100 mile fibre:

The organization and governance of fibresheds in Southern Ontario and Northern Ohio

by

Amaryah DeGroot

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Examining Committee Membership

The following served on the Examining Committee for this thesis. The decision by the Examining Committee is by majority vote.

External Examiner	Dr. Edith Callaghan Professor
Supervisor	Dr. Heather Hall Associate Professor
Co-supervisor	Dr. Jennifer Lynes Associate Professor
Internal Member	Dr. Goretty Dias Associate Professor
Internal-external Member	Dr. Tara Vinodrai Professor
Other Member(s)	Dr. Audra Mitchell Professor

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Textile overconsumption, propelled by a fashion industry that is global in scale and overly reliant on non-renewable feedstocks, has led to new models of fibre production. One model is the fibreshed, a regional-based fibre system that proposes circularity, local scale and suitability, and accessible mechanisms of governance. While fashion and design scholars have studied fibresheds, more research is needed to develop a theoretical understanding of them, their structures of governance and their contributions to sustainable fashion. To address these gaps, a case study was conducted on two fibreshed networks in North America. This research examined how the model is being delivered and the factors influencing its implementation, in particular, how regional fibre production is structured, managed and supported in two regions – Southern Ontario and Northern Ohio – areas which include the organizations of Upper Canada Fibreshed in Ontario and Rust Belt Fibershed in Ohio. Informed by existing scholarship in fashion, sustainable fashion and governance, and by theories on place and regions, this exploratory work involved interviews with key informants and a review of primary documents to draw an empirical understanding of the organization and governance of fibresheds. More specifically, it applied Benedum and Becker's (2021) network governance framework to assess how fibreshed players organize, coordinate stakeholders and carry out their objectives of social accountability and regional development. By integrating sustainable fashion concepts with regional theories from geography and design, the results of this research emphasize the social-spatial dimensions of fibresheds. They also inform the study of other regional-based supply networks by reinforcing the impact of heterogeneity on network capacity and the need for producer involvement in decision-making. Such an analysis provides a critical foundation for progress toward the governance of sustainable fashion which values the players and leads to more meaningful engagement with sustainable consumption.

Acknowledgements

This study centres on two pieces of land: Southern Ontario and Northern Ohio. The names of these places were chosen by settlers to erase the designations by those who lived there for more than a millennium prior, disrupting a sacred relationship between the land and its inhabitants. In Ontario, these inhabitants included members of the Anishnaabeg (Anishinaabeg/Anishnabek/Anishinabek), Haudenosaunee (Iroquois), Huron-Wendt (Wendat/Wyandotte/Wyandot), Attawandaron (Neutral), Lenape, Ojibway/Chippewa and Algonquin people; and in Ohio, they included the Erie, Osage, Hopewell, Myaamia, Shawandasse, Kikaapoi, Odawa, Sauk, Anishinabe-waki, Attiwondaeronk, Haundenosaunee, Wenrohronon, Susquehannock, Massawomeck, Calicuas, Moneton, Yuchi, Adena, Cherokee- East, Kiikaapoi, Peoria, and Meskwahiki-asa-hina people[1]. I recognize those who lived and worked on these lands before colonialization and the Indigenous peoples who inhabit these regions today, whose presence and contributions shape my knowledge of these places.

I wish to extend my deepest gratitude to my advisors, Dr. Heather Hall and Dr. Jennifer Lynes, whose patience and expertise these last five years has been crucial. To Heather, for your eye to every single detail – no matter how small – and to Jenn, for helping me find the missing links. You both taught me how to conduct research and write like a social scientist and for that, I am immensely thankful. Thank you to my committee members – Dr. Edith Callaghan, Dr. Goretty Dias, Dr. Audra Mitchell and Dr. Tara Vinodrai – for your wisdom and encouragement.

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Thanks to my work colleagues, Dawn, Asha, Ros, Mike, Priscilla, Rachel and Kyra, who never failed to show up every day with the determination to improve lives, without knowing who will come through the door or what will arrive in the inbox.

[1] Native Land Digital, 2025

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List of Abbreviations

ATC	Agreement on Textiles and Clothing
CSA	Community Supported Agriculture
CWC	Canadian Wool Council
COIL	Circular Opportunity Innovation Launchpad
DE-FI	Dayton Emerging Fashion Incubator
FABRIC Act	Fashioning Accountability and Building Real Institutional Change Act
FedDev	Federal Economic Development Agency of Southern Ontario
IWTO	International Wool Textile Organization
MFA	Multifibre Arrangement
NALA	North American Linen Association
NFU	National Farmers Union
NOP	Northern Ohio Participant
OSU	Oregon State University
PET	Polyethylene Terephthalate
RBF	Rust Belt Fibershed
RFMI	Regional Fiber Manufacturing Initiative
RoO	Rules of Origin
SOP	Southern Ontario Participant
SAFSF	Sustainable Agriculture and Food Systems Funders
UCFS	Upper Canada Fibreshed
WTO	World Trade Organization

Chapter 1
Introduction

The use of plants and animal fibre for textiles, such as linen and wool, is a centuries-old practice (Breniquet & Michel, 2014; Kvavadze et al., 2009; Melelli et al., 2021) yet today, synthetic fibres considerably outweigh natural fibres in global production and use (Textile Exchange, 2025c). However, there is renewed interest in natural fibres as an alternative to mainstream fashion's overreliance on synthetic fibres (Zuk et al., 2015). Expanding the bioeconomy[2] is considered a way of relieving pressure on non-renewable materials (Frazier et al., 2024; Lazorcakova, 2022) and fibre, like food, presents the opportunity to capitalize on raw materials that are regionally available. While natural fibres do not automatically equal less strain on natural resources, less emissions, less intensive processing or more ethical production (van der Velden et al., 2013), the environmental benefits may be more significant when the fibre is grown or raised in the same region where it will be consumed.

Regional textile production for clothing is not a new concept in North America. However, apart from a brief resurgence of manufacturing in Ontario during the First World War (Grisdale & Hutchison, 1918), North American textile production moved from the centre of the continent to the Southeastern states, along the cotton belt, in the 1900s (Lowenstein & Simon, 1954) and almost entirely offshore by the end of the century (Minchin, 2013; Smelik, 2023). This offshoring of production has created large physical distances between a textile's origin and its user, often resulting in consumer desensitization to the effects of overproduction that is characteristic of the global fashion industry (Fletcher, 2018; Sømme, 2016; Thackara, 2019). In response to these challenges, new models of sustainable fashion, specifically the concept of regional textile systems, such as the fibreshed (Burgess & White, 2019; Fletcher, 2018; Thackara, 2019) have emerged.

Regional textile initiatives like the fibreshed intend to address the functional challenges of economic and organizational decisions facilitating the manufacturing of clothing at a global scale, such as overproduction (Fletcher & Tham, 2015), excess waste (Allwood et al., 2015; Frazier et al., 2024; Gonçalves & Silva, 2021) and producer and worker disempowerment (Henninger et al., 2016; Whitty, 2021). By operating at a local scale, regional textile production can offer improved access to governance mechanisms (Burgess & White, 2019), circularity of design (Burgess & White, 2019;

[2] The bioeconomy is comprised of renewable natural resources including the waste created by their processing (Tan & Lamers, 2021).

Fletcher, 2018), a more diverse textile feedstock (Burgess & White, 2019) and a decrease in production (Fletcher, 2018). Sustainable production models and circular design within the field of fashion sustainability, though, remain steadfast to economic growth and consumption (Kozlowski et al., 2016), an argument that can be made against movements that promote local business as well (Clark, 2008; Fletcher, 2018). There are, however, additional theoretical dimensions to the fibreshed concept, such as adapting to the specific agroeconomic profile of a region. This principle forms the basis of fibreshed design (Burgess & White, 2019). The concept of a fibreshed also considers regional development beyond economic progress, including the growth of ideas, community and culture – a similar philosophy to the one put forth by Fletcher (2018) in her notion of fashion localism.

Even so, the movement to relocalize production has faced criticism as an exclusionary platform for the fact that governing players may not recognize that regional systems are subject to and contributing to the same power structures as conventional systems of production (Hinrichs, 2000; Kolavalli, 2020; Meredith, 2005). Economic imbalance in regional production systems has been further developed in the arena of local food which preceded local fashion initiatives. Khan (2021) puts forth a similar critique of local fashion and its impetus to disengage with global markets, and along with it, the cultural identities and autonomy of fashion makers, in particular those who reside in non-Western countries.

Therefore, more research on regional fibreshed governance is necessary to better understand if regional textile production is a viable model of sustainable fashion which furthers ecological and social well-being and leads to more meaningful engagement with consumption. Currently, sustainable fashion governance is being studied at a global level and there is less research that is regionally specific or fibreshed specific. At the same time, critical engagement in brand accountability in the global fashion industry has led to stronger guidelines and changes in governance. Efforts by sustainable fashion advocates have been documented and further developed by academic researchers such as Fischer (2018), Fletcher (2018), Jastram and Schneider (2018) and Li et al. (2014).

Undertaking a better understanding of what governance means and the shape it takes in the arena of sustainable fashion is necessary as it continues to evolve. Research suggests it includes

diverse actors at multiple levels, in government, business and civil society, working to design guidelines that can be universally applied. These efforts have specifically concentrated on how to achieve collaboration to ensure accountability (Jastram & Schneider, 2018; Li et al., 2014). While fibreshed governance can be broadened by contextualizing it in the field of sustainable fashion governance, more detailed research on the fibreshed is necessary to understand the role of each player and how they engage with each other within the larger system of sustainable fashion governance.

Likewise, as this discussion necessitates reflection on social constructions and re-constructions of place, examining the evolving social, economic and political context is necessary. These conditions, however, are often not given enough weight in regional resilience frameworks (Hassink, 2010), thus undermining the influence of politics and established power in regional development decisions. This area warrants more exploration given the alignment of investment, policy and practice that is necessary to make progress as well as the intention of sustainable fashion advocates to enact collaborative management (Jastram & Schneider, 2018). A commitment to collaboration among the players in the field of sustainable fashion is consistent with wider perspectives on governance in regional development planning regarding the overlapping roles of government, industry, academic institutions and individuals (Burch et al., 2014; Gibson, 2011; Truffler & Coenen, 2012). Sustainable fashion scholars agree that new configurations of production must bring public and private institutions together in nested levels of governance and include citizens and groups in the process from the beginning (Jastram & Schneider, 2018). However, it remains unclear if regional-based initiatives of sustainable fashion such as the fibreshed can achieve collaboration and if the region is the appropriate scale at which to do so.

1.1 Research Objective and Questions

The objective of this research then is to explore the development and governance of fibre production in North America using insights from network governance theory and embedded ideas of region and place. More specifically, this research will answer the following questions:

1. **How is a fibreshed defined?**
2. **How is a fibreshed organized and governed?**
3. **How can a fibreshed contribute to sustainable fashion?**

To answer these questions, I carried out a comparative case study of two fibresheds. I conducted twenty-five interviews with key players in regional fibre production, including the founders, board and members of two affiliates of the Fibershed organization, Upper Canada Fibreshed in Ontario, Canada and Rust Belt Fibershed in Ohio, United States. I recruited interview participants through affiliate websites and through Fibershed board members and founders. During interviews, participants discussed their role in regional fibre production and the opportunities it created for sustainable fashion, detailed their involvement in the Fibershed affiliate and its programing, and shared their perspective on the mandate of the Fibershed organization and their recommendations for future development. In addition, I reviewed documents from Fibershed affiliates, government and other stakeholder organizations to supplement and give further context to interview data.

1.2 Significance of Study

The results of this study demonstrate that fibreshed players, like sustainable fashion scholars and brands who are conceptualizing and carrying out alternatives to the global fashion system, contend with the same tensions between global and local, economic and social, rural and urban, and sustainable policy and practice. What this study brings to the surface are the thought processes and decision-making that occurs as they navigate the conditions of their urban or rural context, pursue economic and social goals, and ensure their livelihood and the well-being of their community, aspects which are oftentimes at odds with each other. This study documents both the challenges and opportunities they discover when engaging with the fibreshed, a fuzzy concept (Markusen, 1999), with boundaries that are fluid and goals that are not always mutually expressed. Devising clear and applicable policies out of these conditions presents challenges, and these results show that the structure of the organization, as a network, is not conducive to the traditional governance practices of firms or government agencies. But the study results also reveal the ways in which participants sought out and participated in a wide variety of collaborative opportunities in order to reach their goals, and that joys and successes were most likely to be realized in relationships where trust and reciprocity were valued. The implications of this research to network governance theory and to social perspectives on regional production systems, therefore, is significant in that it captures the social learning that happens when communities harness their capabilities to transition toward more

sustainable living practices and the opportunities it creates for regional development and industry. It also contributes to the field of academic research on fibresheds that to date is relatively limited.

1.3 Study Limitations

The small amount of scholarship on fibresheds affected the scope of my research. Initially, the focus of my research was linen fibreshed governance in Ontario and Ohio. However, the production of linen, the textile produced from flax plants, is currently very limited in these regions. While there is significant interest in developing the production of other animal and plant fibres among the fibreshed network, the wool industry in both regions is more established. Therefore, I did not limit participants to only those processing linen. Despite the technical differences between processing linen and wool and the additional dimension of animal husbandry when raising sheep for fibre, the process of decision-making and integrating network players aligns. As a result, the wool producers and industry strategists I interviewed provided insights on decisions made regarding fibre processing infrastructure, product marketing and private and institutional investment at a regional scale, which applied to other forms of regional fibre production. Once the findings were compiled and analyzed, it was clear that the results were reflective of fibreshed governance rather than flax specific. Since this change was made after data collection, the Interview Guide (see Appendix A & B) retains my original focus.

1.4 Fibershed vs. fibreshed

The term fibreshed, introduced in 2010 (Liberatore, 2011), is distinct from Fibershed, the organization that was formed in 2013 (Fibershed, 2025b), however the two can be easily confused, as the following study participant acknowledges:

> *I also kind of make a distinction between like an uppercase F Fibershed and the lowercase f fibreshed. To me, like, an uppercase Fibershed, like what the Upper Canada Fibreshed is, you know, that's like an official organization. But like, there could be any number of million, zillion overlapping lowercase f fibresheds. And we're just trying to organize ourselves. You know, that's why we're the uppercase F* (SOP-5).

