moral obligation to "save" the souls of Indigenous Peoples via religious assimilation (Harvard University, n.d.). This meant that the lands occupied by Indigenous people could be colonized as they did not fit with the Eurocentric

perception of civilized living. Colonizers perpetuated the narrative that Indigenous Peoples were lacking the societal structures and civilities reflective of the European colonial standards, such as agriculture, social hierarchical systems, and European religion (Deur et al., 2013). The propagation of this narrative served the colonial agenda of territorial displacement and subsequent resource extraction (Deur et al., 2013).

Framing Indigenous Peoples as being uncivilized "hunter gatherers" and incapable of European-style cultivation undermined Indigenous food acquisition practices and the knowledges that had been, and continue to be, developed by Indigenous Peoples since time immemorial. The term 'hunter-gatherer' saturates much of the discourse surrounding Indigenous Peoples and how they lived prior to, as well as following European contact; this narrative was especially prominent in the 18th and 19th century when settlers were particularly critical of Indigenous Peoples lack of European agriculture (Deur, 2002; Deur et al., 2013). However, scholars have since criticized the use of this term as it oversimplifies and generalizes the sophisticated reality of Indigenous food systems across Turtle Island (Lepofsky, & Lertzman, 2008; Turner et al., 2013). Indigenous food acquisition in many regions of Turtle Island was far more expansive than hunting and gathering. Food cultivation existed in various formats in many Indigenous cultures and communities as various plant management practices and systems (Carney et al., 2021; Lepofsky & Lertzman, 2008; Turner et al., 2013). Turner et al. (2013) lists the following Indigenous "ecological management strategies" documented by researchers in British Columbia:

> (1) landscape burning; (2) clearing, weeding "cleaning"; (3) habitat creation, extension, or alteration; (4) Bounding of resource areas; (5) tilling soil; (6) dissemination; (7) transplanting; and (8) pruning or coppicing (pg. 111)

This emphasis on acknowledging plant management and cultivation is not meant to devalue hunting and gathering practices within Indigenous food systems, but rather to highlight that the colonial discourse surrounding Indigenous food systems, and Indigenous Peoples in general, has painted an over-simplistic and "uncivilized" portrayal of Indigenous food acquisition practices to both reaffirm their self-proclaimed superiority and validate "territorial displacement and resource dispossession" (Deur et al., 2013).

As colonialists spread and promoted this narrative, they were actively targeting the existing cultivation practices of First Nations. In British Columbia, the estuarine root gardens of coastal

First Nations were the target of European colonizers from the mid-1800s to the early 1900s (Deur et al., 2013). The root gardens were an important part of those Nations' diets and cultures which is exactly what made them a prime target for colonizers to set on fire in order to destabilize First Nations food security and sovereignty (Deur et al., 2013). The British military instigated the attacks on the gardens, which were vital to Kwakwaka'wakw food systems. Though the estuarine root gardens were not the sole focus of the attack, homes, and weirs (fish trapping structures) were also targeted (Deur et al., 2013). Local newspapers of the time deemed the attacks to be fair within the rules of "civilized warfare" (Fisher & Xwi7xwa Collection, 1992), as though the decimation of a people's ability to feed themselves was an acceptable price to further the settler- colonial agenda of erasing Indigenous Peoples from the land they desired. These estuarine gardens were typically located in the flattest and clearest areas, making them ideal locations for settlers to establish agricultural settlements in areas that were otherwise occupied with dense forests and steep mountains (Deur et al., 2013).

Though the burning of estuarine gardens may have ceased, the assault on Indigenous food systems has persisted. Residential Schools were institutions of harm, where the physical, emotional, and sexual abuse of children was ubiquitous (Coté, 2016; Truth and Reconciliation Commission of Canada, 2015). Residential Schools are a significant source of intergenerational trauma for Indigenous Peoples and their knowledge systems; it was in these schools that the pathways to traditional knowledge transmission among Indigenous Peoples were blocked by the church and government (Coté, 2016; Mosby, 2013). The loss of knowledge was detrimental to Indigenous food systems across Canada, not only because any expressions of Indigenous cultures was banned in the schools but also because they kept children from their families. Indigenous culture and identity are collective by nature (Coté, 2016); learning and teaching happens in a collective and relational environment on the land. To be removed from both the land and the collective means that many aspects of Indigenous living were completely inaccessible, resulting in entire generations of Indigenous Peoples cut off from their traditional teachings and skill building. From past discussions with survivors of residential schools, I know that some schools forced children to do extensive agrarian labour while being expressly forbidden to eat the foods they were growing; understandably, labouring over crops while being effectively starved resulted in deeply rooted trauma linked to agriculture for many Indigenous Peoples (TRC, 2015).

Beyond oppressive policies and assimilation tactics, there is a long colonial history "including the destruction of animals, land, waterways, and connections to Indigenous ways of life…" which have all culminated into the suffering of Indigenous communities through a lack of food security, self-determination, and general well-being (Robin, 2019, p 86). For example, Sayisi Dene author Ila Bussidor and Üstün Bilgen-Reinart delineated the painful story of how the Canadian government forcibly relocated the Sayisi Dene people, from Tadoule Lake (Northern Manitoba) to the outskirts of Churchill, Manitoba, which was unsuitable for survival. This long struggle began with small infringements on their treaty hunting rights and escalated into trans-generational trauma (Bussidor and Bilgen-Reinart, 2006). Western wildlife conservation practices first started encroaching on the Sayisi Dene in 1917 with initial changes to hunting regulations, such as seasonal hunting and species restrictions (Bussidor and Bilgen-Reinart, 2006). This began due to the egregious toll the fur trade had on wildlife populations, especially with key species such as the beaver, caribou, and bison. For the Sayisi Dene, caribou were vital to survival and no part of the animal was left unused (Bussidor and Bilgen-Reinart, 2006). By contrast, the sometimes-indiscriminate hunting practices of non-Indigenous fur trappers severely impacted wildlife populations; fur trappers had been known to occasionally use poisons, resulting in the death of many different species (not all could be sold as furs), including dogs in surrounding communities (Bussidor and Bilgen-Reinart, 2006).

In the 1930s, the Canadian Government gave control of crown lands to the Provincial Governments of Manitoba, Saskatchewan, and Alberta, including Aboriginal hunting and harvesting rights (Bussidor & Bilgen-Reinart, 2006). Their lack of understanding of Indigenous cultures and food acquisition practices meant that the provinces were ill-equipped to effectively manage the hunting and harvesting rights of Indigenous Peoples. For example, in 1955, officials from the Manitoba Department of Natural Resources witnessed the traditional caribou hunting and food preservation methods used by the Sayisi Dene people and villainized the peoples and practices in the media; this can be attributed to the agencies' lack of awareness surrounding Indigenous hunting practices (Bussidor & Bilgen-Reinart, 2006). The Sayisi Dene would spear the caribou as they crossed bodies of water (lakes and rivers) and drag their carcasses to the shore where they would then be buried beneath the winter snow thus storing the caribou for the long winter months when food could be scarce (Bussidor & Bilgen-Reinart, 2006). However, in the eyes of the Manitoba Department of Natural Resources officials, the Sayisi Dene were being

wasteful and contributing to the decline in caribou populations. In direct opposition to this ignorant, false, and self-serving characterization made by government officials, the Sayisi Dene had followed the caribou herds for generations and were deeply cognizant of herd population as their families and communities relied on them for survival (Bussidor & Bilgen-Reinart, 2006). Ultimately the Manitoba Department of Natural Resources decided that the Indigenous Peoples and wolves were the root cause for the declining animal populations such as the 'Caribou Crisis'; however, the claims were based in cultural bias instead of scientific evidence (Usher, 2004). The 'Caribou Crisis' was used as a justification for relocating groups of Inuit and Dene Peoples; government officials made sure to lay blame for the declining caribou populations on Indigenous hunters, arguing that forcibly relocating them would save the caribou from over-harvesting (Bussidor, 2006; Usher, 2004). As demonstrated by the examples above, western imperialism intentionally resulted in the misunderstanding, mischaracterization, and underestimation of the complexities and sophistication of Indigenous food systems among settler Canadians. This has historically resulted in negative consequences for Indigenous communities and cultures and continues to this day.

1.1.3 Power Inequities Between Knowledge Systems

This study acknowledges that there are distinct knowledge systems that are important to understanding what systemic barriers may exist to the co-development of Indigenous food systems research within colonial institutions. Indigenous and western knowledge systems are based in very different epistemological approaches. Western knowledge systems are the dominant doctrine in research institutions and are characterized as anthropocentric, patriarchal, reductionist, positivist, capitalist, and colonial in nature (Ermine, 2007; Kwame, 2017; Martin, 2012). In contrast, Indigenous knowledge systems are holistic, relational, reciprocal, place-based, respectful, and responsible approaches to viewing the world (Kovach, 2009; Kovach et al., 2013; Kwame, 2017). However, Indigenous knowledge systems have been systematically undermined by the dominant western knowledge system, especially within settler-led academic institutions (Snively & Corsiglia, 2001; Stanton, 2014).

The western system claims dominance through the erasure of knowledge systems that threaten their claim to superiority (Battiste, 2005). This follows the same logic as '*terra nullius'* as once again we see a dominant social structure self-proclaiming themselves as the sole legitimate

epistemological system/entity (Asch, 2002; Buchan & Heath, 2006; Little Bear, 2000), where all other knowledge systems and ways of knowing are categorized as 'less than' or inferior to the dominant doctrine (Battiste, 2005; Buchan & Heath, 2006). Historically, Indigenous knowledges and Peoples have been excluded from academic and educational institutions in Canada (Battiste, 2005; Foley, 2018); such as the exclusion of oral knowledge as historical record.

The end of the 20th century brought about a shift in how Indigenous oral traditions were perceived within colonial institutions, in large part due to significant litigation occurring in the Supreme Court of Canada involving Indigenous land claims. The Delgamuukw *v*. British Columbia case from 1997 is commonly regarded as the catalyst for Indigenous oral traditions gaining more recognition and validation in Canadian institutions (Napoleon, 2005; Palmer, 2000). Throughout the Delgamuukw *v*. BC case, Gitxsan and Wet'suwet'en hereditary chiefs presented oral stories as evidence of land occupation and Aboriginal Title (Napoleon, 2005; Palmer, 2000). Facing rejection in provincial courts, the claimants appealed to the Supreme Court of Canada who supported the use of oral history in consideration of the lack of written history among Indigenous Peoples (Palmer, 2000). Despite the court's validation of oral history as evidence, the ruling did not actually result in oral traditions being valued as equal to other admissible forms of evidence. This resulted in the decontextualizing of oral traditions to fit within the existing framework of evidence so that those presiding over courts could understand them within their own worldviews instead of maintaining Indigenous contexts (Napoleon, 2005; Palmer, 2000).

Much of western academia maintains the belief that Indigenous knowledge is centred in the past with little insight into the future (Battiste, 2005). However, many Indigenous cultures around the world have deep rooted beliefs and values that surround planning for the future; or more accurately <u>living</u> for the future. For example, the Haudenosaunee's 'Seventh Generation' principle revolves around the belief that present actions will be felt for seven generations and as such we must all live our lives in a manner that has positive reverberations for our future generations (Haudenosaunee Confederacy, n.d.). The 'seven generations' or 'seventh generation' principle is one that can be seen in many Indigenous cultures in Canada, and similar principles exist globally amongst Indigenous Peoples.

Relationships are deeply embedded in Indigenous knowledge systems across Turtle Island, including relationships to community, to the land, and even to past and future generations. These relationships are at the core of our cultural values, we learn to care for ourselves, our relations both human and non-human and to always think of our unborn relations and how our actions affect their realities.

In direct contrast to these beliefs and values, western society places humans at the top of an elaborate hierarchy where all other things on Earth are classified as resources (Tynan, 2021); their importance only determined by how humans can profit from their extraction and sale. Below is an excerpt from a reflective journal I wrote in throughout my Master's.

> A few years ago, I attended a meeting at the request of an AAFC researcher. The meeting was an introduction to a community he wanted to collaborate with. He asked them about their interests and any issues they had with their food system. I recall that one community representative shared that bears were a big issue in their community since they were always ripping up gardens and garbage, that it posed a safety concern having so many interactions with hungry bears. The researcher jumped in saying that they should get conservation officers to shoot the bears or relocate them. The community members seemed startled and quickly said that no, they did not want that. That the bears had just as much right to the land as they did, but that to be good kin, they needed find a way to make sure the bears were well-fed without needing to come into the reserve. They said that a blight killed off nut-bearing trees on the border of their community, that previously those trees acted as a natural border that kept the bears satiated and therefore outside of the community.

This, to me, strongly demonstrates the difference between Indigenous and western worldviews and science. Where western worldviews seek to "manage", "control" and "dominate" the land and its inhabitants, Indigenous worldviews seek relationships through "stewardship", and "caretaking" (Turner et al., 2013). Western science is often used to support 'the path of dominance' and will seek to force nature into a hierarchical system where humans are both separate from nature while presiding over the exploitation of "resources" (Tynan, 2021). In contrast, Indigenous science and worldviews support the natural environment by existing within

it, in relationship with it not as a leader or owner, but as a part of the greater system (Little Bear, 2000; Smith, 2012; Snively & Corsiglia, 2001; Turner et al., 2013; Tynan, 2021). Additionally, the Indigenous worldviews are holistic and as such are mindful of the interconnected relationships that exist in our world (Johnson & Murton, 2007; Tynan, 2021), whereas western worldviews use a reductionist approach to breakdown the natural world into smaller-digestible components (Wilson, 2008; Johnson & Murton, 2007). In 'What is relationality? Indigenous knowledges, practices, and responsibilities with kin' (2021) Trawlwulwuy (Aboriginal Tasmanian) scholar Lauren Tynan emphasizes the centrality of relationality to Indigenous epistemologies. Decontextualizing relationships from Indigenous worldviews and systems only serves to misrepresent and misunderstand them, Indigenous Peoples, histories, cultures, and contexts cannot be understood without all the relationships that connect them to each other and their non-human relations (Tynan, 2021). A wholistic and relational approach is needed when engaging within Indigenous contexts (Blaikie et al., 2020; Kovach, 2009; Kwame, 2017; Tynan, 2021).

Using research methodologies that are grounded in western worldviews inherently influences research by filtering it through a western lens and altering the results to fit within the western worldview's predetermined assumptions (Hassel, 2010). A considerable difference between western research and Indigenous research is found in the application of Eurocentric perceptions and standards. Western characterization and categorization are inherently meant to allow for comparison and evaluation of societies with the goal of ranking them against one another (Smith, 2012; Tynan, 2021). Eurocentric standards and values cannot be used within Indigenous research because it continues the process of colonization through assimilation by comparing Indigenous cultures, communities, histories, and traditions against the western perception of what knowledge and science is.

1.1.4 Indigenous Research Methodologies

Indigenous research is fundamentally a conduit for "critical and anti-oppressive" resistance to the dominant settler colonial knowledge system (Kurtz, 2013), and as resistance to ongoing colonization. Indigenous methodologies are rooted in Indigenous epistemologies and axiologies that centre our collective responsibility to the land and each other as interconnected relations (Foley, 2018). Further, Indigenous methodologies are not intended to 'contribute' to western

knowledge systems and paradigms (Foley, 2018) as they are not “complements” to western research and cannot be inauthentically used for tokenistic efforts of “diversification” in science. Simply, Indigenous methodologies are meant to be wielded primarily by Indigenous scholars in the pursuit of contributions to Indigenous knowledge systems for Indigenous Peoples benefit (Foley, 2018). That’s not to say that Indigenous knowledges solely benefit Indigenous Peoples; to benefit from and use Indigenous knowledge is to have a deep acknowledgement and understanding of one's relations with the land itself and all those that occupy it. Yet, many researchers within colonial institutions and societies struggle to see the benefit and logic to Indigenous knowledges because they are so far removed from their own connections to the world around them.

Indigenous research methodologies, like Indigenous Peoples, are diverse with many intricacies that depend not only on the type of study and subject matter but also on the participating communities and researchers, as seen in Māori author Linda Tuhiwai Smith’s *Decolonizing Methodologies* (2012). Though Indigenous research methodologies differ from western research methodologies, there are some similarities in the "data collection” methods, which is often where researchers presume to “adopt” Indigenous methodologies. For example, regarding interview techniques, both western and Indigenous research methodologies value face-to-face interviews. Opdenakker (2006) explains that face-to-face interviews facilitates optimal communication and relationship building. Nêhiyaw and Saulteaux scholar Margaret Kovach (2019) states that conversational methods are key within Indigenous research, to embody the relational spirit of knowledge gathering and sharing a methodology must be related to their Indigenous epistemology. Traditionally, among Indigenous people knowledge is shared orally and often through storytelling (Kovach, 2019), which is why Indigenous research methods are so often conducted via some form of dialogue-centric process.

It is imperative to distinguish between Indigenous methodologies and data collection methods used in Indigenous research as they are not synonymous of each other. Experience has led me to surmise that non-Indigenous researchers often model their studies after Indigenous-led research and believe this lends a certain degree of indigeneity to their study, when they have simply adopted the same data-collection methods while maintaining the use of western-worldviews and methodologies (see also, Foley 2018). However, I must reiterate that one does not “use”

Indigenous research methodologies, you practice it, you live it, you learn from it. To practice in Indigenous methodologies is to seek knowledge and understanding in a way that reflects the epistemological and axiological positioning of Indigenous Peoples. Absolon (2020) refers to this process as 're-search,' as a guided search to recontextualize research through Indigenous axiologies and epistemologies, through "re-searching" or "looking again" at how we as Indigenous researchers come to produce and understand knowledge (p.20-21).

1.1.5 Canada's Agrarian Roots

For many settlers, coming to Canada afforded them many opportunities to increase their quality of life; land was freely or cheaply accessible for those who would have otherwise never been able to afford such extensive homesteads (Rotz, 2017). The Dominion Lands Act of 1872 was one such opportunity that gave farmers 160 acres of free productive land to farm so long as they built homes and cleared ten acres of land within three years (Mooney, n.d.; Yarhi & Regehr, 2006); these provisions ensured that land in Western Canada was being "surveyed, subdivided and settled" for the Dominion (i.e., Canadian Government) (Mooney, n.d.; Yarhi & Regehr, 2006). European settlers were flooding the Canadian landscape and erecting homesteads through the widespread dispossession of Indigenous Peoples, who were being relocated (even prior to 1872) to reserves segregated from their traditional territories, food lands and collective communities (ICTINC, 2015; Rotz, 2017; Yarhi & Regehr, 2006).

It is often remarked in historical accounts that Indigenous Peoples in Canada were poor or unskilled farmers; the origin of this narrative is deeply ironic. Unfortunately, many reserves are located on lands that are not conducive to agriculture, which makes sense since Indigenous Peoples were being displaced so that the best land masses could be transferred to settler-Canadians and the Crown (Deur et al., 2013; ICTINC, 2015; Rotz, 2017). This contributed to the narrative that Indigenous Peoples could not grow food, which government officials later used as a validation to scale back reserves since they were "wasting" land (ICTINC, 2015). Indigenous Peoples were "encouraged" (i.e., forced) by the Canadian Government to trade hunting and gathering for "civilized" agrarian lives, however, in direct contrast to this encouragement was the 1880 amendment to the Indian Act which prohibited 'Indians' from selling agricultural goods without a dedicated permit (Groen, 2022; ICTINC, 2015). This restrictive legislation was a direct result of the overwhelming success that Indigenous farmers had in the prairies; to protect market

share for non-Indigenous farmers, the government chose to restrict Indigenous farmers from engaging in the agricultural products market (ICTINC, 2015). Again, the fundamental justification for colonization lies within the European idea of *terra nullius,* of empty lands, of inferior peoples with no "civilized" cultivation and of the European right to dominate those lands and thus its peoples. This remains the dominant perception today, with many settler-Canadians believing in "narratives of Indigenous incompetence and dependence" (Rotz, 2017). Indeed, many settler-Canadians maintain familial pride regarding ancestors coming to Canada and building a farming legacy through hard work and tenacity; thus, reaffirming that Indigenous Peoples were inferior farmers, since they "failed" where so many non-Indigenous settlers thrived.

1.1.6 Agriculture and Agri-Food Canada

In Canada, agricultural research on a federal level began in 1886 with the development of the Research Branch of the Canada Department of Agriculture. In *One Hundred Harvests: Research Branch Agriculture Canada 1886-1986,* Anstey (1986) celebrates and delineates one hundred years of Agriculture Canada's Research Branch and the agricultural research that was conducted in the fields of "soil management, crop and animal production, protection, utilization, food quality and food processing". Presently, this department is called Agriculture and Agri-Food Canada (AAFC), and the 'Research Branch' is called the Science and Technology Branch (STB). The Science and Technology Branch composes approximately half of AAFC's department. Generally, the goal of AAFC has remained the same through the years, to "assure that Canada reaches its agricultural potential" (Anstey, 1986), currently however, AAFC's mandate is more extensive and inclusive.

Below is AAFC's mandate as published online in 2023:

> AAFC provides information, research and technology, and policies and programs to help Canada's agriculture, agri-food and agri-based products sectors compete in markets at home and abroad, manage risk and embrace innovation. The activities of the Department extend from the farmer to the consumer, from the farm to global markets, through all phases of sustainably producing, processing, and marketing of agriculture and agri-food products. In this regard, and in

> recognition that agriculture is a shared jurisdiction, AAFC works closely with provincial and territorial governments.
>
> AAFC's vision is to drive innovation and ingenuity to build a world-leading agricultural and food economy for the benefit of all Canadians, and the mission is to provide leadership in the growth and development of a competitive, innovative, and sustainable Canadian agriculture and agri-food sector (Information Architecture Services, 2015).

While not included in the official mandate, AAFC has committed to creating and maintaining new relationships with Indigenous Peoples across Canada, with the intention of contributing to reconciliation through a...

> commitment to fostering a renewed relationship with Indigenous Peoples and to advancing reconciliation through support for Indigenous-led agriculture (Government of Canada, 2022).

1.1.6.1 Indigenous Science Liaison Office

In 2017, AAFC's Science and Technology Branch (STB) created the Indigenous Science Liaison Officer position as the liaison between AAFC researchers and Indigenous research partners, such as Indigenous communities and organizations (unpublished internal brief, 2023). Eventually, ISLO was formed as its own office, splitting from the Indigenous Support and Awareness Office (ISAO). As Indigenous projects and programming increased, so did the demand for more resources allocated to meet this need (E. McAuley, personal communication, March 24, 2023). Splitting ISAO into two offices allowed the ISAO to focus more on the human resources side of Indigenous relations within AAFC (Corporate Management Branch) and for ISLO to work with the STB within AAFC (E. McAuley, personal communication, March 24, 2023). The purpose of the Indigenous Science Liaison Office is to:

> Support AAFC researchers in building relationships, engaging, and ultimately co-developing research projects with Indigenous partners. ISLO does this by providing science-specific Indigenous cultural literacy and intercultural competency training to STB staff, researchers, and management, liaising between

researchers and potential Indigenous partners, creating guides, tools, and providing input in science policy and programming to facilitate Indigenous research partnerships. (Personal communication [unpublished internal brief], 2023).

1.1.6.2 Science and Technology Branch's (STB) 'Indigenous Strategy'

The STB 'Indigenous Strategy' was approved in May of 2021. The STB 'Indigenous Strategy' is a high-level living document that was developed to outline how research staff and managers within AAFC can works towards "improved relationships with, and outcomes for, Indigenous Peoples" (personal communication [unpublished internal document], 2023, pg. 2). A breakdown of the 'Indigenous Strategy is below.

ISLO led the creation of this 'Indigenous Strategy', which is meant to:

> provide guidance as Agriculture and Agri-Food Canada's (AAFC) Science and Technology Branch (STB) develops relationships with Indigenous Peoples and takes steps to co-develop a path forward on science cooperation to support Indigenous agriculture in Canada. (Personal communication [unpublished document], 2023, pg. 1)

The STB 'Indigenous Strategy' is outlined in Figure 1.

Key Objectives

1. Build trust and relationships.
2. Research development and technology transfer aligned with Indigenous priorities.
3. Increase Indigenous participation, capacity and governance in research and development.

Principles and Approaches

1. Indigenous-led and co-developed.
2. Distinction-based (First Nation, Inuit and Métis Nation).
3. Promote the interface of Indigenous Knowledge/western science.
4. Mainstreaming mechanisms and tools.
5. Integrate departmental effort.
6. International linkages.

Expected Outcomes

1. New and enhanced relationships with Indigenous partners.
2. Direct benefits for Indigenous partners.
3. Advancement of science and knowledge and technology transfer supporting Indigenous-led agriculture.
4. Synergies from Indigenous and western science knowledge systems.
5. Increased recruitment and retention Indigenous students, science professionals and research scientists.
6. Increased Indigenous research governance capacity.
7. Greater impact from alignment of AAFC branch activities.

Figure 1: Indigenous Strategy Summary (personal communication [unpublished internal document], 2023)

The ‘STB Indigenous Action Plan’ is a subsequent document that outlines how STB can implement the ‘Indigenous Strategy’. The document outlines the 3 objectives from the ‘Indigenous Strategy’ (see figure 1) and includes some of the specific actions needed to implement them (see Table 1) (personal communication [unpublished internal document], 2023).

Table 1 Indigenous Action Plan Activities

Key Objective 1: Build trust and relationships	
i)	STB staff cultural competency and co-development training.
ii)	External outreach initiatives.
iii)	Building relationships.
Key Objective 2: Research development and technology transfer aligned with Indigenous priorities	
i)	Co-develop STB funded Research, Development and Knowledge and Technology Transfer (RD & KTT) projects addressing Indigenous priorities.
ii)	Support Indigenous-led RD & KTT projects funded by Programs Branch
Key Objective 3: Increase Indigenous participation, capacity and governance in research and development	
i)	Increase Indigenous recruitment retention.
ii)	Strengthen RD & KTT capacity of external Indigenous partners.
iii)	Indigenous governance in RD & KTT

Examples of activities completed since the approval of the 'Indigenous Strategy' in May 2021 include staff training, the creation of a relationship-building fund for researchers, and an Indigenous technician recruitment initiative. One of the most notable activities completed was the implementation of mandatory cultural awareness training across all staff in STB in 2022 (approximately 2000 employees). Discussion topics included diversity of Nations in Canada, Indigenous food systems, and the 'STB Indigenous Strategy. Additionally, training on the First Nations principles of data Ownership Control Access and Possession (OCAP®) training was mandated for all principal investigators and project team members working with Indigenous partners, as well as senior managers throughout STB. The principles of OCAP® are Ownership, Control, Access, and Possession and were developed by the First Nations Information Governance Centre to determine how First Nations data should be "collected, protected, used or shared" (FNIGC, 2022).

To evaluate the effectiveness of actions made under the 'STB Indigenous Strategy' and the 'Indigenous Action Plan' and identify potential gaps that still exist, I conducted 9 interview and 1 focus group with ISLO staff to assess where systemic barriers were presenting challenges to the implementation of the strategy and action plan.