Throughout my thesis, I have distinguished the fibreshed concept from the Fibershed organization or member of its affiliate. More specifically, when referring to Fibershed, the parent organization, the Fibershed organization or Fibershed [organization] is used. Affiliates are referred to by their names or

as Fibershed Affiliate. While the fibreshed concept is spelled with a lower-case f and Canadian spelling.

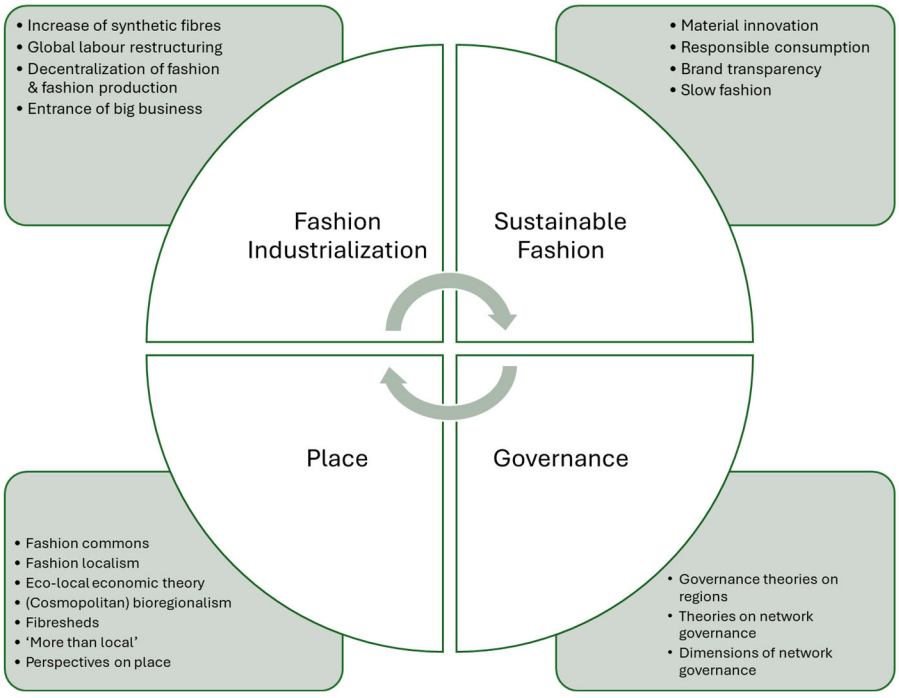
1.5 Thesis Structure

My dissertation is divided into 8 chapters. The next chapter, Chapter 2, will situate regional fibre production in relation to fashion sustainability, discuss the forms it has taken in scholarly research and design, and propose a framework of network governance for analyzing it. Chapter 3 will present the research methodology, including the strengths and limitations of the chosen approach. Chapters 4 to 7 will evaluate the collected data according to Benedum and Becker's (2021) four dimensions of network governance: network structure, operating function, heterogeneity and integration. Lastly, Chapter 8 will revisit the research questions and propose recommendations for future fibreshed development and suggested areas of further research on regional fibre production.

Chapter 2
Governance of Regional Fibre Systems

This chapter draws on literature from the field of fashion, sustainable fashion, regional development and network governance to provide a theoretical framework for understanding fibresheds. I begin by examining the issues in the fashion industry that led to the call for renewed emphasis on place by sustainable fashion scholars, which is followed by a consideration of the conceptualizations of place by geographers, historians, design researchers and ecologists studying regions. Lastly, I evaluate how theories on governance, in particular network governance and Benedum and Becker's (2021) analysis framework, can be applied to this study to understand the network of fibreshed players, how they organize themselves and carry out their objectives. Figure 2.1 illustrates key concepts in the fields of fashion scholarship, place-based theories and regional governance that inform this study.

Figure 2.1
Principal concepts of fibreshed governance

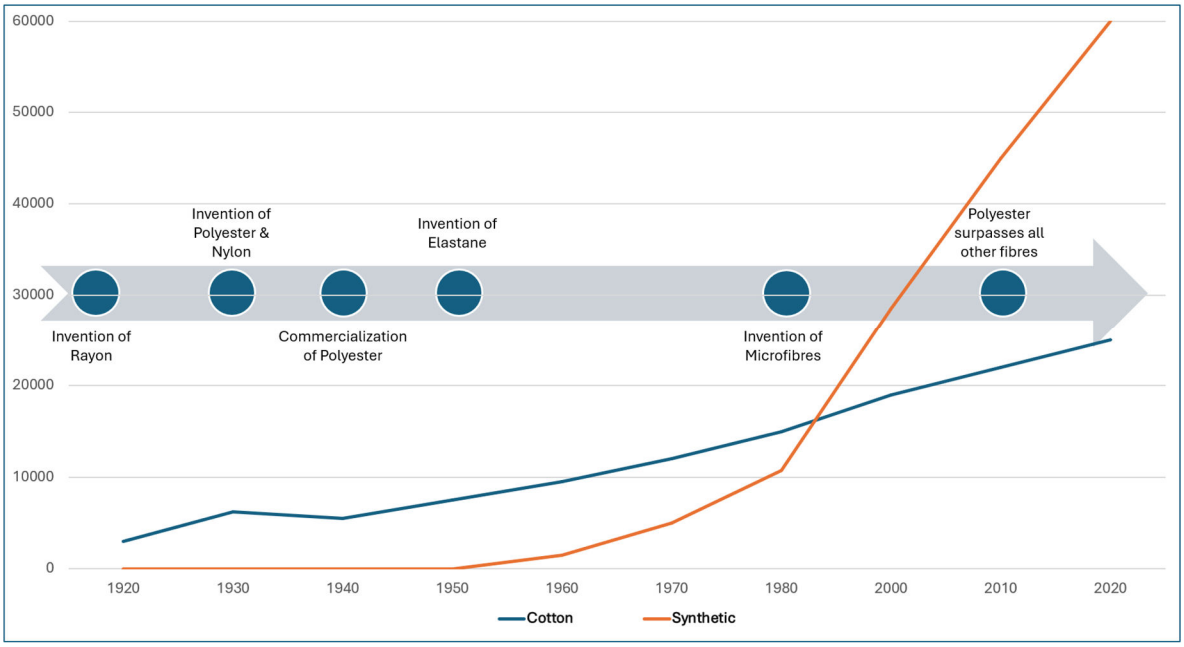


2.1 The Industrialization of Fashion

Over the last hundred years, biofibres like wool, silk and cotton that traditionally made up the world's clothing supply have been largely replaced by synthetic fibres, including nylon, polyester and elastane. In Europe, the shift to non-native fibres began much earlier as Asian cottons and silks were introduced because of colonialization, leading to a textile abundance compared to when only linen and wool, the two primary native fibers, were used to manufacture garments beforehand (Lemire, 2023). The shift to synthetics during the 1900s was not a steady transition (see Figure 2.2). Rather, it was slowed and accelerated by economic and political changes of the 20th century, including the restructuring of labour and the rise and decline of the middle class. Furthermore, the growth of synthetics has shaped the business of fashion tremendously, particularly in the rise of fast fashion.

Figure 2.2

Global Production of Cotton & Synthetic Fibres 1920-2020 (kton) and Industry Milestones



Note. Data from Shen, Haufe & Patel, 2009 and Textile Exchange, 2025b.

Although a semi-synthetic fibre, rayon, had been in use since the early 1900s (Bastin, 2024), the first fully synthetic fibre was discovered in 1930 when American W. H. Carothers found that a

linear molecular chain of a high molecular weight produced a polymer of limitless length, essentially a filament that could be spun into yarn (Whinfield, 1953). This fibre-forming chemical reaction was not unique to polyester polymers, and initially more attention was paid to polyamide polymers, leading to the invention of nylon (Clarke, 2002). Nylon was used to manufacture women's stockings which almost immediately replaced those made of silk (Blaszczyk, 2006; Lebow, 1961), an outcome that was reinforced when the US boycotted Japanese products the following decade. It took several more years of research to produce a commercial textile from polyester polymers. In 1941, British chemists J. R. Whinfield and J. T. Dickson created polyethylene terephthalate (PET) by combining terephthalic acid and ethylene glycol (Whinfield, 1953) which was found to produce a textile that was soft, pliable, fast drying, wrinkle resistant and durable (Smelik, 2023): a combination of qualities unavailable in fabrics from natural fibres. Initially, the development of synthetics had a significant impact on women as clothing care and upkeep was typically carried out by them. The first place where labour was restructured because of synthetics, therefore, was in the home. By lessening the burden of domestic tasks like hand washing and pressing (Blaszczyk, 2006; Schneider, 1994) and relieving some households of their domestic help altogether (Schneider, 1994), synthetics reshaped the household economy.

Economic change outside the home, such as the class restructuring brought on by industrialization, facilitated the growth of the synthetic fibre industry. Textile manufacturers reacted to a growing middle class with increased marketing (Blaszczyk, 2006) and lobbying for trade agreements (Schneider, 1994) to attract and retain the attention of new consumers. In postwar America, synthetics were marketed to represent progress and "the superiority of American abundance over Communist scarcity" (Blaszczyk, 2006, p. 490). However, the industry had to learn how to manipulate the fibre effectively, through different processing techniques, and successfully market it to consumers wary of a petroleum-based textile (Smelik, 2023). The textile industry, a space previously occupied by fibre mills, was now comprised of petrochemical companies with little experience in textile production (Blaszczyk, 2006). DuPont, the first of these companies (Blaszczyk, 2006), had to learn the textile manufacturing industry and also the business of fashion. Its entry into this space was the first instance of big business in the apparel industry, a model that persists today.

To succeed, these companies had to understand their customers and the qualities they were looking for when garment shopping. While DuPont invested a significant amount into consumer

research and product development (Blaszczyk, 2006), they could not anticipate the changing social views as consumers found their place in the new social order and discovered how closely it was connected to economic access. For the new middle class were not only interested in increased purchasing power but also in its associated access to a higher social status (Blaszczyk, 2006). In this context, polyester played the role of an "equalizing fabric" (p. 10), according to Schneider (1994), because it made fashion and fashion design accessible to the masses. Garments could be produced in the volume demanded by the growing middle class and polyester textiles provided a less expensive template for fashion designers to experiment with (Schneider, 1994).

However, the fashion world also reflected society's apprehension regarding the disintegration of class divisions (Blaszczyk, 2006; Schneider, 1994), affecting public opinions on polyester and other synthetic textiles. For instance, disdain for synthetics accompanied the scientific skepticism of 1970s postmodernism and was, in many ways, a revolt against this democratization of the industry, which was considered by some luxury apparel brands to devalue fashion (Schneider, 1994). As clothing choices increasingly revealed more about an individual's tastes rather than their social status (Blaszczyk, 2006), consumers also became critical of another by-product of expanded access and increased volume which polyester was seen to symbolize: the homogenization of style. The growing individualism of the mid-20th century emboldened them to consider their own agency when making purchasing decisions rather than automatically bending to trends set by brands and designers (Blaszczyk, 2006; English, 2013). Indeed, the 1960s marks the beginning of a shift to decentralize fashion. Whereas up until then, styles originated in Paris, trends were now being set by designers in other cities, such as London, New York and Los Angeles (Schneider, 1994) and even on city streets, by individuals themselves (English, 2013; Mackinney-Valentin, 2014). During this time, polyester was considered antithetical to individual expression because it enabled mass production of the same design (Schneider, 1994), however, this argument does not consider that all expressions of fashion, once drawn into an industrialized system of production, is subject to losing its original identity (Mackinney-Valentin, 2014).

While the design of fashion was decentralized in the 20th century, so too was the production of fashion. The North American textile processing industry underwent massive restructuring which began with the introduction of synthetics. Prior to their development, the US heavily relied on non-Western countries for their supply of apparel fibres, in addition to the southern states and several

regions in Europe and Asia with appropriate growing conditions. As Schneider (1994) explains, synthetic fibres do not depend on ecological and human resources to the extent that natural fibres do; instead, they rely on financial resources:

> *Only the American South and Southwest, and selected regions in Italy, France, and Japan, are well suited to the cultivation of cotton or silk; to grow these fibres, and wool, on a scale appropriate to the demands of a mass society, is difficult. Put another way, the natural fibres are land and labour intensive and have specific climate requirements, whereas the synthetics thrive, above all, on large concentrations of capital* (Schneider, 1994, p. 6).

Recognizing the threat posed by the synthetic fibre industry, natural fibre producers in the US, who represented less than 20% of the global natural fibre supply, mobilized to establish industry trade boards and lobbied for trade agreements that would protect domestic products against imports (Schneider, 1994). As a result, the first textile-specific agreements that were implemented applied only to natural fibres and not to synthetics (Hudson et al., 2011). However, the fact that American consumers were demonstrating renewed interest in natural fibres was not enough to buoy the industry since the majority of these fibres were sourced elsewhere (Schneider, 1994). In fact, the US suffered a massive loss of manufacturing jobs between 1970 and 1980 (Schneider, 1994).

Efforts at trade protectionism required the input of all domestic fibre producers and in 1974, the Multifibre Arrangement (MFA), which applied to natural and synthetic fibres, was signed (Hudson et al., 2011; Schneider, 1994). The MFA regulated the industry until 1994, when it was replaced by the Agreement on Textiles and Clothing (ATC), which functioned until 2005 when it was removed (Hudson et al, 2011). While bilateral agreements MFA and ATC established limitations on import quotas for non-Western manufacturing countries, when the agreements were eliminated, the quotas were replaced by tariffs and other multilateral trade rules set by the World Trade Organization (WTO), which tend to be as disadvantageous to the least developed countries as previous agreements (Hudson et al., 2011). Nonetheless, the restructuring that began during the MFA era whereby mills and manufacturers moved from Western countries to non-Western countries continues today as they now migrate to the least developed of these countries.

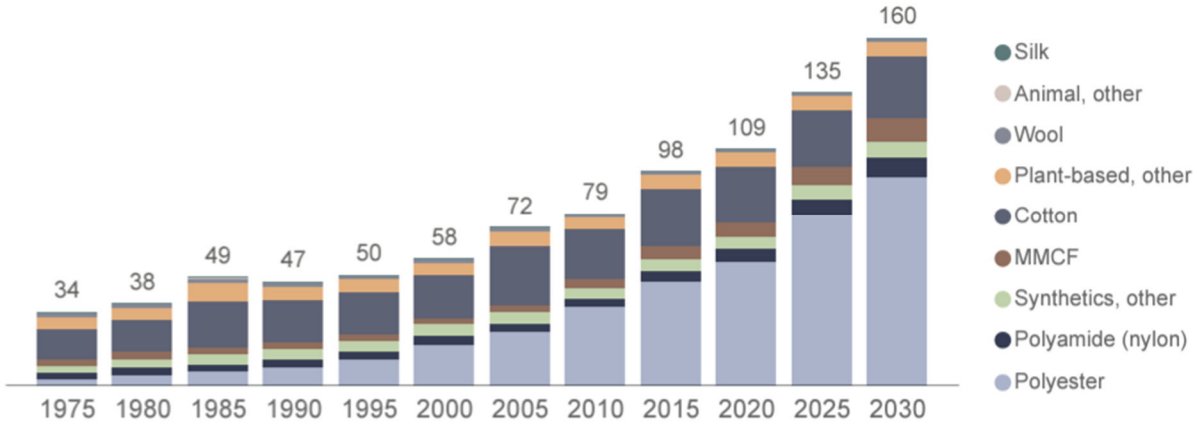
According to Hudson et al. (2011), the supply side of the industry now holds more power than the demand side, however Western countries still hold a considerable amount of influence in WTO decisions. One example is the Rules of Origin (RoOs), a set of trade rules stipulating that if parts of a product, that which is "deemed sufficient to give a commodity its essential character"

(WTO, ITC, UNCTAD, 2022, p. 231), originate or are manufactured in the country of export, then the importing country receives Preferential Trade Agreements (PTAs) or tariff reductions (Fox et al., 2008; WTO, ITC, UNCTAD, 2022). For example, even if a product, such as cotton fabric, is entirely sourced in one country, if it undergoes more than one phase of processing in another country, it can now be considered originating in the second country. While Preferential Trade Agreements are intended to support developing industries (WTO, ITC, UNCTAD, 2022), Western countries are more likely to benefit from RoOs (Fox et al., 2008). Just as Schneider (1994) implies when discussing the changing views on synthetic fibres, decisions affecting the garment trade, such as where production occurs and how easily fibres and textiles move from country to country, can be politically as much as economically motivated.

Cost is certainly a significant factor in the renewed growth of synthetics during the end of the 20th century. Investment in product development paid off as new fibre types, such as microfibres in the 1980s, were better able to mimic the feel of natural fibres (Schneider, 1994; Smelik, 2023). Through their development, the synthetic fibre industry made its comeback (see Figure 2.3).

Figure 2.3

Global Fibre Production (mton)



Note. From "Materials Market Report" by Textile Exchange, 2025, p. 8. In Public Domain. (MMCF refers to Man-made cellulosic fibres, such as bamboo).

With the rise of fitness trends, the lack of breathability of previous synthetic fibre types were improved by modifications to yarn weight and textile construction and by creating blends (Blaszczyk, 2006). As a result of these changes, there was now a limited distinction between synthetic and natural fibres. At the same time, awareness of the ecological issues associated with growing and processing natural fibres, such as intensive land use and unethical labour practices, was increasing (Schneider, 1994).

Another development destabilizing the binary between natural and synthetic fibres was the growing interest and experimentation in chemically manipulating natural fibres. While efforts to reduce the costs of natural fibre production, in terms of materials, processing infrastructure and labour, have been successful, these fibres will never be able to compete with the low cost of synthetic fibre production. The process for synthetic production is cheap because PET is derived from crude oil (Schneider, 1994), however most of its cost is attributed to research and product development rather than raw materials (Blaszczyk, 2006). The low cost of producing synthetics, the facility with which they can be modified, and the speed with which they can be produced has made the industrialization of fashion possible. Without synthetics, according to St. Clair (2019), fast fashion would not exist. By 2005, the world's most consumed fibre was polyester (see Figure 2.3) and its percentage in the global fashion supply continues to grow (Textile Exchange, 2025c), despite the lack of adequate disposal opportunities (Smelik, 2023) and the high cost of recycling polyester and polyester blends (Ramamoorthy et al., 2018).

2.2 The Emergence of Sustainable Fashion

The growth in polyester, as demonstrated by Figures 2.2 and 2.3, has prompted fashion brands and industry groups to engage and invest in research and development to diversify the industry's reliance on the fibre (Frazier et al., 2024). Targets to boost the development of recycled synthetic fibres, such as the 2025 Recycled Textile Challenge (Textile Exchange, 2025d), are meant to offset the overproduction of virgin polyester but the disposal problem persists. As a result, renewed attention has been given to biodegradable fibres, natural dyes and cellulosic recycling (Beldean-Galea et al., 2018; Frazier et al., 2024). Material innovation in sustainable fashion has led not only to the adaptation of food plants for fibre, such as soy, banana and pineapple (Nayak et al., 2023; Schneider, 1994), but also the development of biofibres such as mirum (Natural Fiber Welding, 2022) and food

waste fibres (Alt Tex, 2022). At the same time, the concern with polyester consumption and disposal has revived interest in animal and plant fibres including wool, silk, hemp and linen, as well as other ancient fibres that are less familiar, such as ramie and camelid (Burgess, 2022).

Material innovation was the first focus of the modern sustainable fashion movement, initiated by brands trying to implement environmental principles in their business strategies (Thomas, 2008). Initial steps to decrease the ecological impacts of clothing production were influenced by environmental ethics design discourse (Niinimäki, 2015) and focused on fibre – both type and processing – to build responsible production through design (Thomas, 2008). This strategy in turn relied on establishing ideals of responsible consumption in consumers (Niinimäki, 2015), which proved difficult given the many stages of industrialized clothing production and brand propensity to hide or oversimplify them (Crane, 2016; Thomas, 2008; Whitty, 2021). As a result, it triggered a debate on *who* is responsible for fixing fashion's problems: the producer or the consumer. The ensuing dialogue engaged people beyond the business community as brand accountability to sustainability principles were called into question (Adamkiewicz et al., 2022). Citizens began to demand more guidance from government, in terms of policies to reduce environmental impact in the manufacturing or disposal phase and there was more pressure on brands to improve transparency regarding materials and production processes (Thomas, 2008).

Material innovation, however, is not enough to address the industry's environmental footprint. Research has demonstrated that increased production of cotton and other natural fibres cannot keep up with global textile demand (Frazier et al., 2024). For example, while natural fibres can break down substantially faster than polyester fibre with less risk to soil and water health (Brown et al., 2011), increasing the cultivation of natural fibres raises new ecological concerns without satisfying the anticipated industry growth. Likewise, attempts by sustainable fashion brands to turn the linear system circular with new material and new methods of recycling only seem to add to the current business model or serve to improve a brand's public image (Stål, 2023). This impasse has driven sustainable fashion scholars, such as Burgess & White (2019), Fletcher (2018), Grimstad Klepp (2022) and Rissanen (2017), to direct their attention to another problem: the scale of manufacturing. In doing so, the discussion moves beyond the product level to a system redesign. By recalling a fibre's place of origin and giving it significance, these scholars argued, it can start to repair

the connection that clothing has to a place, which has eroded through the expanded processing and distributed manufacturing of the present-day industry.

All biofibres, no matter their age or degree of adaptation, have regional implications. Yet the connection between fibres and their origin is not significant in the fashion industry's current form. As the above discussion on fashion industrialization indicates, most of the world's fibre and textile processing is no longer situated at the site of cultivation, and the finished product is often consumed far from the individual who cultivated the plant it was harvested from. As a result, the place of origin is disregarded or, as in the case of trade policies like the RoO, distorted for political or economic gain. The scale, in terms of both space and scope, and complexity of garment production have made it increasingly difficult to trace each step back to its source. However, sustainable fashion scholars argue that a renewed attention to the importance of place in textile production (Fletcher & Grimstad Klepp, 2018) and regional-specific policies (Thackara, 2019) can start to mend the damages caused by the conventional system.

Their work reveals the tension at the heart of sustainable consumption, between growth and degrowth. This tension continues to overshadow business practice and casts doubt on the effectiveness of proposed models (Brooks et al, 2017; Fletcher & Tham, 2018; Grimstad Klepp & al., 2022; Thackara, 2014), including alternatives that emphasize degrowth. Regional fibre production, therefore, retains this tension. Broadening perspectives to reconceptualize production, whether in natural or synthetic fibres, does not automatically advance a critique of the economic system. However, by changing the scale of operations, it hopes to destabilize it, simply by replacing market values with human values, such as attention, care and agency. Acknowledging the problem of growth that drives the fashion industry is crucial, according to Fletcher (2016), to move toward sustainability in clothing production and use. Fletcher & Tham (2019) and other scholars in the field including Thackara (2014), Whitty (2021), Grimstad Klepp (2022) and Hoskins (2022) have pushed the discussion in the direction of Raworth's (2017) theory of doughnut economics[3] and principles of degrowth. Whereas sustainable fashion originated as a practice of implementing measures to increase

[3] The theory of doughnut economics is a visual framework conceptualized by Raworth (2017) illustrating the safe and just space for humans to inhabit, with access to life's essentials and within the earth's planetary boundaries.

brand responsibility in ecological and social impacts of fashion production, the product level approach has led to an appeal for a systems level transformation.

2.2.1 Emphasizing Place

Attempts at alternatives to fast fashion did not initially consider fashion's treatment of space as problematic, but rather its treatment of time. Influences from the slow food movement[4] drew concern toward fashion (Fletcher & Vittersø, 2018; Thackara, 2019) and its manipulation of time through accelerated production and hyper-accelerated trends, its shortening of a garment's lifespan and extension of disintegration phases. Slow fashion became an antidote to fashion's growth paradigm, by supporting care of garments, smaller wardrobes and longer garment lifespans, and by expanding consumer's knowledge of production (Fletcher & Vittersø, 2018; Laitala & Grimstad Klepp, 2018) Moreover, evaluating fashion's interpretation of time necessitated a better understanding of the meaning of place in clothing production (Fletcher & Vittersø, 2018), and thus contributed to the reinterpretation of fashion systems by Burgess & White (2019), Fletcher (2018), Grimstad Klepp (2022), Khan (2021), Rissanen (2017), Thackara (2019), Twigger Holroyd (2017) and Whitty (2021).

Burgess was the first to apply the significance of place to clothing production (Liberatore, 2011). She used the term fibreshed to capture the particular fibre character that is agriculturally specific to each region. Navigated by the concept of ecosystems, fibreshed design draws on the system's approach to a watershed (Burgess & White, 2019). Yet the fibreshed, as opposed to watersheds, are conceptualized more as a social versus a biophysical construct and therefore emerged predominately in the sphere of advocacy rather than academic research. The fibreshed is heavily influenced by the concept of a foodshed, both theoretically and as applied to regional food production. A foodshed draws awareness to the physical place where food is grown, as well as the idea that the waste, and where it goes, must be accounted for (Peters et al., 2009). The "soil to soil" vision underlying the fibreshed model is visually similar, whereby each phase of production, distribution and disposal feed the cycle's continuity (Burgess & White, 2019). Figures 2.4 and 2.5

[4] The slow food movement, established in 1986 by Carlo Petrini, sought to emphasize the connection between food quality and how it is prepared and consumed (Petrini, 2006). It advocates for production and consumption practices that support local systems, both natural and human (Fletcher & Vittersø, 2018).

illustrate how regional systems are often conceptualized as circular processes, in terms of product phases and impacts on ecosystem health. However, it is important to note that the ecological benefits of regional food production are still being debated (Jung & al., 2024; Stein & Santini, 2022). In addition, the social component to these systems is underdefined.

Figure 2.4
Regional Food System

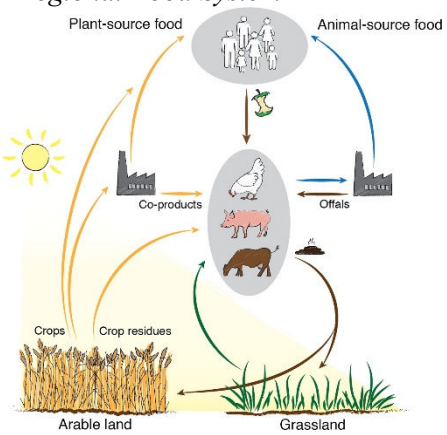


Figure 2.5
Regional Textile System



Note on Figure 2.4. From "Defining a Land Boundary for Sustainable Livestock Consumption" by H. H. E. van Zanten, M. Herrero, O. Van Hal, E. Röös, A. Muller, T. Garnett, P. J. Gerber, C. Schader & I. J. M. De Boer, 2018, *Global Change Biology*, *24*(9), p. 4189. Reprinted from an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

Note on Figure 2.5. From "Mission and Vision" by Fibershed, 2024. (https://fibershed.org/mission-vision/) In Public Domain.

Research does indicate that regional food production systems typically increase relationships between producers and consumers by engaging citizens in agricultural production (Fonte, 2008; Hinrichs, 2000). Inspired by regional food models, the development of the Fibershed organization in California signaled an effort to link participants within a region – producers, brands, investors, educators, advocates and consumers – to raise collective awareness of the fibre-based skills, resources and interest available in the area (Burgess & White, 2019). Efforts to establish producer directories demonstrate that the building and reinforcing of human networks is key to fibreshed design, yet these networks require further study, particularly as regional fibre systems are less developed than regional food systems.