1.2 Study Purpose

The purpose of this study was to explore how non-Indigenous research institutions can and should engage in ethical and culturally appropriate food systems research with Indigenous communities, using AAFC as a case study. I chose to design this study around assessing the institutional barriers (also referred to in the thesis as 'systemic barriers') surrounding conducting IFSR as these institutions have been agencies of oppression for Indigenous Peoples and both research and Indigenous food systems have been weaponized against Indigenous Peoples (see Section 1.1). As such, the most important steps towards colonial institutions engaging in reconciliation involves undoing ongoing systemic oppression.

Main Research Question: How can and should non-Indigenous research institutions engage in Indigenous food systems research with Indigenous communities?

Secondary Research Question: What systemic barriers exist, within Agriculture and Agri-Food Canada, to the co-development of Indigenous Food Systems research with Indigenous Partners?

Objective 1: Conduct interviews and focus group with staff from AAFC's Indigenous Science Liaison Office to gain insight into the perceived barriers that limit the co-development of Indigenous food systems research within colonial institutions.

Objective 2: Develop a list of recommendations that AAFC can use to address the barriers identified in this study.

CHAPTER 2: METHODOLOGY

This study was grounded in critical, emancipatory theory which is rooted in the belief that western science has been used to support the oppression and domination of people around the world, and that ultimately science should not be trusted blindly without question (Fals Borda, 1996; Watson & Watson, 2011). Instead, my approach follows the belief that the pursuit of scientific progress should be with the goal of achieving human emancipation, ergo the liberation of those oppressed and dominated (Fals Bardo, 1996; Lincoln, et al., 2011; Watson & Watson, 2011).

As a result, the primary goal of this project was to identify systemic barriers within AAFC to the co-development of Indigenous focused food systems research. I interviewed key staff in AAFC's ISLO to identify what barriers were negatively impacting research collaborations between Indigenous communities and AAFC. Ethics approval to conduct interviews and focus groups was obtained from the University of British Columbia's (UBC) Behavioural Research Ethics Board (BREB) [Ethics File Number: H21-01939] and AAFC's Human Research Ethics Committee (HREC) [HREC Reference Number 2021-D-007].

2.1 Author Positionality Statement

Before explaining the methods used in this study, I would like to clarify my positioning and how it influenced this study. I am a western-educated, urban-Indigenous, mixed-ancestry Interior Salish woman. My upbringing was heavily influenced by settler narratives, and I did not begin reconnecting with my community and culture until I entered my undergraduate studies. Though I have always maintained a connection to land, I am currently indigenizing my relationship to my non-human relations. As an Indigenous scholar, much of my training surrounds identifying and addressing systemic racism and oppression, which contributed greatly to choosing the research problem for my graduate studies. I worked for AAFC as a Knowledge and Technology Transfer (KTT) student over two separate terms prior to starting as a Research Affiliate Student; in my role as a KTT student one of the duties I was tasked with was organizing and attending meetings with the neighbouring First Nation in preparation for potential collaborations. During my time as a KTT student, and in the first year of my master's program, I witnessed and experienced many instances where racial biases against Indigenous Peoples were still present in AAFC. This study

was an opportunity to identify and hopefully address many of the pernicious issues and barriers I witnessed persisting in this institution. I acknowledge that my positionality influenced this study from choosing the research problem, to the methods, and how the results were interpreted.

2.2 Study Population

The Indigenous Science Liaison Office (ISLO) was the population from which I recruited participants. As the liaisons between AAFC researchers and Indigenous partners, ISLO officers were in the unique position to witness the development of relationships between partner communities and AAFC researchers. Further, ISLO officers possessed a working knowledge of the ongoing research relationships with Indigenous partners, the 'Indigenous Strategy', as well as unique insights into the strengths and weaknesses of AAFC researchers engaging in these collaborations. For these reasons, ISLO officers were selected as the study population and focus of this project.

The project had two phases of data collection to gain knowledge, understanding and experience to answer my research question as well as to create a set of recommendations to AAFC. The first phase was aimed at gaining insight into the barriers that participants perceived to negatively impact the co-development of Indigenous food systems research projects between Indigenous communities and AAFC researchers. In Phase 1, I interviewed nine ISLO staff members, and in Phase 2, I facilitated a focus group with four of the interview participants. I used an iterative approach for my data analysis, resulting in two rounds of coding.

Participants for the focus group were from the same group as the interviewees. Of the nine interview participants, four agreed to return for the focus group. Since this was a qualitative study, and I was not aiming to achieve statistical representation in my research or gain a large or probabilistic sample size as would be typical in quantitative research (Guest, Bunce, & Johnson, 2006).

2.2.2 Consent Process

A letter of consent (Appendix A, section 1) was sent to participants prior to the interview time. Participants could choose to participate in the interviews and focus group or just the interview. While some signed and returned them in advance, others requested to sign and send them later after the interview. I also requested oral consent for their participation at the beginning of the

interview. All participants consented orally and provided written consent subsequently. Within the consent form, participants had the option to be identified or to remain anonymous. Participants that chose to be identified were contacted during the writing process to ask how they wanted to be identified, such as their preferred name(s), and whether they wanted their community listed as well as any other information. The names of the participants that did not want to be identified were replaced with unique identification codes. To avoid participants being able to identify one another based on the codes they saw in the transcripts; the focus group and interviews have different ID sets. Any participants named throughout this thesis explicitly chose to be identified along with their words. Additionally, all participants (both identified and anonymous) were given the opportunity to review their transcripts prior to analysis and review any included quotations prior to the finalization of the thesis.

2.3 Data Collection

Zoom (version 5.13.11, Zoom Video Communication Inc.), was used to remotely conduct interviews and the focus group; I used Zoom's 'Audio Transcription' feature, which automatically creates a transcript of a meeting when uploaded to Zoom's cloud. As with any transcription software there were instances where the software did not correctly transcribe discussions. I performed quality control for all transcripts by comparing the transcripts against the audio recordings. Once the transcripts accurately matched the audio recordings they were returned to their respective participants for review and edits; for the transcripts that were returned with further edits, I made necessary changes and returned them to the participant for a second review and confirmation of accuracy prior to analysis.

2.3.1 Interviews

I conducted nine virtual, semi-structured interviews with the members of ISLO. Data collection during the first phase (interviews) began April 21, 2022, and continued until September 13, 2022. Interviews were scheduled to take place over 60 minutes; however, some participants chose to extend them as they felt that they had more to say than could fit into 60 minutes. The interviews were automatically recorded to the UBC Zoom cloud, instead of being saved on an AAFC hard drive or cloud software, to protect the privacy of the AAFC participants.

The interview guide (Appendix A, section 2) was sent to participants in advance so that they could familiarize themselves with the concepts and prepare responses if they felt it advantageous.

I selected a semi-structured interview approach as this aligned well with my interest in gaining insight based on theoretical lines of questioning and having participants draw on their individual experiences. Using semi-structured interview techniques encouraged participants to be more engaged in developing a narrative in their responses, while still speaking directly to specific topics (Galletta & Cross, 2013, p. 46). The participants often initiated discussions not directly in response to topics on the interview guide but related, nonetheless. These discussions were encouraged, as they offered insight into ideas and concepts beyond those I had considered when creating the interview guide. Using a semi-structured interview method encouraged reciprocity between the interviewer and participant as well as promoted reflexivity in the research (Galletta & Cross, 2013, p. 75). Ultimately, the interviews were meaningful conversations between the interviewer and participant, conducted as discussions rather than a one-sided inquiry.

2.3.2 Focus Group

The focus group included four participants from the original interview pool of participants. The focus group lasted 90 minutes and occurred over Zoom. Like the interviews, it was recorded to the UBC Zoom Cloud.

Participants were shown the coding analysis results from the interviews, including tables, diagrams, and quotations. This allowed the participants to see a thematic breakdown of what members of ISLO collectively discussed in the interviews. From this, the focus group participants were given time to discuss their thoughts on the findings and if the analysis draft accurately summarized them or if there were inconsistencies with how they perceived the research problem. Participants were encouraged to give feedback on both the results as well as the researcher's presentation of the data.

2.4 Analysis

2.4.1 Analysis structure and software

NVIVO (release 1.0, Lumivero, 2020) was used to analyse data from interviews and the focus group; thematic analysis and coding matrices were the primary analytical tools and processes.

Coding matrices are “exploratory data structures” used in qualitative research to identify intersections (i.e., relationships) within data (Hai-Jew, 2019, p.183). Analysing the dispersal and frequency of codes and their relationships was crucial to determining which themes (codes) were the most emphasized by the participants. ‘Round One’ of coding was an exploration of the data with a predetermined codebook and ‘Round Two’ of coding was done with a revised thematic codebook drafted after reviewing the analytics from the first round.

2.4.2 Round One of Coding

The first codebook (Appendix B, section 1) was developed deductively from themes presented in Chapter 1, informal conversations prior to data collection, and from my own lived experiences as an Indigenous scholar within both academia and AAFC. The first round of coding interview transcripts served to broadly identify what ISLO staff participants perceived to be barriers to Indigenous food systems research (IFSR). After completing the first round of coding, I assessed that while my codebook was broad it also contained some codes that did not serve to answer or contribute to answering my research question. For example, I had included a code for ‘AAFC’ which provided no insight into the barriers and was coded to almost everything as nearly all conversations discussed AAFC in some way. After sorting through the codes that did not serve to answer my research question, I was able to narrow down to the main themes emerging from my interviews. To further explore the identified themes, I began a second round of coding with this revised set of codes (Appendix B, sections 2-4).

2.4.3 Second Round of Coding

The purpose of the second round of coding was to focus on barriers to IFSR that exist in relation to the primary themes identified in the first round of coding. The codebook for the second round of analysis was developed inductively after reviewing the interview results from the first round of coding and reflecting on how to further understand IFSR barriers (see Appendix B, sections 2-4). Once the second round of coding was complete the focus group was scheduled.

2.4.4 Focus Group Analysis

I chose to conduct a focus group with the previous interview participants to obtain feedback on the themes I had identified from the interviews. Participants were encouraged to ask questions and critique the results from my first two rounds of coding. They were shown the same tables

that appear in Appendix B. I used the focus group as a secondary form of analysis, to see if my interview data was accurately capturing how the participants generally perceived the identified themes and subthemes.

CHAPTER THREE: RESULTS & DISCUSSION

3.1 Results

Two rounds of thematic analysis identified three primary challenges to co-developing Indigenous food system research with Indigenous communities: 1) Relationship Building, 2) Administrative Processes and 3) Intercultural Competence and Knowledge (see Appendix C). The following sections include a theme definition, the findings for each of the three major themes, and discussion surrounding the findings. Each section includes subheadings that coincide with the most discussed sub-themes (codes) from the interviews and focus group.

After the initial round of coding, focus group participants were concerned that 'relationship building' was identified as one of the three primary themes, rather than elevated as an overarching theme. The participants said that from their perspective, all barriers ultimately come down to relationships and the consequences of colonisation on relationships. They suggested that I maintain the layout of the three main themes as presented but that I acknowledge that all IFSR barriers are impacted by relationships.

3.2 Relationship Building

In the context of this study, 'relationship building' generally refers to how relationships are built between AAFC and Indigenous Peoples; this includes the informal and formal processes that contribute to creating and maintaining relationships. The most discussed subthemes (codes) within 'Relationship Building' were (1) Individual Relationships, (2) Collective Relationships, (3) Dedicated Staff and (4) Funding Limitations. After reviewing the coding results and discussing the themes and their sub-themes with focus group participants and study supervisors, I realized some sub-themes are deeply intertwined with the other themes i.e., funding limitations are also mentioned as part of 'Administrative Processes'. This can be attributed to the western practice of reducing larger systems into disparate components, this is discussed further in section 3.2.2.

3.2.1 Individual relationships

Within this study 'Individual Relationships' refer to relationships that exist between AAFC staff (researchers, students etc.) and representatives from specific Indigenous communities (i.e., Chief

and council, department liaisons etc.). For 'Individual Relationships' it is especially important that researchers understand the commitment they are engaging in; that relationships with Indigenous Peoples require more personal commitment than researchers may be prepared for, in both time requirements and personal investment. Participants highlighted that vulnerability is needed for honesty and trust to be present in collaborative relationships, that researchers must open themselves up to authentic relationships—this means relationships where researchers are engaging with Indigenous epistemologies; instead of solely thinking from western mindsets and narratives, in authentic relationships, researchers would engage with Indigenous realities and worldviews (Bull, 2010).

Much of the relationship-building discussion focused on the need for clarification surrounding what is expected of AAFC researchers when developing and maintaining relationships with Indigenous partners. Participants said that they often see researchers under-estimating the time and emotional commitments these relationships require; the level of emotional investment is something that researchers rarely anticipate or factor into their research plans.

> ...working with Indigenous partners is not ultimately a finite part of your work as an AAFC employee. Once you start working in the context of relationships with Indigenous communities, that's not a door you can open and shut when you want. That door stays open, and you have a part in keeping that door open. (Interview Participant Apr01)

During the focus group, participants noted that often, researchers treat relationship building as a side-task rather than an official part of their work that requires equivalent, if not more, attention and dedication as data collection and analysis.

> We need to treat relationship-building like work. This isn't something that people should do in their spare time, it should be treated as something with dedicated time and effort built into workplans. It's a personal investment yes, but we as an organization need to be more supportive of it. (Sam David)

Participants discussed that when working with Indigenous communities, researchers mut be mindful to spend time with Indigenous partners beyond data extraction and research discussions. That there must be time and effort reserved specifically for the development and caretaking of

long-term relationships, to emphasize that these relationships are important outside of research as well. Interview participant Colleen Antholz spoke to relationship by saying:

> You need to learn about the whole community, not just the Chief and Council and see people on a personal level.

This statement highlights a common issue, researchers only engaging with people involved in the research itself instead of engaging with the community as a whole. The development and caretaking of relationships should involve being present in the community, attending, hosting, and supporting events where researchers and staff can become involved with community members.