Fletcher and Vittersø (2018) recognized the social similarities between food and fashion in their comparison of the two regional systems. As connection increases between consumers and producers, the number of market transactions grow, as well as non-financial exchanges, such as the sharing of experiences, ideas and even labour. However, Fletcher and Vittersø (2018) also found that the many ways fashion was distinct from food, including long value chains, complicated garment construction and generally more steps in processing makes it less understood, less immediate and less accessible to many people. Nonetheless, Fletcher (2018) felt that the ideas influencing the local food movement would benefit the development of sustainable fashion. With the concept of fashion localism, she applies the ethics of eco-local economic theory[5] (Curtis, 2003) to the domain of fashion. Whereas a fibreshed, in part due to its association with the word watershed, considers the reverberations – both upstream and downstream – of local decisions on the wider system, fashion localism aims to draw activity in towards a designated centre (Fletcher, 2018). They both employ circularity to illustrate their argument – Burgess' soil to soil design is suggestive of Fletcher's IMBY (In My Back Yard) feedback loop – the goal being no waste rather than waste that is devalued and difficult to reuse. Moreover, Fletcher (2018) is explicit that fashion localism does not subscribe to the growth paradigm that many argue persists in circular economy models (Grimstad Klepp et al., 2022; Rissanen, 2017; Thackara, 2014; Whitty, 2021).

Economic activity, therefore, is only one aspect of localization (Dybdahl, 2019). Equally as important are activities that are not tied to material production, including knowledge creation, cultural and biodiversity, and community building (Fletcher, 2018; Pratt, 2007). Fashion localism values knowledge production and the sharing of fibre narratives between producers, and with consumers. Knowledge, for Fletcher (2018), is directly related to power whereby the reduced scale of localism, and the accompanying spatial proximity between producers and consumers, provides individuals with greater autonomy over the decisions they make about what they wear. As such, the gathering of activities in one place could, according to Fletcher (2018), result in decentralized power. Moreover, emphasizing the origin of clothing invites interest in how textiles are created. Over the last century in North America, there has been little effort to enhance skills in textile processing and clothing construction. Rather, this knowledge and practice has deteriorated among the public and

[5] Eco-local economic theory is conceptualized by Curtis (2003) to explain the features, including social capital, of economies that operate at the local scale within ecological limits.

among fashion design students as well (Smelik, 2023). At the same time, the fashion industry has become increasingly more complex and less accessible.

For example, in the early 1900's, the Ontario linen industry disappeared (McFadyen, 2019), and with it, flax's cultural and historical significance to the people who used it and to the land itself. As with other commodities, the problematic human/earth relationship steering industrialization determined flax's primary application as a resource and shaped its evolution (McFadyen, 2019). Its purpose became economic and remained so after changes to its end use. Industrial flax farming, however, does not alter the fact that, as naturally occurring flora, flax and other natural fibres belong to the commons (Hardin, 1968). As a textile source, it is also part of what Amy Twigger Holroyd (2017) refers to as the fashion commons or a shared cultural space. As with other textile fibres, industrialization made domestic linen production more difficult because it separated processing phases into different locales. Linen fabric became less available as a result of economic decisions and the accumulated effects of pressures within the fashion industry (see section 2.1) which, according to Twigger Holroyd (2017), Schneider (1994) and Whitty (2021), narrowed or homogenized choices of fibre and clothing design.

2.3 Implications of Place

A renewed emphasis on place brings it closer to the recipient, in a physical sense as well as emotionally. To know something more intimately or directly engage with it contributes to a more complex understanding of it. The process demands a recipient's care and attention. Sustainable fashion scholars (Burgess & White, 2019; Fletcher, 2018; Khan, 2021 and Thackara, 2019) recognize that reemphasizing the significance of place in clothing production makes individuals think differently about it. However, Khan (2021) in particular, argues that this perspective must include attention to the dynamics of power that exist in regional settings, just as in global systems. Nonetheless, fashion scholarship is still limited in its analysis of how a physical space interacts with its social and institutional features and the impact on clothing production. More insight can be gathered from geographers (Massey, 1995; Passi, 2022 and others) who have been grappling with the different meanings of place and how it shapes human and economic development and from local and regional-centered models in the field of design (Thomashow, 1999; Manzini and M'Rithaa, 2016).

2.3.1 Place-based Theories

A closer attention to place developed during the second half of the 1900s when Canada and the UK and other European governments developed policies aimed at addressing economic disadvantages and initiating growth in lagging regions (Garcilazo, 2011; Savoie, 2019). The idea of spatial divisions of opportunities was given more consideration, initially with attention to resource and labour patterns and subsequently to institutional factors contributing to these imbalances (Massey, 1995; Smith, 1984). Meanwhile, new ways of thinking about place by Relph (1976) and Tuan (1976) were shaping the field of human geography. This combined scholarship reinforced the region as a distinct place and renewed efforts to define it. Whereas the concept of the region, fundamental to geography, had been predominantly interpreted by scientific classifications, it was increasingly influenced by studies in human behavior and social conditions (Duckham et al, 2003). As a result, boundaries, how they were made and who made them, were scrutinized as the concept of the region evolved.

Establishing boundaries or defining a place by its features – as consistent within its borders and distinct from areas outside of it – is essential for studying it. Likewise, governments designate places as regions for jurisdictional clarity and ease in managing them. In fact, as a result of contemporary interest in regions, the practice of establishing regions as a means of legitimizing them for economic or political reasons has increased (Passi & Metzger, 2017). Furthermore, conceptualizing the region gives identity to a place for citizens reacting to an increasingly globalized world (Passi, 2003), both as a means of preserving tradition and challenging it. Individuals and institutions define themselves regionally to set them apart, economically, socially and culturally, from elsewhere.

However, for place-based theorists, the spatial delineations of regions that were primarily adopted were increasingly seen as inadequate, particularly because of their fixed nature (Amin, 2004; Foster & Barnes, 2012; Jessop et al., 2008). In the original approach, known as the **territorial** perspective, demarcations outlining a place were assumed (Agnew, 1994) and furthermore, assumed as absolute (Jones, 2009). This idea of space as its own entity apart from human systems was juxtaposed with the **structural** perspective, which viewed regions as formed and reinforced by social and economic structures (Agnew, 1994). The structural perspective, however, had its own shortcomings. For one, like the territorial perspective, it did not pay enough attention to a region's historical context (Agnew, 1994); in fact, it underemphasized human relations altogether (Massey,

2004). As a result, a **relational** perspective to regions took precedence, reinforced by the view that boundaries are not absolute but relative (Amin, 2004; Hudson, 2001; Massey, 2004).

These scholars argue that places cannot be conceptualized by spatial perimeters alone because it risks overlooking the political and institutional history determining these perimeters. However, the tendency to compartmentalize a region's identifiers is also problematic, according to Passi (2017), as it sets spatial boundaries in opposition to social boundaries when the two are fully integrated: "It is therefore crucial to scrutinize the territory/network constellation as embedded in social practice (planning, governance, politics) rather than assuming an abstract ontological rupture between the territorial and relational" (Passi & Metzger, 2017, p. 23). Integrating the territorial and relational perceptions of place facilitates a vantage point on places that they are always in flux and continuously being shaped and reshaped by social activity operating at various spatial scales (Hudson, 2001; Passi, 2002). Just as an individual cannot be conceptualized in isolation of its social community, a place cannot be conceptualized in isolation of the world it is part of.

Rather than a single interpretation of place – whether territorial or relational – the study of human geography has predominately shifted to a **moderate** perspective (Jones, 2004; Varró and Lagendijk, 2013). The motivation for this shift is to balance out these perspectives, to apply a social-spatial interpretation, so as not to exclude one dimension or consider it more significant than another (Jones, 2004). Whereas Varró and Lagendijk (2013) adopt the term moderate, Jones (2009) applies the term phase space, which was first introduced in mathematics by Poincaré (1952) and subsequently applied to a number of disciplines. In the context of human geography, phase space effectively integrates the flexibility of relational thinking with territorial legacies in place by acknowledging the temporality of a region's identity (Jones, 2009). However, rather than reinventing itself at each stage anew, a region is continuously building upon layers of history.

Cumulatively, these layers create a politically charged space that bears influence no matter how it is measured. Moreover, a single scale cannot describe a region because identities operate at multiple scales simultaneously (Passi, 2003). For this reason, the local and global cannot be disintegrated from each other. Moreover, since objects are connected at multiple scales simultaneously (Passi, 2003), neither a binary (Amin, 2004; Escobar, 2018) nor a hierarchy of scale (Thrift, 2004) is accurate. Accordingly, when local communities make decisions, they are affected by global conditions, and in turn, they shape opinions about these conditions (Massey, 2004; Sassen,

2007). Therefore, when designating an area as a region, it is essential to consider the varying nature of its boundaries and the fact that it has been and will continue to be shaped by social conditions inside and outside these boundaries. In other words, a region's identifiers must be dissected to specifically examine how and why they were chosen and the implications of these decisions (Passi, 2003).

2.3.1 Localism in Design Theory

Relatedly, the use of the term bioregional fashion in the context of regional fibre production (Upper Canada Fibreshed, 2024b; Whitty, 2021) demonstrates how critical it is to honour embedded meanings of place and the histories that formed them. Bioregional fashion draws from bioregionalism which, as studied by North American scholarship, centres on the dynamics of human interaction with a place and its biophysical elements: climate, geography, flora, fauna and so on (Hubbard et al., 2023; Wearne et al., 2023). It is concerned with the ethics and politics that ensure optimum coexistence among these features (Gray, 2007; McGinnis, 1998). Bioregional fashion, in its normative understanding, strives for ethical engagement in each step of clothing production (Upper Canada Fibreshed, 2022) however the concept up until now has not been clearly defined by researchers and academics.

Like Burgess and White (2019) and Fletcher (2018), Thackara (2019) is interested in the activity that takes place at the bioregional scale. He describes bioregioning, in the context of fibresheds, as the activity of "creating value [from] care of the bioregion" (p. 15). Bioregional fashion, then, must be entirely immersed in the place where it occurs. Thackara's (2019) bioregionalism, like Fletcher's (2018) fashion localism, was shaped by and shaped design theory developing at this time, specifically the concepts of cosmopolitan bioregionalism (Thomashow, 1999) and cosmopolitan localism, an idea introduced by Wolfgang Sachs (1999) and applied to design by Manzini and M'Rithaa (2016). However, rather than looking inward as Thackara (2019) and Fletcher (2018) propose, cosmopolitan localism, or cosmolocalism, favours staying tethered to the rest of the world (Manzini & M'Rithaa, 2016). Echoing Massey et al.'s (2013) cosmopolitan regionalism, cosmolocalism conceives of the local as wholly integrated with the global. It relies on the design of

distributed systems[6], networks of interconnected small and medium enterprises, as a means of building regional resiliency while maintaining global connection (Kostakis, 2023; Manzini, 2013), an approach which endeavors to avoid the parochial tendencies of localism. Likewise, while regional resiliency is typically pursued in opposition to external forces (Jonas, 2009), cosmolocalism aims to build it in coordination with them. Manzini and M'Rithaa (2016) call it the SLOC scenario, which represents small, local, open and connected.

As demonstrated by the seminal work of human geographers, place is not only understood in its biophysical meaning nor is such meaning separate from the activities that have taken place on it for hundreds of years before. Since places are socially constructed, decisions about regional resource use need to consider the processes that have contributed to the identity of a place and the ways, both locally and globally, it has been shaped and reshaped (Massey, 2004). Arguably, this approach to regions matters most when identity – whether individual or collective – is so intricately connected to interpretations of land and when land-based resources are being developed. While the opportunity to draw production from natural and proximate sources is valuable, with its explicit focus on place, bioregionalism in fibre and textile production carries the risk of undermining and underrepresenting the politics and ethics of the history of the land it is situated on (Wiebe, 2021). For example, most historical accounts of North American flax fiber use do not include the cultivation and application of flax prior to settler arrival though there is evidence of the use of *Linum lewisii*, the variety native to North America, by Indigenous peoples for ropemaking, as well as for cooking and nutrition (Coville, 1897; Kuhnlein & Turner, 1991).

Furthermore, bioregional fashion will pass over contemporary Indigenous contributions as well if it does not adopt a decolonial framework (Wiebe, 2021). Further development of regional fibre and textile production necessitates this framework, by ensuring Indigenous leadership in fibreshed governance and by educating players on an Indigenous-centred history. Moreover, when considering the history that is informing current configurations of fibre production in Ontario and Ohio, the geographical and socio-cultural significance of the terms fibreshed, fashion localism and

[6] Introduced by computer scientist Lamport (1978), distributed systems are networks of interconnected computers.

bioregional fashion must be analyzed since the fibres cultivated in the region depend on a confluence of geologic, climatologic and social geographic factors both past and present.

Accurate accounts of history also raise considerations of the ethical management of resources in a region and lead to questions on how social and cultural understandings of a place shape conceptions on who or what belongs there. Embedded values can impact decisions on resource use and distribution and in turn, the opportunities that are available across a region. According to Massey (2004), history demonstrates that there is unequal spatial distribution because of political and economic prioritizing. Regional systems, by emphasizing an area's boundaries, create outsiders. While this strategy is not necessarily problematic and may make sense for mobilizing regional-specific activities or marketing regional products, it may risk losing opportunities for collaboration with individuals or groups outside the borders, as local food projects have (Walters et al., 2021). Furthermore, in centering fibre production in an individual region, this designation may subsequently concentrate wealth and expertise in that area and inadvertently deplete wider resources. The resulting inequity can affect neighbouring regions as well as communities within the same region (Kolavalli, 2020). What may be more problematic about these spatial inequalities is that they can be overlooked in local systems of production if the alternatives are positioned as superior to conventional systems. As a result, they can be susceptible to the risk of "conflat[ing] spatial relations with social relations" (Hinrichs, 2000, p. 301) and thereby considered exempt from or able to circumvent social and economic imbalances.

Like Massey (2004), Khan (2021) is adept at demonstrating how the local is not immune from the global in her analysis of sustainable fashion's interpretations of scale, by identifying the power imbalances that contribute to production systems, no matter which scale they operate on. In the global fashion industry, the term global is misrepresentative because it reflects Western interests even though manufacturing and fashion design takes place across the globe (Khan, 2021). This arrangement typically means production sites situated in non-Western countries are feeding Western consumption (Fletcher & Tham, 2015). Moreover, it sustains a problematic hierarchy between the two regions, in which Western countries are disproportionately valued for clothing design and conceptualization over non-Western countries, contributing to what Khan (2021) calls a problem of intercultural reciprocity. As a result, relocalizing fashion or reevaluating place in fashion production does not solve the problem without an analysis of the geographical and cultural binary that exists.

However, Khan's expression "more than local" conceptualizes the value of the site of production while also emphasizing the inequalities between places that have been formed by fashion:

> *I distinguish between 'more than local' and 'glocal', 'trans-', or 'intra-' local because, useful as these concepts are, they do not carry a normative emphasis on the local as a site of agency, care and community-making, that is the starting point for practices of sustainability. 'Trans-' or 'intra-' local also imply a transactional relationship between different sites that does not acknowledge the hierarchical and unequal relationships that attend intercultural exchange…. the 'more than local' is thus an expansive form of localism in fashion that acknowledges both the particularity of place and the problem of inter-cultural reciprocity across scales* (p. 842).

A renewed emphasis on place, by rebuilding an understanding of the origins of clothing and by imparting care on a bioregion, according to Thackara (2019), is fundamental for fashion's progress, but attention cannot be on the local alone. For Khan's critique of efforts to relocalize fashion is that it risks overlooking local's engagement with the global or the cultural, social and political context of individuals operating at a regional scale. Khan's argument builds on Meredith's (2005) critique of bioregional models in that they do not correspond with the demands and obligations of global citizens. What Khan is maintaining is that all fashion, including what is produced regionally, has broader implications.

Rather than assume that regional systems are inherently more just than conventional systems, there must be policies in place to address spatial inequity within the region and refrain from contributing to inequality outside regional boundaries. Proponents of bioregionalism, such as Evanoff (2017) and Carr (2004) argue that inequalities, as well as the factors causing inequalities, are more visible and addressed with less difficulty when compared to global systems of manufacturing. For example, when control is carried out regionally, needs and products can be identified more easily and matched to achieve steady state economies (Evanoff, 2017). Accordingly, Hanson et al. (2022) summarize the concept of bioregions, as it is developed in foodsheds and which Thackara applies to fibresheds (2019), by considering the following key factors guiding their governance: scale is regional; all biophysical and human elements at this scale are included; management is internal; and the objective is self-sufficiency. Ideally, as Lengnick et al. (2015) argue, *sheds* function successfully by multiplying connections within the network and by adapting a diversity of goods and services according to what the region and its citizens require. For fibresheds to meet the needs of citizens without compromising social wellness requires good governance.

Therefore, a closer look at the governance of fibresheds is necessary to determine if decision-making processes are integrating principles of individual and community wellbeing and actively ensuring that they are meeting these goals.

2.4 The Role of Governance

Contemporary use of the term governance began in the 1980s in response to the structural changes in Western countries and multilateral organizations (Bevir & Rhodes, 2016) and a growing acknowledgement of the limitations of centralized, hierarchical government. Rural communities in particular, voiced concerns over inadequate representation (Gibson, 2011), their reaction to policy makers and public administrators in cities making decisions about resource use and rural infrastructure. As a result of an erosion of trust in traditional government, along with other macroenvironmental and social change, including increased globalization, fiscal conservatism and growing individualization, governments began to look to business models for insight on organizational management (Lo, 2022). Moreover, the neoliberalism of public administration services signaled a more signification shift away from, or deliberate deregulation of, centralized government control (Gibson, 2011). At the same time, political scientists were proposing multi-sectoral solutions, ranging from formal contracts between public and private actors to sophisticated networks of representatives from public, private and civil society (Ansell & Torfing, 2022). As different configurations integrating public and private actors took shape in a sphere that had traditionally been reserved for government, the concept of governance emerged as a new strategy for public organization and control.

The term governance, though nebulous in nature (Rhodes, 1996; Gibson, 2011), is understood as the players and processes involved in the decision-making that takes place in managing social and economic activity. While there is continued debate on the extent to which governance is distinct from government, particularly on the nature of government control (Bevir & Rhodes, 2003), there is consensus among most scholars in the field that governance standards are internally established and enforced (Kooiman, 1993; Stoker, 2018) and as such, are ultimately accountable to stakeholders (Stoker, 2018). The ambiguity of governance may in part be a result of new forms of management being adopted, evolving to different settings and different configurations of players, at the same time as they are studied. As such, governance scholarship has undergone a series of adaptations through

the political fluctuations of contemporary society (Ansell & Torfing, 2022). For example, whereas the private sector's involvement in public administration initially drew skepticism, diverse forms of public/private relationships have become increasingly more common. In this context, policymaking does not rest exclusively in the hands of the state but is increasingly carried out with input from external individuals and groups. Furthermore, as Lo (2022) indicates, governing processes are oftentimes comprised of "a synthesized mix of elements of hierarchy, markets, and networks" (p. 5639), the degree of each being dependent upon the organization's actors and their interplay.

Theories on governance are useful for explaining how processes are carried out in real-life settings. Organizational theory, for example, can help frame an assessment on how tasks and responsibilities are allocated in organizations and if arrangements are more or less conducive to the achievement of intended outcomes (Egeberg et al., 2022). It can push the analysis to consider if specific attributes of an organization or the structures that guide their processes have increased or restricted their capabilities, that is, their ability to meet their goals. Governance theories can also provide insight on the form of governance that organizations adopt and whether it aligns with their objectives and performs according to its expectations.

2.4.1 Fashion Governance

An analysis of regional fibre governance requires a brief overview of the broader context of governance in the North American fashion industry, specifically in the regions of interest. Fashion governance has traditionally taken the form of market governance, understood by Powell (1990) as the governance structures and processes dictated by market features, such as supply and demand. Governance of the contemporary fashion industry in Ontario and Ohio has been globally rather than locally attuned because concentrating too narrowly on local assets carried the risk of losing a competitive position in a supply chain. For example, economic development policy guiding the Ontario fashion industry in the early 2000s, focused on forming clusters – hubs of activity – with the goal to export and achieve anticipated side-effects of growth in other related sectors (Galvin, 2019). The industry at that time consisted of small and medium-sized enterprises that were "highly fragmented" (Galvin, 2019, p. 129), and most goods produced were for export just as they are today (Government of Canada, 2021). The data on domestic apparel manufacturing is very limited and therefore, it is difficult to determine how many enterprises remain.

In the US, a recent development in domestic fibre production is the *Fashioning Accountability and Building Real Institutional Change* or FABRIC Act, a bill which was introduced in the Senate in 2022, and revised and reintroduced in 2023. In addition to proposed legislation which enforces fabric sellers to uphold environmental and social standards, it also includes investment specifically allocated for domestic apparel production (FABRIC, 2023-24). Government involvement in fashion governance like the FABRIC Act, has been growing, more so in Europe than North America, in response to demands by consumers and consumer groups for increased brand accountability. Several global initiatives have been implemented to establish standards that legislate producers across jurisdictions. However, policies to improve equity, such as the G7 Elmau Summit Leader's Declaration (G7, 2015) and the UN Guiding Principles on Business and Human Rights (UNGP, 2011) vary in the degree to which they are implemented because ratification is left up to individual businesses (Fischer, 2018) unless countries or nation groups, such as the European Union, take up the initiative.

As with research on governance of the North American fashion industry, sustainable fashion governance is generally global in scope because of concerns with supply chain coordination across various locations (Li et al., 2014). While the literature on sustainable fashion governance is limited, what is available to date is from the firm-perspective (Jastram & Schneider, 2018, Li et al., 2014) with brands interested in improving communication across supply chain players to better equip them to face uncertainty (Chaffin et al., 2014). Being adaptive to change is an asset of successful fashion firms (Ünay & Zehir, 2012), however, they are often more resilient to social and cultural shifts, such as fashion trends that have emerged as a result of the LGBTQIA+ movement, rather than global environmental change, as the pandemic demonstrated (Brydges et al., 2020; Whitty, 2021). The challenge of the global systems of textile manufacturing is a dispersed supply chain and players who are positioned across temporal, spatial and jurisdictional boundaries. Supply chain governance, therefore, consists of increasing communication and coordination across a network, which Statsenko et al. (2018) argue is particularly effective in regional natural resource supply chains. In the case of the majority of existing textile supply chains, however, processing is often geographically removed from resource extraction sites, thereby contributing to the vulnerability of the source fibre and the livelihoods of those who extract it (Whitty, 2021).

2.4.2 Governance of Regional Production

The governance of regional fibre production is informed by existing scholarship on regional food governance by nature of both systems operating at the regional scale. More specifically, the body of research on regional food systems can contribute to an understanding of what constitutes good governance in systems of regional production, including: regional control that is shared among coordinated actors (Clancy, 2014; Wheeler, 2009); a diverse resource capacity that aligns with ecological limits (Blay-Palmer et al., 2013; Wheeler, 2009) and a reflexive process (Clancy, 2014; DuPuis & Goodman, 2005; Johnston & Baker, 20005). Similar themes emerge in Haysom's (2015) application of MacRae and Donahue's (2013) framework of food policy governance structures to assess several non-governmental regional food initiatives, revealing the importance of knowledge generation by networks operating at the regional scale in shaping internal policies that can withstand political and organizational turnover. The results not only illustrate the different forms governance can take in regional production but the need for more analysis of governance networks to understand the factors that build their capacity.

More recently, Hansom et al's (2022) review of regional food system governance highlights how several theoretical frameworks, including foodsheds, can inform the study of fibreshed governance, particularly when considering their limitations. When set parameters, such as boundary and scale, are deemed inflexible, the effect oversimplifies the social dimensions of regional frameworks and undermines the interconnectedness and influence of global systems (Blay-Palmer & al., 2013; Hansom & al, 2022; Meredith, 2005). While these insights on regional food governance are helpful for recognizing the conceptual features and constraints of regional systems, the theoretical contributions for framing such an analysis are limited. More specifically, the non-structural components shaping network governance practices, such as player's contexts and contributions, are not sufficiently evaluated.

On the other hand, governance insights may be gained from research on other agricultural-based production systems in areas where the governance of regional food systems is limited, such as Peltier et al.'s study on the role of collectives in restructuring three regional fibre and leather industries in France, and from studies on governance in the energy sector, such as Benedum and Becker's (2019) and de Leeuw & Groenleer's (2018) research on how regional networks players collectively navigate climate challenges. Their work has generated analysis frameworks which are

useful for evaluating the development of regional fibre and textile production. These frameworks will be explored in more detail in section 2.5.1 following a closer look at the governance theories on regions and networks.

2.4.3 Governance Theories on Regions and Networks

The conceptualization of regional governance has been largely influenced by theories on place as they relate to the concept of a region. As a result, different forms of governance have emerged and adapted to changing perspectives on how governance is carried out in regions. Table 2.1 identifies the different forms and dimensions of governance in regions.

Table 2.1

Changing Conceptualizations of the Governance of Regions

Governance Form	Origins	How it applies to the governance of regions	Authors
Multi-level	Marks (1993)	• Concerned with functions of territorial levels of government, particularly subnational (Marks, 1993) • Split into two types by Hooghe & Marks (2003): 1. where governance is carried out by bodies operating at multiple tiers under one central government; and 2. where governance roles are taken on by a network of public and private actors	• Hooghe & Marks (2001) • Anderson & Pierre (2010) • Bache et al. (2022)
Regional	Keating (1988); Marks et al. (1996)	• Considers the spatial political context of regional development and policy formation (Li et al., 2025) • Reflects a tension between mobilizing for regional economic development or improving governance capacity at the regional scale (Pierre, 2022)	• Foster & Barnes (2012) • Pierre (2022) • Li et al. (2025)
Collaborative	Ansell & Gash (2007)	• Initiated by the public sector to draw input from non-state actors on the implementation of regional development strategies (Ansell & Gash; Gibson, 2011) • Devised to improve the delivery of local and regional programs when traditional forms of decision-making (top-down) are unsuccessful (Ansell & Gash, 2008)	• Ansell & Gash (2008) • Gibson (2011)
Network	Powell (1990)	• Applied to organizational challenges that cross geographical boundaries involving players across multiple jurisdictions (Carlsson & Sandström, 2007) • Captures the interests, capacities and perspectives of players, and their influence on relationships between players, which impact how governance is carried out to address regional issues (Benedum & Becker, 2021)	• Powell (1990) • Provan and Kenis (2008) • Keast (2022)

As indicated in Table 2.1, regional governance is itself a form of governance distinct from theories on the governance of regions. As a theory, however, regional governance is difficult to

conceptually narrow down because of the varying emphasis different scholars have placed on the spatial dimension, and the subsequent implications on jurisdictional authority. Conceptualized broadly, regional governance is the endeavor of multiple actors to address multi-jurisdictional issues (Foster and Barnes, 2012). Pierre (2022) summarized the three most common ways regional governance theory has been applied: to solve coordination problems between actors at the local and regional level, to strengthen the governance capacity of regional actors, and to reemphasize regional capacity while deemphasizing the hierarchy of government levels. As a result, regional governance has been pulled either in the direction of improving governance capacity at the regional scale or mobilizing regional economic development (Pierre, 2022).

Foster and Barnes (2012) propose a reframing of regional governance to move beyond this theoretical dilemma by concentrating on the role and capacity of the region in governance processes rather than its place within a structure of governance and the associated challenges of navigating it. Within this lens, regional governance concepts are applied to economic development strategies with attention to the social dimensions of economic decisions (Markey, 2011). de Leeuw and Groenleer (2018) take this approach in their research on energy-neutral housing developments in three regions in the Netherlands. They argue that Varró and Lagendijk's (2013) perspective which balances the territorial and relational dimensions of regional boundaries, along with Hooghe and Marks' (2016) functional and social logic regarding how governance takes shape in regions accurately bounds the development problem in need of solving. Such an approach revealed that when a network overlooked social aspects, such as a lack of existing collaborative structures in regions, it weakened their governance capacity (de Leeuw & Groenleer, 2018).

While a network governance approach aligns with the relational perspective, it nonetheless pays attention to territorial factors, particularly how they are interpreted by network players. Like the moderate approach, it is interested in studying the dynamics of real-life relationships to understand how players navigate regional parameters and organize themselves accordingly (Varró and Lagendijk, 2013). Given the early stage of development of regional fibre production, the merging of private and civil actors and the volume of energy being invested in relationship-building, scholarship on network governance provides the most suitable theoretical groundwork for studying the fibreshed. Moreover, since the fibreshed network does not exclusively function at the regional scale because many of its players are members of an organization with affiliates located throughout the world, it requires

support from a theory, like network governance, that is not restricted to the regional scale. As a result, network governance can be used to evaluate how regional specificity impacts decision-making and if a wider spatial scope may hinder or facilitate governance goals. More specifically, it provides the opportunity to explore whether players perceive the network achieving its objectives and reflecting their individual needs, and if they consider the regional scale as an effective tool to do so.