Participants said that another issue with individual researcher relationships is that researchers are not always aware that they should be maintaining the relationships with the community partners indefinitely, that their relationships do not have an expiration date that coincides with the end of a funding cycle. Relationship development and caretaking is vital to maintain both before and after research projects are initiated.

3.2.2 Collective Relationships

Within this study 'Collective Relationships' refer to the relationship between the institution of AAFC and Indigenous communities across Canada, beyond the relationships held by individual Indigenous Persons and partners and individual AAFC researchers. Regarding 'Collective Relationships', participants were most focused on how AAFC administration can support the development of relationships by addressing funding and timeline limitations, geographic barriers, and inconsistent relationships with AAFC representatives.

Challenges to 'Collective Relationships' overlapped heavily with another main theme: 'Administrative Processes' (see Section 3.3). This challenge, including funding and timeline limitations, was the greatest issue identified by participants, both referring to AAFC as an overarching federal institution, as well as smaller groups within AAFC such as Research and Development Centres (RDCs). This is an issue that I found throughout the refinement of my analysis; my codebook was designed with a reductionist mindset and in my attempt to break these larger themes into discrete sections I've seen how deeply interconnected they are. Cree

scholar Shawn Wilson captures this sentiment in his 2008 book *Research is Ceremony* in which he says:

> ...and if we are saying that an Indigenous methodology includes all of these relationships, if you are breaking things down into their smallest pieces, you are destroying all of those relationships around it (p.119).

This is to say that 'Collective Relationships' intersected strongly with other themes in 'Administrative Processes' and 'Relationship Building' and the results for this theme could not be summarized as separate from them. Participants heavily emphasized that one of the biggest barriers to 'Collective Relationships' was AAFC fully supporting 'Individual Relationships' and that in circular fashion, healthy and authentic 'Individual Relationships' are needed to improve 'Collective Relationships'. Ultimately, these discussions showed that relationships cannot be analysed independent of each other and must be seen through a wholistic lens.

3.2.3 Funding Limitations

3.2.3.1 Dedicated Staff

The codes 'dedicated staff' and 'funding limitations' were 3rd and 4th ranked behind the two relationship codes reported above. After reflecting on how I structured my codebook I believe they are two pieces of the same barrier. Throughout the interviews, several participants emphasized that more dedicated staff is needed not only in ISLO but broadly throughout AAFC; specifically, staff dedicated to working with Indigenous Peoples and on Indigenous projects and policies. Participants emphasized that there is a much higher demand on their time and resources than they can currently support with their limited staffing; ISLO officers are responsible for liaising across vast regions. Participants mostly discussed this within a funding framework, so I have combined them in this section. Several participants indicated that ISLO needs an influx of funding to recruit additional staff to distribute the workload and have a stronger presence throughout AAFC, especially in the RDCs across the country.

> I think capacity [staffing] is a huge issue. Our offices are very small and we're all insanely busy all day, every day... there are a lot of people that aren't even aware that ISLO or ISAO exist. (Interview Participant JUN01)

Participants noted that there is not currently a dedicated position in the RDCs for Indigenous coordinators or liaisons and that this leaves relationship building and finding resources to support engagement entirely up to individual researchers instead of more consistent and long-term relationships being maintained between the communities and the RDCs.

3.2.3.2 Funding Relationship Building

Participants were frustrated with what they viewed as a transactional view of relationship-building within AAFC, indicating that researchers perceive relationships to be something that can only be built and maintained when researchers have active funding. Participants acknowledged that funding is necessary for research projects, and that it does have a significant role in fostering reciprocity with Indigenous partnerships; especially in terms of ensuring that there are adequate benefits for the community outside of potential study deliverables, such as, employment and training opportunities and funding community events that researchers can attend for further community engagement. However, they noted that there was a gap regarding how researchers maintain these relationships at the conclusion of the projects when there is no longer any funding.

> [researchers are] being told "look it's in the mandate letter, it's our priority for the department. But you have to have this wrapped up in three years because that's the funding cycle." Which to me is in conflict with long-term partnership work. (Interview Participant APR01)

Participants were concerned with how researchers may perceive these relationships as fleeting or only relevant during the confines of research projects; so essentially only when the researchers themselves benefit from it. This perception could result in the commodification of relationships with Indigenous communities and as such does not result in genuine relationships, especially not from an Indigenous perspective.

In the focus group, participants talked about how they think Administrative Processes is one of the largest or most considerable threats to building and maintaining relationships with Indigenous communities.

3.3 Administrative Processes

Within the context of this study, 'Administrative Processes' refers to the challenges to relationship-building that occur because of a rigid administrative structure within government institutions like AAFC. Round Two of coding indicated that within 'Administrative Processes', the most prominent themes (codes) were 'Research Mandates' and 'Productivity Assessment. In the focus group, participants and I discussed the difficulty of separating barriers into discrete themes because there often overlap between them. As discussed in Section 3.2.3, some subthemes seemed to belong within more than one of the three main themes, for example, 'dedicated staff' and 'funding limitations' are also Administrative Processes.

3.3.1 Research Mandate

As a reminder, Indigenous food systems reflect the wholistic worldviews of Indigenous Peoples and encompass deep rooted relationships to the land and all its living components. There are many aspects of Indigenous food systems that are not covered by AAFC's mandate including, for example, fish, and game. Participant Dan Benoit said that wild animals such as fish and game of any kind are only considered to be within AAFC's research mandate once in the processing stage and beyond, i.e., when the "head comes off." This reductive approach reflects domineering western worldviews, overlooking entire portions of Indigenous food systems that do not fit within Eurocentric, settler-Canadian food system models. Freshwater and ocean fish are only within AAFC jurisdiction once they have been killed and can be processed and sold as a product. Participants say this is particularly short-sighted since AAFC researchers are attempting to engage in 'food systems' research, which for many Indigenous Peoples includes fish, sea life, and wild game. This reductionist approach to mandates is limiting how food systems are perceived and approached, as well as what funding is available to communities for research; some communities are turned down for AAFC funding because their interests are too far removed from what AAFC engages with due to their mandate. For example, participants indicated that some communities' interests are in "country" or "forest" foods that are not produced agriculturally and have been told that they would only be considered for AAFC research initiatives if they wanted to find a way to make them into products or grow the foods themselves.

Many participants discussed the difficulty of navigating AAFC's departmental mandate (see section 1.1.6) within the context of researchers engaging with IFSR. Participants attributed this barrier to AAFC's limited focus on research pertaining only to Agriculture and Agri-Food and how this has the unintended consequence of excluding many parts of Indigenous food systems, which are both traditionally and presently more diverse than what AAFC researchers can research within the scope of the mandate as well as their own scientific expertise.

> As a department we're still operating within a narrower departmental mandate with regards to food systems, which doesn't cross into fisheries or into migratory birds, or into any of the other ways that we've historically chopped up ecosystems into management units for the federal government. (Interview Participant APR01)

Departmental silos in the federal Government's organizational structure are evident when looking at the various departments that govern components of our natural world. Sam David points out that Environment and Climate Change Canada (ECCC), Natural Resources Canada (NRCan) and Agriculture and Agri-Food Canada (AAFC) are all departments with overlapping interests and jurisdictions, yet they are often siloed in their work with little interdepartmental collaboration, especially within research. Participants attributed this to administrative and infrastructural difficulties to collaborating within their intersecting areas of interest.

In practice, this means that each government department generally functions independently from the others despite overlapping areas of interest, impact, and governance, especially within Indigenous contexts. For example, Indigenous food systems are very diverse, but my own First Nation has a very diverse food system that includes oceanic and freshwater fish, wild game, and traditional plants and roots. Much of our food comes from the forests and water, so if AAFC wanted to collaborate on a study involving our food system it would only be able to capture a fraction of our much larger system. Or, as another example, AAFC researchers could establish projects surrounding the domestication of bison but would need to collaborate with other government departments or academia to include materials outside of AAFC mandates, such as wild game, thus limiting research opportunities to domesticated livestock and or plants that can be analysed through an agricultural lens, or those that can be achieved through collaboration, which can be complex. This exclusion of traditional foods from agricultural mandates is

mentioned in *Indigenous Food Sovereignty in Ontario: A study of Exclusion at the Ministry of Agriculture, Food & Rural Affairs* by Robin et al. (2023).

> ...when Indigenous communities seek funding for country, traditional and/or wild game foods, it is often considered to be "outside the scope of the available funding" by food and agriculture institutions... (Robin et al., 2023).

This limited scope of funding could be attributed in part to a lack of coordination among government departments who, despite having overlapping jurisdictions, are siloed administratively. Consultation fatigue is a known issue for Indigenous communities that have any number of different government jurisdictions and their subsequent departments approaching them for very similar projects and programs (Government of Canada, 2021).

> Fluidity between mandates is what the federal government and the western science system in general is missing. I think we need to change these colonial systems because they produce the same outcomes. Even if we're all non-racist now, it's still going to keep happening, because the system is still racist. Right? One of the results of those western science systems, and siloed mandates, is that the western scientific process is so competitive, and [many scientists, in general] will not and cannot collaborate with each other, for shared glory. (Focus Group Participant 04)

This participant emphasized the disincentives to collaborate both broadly within western science, and specifically with government department jurisdictions. For example, shared leadership models across departments are difficult to support institutionally due to how funding and decision-making occur across different departments. Participants clarified that interdepartmental research collaborations do occur on occasion, but that they are not as prevalent as they could and should be due to the difficulty of organizing across departments with different agendas.

Participants also noted that using a reductionist, siloed approach to understanding and engaging with Indigenous food systems is an inherently colonial mindset that severely limits researchers' ability to understand and ultimately research these wholistic systems. However, federal research departments are currently required to strictly adhere to their specific mandates due to the federal division of jurisdictional responsibilities, which enables the application of targeted legislation

and promoting accountability to taxpayers who fund public research. Currently, these mandates are structured around western scientific disciplines and creative approaches, and substantial policy and governance reform would be required to entirely dismantle them.

> We need to be breaking down these systems to respond more wholistically to Indigenous research priorities to make all science more collaborative. (Focus Group Participant 04)

Indigenous food systems, as defined in Chapter 1, are wholistic and depend on a collective of people, a collaborative community effort that cannot be understood as single isolated pieces. As such, AAFC and other government departments' strict mandates impose restrictions that limit the extent of what researchers can engage with throughout their research. This results in research that isolates singular components to study without the capacity to consider the other components within the broader food system, as many components of Indigenous food systems reside outside the classification of agriculture. To study Indigenous food systems requires the adoption of a systems approach which requires transdisciplinary collaboration and, in the case of Indigenous food systems, certainly would require significant engagement with Elders and community knowledge holders. Although AAFC researchers can certainly participate in collaborations to study discrete components within Indigenous food systems, participants expressed a range of challenges to addressing Indigenous food systems in a wholistic way. This is to say that the current research model that relies on a reductionist approach does not align with how Indigenous Peoples view food systems, and as such researchers struggle to capture them while studying isolated components of a grander system not meant to be broken down.

3.3.2 Productivity Assessment

When queried about Administrative Processes required to support relationship building for the purposes of co-developing food systems research, several participants discussed how productivity is perceived within AAFC. Similar to how career progression is achieved in university academia, federal researchers are evaluated based on a career progression model that is heavily reliant on publishing as a measure of success. The phrase "publish or perish" was mentioned in both the interviews and the focus group in this study. 'Publish or Perish' (POP) is a term often used when discussing how many research institutions impose pressure upon their researchers to publish literature rapidly and in high quantity as a measure of success, and in some

instances as a condition of on-going employment (Moosa, 2018). This phrase was especially relevant when discussing how AAFC researchers are evaluated for promotions and for general productivity.

Participants brought special attention to the limitations that the career progression framework has, or is perceived to have, on the development of relationships with Indigenous communities. The 'Career Progression Management Framework for Federal Researchers' outlines the four research expectations for successful promotion of researchers, (1) innovation, (2) productivity, (3) impact and (4) recognition (Office of Audit and Evaluation, 2016). However, what constitutes successful achievement of these expectations is somewhat ambiguous. Participants indicated that researchers are struggling to articulate or demonstrate productivity within Indigenous collaborations that do not include publishing literature.

> Departments also recognize the need to develop different types of competencies and responsibilities to meet the exigencies of an efficient and productive research scientist. (Personal communication [unpublished internal framework], 2023)

Focus group participants said it was often up to the discretion of those reviewing applications to determine if a researcher's work was adequately 'innovative, productive, impactful and recognized'. Depending on individual evaluator's perception of the 'Career Progression Management Framework for Federal Researchers', as well as the researcher's ability to articulate their contributions, relationship building processes and community engagement may not be considered as 'productivity' which can hinder career progression for researchers, or create this perception, discouraging others from pursuing Indigenous research partnerships.

From discussions with participants, the current career progression framework is not explicit in how Indigenous collaborations fit within the above outlined research expectations. Since relationship building is not being consistently and adequately considered as productive, innovative, impactful, or recognizable within the current framework, this could be impacting how researchers approach or will approach relationship building processes with Indigenous communities. Participants indicated that relationship building is a very subjective process that depends on all parties involved, that it cannot be rushed or scheduled on a strict timeline. However, if relationship building is not explicitly outlined and uplifted within AAFC's career progression framework, there is the potential for researchers to undervalue relationship building

and favour of allocating their time towards activities that are regarded as more "productive". The measure of what is considered productive, innovative, impactful, or recognizable is subjective and while AAFC's career progression framework casts a broad net over potential contributions, it lacks Indigenous distinctions and contexts. For example, some of the potential outputs listed in AAFC's career progression framework include:

> peer-reviewed publications, scientific products, science advice, research proposals, internal scientific reports, datasets, patents, technology transfers, reviews, books and chapters, expert panels, involvement in advisory committees, policy development, collaborative research and development projects, and public outreach. (Personal communication [unpublished internal document], 2023)

Each of the above outputs could be done as a part of a collaboration with Indigenous partners; however, participants noticed challenges for researchers in describing their contributions and with the evaluators understanding their significance. For example, researchers may not have permission to publish or discuss aspects of their work due to community research agreements, this however, does not devalue this contribution to productivity, innovation, impact, though it may limit recognition depending on the specific instance. Further, relationship building itself should be added to the list of acceptable and encouraged outputs, removing the subjectivity of it.