2.5 Network Governance

Network governance theory developed out of research by Powell (1990), Larson (1992) and others (Agranoff, 2013; Miles & Snow, 1986) on the nature of relationships between network players and how they coordinate themselves to achieve their goals. While all governance theory is informed by theories on social networks (Kenis, 2022), it is important to emphasize that governance is not synonymous with networks despite ambiguity in the literature distinguishing the two (Pierre, 2022). Network governance is its own form of governance that is distinct from the 'governance of networks' and has specific features, which may be conceptualized from theories on social networks but are nonetheless unique to its form.

According to Keast (2022) and Carlsson & Sandström (2007), network governance is theoretically understood as the systems, processes and structures in place that steer an organization or group of organizations toward its objectives. What makes network governance distinct from other forms of governance is that relationships are the foundation of all planning and activity (Powell, 1990). In network governance frameworks, relationships matter. According to Powell (1990), Keast (2022) and Kenis (2022), they are the avenues by which goals are decided and pursued. They are the impetus that forms the network, as it begins with something held in common: an interest, setting or purpose. They build accountability, so that network guidelines, operating procedures, strategies and norms are all established through social interaction and are driven by the desire for collective outcomes. In this context, decision-making is a shared process, and negotiations are aimed at finding mutually beneficial solutions.

Such an outcome seems particularly challenging for situations that are deemed complex and that require additional creativity to solve, such as managing sustainability transitions, yet these are ideal circumstances for network and other forms of collaborative governance, according to Kickert et al., (1997), because they necessitate collective responses. Moreover, as Benedum and Becker (2021)

learned in their study, network governance may be particularly effective in circumstances where policy support is limited. They also found that network governance is commonly applied to natural resource management, since organizational challenges cross geographical boundaries and therefore involve players across multiple jurisdictions (Benedum & Becker, 2021). Like collaborative governance, network governance often adopts a more expansive view of time to account for the longer timelines required to build the necessary relationships for strategies to be reached (Keast, 2022). Similarly, as the formal policies typically used in enforcing the pursuit of organizational goals are replaced by qualities, such as trust and reciprocity (Keast, 2022; Powell, 1990; Provan & Kenis, 2008), that are manifested through social exchange, network players may require more time to adopt them.

2.5.1 Framework for Analyzing Governance in a Regional Network

A network governance analysis provides the opportunity to identify the mode of network governance being applied. According to Provan and Kenis (2008), the three forms of network governance modes – **shared participant, lead organization** and **administrative organization** – are characterized by a distinct governing body and distinguishing features. In the shared participant mode, governance is a joint effort among players without a lead organization. The players are self-organizing, and formally and informally generate rules and normative practices in their network. Whereas in the lead organization mode, governance is primarily carried out by one main organization, who represents the network players, makes decisions and provides coordination. The third mode is the administrative organization mode, which consists of an external organization that plays the governance role in the network, by facilitating all governance activities from the outside.

Similarly, Keast (2022) extends Powell's (1990) analysis by comparing the modes of state and market governance to network governance. Whereas state governance is implemented by regulations and policies, and market governance takes effect through principles of supply and demand, network governance is carried out through social exchange that is guided by a common purpose. While these modes provide insight on the individual or group steering the governance of the network, they are limited in identifying common characteristics since networks, when dividing governance tasks according to their circumstances, can apply features of one, two or all three modes.

Instead, several researchers, including Benedum and Becker (2021), Foster and Barnes (2012) and Markelova et al. (2009) propose a bottom-up approach when analyzing governance in diverse settings by developing analysis frameworks that guide researchers to specific areas for further study. Influenced by the work of Hamilton (2004) and Stone (2005), who concentrate more on governance processes than on structures, Foster and Barnes (2012) propose a framework for evaluating regional governance, which includes the following dimensions: *actor group*, *agenda*, *internal capacity*, *external capacity* and *implementation experience*. These elements consider the players, their capacity and their purpose in organizing rather than governance types (Foster & Barnes, 2012) and are thus adaptable to different governance settings and arrangements. Accordingly, de Leeuw and Groenleer (2018) applied Foster and Barnes' (2012) framework to energy-neutral housing initiatives in three regions. In doing so, they replaced three of the dimensions – *internal capacity*, *external capacity* and *implementation experience* – with *regional capacity* and *mode of alignment*, to better reflect the balanced approach of considering the territorial and relational features of regions. They found that by examining the particulars of these dimensions in each region, they were able to situate the problem and determine if the response fit the specific characteristics of the region and the capacity of players working in it.

The framework proposed by Markelova et al. (2009), while designed for analyzing the nature of collectives in improving market access for smallholder farmers in non-Western countries, corresponds closely with Foster and Barnes' (2012) framework as well as the modifications made by de Leeuw and Groenleer (2018). Markelova et al. (2009) identified the following key areas of study: *group characteristics*, *institutional arrangements*, *types of products and markets* and the *external environment*. The similarities between frameworks indicate how the coordination of groups to address problems in their region are determined by the capacity of players and the nature of their interaction. In contrast to more recent frameworks, the one conceptualized by Markelova et al. (2009) retains features of Keast's (2022) adaptation of Powell's (1990) market, state and network modes of governance. However, there is more emphasis on the structures of state governance and the governance mechanisms of firms than on the characteristics of network governance. Yet, when Peltier et al. (2024) applied this framework to an analysis of the role of collectives in restructuring three regionally-based industries in France, they determined that the two dimensions most aligned with network governance features, *group characteristics* and *external environment*, what Markelova

et al. (2009) use to describe the relationships between the group and the state, market and civil society, had the greatest bearing on the performance of the agricultural collective.

A third iteration of these analysis frameworks was proposed by Benedum and Becker (2021) who, with insights from research on networks by Carlsson and Sandström (2007), Head (2008), Klijn (2008), Reagans and Zuckerman (2001), Robins et al. (2011), devised a framework for assessing the network of players involved in the wood energy industry in California. They identified dimensions that aligned with network governance theory and expressed them in relational terms. For example, rather than actors or user groups, Benedum and Becker (2021) selected *heterogeneity* because it considers each participant in relation to each other. The three remaining dimensions capture how the players organize (*network structure*), coordinate (*integration*) and realize goals (*operating function*). Like heterogeneity, the integration dimension highlights the relational aspect of governance networks better than a singular feature, such as actor group, does. Moreover, integration, like heterogeneity, introduces an index of measurement to the dimension, so that the framework provides a means of assessing the degree of integration. While there are multiple points of overlap between the frameworks (see Table 2.2), Benedum and Becker's (2021) dimensions specifically concentrate on how players interact to understand systems of governance in networks. As a result, their framework offers a means of assessing the nature of network relationships, specifically the array of actors, their individual responsibility, areas of coordination between them and the alignment of objectives.

Table 2.2
Benedum & Becker's (2021) Network Dimensions in relation to Network Dimensions conceptualized by others

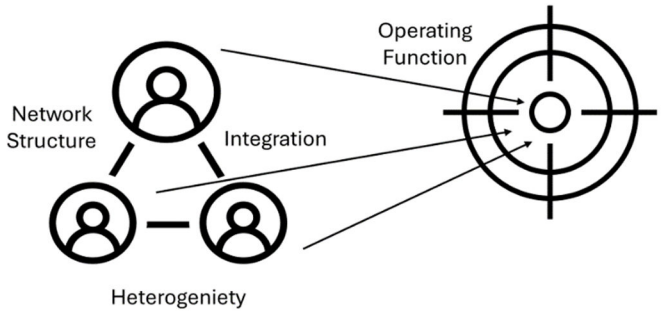
<table>
<tr><th>Benedum & Becker (2021)</th><th>Heterogeneity</th><th>Network Structure</th><th>Integration</th><th>Operating Function</th><th></th></tr>
<tr><td>Markelova et al. (2009)</td><td>Group Characteristics</td><td colspan="2">Institutional Arrangements</td><td></td><td>Types of Markets & Products
External Environment</td></tr>
<tr><td>Foster & Barnes (2012)</td><td>Actor Group</td><td colspan="2">Internal Capacity
External Capacity</td><td>Agenda</td><td>Implementation Experience</td></tr>
<tr><td>de Leeuw and Groenleer's (2018) adaptation of Foster & Barnes (2012)</td><td>Actor Group</td><td></td><td>Regional Capacity</td><td>Agenda
Mode of Alignment</td><td></td></tr>
</table>

As indicated in Table 2.2, the dimensions outlined by Benedum and Becker (2021) are particularly useful in assessing how well a network can coordinate different actors and ensure effective decision-making, that is, decision-making that represents stakeholders and has an impact on the network's goal(s). This analysis requires a framework that is designed in line with the features of relationships – how they take shape and evolve with participant input and external circumstances – since regional fibre and textile systems are designed to be socially and ecologically driven rather than state or market driven. Network governance provides a framework for outlining the governance features of industries whose locations are determined by geographic characteristics as well as human ones and whose players represent the private, public and non-profit sectors (Keast, 2022), including businesses owners, social entrepreneurs, educators, researchers, consultants and citizens. Therefore, it can frame an assessment of the range of players, specifically their personal and professional backgrounds and motivations for participating as these qualities impact their goals and how they coordinate with the network. In the case of regional fibre systems, it can capture the players that are members of the Upper Canada Fibreshed and Rust Belt Fibreshed, as well as the informal players unaffiliated with the Fibershed organization who are engaged in regional fibre and textile production in each region.

2.5.2 Network Governance Dimensions

Benedum and Becker (2021)'s dimensions of network governance provide the means to study the players and the nature of their relationships. These dimensions, as illustrated in Figure 2.6 and discussed in more detail below, are **network structure** (how players are organized); **operating function** (network goals and responsibilities); **heterogeneity** (the range of players); and **integration** (coordination between them).

Figure 2.6
Dimensions of Network Governance



2.5.2.1 Network Structure

The first phase of analysis is network structure. This step is interested in studying how players within a network organize. It is distinct from what Foster and Barnes (2012) conceptualized as *institutional arrangements*, which refers to how governance institutions are structured within a region. Instead, it examines a network's internal structures. Therefore, it requires a closer look at how players organize, and the structures used to allocate and guide roles and responsibilities, arrangements which identify the direction of accountability (Gibson, 2011) and shape the normative practices of co-management contexts in networks (Carlsson & Sandström, 2007). Internal structures, such as a board of directors, arrange players in relation to each other to guide network relationships. As Keast (2022) indicates, relationships are the means through which the network sets goals, enacts plans corresponding to the social and economic contexts of participants, and shapes future directions of the network and of their communities. Consequently, as the nature of a network is relational (Keast, 2022; Kenis, 2022) and structures are a network's internal mechanisms of governance (Van Puyvelde, 2016), internal structures adapt to network players and the ways they interact. Therefore, this analysis also considers the flexibility of network structures.

2.5.2.2 Operating Function

The second stage is an analysis of the network's operating function. Benedum and Becker (2021) identify this step, along with the network structure analysis as an aggregate level evaluation, that is, a

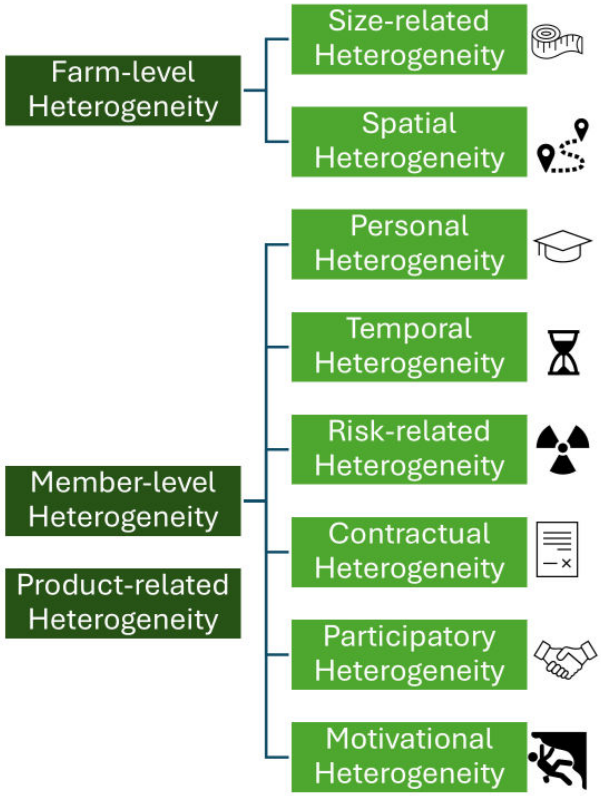
study of the whole network rather than its individual parts, as is the heterogeneity and integration analyses. The prior assessments will have revealed variations in participant experiences, capacities and aims which collectively create friction and cause temporary or ongoing interruptions (Klijn, 2008; Reagans & Zuckerman, 2001). An assessment of the network's operating function continues where the integration analysis has left off, by evaluating what the network players do to manage different interests and how successful they are at reconciling them into common goals. It also assesses how they are able to track progress and determines if the members of the communities they serve feel the network is responding to their needs and integrating their feedback. As the network may have more than one function and these may evolve over time, its progress can only be fully understood through stakeholder assessments. Operating function draws on Foster and Barnes' use of *agenda* as a key dimension and also considers how networks operationally align the goals of network with its outcomes. Therefore, de Leeuw & Groenleer's (2018) *mode of alignment* is reflected both in the third (*integration*) and fourth (*operating function*) dimensions. Similarly, the network's operating function integrates Foster and Barnes' (2012) second (*agenda*) dimension.

2.5.2.3 Heterogeneity

The third phase of analysis examines the individuals and groups in the network. As the range of participants and experiences is typically vast in networks (Head, 2008), this phase aims to know the players, the professional fields within which they operate, the interests they represent and the resources they bring to the network. As indicated, heterogeneity captures Foster and Barnes' (2012) first dimension (*actor group*) and Markelova et al.'s (2009) first dimension (*user group*). However, in relation to Peltier et al. (2024), this phase is less interested in the network size than its attributes, including "socioeconomic characteristics: ages, wealth, norms and values, experiences of working, and the capacity of the group leaders to be knowledgeable, skilled in collective action, and trusted by the group members" (Peltier et al, 2024, p. 4). Peltier et al. (2024) applied Markelova et al.'s (2009) dimension of *group characteristics* and emphasized the importance of evaluating the range of attributes among players. The heterogeneity dimension effectively captures the interplay of personal attributes at a time when the heterogeneity of farm producers is increasing and has been identified as a significant factor impacting network performance (Benedum & Becker, 2021; Höhler & Kühl, 2018; Peltier et al., 2024).

Figure 2.7

Höhler and Kühl's (2018) Heterogeneity Categories



From their research on agricultural cooperatives, Höhler and Kühl (2018) identify three levels of heterogeneity (see Figure 2.7): farm-level heterogeneity, which includes farm sizes and geographical locations; member-level heterogeneity, which refers to several personal attributes; and product-related heterogeneity, which considers the types of farm products. Farm-level heterogeneity includes farm size and geographical location whereas product-level heterogeneity refers to the range of products available in the network. As Figure 2.7 indicates, member-level heterogeneity covers multiple aspects of network members, including their age, education, income, gender, ethnicity, industry experience, length of time in the network, financial investment in the network, level of participation in the network and level of commitment to the network. Therefore, Höhler and Kühl's personal heterogeneity includes the individual element of Foster and Barnes' (2012) *implementation experience*, which captures the network's level of activity.

A heterogeneity analysis evaluates the extent to which government and industry are involved in fibreshed activities by assessing the sectors represented by network players (Benedum and Becker, 2021). It asks if rural and urban viewpoints are present and if individuals from diverse classes and ethnicities are participating (Höhler and Kühl, 2018), including marginalized groups, such as individuals of low income, indigenous and racialized peoples. A heterogeneity analysis does not only identify the participants, but it also explores their reasons for participating in the network (Höhler and Kühl, 2018), which may be singularly focused or a combination of economic, environmental and social factors. Ultimately, these motivations will impact the role they play in the network, thus informing the direction of the next phase of analysis (Benedum and Becker, 2021), which examines how network players coordinate with each other.

2.5.2.3 Integration

Following a heterogeneity assessment, the final step studies the integration of network players. It seeks to understand why partnerships are initiated, how each player's contributions shape the relationship, and how they collaborate when planning strategies and carrying out activities (Carlsson & Sandström, 2007; Robins et al., 2011). This analysis considers if network relationships are connecting needs and solutions in mutually rewarding ways, such as collaboration between sectors to improve product circularity, better producer representation within the industry and securing funding for long-term planning. It evaluates if network activities reflect the realities of members of the communities it serves and if these communities, in turn, feed the network. This third phase assesses goal alignment between players, like de Leeuw and Groenleer's (2018) *mode of alignment*, and measures network reciprocity, an essential step in assessing the alignment of network goals in the fourth phase. As indicated when identifying the first dimension, this analysis is interested in the nature of relationships within the network and with external partners and therefore, it encapsulates Foster and Barnes' (2012) third and fourth dimensions (*internal* and *external capacity*), which includes internal and external access to resources and connectedness.

2.5.3 Limitations of Network Governance Theory

There are qualities of networks that can make governance challenging. For example, networks that are very heterogeneous may take longer to reach consensus even if, as Börzel (1998) argues, overall

transactions are reduced in networks because of a high level of shared knowledge. Similarly, research by Carlsson & Sandström (2007) demonstrates that while heterogeneity can often increase resource mobilization, it can face more challenges with goal alignment than homogenous networks. Yet, whereas heterogeneity was initially considered a risk to the strength of integration within networks (O'Reilly et al., 1989), research by Reagans and Zuckerman (2001) on R&D networks, demonstrated that the two dimensions do not inevitably undermine each other. Depending on circumstances, both qualities can contribute to network performance and effectiveness.

On the other hand, when network players become too close – their roles too familiar and their perspectives too embedded – there is a chance that the network becomes insular and begins to make their own rules (Keast, 2022), which is arguably more liable for networks that function at a regional rather than a national or global scale. Insularity can result from the homogenization of ideas and experiences that can occur in networks over time (Bodin et al., 2006) and risks inhibiting external integration and the growth of the network.

As most of the literature on network players concentrates on one or two aspects of heterogeneity when assessing network performance (Höhler and Kühl, 2018), the results have been conflicting. Therefore, it has been difficult to generalize cause and effect in network scenarios. Establishing network-specific dimensions, such as Benedum and Becker's (2021), and breaking down these dimensions further, as Höhler and Kühl (2018) have done, can augment the existing literature. Moreover, more research in diverse settings can help address some of the inherent challenges of capturing a theory as it is practiced in networks.

2.6 Concluding Remarks

As indicated in Figure 2.1, this research draws from the field of fashion, sustainable fashion, regional development and network governance to provide a theoretical framework for understanding fibresheds and analyzing fibreshed governance. In summary, sustainable fashion discourse and scholarship has led to new forms of fashion production which reinterpret contemporary fashion's use of space. However, reemphasizing the location where fashion is made has ethical implications which generate questions regarding the governance of present-day regional fibre systems in North America. The study of regional production systems, therefore, necessitates more analysis. Specifically, more insight is needed on how these systems are being organized, who is managing their development and

how the players are coordinating with each other. Benedum and Becker's (2021) framework offers a means of evaluating fibreshed actors, their relationships and the alignment of network goals. Such an analysis contributes to a better understanding of how fibreshed players interpret the regional scale, navigate fibreshed boundaries and contextualize their work within the global system of fashion design and production. Before moving to the analysis, however, I will first explain the research approach in more detail in the following chapter.

Chapter 3
Methods

This chapter explains how the research was designed to answer the following questions:

1. **How is a fibreshed defined?**
2. **How is a fibreshed organized and governed?**
3. **How can a fibreshed contribute to sustainable fashion?**

I begin by identifying the epistemological framework guiding my understanding of knowledge production, as it forms the basis of my approach to the research design and my position as researcher. Next, I explain the suitability of case study research to an exploratory study of fibresheds and fibreshed governance. I then describe the case study boundaries, the process of data collection and analysis, and the strengths and limitations of the research design.

3.1 Epistemological Framework

This research is guided by the philosophical worldview of constructivism, a common orientation of qualitative research (Cresswell & Cresswell, 2018). According to Crotty (1998), constructionists approach knowledge as formed out of individuals' experiences and interpretations of their social context. With its emphasis on the shared process of knowledge production, constructivism offers a useful epistemological framework for studying the relationships that shape the governance of a network if the appropriate measures are taken in research design. Aligning my study with constructivism necessitates that I establish a methodology that captures the subjective experiences of each participant as well as the positionality and reflexivity of myself, the researcher, which I describe in the following section.

3.1.1 Positionality

As a researcher, it is necessary to identify my own subjectivity in order to position myself, my experiences and my own understanding of fibre and fibresheds. In doing so, I must acknowledge my own privilege as a white, able-bodied, cisgendered descendent of a colonialist nation – a daughter of first generation Dutch immigrants whose parents moved to Canada with the hope of more space and

economic opportunities yet they, and subsequently I, have benefitted profoundly from colonialism, in one sense directly from stolen land and in another, from the systems that deliberately discriminate against racialized peoples. The business my parents inherited – a plant nursery – relied intimately on land. It provided an education for me, in the agricultural functions required for my daily needs – food of course, but also fibre. This research gives me the chance to expand my education and contribute to the body of research on regional fibre production. It is also an opportunity to seek evidence of colonialism's continuing influence on the future direction of fibreshed discourse and scholarship and to identify governance strategies that will alleviate barriers for marginalized peoples.

This inclination is drawn from my experiences in social justice advocacy, including as Coordinator of the University of Ottawa's Enviro-Action Public Interest Research Group, on the Board of Directors of Kitchener YWCA and as member of the Kitchener-Waterloo Social Action and Advocacy Committee, during which I attempted to address, from my position of privilege, the economic imbalances and social disparities that I encountered through my work in community development, in my own city of Kitchener (as Community Tools Coordinator at the Working Centre) and abroad (as a member of a student-led volunteer group in San Salvador, El Salvador and surrounding rural communities and as a volunteer researcher in Mohuda, Odisha, India). I witnessed the compounding obstacles facing refugees and New Canadians during my job as Services Coordinator and Advocate for the Constituency Office of the Member of Parliament (MP) of Kitchener Centre where I supported newcomers navigating the immigration system and other federal services. Together with my colleagues and the MP, we strategized on how to turn individual stories of disenfranchisement into policy changes that contribute to more equitable structures of governance.

3.1.2 Reflexivity

These current and prior experiences in workplaces and community shape the direction I take in my research. Reflecting on how my positionality influences my approach, the practice of reflexivity (Wilkinson, 1998), is fundamental to the research process. Reflexivity allows the opportunity to consider how my construction of reality, including the politics that shape my experiences and interpretations, affects the design and outcome of my research. As Wilkinson (1998) outlines, reflexivity requires deliberate attention to elements that may be overlooked when collecting the data or assumptions that are made in the process of understanding it.

The process of reflexivity begins by considering my choice of regional fibre production as a topic. To start, alternative models – such as regional rather than global fashion production – are often considered less threatened by political agendas but they are just as susceptible to them, as identified by DuPuis and Goodman (2005) in their analysis of local food systems. Likewise, natural fibres are considered alternatives to the synthetic fibres that are dominating global markets (Zuk et al., 2015). While the unpopularity of natural fibres may have been what contributed to my increased interest in them, the reality is that the price of these fibres remains out of reach for most of the world's consumers. Garments made from wool, silk and linen are often considered high-end products in contemporary marketplaces and their price continues to rise (Fuller, 2024). I had the luxury of time and income to experiment with natural fibres when designing and constructing clothing, and opportunities to dig deeper into how cloth was spun, woven and knit and the plants it came from. In doing so, I came to realize the profound disconnect that contemporary North American consumers have regarding the origins of their clothing. However, only part of this disconnect can be explained by geographical distance or individual preference. Slow fashion, where natural fibres are most prevalent, is predominately a choice that affluent consumers have the capacity to make (McNeill & Moore, 2015) and it reflects a combination of social, economic and political factors. As a result, the sustainable fashion industry, as Aja Barber (2021) argues, remains an exclusionary space to many.

Another example of the politics of fashion became apparent to me while teaching garment making to individuals and groups. Many of my students were drawn to sewing because of their dissatisfaction with the size and fit limitations of ready-to-wear garments, a common motivator to sew rather than buy clothing (Martindale & McKinney, 2018). Yet, sewing does not necessarily offer inclusivity. Sewing pattern companies are equally as limiting as clothing brands and anti-fat bias pervades the home sewing industry just as much as the fashion industry. My sewing students provided me with an opportunity for reflexivity, to rethink the words I used since the common language regarding clothing sizes, fitting requirements and garment construction can carry cultural prejudices towards individuals with larger bodies and disabilities. Learning about poverty and discrimination through social relationships does not measure up to lived experiences but can bring empathy to the process of understanding differences. A reflexive first step in qualitative, exploratory research also lays the groundwork for a data collection phase that is receptive and sensitive to the

participants being interviewed and begins to approach the subject as it is known by those experiencing it.

3.2 Research Design

Case study research in particular is helpful for bringing an empirical understanding to a field where there is still a lot unknown (Yin, 2014), such as governance practices in regional fibre and textile production. According to Yin, a case study approach is specifically effective when *why* and *how* questions are being asked. Like Merriam (2001), I approach this research as a chance to contribute to the meanings people make, in this case, about how clothing is made, its connection to the places people live, and individual and institutional roles in its manufacturing. The process of building an abstract understanding of a theory from a detailed specific case, what Merriam (2002) calls theorizing, aligns with constructivist thought regarding the way people put together meaning and subsequently, the way researchers make sense of it. The constructivist attention to the relational aspect of knowledge production makes it a particularly fitting investigative lens for case studies of networks and network interactions. More specifically, it aligns with the principle of network governance theory which recognizes that network decision-making and operational strategies are enacted through relationships and dialogue. Case study research, with its singular and exhaustive focus on a defined area of study, offers the appropriate scale to study the width and breadth of these relationships.

A case study approach also fits well with fibreshed research, as the emphasis on place that is so integral to fibreshed design suits the bounded nature of case study design. Boundaries provide an ultimate limit to the research subject (Merriam, 2001). Delineating by time, place and activity narrows the subject matter, a criterion that Merriam (2001) calls particularistic and identifies as one of the three key attributes of case studies along with descriptive, in that it depicts the subject matter in detail, and heuristic, because it gives meaning to it. As the fibreshed presents a new model of fibre and textile production that is distinct from past systems, a case study of it can lead to new ways of conceptualizing governance practices and stakeholder relationships.

A multiple case study, according to Merriam (2001), can capture many voices. I determined that drawing from one Fibershed affiliate could potentially generate 10-20 study participants. However, an opportunity to study two affiliates could draw from a larger pool of participants and

provide the chance to compare two regional networks that exist within the larger Fibershed network. Thus, I selected two Fibershed affiliates: Upper Canada Fibreshed in Ontario (UCFS) and Rust Belt Fibershed (RBF) in Ohio. The two fibresheds were selected for similarities in climates, agricultural profiles, fibre history, geographical size, population size and urban/rural proportion. However, despite the fact that the two fibreshed regions physically overlap, there is one distinct difference between the two Fibershed affiliates regarding jurisdiction: UCFS is in Canada and RBF is in the United States.

3.2.1 Case Study Dimensions

This study is bounded by three dimensions: time, place and activity. First, the timeline is contemporary, with auxiliary consideration to 19th and early 20th century North American fibre production as well as to anticipated development over the next several decades. Secondly, the specific region consists of Southern Ontario, Western New York, Western Pennsylvania, Ohio, West Virginia, Northern Kentucky, Eastern Indiana and Southern Michigan. Lastly, the activity under investigation is the cultivation and processing of fibre for garment-making.