Ultimately, if collaborative work with Indigenous Peoples is not adequately recognized for its inherent importance, then neither researchers nor evaluators will have fully developed understanding of how to articulate and measure the productivity of this work.

3.4 Intercultural Competence and Knowledge

As indicated in Chapter 1, there has been a push for government departments to find ways to contribute to reconciliation. Participants emphasized that AAFC researchers have been encouraged to participate in IFSR for this reason. While cross-cultural work is encouraged in AAFC, cross-cultural competence is not a requirement for those engaging in the work.

Within this study intercultural competence refers to when individuals possess the skills and attitudes necessary to work in cross-cultural environments, such as being effective and

appropriate in communicating and working with peoples from differing cultural backgrounds (Hammer et al., 2003; Leung et al., 2014).

The terms ‘intercultural competence’ and ‘intercultural knowledge’ are both used to describe a significant barrier that deeply affects the relationships between Indigenous Peoples and non-Indigenous Peoples, especially in a collaborative working capacity. Participants perceive a lack of foundational knowledge surrounding Indigenous Peoples and histories (intercultural knowledge) as well as a general lack of competence when working with Indigenous Peoples (intercultural competence) (see Appendix C, section 4).

> Intercultural competence is a valuable asset in an increasingly globalised world where we are more likely to interact with people from different cultures and countries who have been shaped by different values, beliefs and experiences. (Monash Intercultural Lab, 2021)

3.4.1 Foundational Knowledge of Indigenous Peoples

The discussion surrounding the need for AAFC staff and researchers to demonstrate foundational knowledge of Indigenous Peoples resulted in participants saying that to create genuine relationships with Indigenous communities, researchers must not limit their learning to simplified versions of Indigenous history, but rather fulfil a broad understanding of colonization and its ongoing impacts to Indigenous Canadians. Study participant Sam David said:

> When we talk about foundational learning, we really need to make sure we’re including a working knowledge of systemic racism as part of the measured competencies. A big part of colonialism and colonization was the weaponization of race, and so when we talk about these systems it’s important, we deal with the totality of the environment because it had such a massive impact on what we talk about.

Sam David emphasized that systemic racism is still prominent in AAFC, as commonly experienced in other colonial institutions such as government departments, academic institutions like universities and even medical care facilities (see also Advisory Panel on Systemic Racism, 2022; Agocs & Jain, 2001; Greenwood, 2021; Stelkia, 2020). Ms. David highlighted the need for researchers to engage in reflexivity of their positionality, not only of their personal values and

intentions but in those of the institutions they are representing and advancing. This reflexivity is especially important when remembering that colonial academic institutions and western science generally have a long history of profiting from the perpetuation of racism against Indigenous Peoples; deeply unethical research that harmed Indigenous Peoples while non-Indigenous researchers benefitted is all too common (Coté, 2016; Lux, 1998; Lux, 2016; Mosby & Swidrovich, 2023). An example of this within the context of this research is the Canadian Food Guide, previously known as Canada's Food Rules, which was developed by Lionel Pett in the 1940s (Mosby, 2013; Tennant, 2021). Pett was also the director of the federal Nutrition Services Division and is known for conducting experiments on Indigenous children in residential schools without permission or awareness from the children and their parents (Mosby, 2013).

This topic has another side to it that needs to be acknowledged; the idea that when learning about Indigenous Peoples one cannot only learn about the trauma Indigenous Peoples have experienced. Participants emphasized the harm that stems from Indigenous Peoples only being recognized for being survivors, only being resilient, only being their trauma; that when researchers see Indigenous Peoples, they only see a people that they can help and not people they can learn with and from. Participants explained that Indigenous Peoples are far more than the culmination of the colonial experience and that prior and post contact, we have been a people of great intellect and innovation. When asked "what is often misunderstood about Indigenous Knowledge systems by AAFC?" a participant had this to say:

> It's like another universe of knowledge, it's just an infinite knowledge base to explore. What we don't know about Indigenous knowledge systems is basically everything. We really know so little, and there's so much that we can learn. (Interview Participant SEPT 01)

Once again highlighting the complexity and diversity of Indigenous knowledge systems, we are not a "homogenous" people (Foley, 2018); no singular nation represents the entirety of our cultures, traditions, desires and needs. This diversity of nations is both acknowledged and well-understood by Indigenous scholars who often have relations and connections to multiple communities, however, participants suggest that non-Indigenous researchers often view Indigenous Peoples through a generalized pan-indigenous lens.

To foster genuine relationships, a perspective shift is needed. AAFC and other colonial institutions must begin the process of decolonizing their mindsets surrounding who they think Indigenous Peoples are. Until western scientists can start seeing Indigenous Peoples for who we are and not who they believe us to be, then we will never be seen as more than a "cause" to help, to save, or to otherwise intervene with. This perspective shift requires one of settler decolonization, a rejection of false narratives and uplifting Indigenous truths.

3.4.2 Recognition of Indigenous Knowledge(s) and Science(s)

Throughout the interviews, participants mentioned that a significant issue they see is that Indigenous Knowledge systems are not recognized adequately; that 'Indigenous Science' is poorly understood if even recognized. Indigenous and ally scholars are still working hard to uplift Indigenous knowledge systems, in the face of Eurocentric knowledge systems erasing and undermining all other knowledge systems (Battiste, 2005; Little Bear, 2000, Pederson et al., 2020; Snively & Corsiglia, 2001; Wilson & Shukla, 2020).

Battiste (2005) highlights this academic struggle by saying that:

> The recognition and intellectual activation of Indigenous knowledge today is an act of empowerment by Indigenous People. The task for Indigenous academics has been to affirm and activate the holistic paradigm of Indigenous knowledge to reveal the wealth and richness of Indigenous languages, worldviews, teachings, and experiences, all of which have been systematically excluded from contemporary educational institutions and from Eurocentric knowledge systems. (pg. 1)

Even when Indigenous science is being recognized by colonial institutions, it is done in a way that frames Indigenous science as inferior to western science. As shown in Figure 1, ECCC defines 'Indigenous Science'.

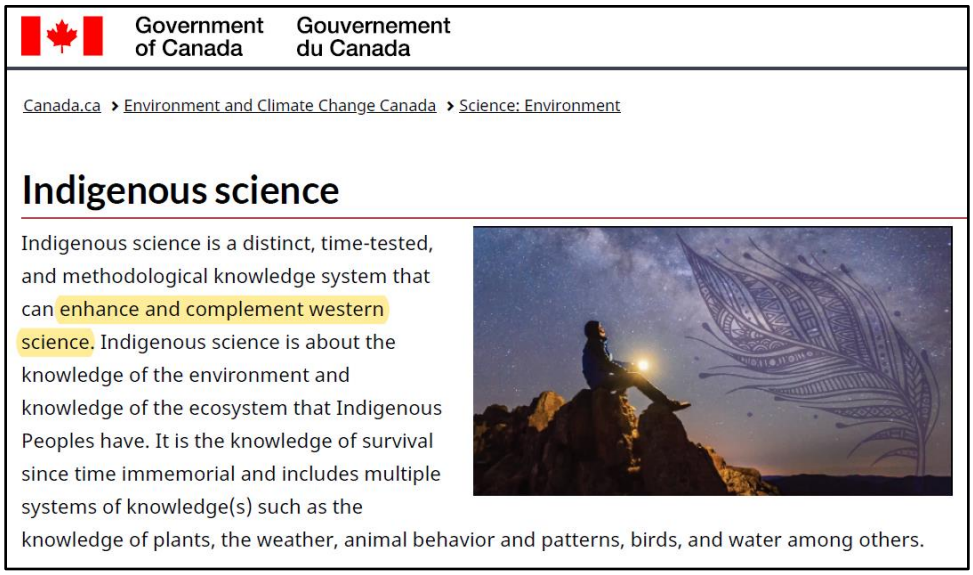

Figure 2 Indigenous Science Definition by ECCC (Environment and Climate Change Canada, 2022**)**

While it is encouraging to see that Environment and Climate Change Canada is bringing visibility to Indigenous science, it is frustrating to see it done in a way that contributes to the narrative of western scientific supremacy. This definition states that Indigenous science "can enhance and complement western science", which reinforces the tokenistic use of Indigenous science and knowledges as "complements" or perhaps just garnish to western science. ECCC's definitions is otherwise good, but Indigenous science does not and should not need to be contextualized within a western context.

This goes back to the false narratives of Indigenous Peoples created by settlers; we are more than our response to colonialism, our knowledges are more than complements, we have always been more than Canada wants us to be. Until we are recognized as being more, especially within colonial institutions, they will continue to fail to work with and for us.

For AAFC to support research collaborations with Indigenous Peoples, it must (1) address the lack of foundational knowledge surrounding Indigenous Peoples, among its staff; and (2) recognize Indigenous knowledges as being valid and independent from western knowledge systems.

3.6 Summary and Discussion

This study identified three main themes that participant found particularly relevant to the systemic barriers present in AAFC that impact the co-development of IFSR. These were (1) Relationship Building, (2) Administrative Processes, and (3) Intercultural Competence and Knowledge; each theme had numerous subthemes which captured what participants perceived as the barriers to collaborative IFSR.

Regarding 'Relationship Building' the subthemes identified from the interviews were 'Individual Relationships', 'Collective Relationships' and 'Funding Limitations'. Participants discussed issues with the ways that AAFC, and its researchers are maintaining 'Individual Relationships' and 'Collective Relationships' with Indigenous partners and communities. Strongly embedded within those discussions in regard to both individual and collective relationships was the topic of funding limitations acting as a barrier to relationships building and maintenance.

There were several subthemes that were identified within the 'Relationship Building' section but were strongly embedded within 'Administrative Processes' as well. The two themes that were organized into 'Administrative Processes' were 'Research Mandate' and 'Productivity Assessment'. Participants discussed how 'Productivity Assessment' barriers affected relationship building with Indigenous partners by contradicting OCAP principles. Participants considered the 'Research Mandate' as a barrier because AAFC's mandate is rooted in the western worldview which excludes components of Indigenous food systems from prospective research projects. Ultimately, AAFC researchers are not funded or rewarded to do the hard, time intensive work of relationship building.

Regarding 'Intercultural Competence and Knowledge' there were two subthemes that participants discussed the most, (1) Foundational Knowledge of Indigenous Peoples, and (2) Recognition of Indigenous Knowledge(s) and Science(s). Both subthemes ultimately centred around participants feeling that researchers and staff within AAFC have a limited understanding of Indigenous Peoples, their worldviews, histories, and knowledges.

3.6.1 Comparison to the STB 'Indigenous Strategy'

The perceptions of many study participants aligned with the 'Indigenous Strategy' and 'Indigenous Strategy Action Plan', which is not suprising since participants were recruited from

the ISLO which led the development of those documents. In section 1.1.6.2, I discussed STB's advancements due to the implementation of the 'Indigenous Strategy. My interviews took place around the same time as the implementation of the STB-wide mandatory cultural awareness training. At the time of my interviews, participants were suggesting cultural training to address the gap in intercultural competence and knowledge among non-Indigenous staff in AAFC.

A disparity between my results and STB's 'Indigenous Strategy' is the lack of discussion (in my study results) surrounding Indigenous training and recruitment which is a significant component of STB's strategy. As seen in Table 1, STB aims to "increase Indigenous participation, capacity and governance in research and development". In 2022, AAFC supported the development of an Indigenous recruitment initiative; the initiative was launched to "increase the representation of Indigenous Peoples in Science, Technology, Engineering and Mathematics" (E. McAuley, personal communication, 2023). The Indigenous-specific recruitment for research technician positions process resulted in over 230 completed applications in 2022; the department has set a goal of hiring thirty peoples within this initiative by 2025 (E. McAuley, personal communication, 2023).

The lack of discussion surrounding Indigenous training and recruitment could be attributed to researcher influence. During interviews, I was often asking what ISLO officer concerns were regarding AAFC researchers conducting research with Indigenous communities. This framing does not necessarily encourage discussions surrounding Indigenous recruitment and training. The only discussion regarding hiring Indigenous Peoples was within the context of providing funding for Indigenous partners to create temporary in community employment to support research projects or hiring students from partner communities to work on the co-developed projects.

Despite this gap between the study and the 'Indigenous Strategy', my results still complement and support the strategy. While the 'Indigenous Strategy' is a high-level document aimed at providing a branch-wide direction for relations with Indigenous Peoples, my study shows the existing systemic barriers that may challenge the implementation of the strategy across STB. My results show that there are several significant barriers to relationship building which is one of the main objectives of the 'Indigenous Strategy.' Addressing the identified barriers is key to AAFC and specifically the STB improving relationships with Indigenous partners. Ultimately, I believe

this study will support ISLO to confront the identified systemic barriers within AAFC and in doing so, aid the implementation of the 'Indigenous Strategy'.

3.6.2 Comparison to the Yellowhead Institute Report

The results of this study are also very similar to those from the Yellowhead Institute's 2023 case study involving the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) (Robin et al., 2023). Participants in the Yellowhead report suggested that systemic barriers within OMAFRA are preventing adequate recognition and prioritization of Indigenous knowledges, issues, and realities within Ontario's decision-making regarding agricultural policy and programming (Robin et al., 2023). The report organized their results into four distinct themes.

Theme 1 'Land, Settler Contamination, and Health' discussed how Indigenous participants expressed concern over the availability of land for their own farming and food acquisition practices, but also that western agriculture practices present risks via contamination and soil depletion (Robin et al., 2023). Additionally, their participants indicated concern with government and industry interests in land development for agricultural ventures that do not align with their communities' values due the contamination risks (Robin et al., 2023).

Theme 2 'Representation and Support for Communities' discussed the difficulty of navigating programming, jurisdictional, and legislative barriers for Indigenous communities when there are few Indigenous Peoples working within OMAFRA (Robin et al., 2023). Further, the report found that non-Indigenous staff are not adequately equipped with the cultural competence necessary to effectively support Indigenous communities (Robin et al., 2023).

> Indigenous representation—in terms of Indigenous staff numbers as well as access, positioning, capacity, and leadership—was a consistent gap for Indigenous participants when interacting with OMAFRA (Robin et al., 2023, pg. 9)

As discussed in the previous section, my results contained only a few responses surrounding Indigenous staffing, whereas both the 'STB Indigenous Strategy' and the Yellowhead report include extensive discussions surrounding increasing Indigenous representation internally and externally. In the OMAFRA study, participants on both sides of the relationship (i.e., Indigenous participants and OMAFRA staff) said that there were few established relationships; none of the Indigenous participants, "were able to connect with or establish a

working relationship with an Indigenous staff member at OMAFRA" (Robin et al., 2023, pg. 9). One of the Yellowhead participants said that this is an issue because when working with non-Indigenous representatives they must self-advocate constantly, as Indigenous representatives must have the knowledge to navigate their organization while also possessing the cultural understanding to effectively support Indigenous communities.

I spoke to this issue at the BC Ministry of Agriculture's 'Gathering of Indigenous-Led Organizations in Agriculture & Food' in Penticton, British Columbia, on March 15, 2023. In response to a discussion prompt around the barriers to gaining funding from government, I stated that no matter how well intentioned these funders are by providing these opportunities, they still don't take the time to understand our needs. They provide the funding, then create a metric for who deserves it and why and then make us do the work of tailoring our needs to fit within what they want to fund. Then to top it all off, communities then have to figure out how to write these high-level academic proposals in a way that these non-Indigenous funders can understand. It becomes our responsibility to learn how to make this matter to them, in a language they understand. Indigenous representation is so important in these government roles, we need people that understand why we matter, why our foods, our lands, our futures matter.

Theme 3 'Capacity, Consultation, Consent (and Racism) in Programming and Development' discussed the lack of meaningful consultation with Indigenous Peoples in OMAFRA, that only superficial efforts are made when collaborative efforts are desperately needed to ensure Indigenous Peoples are being represented in programming and development (Robin et al., 2023). The report further stated that many Indigenous communities lack the capacity needed to engage in the agricultural programming and development OMAFRA is doing (Robin et al., 2023). Participants in the Yellowhead report highlighted the racist environment being maintained within OMAFRA, wherein consultation with Indigenous Peoples is considered "a barrier to program implementation" (Robin et al., 2023, pg. 13).

Theme 4 'Differing Needs, Visions and Priorities' discussed that agri-food funding opportunities are very limited for Indigenous communities since most agri-food funding is centred around economic potential and conventional agriculture (Robin et al., 2023).

> Interviewees working on Indigenous food programming said that OMAFRA and other agri-food funders often assessed projects based on their potential to contribute to the regional, provincial, or federal settler economy in order to be perceived and assessed as worthy or viable (Robin et al., 2023, pg. 14)

Both Indigenous and non-Indigenous participants heavily emphasized that OMAFRA only supports initiatives that fit within the western mould of agriculture that many Indigenous communities are not interested in perpetuating. Indigenous communities, on the other hand, are often looking to support their community to support food security and sovereignty, not to become the next big farmer (Robin et al., 2023).

The Yellowhead report results certainly reflect similar discussions as my study, such as the mandate limitations surrounding what kind of proposals gain funding, and the issues that arise from working with non-Indigenous staff that have not been adequately prepared to work with and for Indigenous communities. Generally, the Yellowhead has a similar emphasis on relationships and finding ways to improving that relationship. However, their results presented a wider diversity of participant perceptions and experiences. Participants in the Yellowhead report were more numerous and diverse than my study; theirs included OMAFRA staff, external contacts in related fields, Indigenous colleagues (of the researchers), and participants from the '2021 Indigenous Agri-Food Funders Forum' (Robin et al., 2023, pg. 6). Conversely, my study was limited to the nine staff members in ISLO at the time of recruitment. Both studies included both Indigenous and non-Indigenous participants; however, the Yellowhead report included participants from a wider range of populations. This resulted in the inclusion of perceptions outside of OMAFRA (colonial institution), whereas my study was limited to perceptions of staff within AAFC (colonial institution). Because of this, the Yellowhead report includes discussions from participants who have worked with colonial institutions, providing insight into the perspectives and experiences of Indigenous communities.

Much like this study, the authors of the Yellowhead report concluded with recommendations that strongly emphasized relationships, and structural change in colonial institution (OMAFRA):

> The insights and experiences from this research have informed our recommendations, which ought to drive structural change, meaningful dialogue

> and relationship building, as well as listening, reflection, and action across the Ministry and the public service more widely. (Robin et al, 2023, pg. 20).

The report's recommendations are: "(1) Redesign decision-making processes; (2) Formalize respect for Indigenous laws, policies and practices; (3) Improve settler understanding and education; and (4) invest in Indigenous land and food economies" (Robin et al., 2023, pg. 18-19).

Ultimately, while my study focused on a federal department and the Yellowhead report was provincial the results share a similar narrative. While the studies have their individual voices, they reflect on the state of colonial institutions in Canada and the overarching narrative of Indigenous Peoples being excluded or ill supported within colonial structures, especially within the context of food related research and programming.

3.6.1 Study Limitations

This study was designed to address the systemic barriers to conducting ethical and culturally responsive food systems research with Indigenous communities within AAFC and as such may not be broadly applicable across all colonial institutions, though I do believe that many of the barriers identified in this study are specifically rooted in colonialism which is ubiquitous throughout government institutions across jurisdictions and departments. The study population was limited to a specific office within AAFC, and as such only represents the thoughts and perceptions from that specific group. As with all research, the results are influenced by the researcher; my interview questions were certainly influenced by my own experiences and opinions regarding systemic barriers in AAFC. Further, the recommendations will only work within an institution whose administration is engaging in action-based change – they are not quick fixes that can be applied without the commitment and support of administration.

CHAPTER FOUR: RECOMMENDATIONS

4.1 'Relationship Building' Recommendations

4.1.1 Develop Engagement Protocol

Participants recommended that researchers pro-actively plan ways to maintain relationships well beyond the conclusion of their research; within both 'individual' and 'collective' relationships. For example, 'individual relationships' should be maintained beyond the conclusion of projects through ongoing communication and engagement in relational activities (attending and hosting gatherings, invitations to events and available training etc.). For "collective relationships' maintaining relationships between communities could manifest through the creation of new positions, or allocating new responsibilities to other positions, that are centred around maintaining long-term engagement with their local Indigenous communities. Participants suggested that this plan be co-developed with their community partners so that both parties' expectations are met and accounted for.

Similarly, I recommend that AAFC and other non-Indigenous research institutions co-develop formal protocols regarding relationship building between researchers and Indigenous communities as a measure to increase the consistency of how researchers are not only approaching the development of relationships but also how they facilitate the long-term maintenance of those relationships. Additionally, implementing similar protocols and agreements throughout AAFC on an organization level to ensure appropriate engagement with Indigenous partners.

Relational protocols would provide researchers with a guide for the minimum expectations that come with the commitment of working with Indigenous Peoples in collaborative research projects.

4.1.2 Allocate Engagement Funding

Participants felt that having dedicated engagement funds within Research and Development Centres would assist in ensuring that relationships are continued in reciprocal fashion both inside and outside of research projects (see also Bull, 2010). This would not negate the communication commitment required of the researchers, but simply to allow for the inclusion of additional

bonding activities, such as inviting community members to training opportunities, and events as well as engaging in any appropriate events open to researchers within the communities. Further, as indicated in Section 3.2.3., participants believe allocating funding towards hiring within partner communities would be beneficial to relationships. Study participant Jinxz Pollard-Flamand of the Red River Metis said the following:

> Included in every single research project proposal there should be money allotted for a coordinator from the community... and they champion the project, because there needs to be that bridge between the researchers and the communities.

Participants stressed that this would ensure an immediate benefit to the community in the form of temporary employment, as well as decreasing the burden or consultation cost of the community to allocate time to some aspects of collaboration without direct compensation. If AAFC researchers can receive funding to do the research with communities, the communities should certainly be compensated for their time and efforts.

These funding-based recommendations also fall within the 'Administrative Processes' recommendation as well since it speaks to the funding and time barriers that were within both the 'Administrative Processes' and 'relationship building' themes.

4.2 'Administrative Processes' Recommendations:

4.2.1 Develop Research Review

I recommend that AAFC develops a 'research review' process that would allow Indigenous partners to review and reflect upon their experiences with AAFC researchers and AAFC as a whole; ideally this would occur at predetermined intervals so that researchers are given constructive criticism. The partners may not feel comfortable or secure in doing so with the researchers and perhaps not even with agents of AAFC. A trial could be done with a third party, to assess if AAFC researchers are adequately and appropriately participating in these relationships. Indicators would be:

a. Informal and formal communication needs being met.
b. Time spent with community outside of research.
c. Knowledge transfer to the community.

d. Adequate researcher experience working with and for Indigenous Peoples.
e. Researcher understanding of community, and its needs and wants.
f. Adequate planning for relationship maintenance once project complete.
g. Intercultural Competence and Knowledge proficiency.
h. Adequate community compensation and reciprocity (i.e., hired community members, service contracts, goods procurement etc.)

Establishing a research review process has the potential to also address the 'Productivity Assessment' barrier by providing scientists with evidence of their community outreach and relationship building to add to any applications for career progression. This also would better facilitate AAFC administration ensuring relationships are being developed and maintained in accordance with AAFC's commitment to reconciliation. Additionally, this creates space for Indigenous partners and communities to voice their wants, needs and critiques in a timely and confidential way, within those projects; assuring partners that quality of relationships is a central concern of AAFC and ultimately is regarded as an iterative process with limitless potential for improvement. As discussed, participants believe that there is great unrealized potential for Indigenous relationship building to be appropriately recognized within the career progression framework as a productive use of time and resources. Further, this process would allow researchers and staff to develop relationships organically and with genuine intentions rather than pursuing a rushed and inauthentic relationship resultant of inappropriate, unconducive timelines.

4.2.2 Human Ethics Protocols

While not being one of the most discussed elements, study participants discussed the human research ethics review process within the context of 'Administrative Processes'. Participants suggested that the current human research ethics review process should be applied much more stringently and consistently in this emerging research area. The human research ethics review process at AAFC applies when research involves 'human subjects.' In the context of conventional AAFC research, this most commonly applies in the case of consumer trials. As such, participants suggested that AAFC researchers are often reluctant or even unaware that they may need to seek HREC review when working with Indigenous partners; specifically, when the research may involve the sharing of traditional or Indigenous knowledge.

As such, my recommendation is for the development of a protocol that requires preliminary consultation with AAFC's HREC for all projects with Indigenous collaborators. This gives the HREC the opportunity to give researchers insight into the necessary ethical considerations for their projects. Establishing ethical protocols and processes for before, during and after research projects is imperative to ensuring no harm comes to Indigenous collaborators. Additionally, this requires the HREC to also have intercultural competence and knowledge surrounding Indigenous Peoples. However, without a thorough understanding of ethical concerns in research involving Indigenous Peoples, as well as the historical relationship between Indigenous communities and settler research, human research ethics review processes would be redundant.

To this point, this recommendation includes the need for an assessment of the current HREC tools and frameworks that are in place for safeguarding Indigenous Peoples in research; as well as an assessment of what level of knowledge is necessary for HREC staff to possess to effectively review research projects engaging with Indigenous partners and participants.

4.2.3 Shift Towards Alternative Research Models

Regarding harm mitigation for Indigenous communities interested in engaging in research, participants expressed a desire to shift away from the current research model used when collaborating with Indigenous communities as they believe it perpetuates unequal power dynamics. Numerous participants discussed creating a center for Indigenous research, funded trans-departmentally without interfering jurisdictional borders. In this model, communities would engage with this research center which would ideally be staffed with Indigenous scientists; resulting in research model where the center acts as a resource for communities to use.

Another alternative presented by participants was a shift towards a service model, where funding is given directly to communities which puts them in a position of power to direct their own research, with the option to contract AAFC researchers to support and collaborate.

Inherently, participants expressed a desire to see power dynamics addressed by shifting away the current model which often has limited benefits to the Indigenous participants. ISLO works to support a power shift that centers Indigenous Peoples as the decision-makers, as sovereign nations, and moves research along the continuum of co-development towards increasing

Indigenous leadership and participation. Not to further embed power inequalities in knowledge systems or in the relationships between Indigenous Peoples and colonial institutions.

4.3 'Intercultural Competence and Knowledge' Recommendations

A common thread among discussions with participants was that AAFC researchers engaged in Indigenous research projects are usually well intended but have not been adequately equipped with the required intercultural competence and knowledge to have equally good impacts via their research.

Participants recommended that those looking to improve their, "Indigenous Cultural Awareness, Literacy, and Competency" engage with the external learning resources they have curated on their internal training platform. Some examples are:

> (1) University of British Columbia's 'Indigenous Foundations' (4-6 hours reading) (First Nations and Indigenous Studies, 2009).
>
> (2) University of Alberta's 'Indigenous Canada' (5-8 hours online modules) (Faculty of Native Studies, n.d.).

ISLO has selected these resources to ensure AAFC staff, "Are all starting from a common, basic understanding of Indigenous cultures, histories, issues, and terminology" (personal communication, [unpublished internal document], 2023).

Further, ISLO recommends additional resources that include content regarding: Indigenous identity, land and rights, government policy, global Indigenous issues, Indigenous protocol (such as territorial acknowledgments) and more (personal communication, [unpublished internal document], 2023). Participants expect that those actively engaging with Indigenous Peoples have intercultural competence and knowledge that extends beyond foundational knowledge. Participants emphasized that researchers, and all those in academia and research involving Indigenous Peoples, must continuously further their knowledge and understanding of Indigenous Peoples while also unlearning the false narratives developed and perpetuated by colonization.

My recommendations for 'Intercultural Competence and Knowledge' development in AAFC are (1) Moving Beyond Foundational Knowledge, (2) Culturally Adept Supervision, and (3) 'Ethical Space'.

4.3.1 Move Beyond Foundational Knowledge

In the article "Intercultural Competence", Leung et al. suggests that intercultural competence should be more strongly considered as a qualification and skillset that is encouraged and valued in employees (2014); the demand for this has increased with globalization but is also highly necessary within the Canadian context of Indigenous-settler relationships. Much of the current literature surrounding 'intercultural competence' or 'intercultural sensitivity' focuses on global applications; however, it should not be overlooked for the importance of its local applications such as within colonial contexts, where Indigenous Peoples and colonial institutions are engaging in relationships and cross-cultural research.

Researchers from non-Indigenous research institutions should possess more than just a foundational knowledge of Indigenous Peoples prior to engaging with Indigenous communities. Researchers should be encouraged, supported, and required by non-Indigenous research institutions to engage in active, continuous learning and education surrounding Indigenous knowledge and science (beyond foundational knowledge) if they are collaborating with Indigenous communities. This includes increased sensitization to the colonial and neo-colonial systems that perpetrate the ongoing colonization and marginalization of Indigenous partners, staff, and students. The application of this recommendation may vary depending on prior commitments to reconciliation. For example, institutions located in provinces or municipalities that have committed to upholding various calls to action such as The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), The Royal Commission on Aboriginal Peoples (RCAP), The Truth and Reconciliation Commission (TRC), and the National Inquiry into Missing and Murdered Indigenous Women and Girls (MMIWG) etc. For such institutions, these commitments may already result in a higher level of 'foundational knowledge' leaving for more capacity to create and implement internal protocols that go beyond compensating for institutional weaknesses.

4.3.2 Provide Culturally Adept Mentorship

Numerous participants discussed the need for a program or structure that allows researchers to gain experience working with Indigenous communities without risk to the communities themselves. In other words, researchers would be guided by someone, not necessarily a researcher or scientist, in all aspects of working with Indigenous communities. While this would

be like having Indigenous Liaisons and coordinators, the focus would be on teaching and guiding researchers, not doing the work in place of the researchers. Participants visualized this as taking on a similar structure as a mentor/mentee program, or perhaps a colleague-to-colleague relationship. This would result in more intercultural competence among researchers without limiting research opportunities or putting Indigenous communities at risk.

4.3.3 Create Ethical Space

Encouraging the development of Intercultural competence and knowledge is essential to creating 'ethical spaces' for AAFC researchers and Indigenous Peoples to collaborate. Dr. Willie Ermine developed the concept of 'ethical space':

> ...the idea of the ethical space, produced by contrasting perspectives of the world, entertains the notion of a meeting place, or initial thinking about a neutral zone between entities or cultures. The space offers a venue ...where human-to-human dialogue can occur. The ethical space offers itself as the theatre for cross-cultural conversation in pursuit of ethically engaging diversity and disperses claims to the human order (Ermine, 2007).

Cree scholar (Sturgeon Lake First Nations) Dr. Ermine's initial conception of 'ethical space' was rooted in a law and legal institutions, however, the concept of 'ethical space has taken hold as a general framework for cross-cultural engagement with colonial institutions and Indigenous Peoples. In the 2018 report "We Rise Together", the Indigenous Circle of Experts (ICE) discusses the merits of implementing Dr. Ermine's 'ethical spaces' in collaborative contexts where both groups are equal partners, and their voices and worldviews are seen, heard, and valued.

ICE states that the framework for ethical space is to build and nurture "a place for knowledge systems to interact with mutual respect, kindness, generosity and other basic values and principles"; a space where the legitimacy of Indigenous knowledge systems is never questioned or compared against western knowledge systems (Indigenous Circle of Experts, 2018).

It stands to reason that the building 'ethical spaces' requires interculturally competent and knowledgeable people; engaging in 'ethical spaces' is about equal partnerships and for both participating groups to recognize the other knowledge system as legitimate (Indigenous Circle of

Experts, 2018). Members of ISLO indicated that Indigenous knowledge systems are rarely given adequate consideration by AAFC researchers. For example, while researchers may include some morsels of information and traditional knowledge in their work, most researchers only include Indigenous knowledge in superficial, fragmented, or tokenistic ways. It should be noted that this is likely not the intention of the researchers, but rather a by-product of working within the world of western academia, where Indigenous knowledge systems are not considered legitimate ways of knowing, but simply alternative sources of data. This is further compounded by the short-term nature of federal research partnerships and unfamiliarity with community research outcomes within career progression frameworks (see section 3.3.2 'Productivity Assessment') causing work and relationships to be similarly short-term and fragmented.

ISLO itself facilitates Indigenous learning opportunities for AAFC staff and students, including hosting events, inviting guest speakers, and developing internal resources. An interview participant had the following to say about ISLO's role providing learning resources and opportunities for research staff.

> I think that the other role of ISLO is to as best as possible prepare research scientists for working with Indigenous communities, so that they can approach research relationships from a strong base of knowledge and take some of those early steps and make some of those early mistakes internally. (Interview Participant APR01)

Study participants emphasized that AAFC researchers are experts in their respective fields, but not necessarily experts in intercultural competencies and knowledges in relation to Indigenous Peoples. During his interview Dan Benoit spoke to this saying, "part of the problem is that you have well intentioned allies, without the full cultural competency or the social competency." This is to say that there must be a higher degree of cultural competency and knowledge achieved by current researchers and staff, or cultural ambassador services supported by the institution to mitigate any gaps.

Participants further emphasized that AAFC needs to encourage increased presence and recognition of social sciences when working with Indigenous communities. Specifically, participants noted that working with Indigenous communities required experiences and skills related to intercultural knowledge and competence that are more typical of researchers in social

sciences. Participant Sam David spoke to this, saying that "if you're dealing with people in any way, shape or form, you should have social science involved." David went on to elaborate that, in their opinion, social scientists have adopted a higher rigour regarding ethical standards and methodologies in research because of the long history of social scientists conducting exploitative and unethical research on minority groups, especially BIPOC communities, and facing the subsequent consequences of such.

4.4 Conclusion

Broadly, the purpose of this study was to address how AAFC, and other colonial institutions, can engage with Indigenous communities in ways that focus on ending institution-based 'colonial harm', rather than offering 'colonized help'. Specifically, my aim was determining what AAFC can and should do to appropriately engage with Indigenous communities. The data analysis revealed that participants perceived systemic barriers to be a considerable challenge to appropriately engaging with Indigenous communities. Ultimately, the study focused on further identifying and addressing systemic barriers to co-developing Indigenous food systems research within the colonial institution AAFC.

I identified three themes in my data (1) Relationship Building, (2) Administrative Processes, and (3) Intercultural Competence and Knowledge. However, participants emphasized that they perceived relationships to be the overarching theme that all others fell within. This was especially noticeable during the writing of this thesis; certain barriers were connected across several themes and could not be discussed separately from each other.

My results indicated that within each theme there were several barriers to IFSR:

> **'Relationship Building':** (1) Individual Relationships, (2) Collective Relationships, (3) Funding Limitations and Dedicated Staff.
>
> **'Administrative Processes':** (1) Research Mandate, and (2) Productivity Assessment
>
> **'Intercultural Competence and Knowledge'**: (1) Foundational Knowledge of Indigenous Peoples, (2) Recognition of Indigenous Knowledge(s) and Science(s).

In both the interviews and the focus group, the most frequently discussed barriers to IFSR were how relationships are built between Indigenous communities and AAFC's staff. The data showed that participants perceived there to be two types of relationships: (1) individual relationships and (2) collective relationships, which were the top two most discussed subthemes in 'Relationship Building' (see Appendix C, section 2). While participants identified several overlapping barriers with these two relationship types, it was clear that each type of relationship also possessed unique barriers. Participants emphasized that the collective relationship between AAFC and Indigenous communities is mainly impacted by 'Administrative Processes' and by the historical and ongoing effects of colonization. As participants discussed, AAFC has always been a government institution and, as such, is a colonial structure that is designed to produce colonial knowledge and outcomes; therefore, working within this system requires significant attention to the potential harms of engaging with colonial institutions from the perspective of Indigenous communities.

The main subthemes within 'Administrative Processes' were 'Research Mandate' and 'Productivity Assessment'. Participants described the Government of Canada as breaking down the natural world into individual research departments that must maintain separate research mandates despite overlapping areas of interest, resulting in departments governing discrete components of a much larger system. This presents an issue when engaging with IFSR, due to the diversity of Indigenous food systems which span multiple departmental jurisdictions.

The application of AAFC's current career progression framework was identified as a barrier to IFSR because the framework does not explicitly include provisions to measure productivity and success surrounding work with Indigenous communities, and both researchers and evaluators are unfamiliar with articulating or evaluating community-based indicators in the context of research outcomes. This has the potential to harm relationships between researchers and Indigenous communities as it may disincentivize researchers from pursuing or maintaining co-developed research relationships or could create the perception that co-developed research is not 'productive' or 'innovative.'

The two subthemes identified under 'Intercultural Competence and Knowledge' were (1) foundational knowledge surrounding Indigenous Peoples and (2) recognition of Indigenous Knowledge(s) and Science(s). Participants felt that many of AAFC's researchers and staff are not

in possession of a working knowledge surrounding Indigenous Peoples' histories, cultures, worldviews, struggles and successes. Participants perceived a similar lack of individual and institutional recognition and understanding of Indigenous knowledges and sciences. Some participants felt that AAFC continues to perpetuate the dominant western knowledge system and that the level of recognition and inclusion of Indigenous knowledge could be enhanced at all levels of the organization.

The recommendations emerging from this study are the result of the interviews with ISLO staff (study participants) but could be similarly applied at many colonial institutions:

*'**Relationship Building'***- (i) Develop Engagement Protocols, (ii) Allocate Engagement Funding.

'Administrative Processes'- (iii) Develop Research Review, (iv) Shift Towards Alternative Research Models.

'*Intercultural Competence and Knowledge'*- (v) Move Beyond Foundational Knowledge, (vi) Provide Culturally Adept Mentorship, (vii) Create Ethical Space

The most important theme identified repeatedly was that of c lasting, authentic, and equal relationship-building. Because of this, the recommendations are centred around improving and safeguarding relationships with Indigenous Peoples. I urge AAFC to take this study into consideration and utilize the results and recommendations to further advance their implementation of the 'STB Indigenous Strategy'.

Ultimately, this study is not revolutionary, it does not solve any issues, instead it brings attention to the systemic barriers that have existed since the conception of colonial institutions in Canada and must be similarly dismantled and remedied. It emphasizes that Indigenous Peoples and knowledge systems are kept on the fringes of academia and research due to the ostracization of 'other' ways of knowing that contradict the dominant western knowledge regime. This study and studies like it (see section 3.6.2) are providing a jumping off point for colonial institutions to address their internal barriers with the intention of improving relationships with Indigenous Peoples.

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APPENDICES

Appendix A

Section 1, Consent Form

Consent Form

Interview and Focus Group Participants
Conducting Indigenous Food Systems Research as a non-Indigenous Institution

Principal Investigator:
Dr. Hannah Wittman, Professor, Faculty of Land and Food Systems, Centre for Sustainable Food Systems, The University of British Columbia | [redacted]

Co-Investigators:
Dr. Emily McAuley, Director, Indigenous Science Liaison Office, Agriculture and Agri-Food Canada | [redacted] | [redacted]
Aleesha Jones, Graduate Student, Faculty of Land and Food Systems | [redacted]
Dr. Tabitha Robin, Professor, Faculty of Land and Food Systems, The University of British Columbia
Dr. Kent Mullinix, University of British Columbia, Adjunct Professor, Faculty of Land and Food Systems | [redacted]

This research study is being conducted in partial fulfillment of the requirements for a Master of Science degree for Aleesha Jones who is a research assistant within the 'Research Affiliate Program' with Agriculture and Agri-Food Canada (AAFC). Information collected will form part of a graduate thesis, which will become a public document. In addition to Aleesha Jones, only the Principal Investigator and the other Co-investigators will have access to the records of this research. Your participation will provide important knowledge about the framework for collaboration of non-Indigenous research participants in Indigenous food systems studies.

Sponsor:
Funding for this study has been provided by the Indigenous Science Liaison Office (ISLO) from Agriculture and Agri-Food Canada.

Purpose:
The purpose of this study is to obtain advice and knowledge from experts, within relevant fields to Indigenous food systems, that can be used to collaborate in research projects with Indigenous communities pertaining to the state of their food systems. We aim to address how non-Indigenous research institutions can and should appropriately engage in food system research with Indigenous communities.

You are being invited to take part in this research study because you have important experiences and perspectives that may provide further understanding into how ISLO can more effectively and appropriately engage with Indigenous partners.

The results will be published in a thesis, an internal AAFC report and future academic publications. Dr. Wittman and Miss Jones will have access to the raw data gained from this study.

Study Procedures:
Participants have the option to engage in one or both phases of research. The study includes both interviews and focus grouping, participants can choose which ones they would like to be included in.

Interviews (Phase 1):
Participants will be interviewed individually during our first phase of information gathering. In the interview, you will be asked open-ended questions regarding Indigenous food systems, research in Indigenous communities, and Indigenous research methodologies. There are no right or wrong answers; all points of view will be respected. The interview will take **approximately 60 minutes** and will be conducted **via Zoom.** You may refuse to answer any question, or you may withdraw from the interview at any time without explanation and without any consequence to yourself.

The interview will **be audio-recorded and transcribed**, and the transcript will be sent back to you for review and approval. You can also request amendments to the transcript before giving the approval for the inclusion of the data in the study.

Focus Grouping (Phase 3):
Participants will be included in focus groups with a total of 5-8 other experts. The focus groups will take place **virtually using Zoom** and will be approximately **60-90 minutes long**.

The participants will be asked questions so that they can discuss and assess the research materials that were developed using the information gathered from the initial interviews in Phase 1. Participants will be sent the research materials in advance for their revision and preparation for the focus group. Participants will be encouraged to ask any questions about the materials, as well as provide feedback that can be discussed collectively within the group. The mediator will have a focus group guide to assist in facilitating discussions.

There are no right or wrong answers; all points of view will be respected. You may refuse to answer any question, or you may withdraw from the group at any time without explanation and without any consequence to yourself. The focus group will be **audio-recorded and transcribed**, and the transcript will be sent back to you for **review and approval**. You can also request amendments to the transcript before giving the approval for the inclusion of the data in the study.

Zoom Procedures:
The interviews and focus group recordings will be stored on the University of British Columbia's licensed Zoom cloud server and transcript files will remain confidential and encrypted, stored on a secure, password protected computer, with no identifying information such as your full name or contact information associated with the original data files. Please note, however, that conversation from the focus group may be anonymously quoted in the final Thesis report or any other reports published from the study.

For the duration of the interviews and/or focus groups it is important that participants refrain from using their full name as their ID on Zoom; it is preferable for them to use a nickname or substitute name. Their preferences will be discussed and noted prior to engaging in the interviews and/or focus group. Participants are encouraged to share their preferences for having their camera turned on or off. Ideally participants will mute themselves when they are not speaking to improve sound quality and clarity.

Risks Involved:
There is minimal risk to taking part in this study. Your name, any contact details, and any other identifying characteristics will be excluded from published materials and will remain confidential, unless participants wish otherwise. If you would like an electronic copy, or notification of how to access a paper copy of the completed thesis, please enter your email or mailing address at the bottom of the consent form. Your contact information will not be shared with any other party and will not be published.

Benefits Involved:
There is no compensation for your participation or direct benefit in this study. However, your participation would be a significant contribution to our research and to AAFC's efforts to decolonize their research practices.

Confidentiality/Anonymity:
Information gathered from the interview will not be linked to any individual as identities for the purpose of anonymity. Participants will not be identifiable in any reports, unless they wish otherwise; all responses will be kept confidential. An audio recording device will be used but no video footage will be taken. Number codes will be assigned to the interviews to remove personal identifiers and maintain confidentiality throughout the interview analysis as well as any writing produced from the research.

Questions:
If you have any questions or would like further information with respect to this study, you may contact Aleesha Jones at the Faculty of Land and Food Systems, UBC or the Principal Investigator, Dr. Hannah Wittman.

Complaints:
If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in

the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Consent:
I understand and recognize that my participation in this study is entirely voluntary. I have been informed that I can withdraw from this study at any time, without risking any adverse effects.

I have read and understood the Consent Form. I have received a copy of this form and will keep it for my own records. I understand that my anonymity will be protected to the best of the abilities of the researchers.

I consent to participating in one or more of the following phase(s):

☐ **Phase 1: Interviews**

☐ **Phase 3: Focus Group**

Your signature indicates that you consent to participate in this study.

I, the undersigned, consent to participate in this study.

_____

Participant Signature Date

_____

Printed Name of the Participant

☐ Yes, I would like to receive an electronic copy of the completed study. Please email to _____ or please notify me by mail when and where I may access a paper copy of the Thesis once it is published:

_____

Request to be identified

☐ I request to be identified by name in published works resulting from this interview.

Your signature indicates that you consent to have your name used in published works resulting from this interview. You consent to your name being linked to information quoted from your interview.

I, the undersigned, consent to be identified by name in published works resulting from this interview.

_____

Participant Signature Date

_____

Printed Name of the Participant

Appendix A

Section 2, Interview Guide

<u>Phase 1: Interviews with ISLO Members</u>
Interview Guide
Aleesha Jones

ISLO Resources:

1) Do you think that the protocols and resources ISLO has to offer, effectively prepare researchers to engage with Indigenous partners and communities?

2) From your perspective has AAFC effectively adopted the resources that ISLO has developed?

3) What barriers do you think exist that may prevent or slow the adoption of ISLO resources throughout AAFC?

4) Can you identify any weaknesses or knowledge gaps that AAFC and ISLO have in regard to engaging in and maintaining relationships with Indigenous partners?

Indigenous Food Systems

1) Have you witnessed or experienced any barriers to AAFC engaging in food systems research in collaboration with Indigenous communities?

2) What aspects of Indigenous food systems do you believe are most under-researched or under-represented?

    a. Do you have any insights into why this may be the case?

Non-Indigenous Research Institutions

1) What are common mistakes or assumptions non-Indigenous research institutions make when engaging in research involving Indigenous Peoples/communities?

2) Alternatively, have you seen or experienced anything in particular that was well-done by AAFC while conducting Indigenous focused research?

(ONLY if there's Extra Time)
Understanding Indigenous Research Methodologies

1) Do you believe there are ways in which Indigenous research methodologies are misunderstood and therefore improperly applied by non-Indigenous research institutions?
2) Are there aspects of Indigenous research methodologies that you think AAFC is fundamentally unable to use/adopt since it is a government research institution?

3) What do you consider to be the most significant disparities and similarities between Indigenous research methodologies and western research methods?

Closing Questions

Is there anything I have failed to ask or broach that you would like to share?
Do you have any questions for me about this project?

Appendix B

Section 1, Codebook 1

Code	Description
AAFC	Anything related to Agriculture and Agri-Food Canada
AAFC Mandate	The mandate and goals of AAFC with specific attention to how this affects work with or by Indigenous Peoples.
Indigenous Resources	Resources from within AAFC or suggested by AAFC that provide insight and education into working with Indigenous peoples/communities broadly.
Indigenous Capacity	This is for discussions regarding the capacity that AAFC has for Indigenous projects, programs and research for the Indigenous departments (ISAO, ISLO, etc). This may include staffing capacity, funding capacity, general capacity for growth.
ISLO	Information regarding the Indigenous Science Liaison Office

Food Systems	Relating broadly to Indigenous food systems, food sovereignty, security etc.
Food Security	Relating to Indigenous food security
Indigenous Food Systems	Relating to Indigenous food systems
Knowledge	This refers to either Indigenous or Western knowledge systems. May include discussions of their similarities or differences, general worldviews, etc.
Indigenous Knowledge Systems	Discussions including Indigenous Knowledge Systems.
Similarities & Differences	Discussion highlighting similarities and differences of IKS and WKS

Western Knowledge System	Discussions about Western Knowledge Systems
Research Considerations	Includes discussions surrounding research considerations such as: institutional considerations & barriers, intercultural competencies, and physical barriers.
Institutional Considerations & Barriers	Includes discussions surrounding Career progression and interdepartmental collaborations
Career Progression	Discussions surrounding how researchers are able to progress in their careers, within the context of conducting research with Indigenous communities.
Interdepartmental Collaborations	Includes discussions surrounding how AAFC does or doesn't collaborate with other government departments.
Intercultural Competencies	Discussions regarding the presence or lack of intercultural competencies.

Relationships	Discussion regarding how intercultural competencies influence relationships.
Relevant Experience	Discussions surrounding researchers having or lacking relevant experience to working with Indigenous partners.
Physical Barriers	Including, Funding Limitations, geographic barriers, staffing barriers etc.
Suggestions	Includes all discussions surrounding suggestions to address barriers/issues.

Appendix B

Section 2, Codebook 2- Relationship Building

Codebook 2- Relationship Building	
Code	**Description**
Dedicated Staff	This code is for discussions about staffing capacity, dedicating staff to Indigenous projects, lack of dedicated staff etc.
Suggestions for Dedicated Staff	This code refers to discussions surrounding suggestions for 'Dedicated Staff'
Funding Limitations	This code is for discussions surrounding financial support for building Indigenous relationships, such as hiring community members, lack of internal/external funding, etc.
Suggestions for Funding Limitations	This code refers to discussions surrounding suggestions for 'Funding Limitations'
Geographic Limitations	This code refers to discussions about Relationship building being limited by geography, such as only adjacent communities being considered for projects.

Suggestions for Geographic limitations	This code refers to discussions surrounding suggestions for 'Geographic Limitations'
Individual Relationships	This code refers to discussions about the relationships between individual researchers and Indigenous community members and representatives. So, it is on a more personal/micro scale than the institutional relationships.
Suggestions for Individual Relationships	This code refers to discussions surrounding suggestions for 'Individual Relationships'
Timeline limitations in relationship building	This code refers to discussions about limitations to the amount of time researchers have to build relationships with communities. This time can be influenced by workload, funding cycles, etc.
Suggestions for Timeline Limitations	This code refers to discussions surrounding suggestions for 'Timeline Limitations'
Collective Relationships	Discussions relating to collective relationships, such as AAFC and Indigenous communities.

Suggestions for Collective Relationships	This code refers to discussions surrounding suggestions for 'Collective Relationships'

Appendix B

Section 3, Codebook 2- Administrative Processes

Codebook 2- Administrative Processes	
Code	**Description**
Research Mandate	This code refers to discussions about AAFC's departmental mandate and how it directs research. This can include AAFC's limitations, and encouragements revolving around research interests, research scope etc.
Suggestions for Research Mandate	This code refers to discussions surrounding suggestions for the 'Research Mandate'
Productivity Assessment	This code refers to discussions revolving around AAFC's career progression model/structure. Meaning, how researchers are given salary increases, resources, titles etc.
Suggestions for Productivity Assessment	This code refers to discussions surrounding suggestions for 'productivity assessment'

Appendix B

Section 4, Codebook 2- Intercultural Competence and Knowledge

Codebook 2- Intercultural Competence and Knowledge	
Code	**Description**
Foundational Knowledge	This code encompasses discussion around the presence or lack of foundational knowledge surrounding Indigenous Peoples, histories, and cultures. This can include researchers not having experience working with Indigenous Peoples, not knowing the history of colonisation etc.
Suggestions for Foundational Knowledge	This code refers to discussions surrounding suggestions for 'Foundational Knowledge'
Indigenous Food System Knowledge	Having a general comprehension of historical and contemporary food practices, food sources, and food-based challenges of Indigenous Peoples in Canada.
Suggestions for Indigenous Food Systems Knowledge	This code refers to discussions surrounding suggestions for 'Indigenous Food Systems Competencies'
Recognition of Indigenous knowledge, expertise, and science(s).	This code is for discussion revolving whether Indigenous knowledges, expertise and sciences are being included, understood, or even recognized within AAFC.

Suggestions for Recognition of Indigenous knowledge, expertise, and science	This code refers to discussions surrounding suggestions for 'Recognition of Indigenous knowledge, expertise and science'
Social science expertise	This code is for discussions that directly or indirectly mentioned social science expertise being either present or not in AAFC research projects/programs involving Indigenous Peoples and or communities.
Suggestions for Social Science Expertise	This code refers to discussions surrounding suggestions for 'Social Science Expertise'

Appendix C

Section 1, Round 1 Coding Table

Round One Coding Table	
Code	**Number of References**
Research Considerations and Barriers	192
AAFC	160
Relationships	150
Intercultural Competencies	142
Knowledge	97
Institutional Considerations and Barriers	94
INDG Resources	89
Suggested Changes	87
Similarities and Differences	69
Physical Barriers	69
Indigenous Capacity	68
Indigenous Food Systems	66
IKS	66
ISLO	60
WKS	45
Relevant Experience	45
AAFC Mandate	37
Food Systems	35
Career Progression	28
Interdepartmental Collaborations	21
Food Security	12
Food Sovereignty	4

Appendix C

Section 2. Relationship Building Coding Table

Relationship Building	
Codes	**Number of References**
Suggestions for Geographic Limitations	3
Suggestions for Timeline Limitations	5
Timeline limitations in relationship building	14
Suggestions for Funding Limitations	16
Geographic Limitations	16
Suggestions for Dedicated Staff	17
Suggestions for Individual Relationships	23
Suggestions for Collective Relationships	29
Funding Limitations	40
Dedicated staff (capacity)	42
Collective Relationships	50
Individual Relationships	55
TOTAL	**310**

Appendix C

Section 3. Administrative Processes Coding Table

Administrative Processes	
Codes	**Number of References**
Suggestions for Productivity Assessment	8
Suggestions for Research Mandate	13
Productivity Assessment Structure	24
Research Mandate	31
TOTAL	**76**

Section 4. Intercultural Competence and Knowledge Coding Table

Intercultural Competence and Knowledge	
Codes	**Number of References**
Suggestions for Social Science Expertise	6
Suggestions for Indigenous Food Systems Knowledge	7
Social science expertise	11
Suggestions for Indigenous knowledge, expertise and science	12
Suggestions for Foundational Knowledge	23
Indigenous Food System Knowledge	45
Foundational Knowledge	71
Recognition of Indigenous knowledge, expertise, and science(s).	75
TOTAL	**250**