3.2.1.1 Time

The fibreshed concept was first introduced by Rebecca Burgess in 2010, when she embarked on a *One Year Wardrobe Challenge* to "live in clothes…solely created, designed [and] farmed…all within 150 miles of [her] front door" (Collier, 2010, 0:52) in Marin County, California. In 2013, the Fibershed organization was officially launched (Fibershed, 2025b) and in 2016, UCFS became the first affiliate (SOP-2). Just over one year later, in late 2017, RBF joined the network (Rust Belt Fibershed, 2025g). Over the next decade, interest in regional textile production continued to develop, including, in 2018, when Kate Fletcher's proposed the concept of fashion localism.

In regions in both Ontario and Ohio, natural fibres are produced. Wool production began in North America in the mid-1600s when sheep were brought over from Europe (Canadian Co-operative Wool Growers Limited, 2025b), but was limited to hand processing until the industrialization of textile production that began in the late 1700s. North American linen production took place throughout the 1800s (Green, 2014; MacFadyen, 2018; Selected paragraphs, 1877) as well as a brief resurgence during the first World War (Grisdale & Hutchison, 1918; MacFadyen, 2018). However,

100 to 150 years have passed since it was grown primarily for linen rather than paint, seed and oil. This time period is regularly referenced by contemporary fibre producers and regional textile advocates as confirmation of the region's historical ties to fibre and as rationale for new investment in regional fibre production (Jones, 2023; Tancock, 2024; Vujić, 2023).

During the early to mid-20th century period, the garment industry in Cleveland was second only to New York City (Martin, 2015). This history, when evaluated in light of the wider industrial context as well as the social and political conditions of the day, can provide critical insight into the factors that contributed to both the development and erosion of the regional fibre industry. While my study concentrates on contemporary efforts of fibre production, the history and previous governance of it is nonetheless valuable in evaluating the path dependency (Burch et al., 2014) of the industry and colonial opinions influencing further development. In addition to historical references of textile production throughout this study, I also consider the next ten to twenty years in terms of anticipated developments in the industry.

3.2.1.2 Place

Figure 3.1

Map of Area Upper Canada Fibreshed Serves

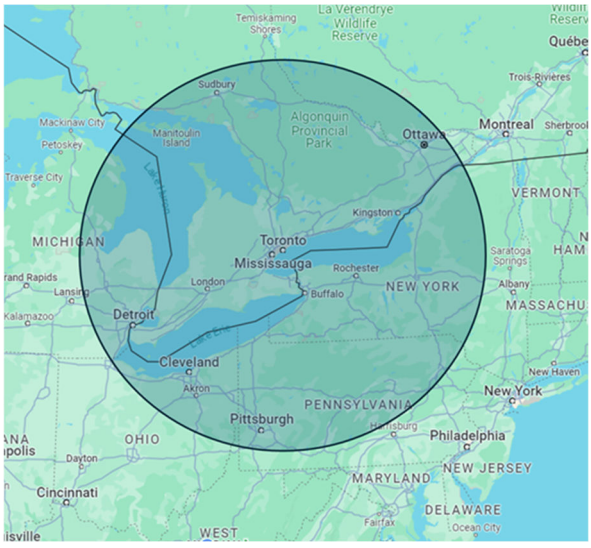
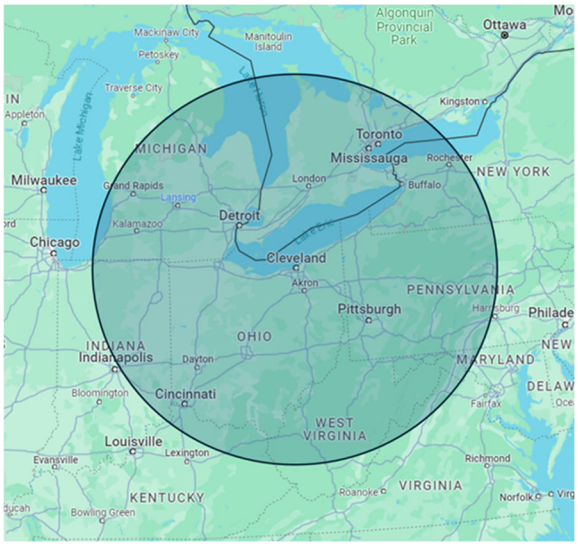


Figure 3.2

Map of Area Rust Belt Fibershed Serves



Note. From Google Maps, 2025

The areas of this study were initially chosen for their suitable climate and agricultural profile for growing and retting flax (MacFadyen, 2018) and included the regions served by UCFS and RBF. At the time of my study, UCFS encompassed an area within a 400-kilometre radius of Toronto (Upper Canada Fibreshed, 2024a) (see Figure 3.1). Similar in geographical size, RBF encircles 250 miles around Cleveland, Ohio (Rust Belt Fibershed, 2025b) (see Figure 3.2). The population size of the Rust Belt region is higher than that of Southern Ontario (U. S. Census Bureau, 2025), however their densities and urban/rural proportionalities are comparable in population density maps (Commission for Environmental Cooperation, 2025; Wikimedia Commons, 2025). There were an estimated 76,500 farms in Ohio in 2022 over 13.1 acres (U. S. Department of Agriculture, 2023a) in comparison to 48,300 farms in Ontario in 2021 over 11.8 acres (Government of Canada, 2022a).

The urban epicenters of both regions contribute to the fashion and apparel manufacturing industry through employment and education programs. Accurately capturing workforce and revenue in each city, however, is difficult because data on the industry is either unavailable at the municipal level or includes the retail sector in its measurement. For example, in Toronto, only 20.4% of the industry consists of garment manufacturers and textile mills (City of Toronto, 2025). When comparing Ontario and Ohio to the rest of Canada and the U.S. in regard to apparel manufacturing and fashion design, Ontario and Ohio are both mid-positioned, with Ontario behind Quebec (Galvin, 2019) and Ohio among the top four highest performing states (U. S. Bureau of Labor Statistics, 2025).

There are six institutions offering fashion design programs in Toronto, including Seneca, Toronto Metropolitan University and George Brown College, as well as Toronto Fashion Incubator, which was established by the City of Toronto in 1987 (City of Toronto, 2025). Kent State University, in Cleveland, is one of the leading fashion design schools in the U.S., with undergraduate and graduate programs available in design, merchandising and fashion industry studies (Kent State University, 2025a). Fashion Week Cleveland, which ran from 2002 to 2017, became the country's third largest fashion show, behind New York and Los Angeles (Fashion Week Cleveland, 2016). Dayton Fashion Week took place in 2017 and again in September 2024 (Dayton Emerging Fashion Incubator, 2025). Toronto Fashion Week has been running since 1999 and is held semi-annually, in February and September (Toronto Fashion Week, 2018).

Government support for the sector differs slightly between the two locations. In 2016, when the former owners of Toronto Fashion Week announced the cancellation of the event, the Fashion Industry Advisory Panel was formed to liaise between the city's Economic Development Committee and key industry stakeholders on supporting skills and entrepreneurial development in the sector (Williams, 2017). Nonetheless, Galvin (2019), in his research on economic development clusters in Toronto and Montreal, indicated that the fashion sector suffers from lack of municipal, provincial and federal support. From his consultation with industry leaders, it was understood that all levels of government lacked the interest and knowledge on industry needs for coordinating efforts to support domestic fashion (Galvin, 2019). Typically, the kind of support received from government has been export-specific (Galvin 2019), whereas recent legislation proposed in the U.S., and currently being reviewed in the New York Senate Committee, includes specific investment for domestic apparel production (Senate Bill S7428A, 2021-22). However, a lack of sector-specific municipal or state support is facing designers and manufacturers in the Rust Belt region, similar to Ontario.

3.2.1.3 Activity

The activity at the focus of this study is fibre production taking place within a region, and the people and groups engaged in and supporting this production. The fibre that is being processed into garments is wool and to a lesser extent, alpaca, mohair, llama, flax and hemp. Flax and hemp are plant fibres and wool, alpaca, mohair and llama are animal fibres. Refining flax into linen and hemp into a wearable cloth involves the following steps: cultivating, harvesting, rippling (removing the seeds), retting (allowing the harvested plant to break down in the field or in water), breaking/braking (separating the outer layers from the inner fibre), scutching (removing any remaining outer layers) and hackling (separating the long line from the shorter tow) (Grégoire & als., 2021; MacFadyen, 2018). Processing animal fibres into textiles begins by shearing (cutting the fibre off the animal), scouring (cleaning the fibre) and either carding (untangling the fibre) or combing (aligning the fibres), depending on the desired outcome (Wiedemann et al., 2024). Each process requires specific tools and machinery and workers to handle them. With both plant and animal fibres, the next step involves spinning (twisting the fibres together to form yarn) and then knitting or weaving them. The textile produced is dyed, designed, and sewn into garments which is then distributed and marketed.

Flax and hemp are both considered bast fibres (Chen & Lui, 2010). The variety of flax grown for linen is *Linum usitatissimum* which is native to West Asia and the Mediterranean coast (Melelli et al., 2021). The variety of hemp is *Cannabis sativa L.*, which is distinct from marijuana by its low delta-9-tetrahydrocannabinol (THC) content (Textile Exchange, 2023) and native to eastern Asia (Lash, 2002). Very small-scale processing and experimentation is also being done on other bast fibres such as nettle, milkweed and dogbane (Wenner, 2020). With respect to the natural fibres being produced in the studied regions, the wool textile industry is the most developed. Some of the breeds of sheep being raised for wool include Corriedale, Jacob, Rambouillet and Icelandic (The Campaign for Wool, 2021).

3.2.2 Data Collection

Since drawing from multiple sources of data is essential for effective triangulation and analysis (Yin, 2014), I used two methods of data collection, primary document review and interviews, both of which are common to case study research. The document review phase was initiated at the start of my research, during my review of academic literature, in January 2022. Prior to the participant recruitment phase, on September 11, 2023, my research received clearance from a University of Waterloo Research Ethics board (REB #45420) (see Appendix A).

3.2.3 Document Review

The documents under review are considered distinct from academic literature as they were sourced from the industry and typically authored by key industry players or supporting agencies. They include documents from the Fibershed organization, such as promotional materials, meeting minutes, newsletters, board position descriptions and strategic plans, which provided contextual information on the affiliate's activities, programing and future planning. I sorted these documents by *internal* (such as administrative or pertaining to organizational planning) or *external* (including marketing and educational materials) for ease of reference in the data analysis phase. Internal documents were limited by what study participants were willing to share with me. For example, only one affiliate shared their strategic plan with me. I asked board members from both Fibershed affiliates for a copy of the initial materials they received from the Fibershed organization but did not receive them. One

member suggested that new affiliates are given an orientation package, however they joined before that practice was in place.

In addition, documents were also sourced from government and other stakeholder organizations, including policy statements, agency or committee reports and industry white papers, which I regularly reviewed to corroborate or add to interview data. My preliminary research involved reviewing government documents, such as a report from the City of Toronto's Economic Development Committee on the size and revenue of the garment sector (Williams, 2017) and the Textile and Fashion Waste Report of Central Ohio (Mive Labs, 2023) to better understand how levels of government are engaging with or responding to fibre and textile producers in each region. While my research began more broadly on the textile industries in both locations, I narrowed my document review to those generated by producers themselves. Following our interviews, several fibre producers shared their own business reports or directed me towards those published by industry groups, such as the Wool Plan (Canadian Wool Council, 2021), which detailed the challenges and opportunities of domestic production.

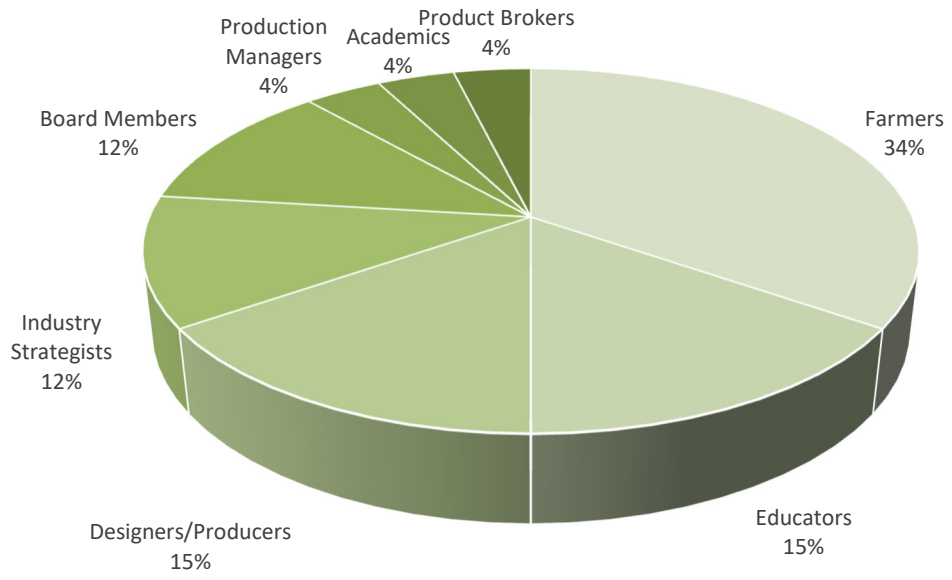
3.2.4 Participant Recruitment

I initially concentrated on Fibershed affiliates for participant recruitment as they offered the largest concentration of individuals engaged in fibreshed activities. To establish a context of the origins and evolution of RBS and UCFS, I invited the founders of each affiliate for the first interviews.

Once I connected with the affiliates' founders, I then pivoted to the rest of the membership. Initially, I reached out to board members prior to general members, however recruitment of the two groups quickly overlapped in my effort to secure participation and schedule the interviews within a timely manner. In the meantime, I shared study information with affiliate founders with the request to disperse it by email to the wider membership. I also attended the online Annual General Meeting of UCFS on November 1, 2023, to announce my recruitment of interview participants. At the time I began participant recruitment, in September 2021, there were thirty-eight members listed on the RBF website and fifty-seven members listed on the UCFS website, including board and producer members. Of the producer members, the majority were fibre farmers in addition to designers, educators, fiber mills and supply shops.

Figure 3.3

Fibreshed Roles of Interview Participants



From membership profiles, I selected individuals whose professions aligned with the dimensions of my study but did not restrict recruitment to those working with only one type of fibre. Several interviewees, during or post interview, shared their recommendations for study participants that I should contact, either within or outside the Fibershed organization. I did not turn down anyone who reached out to me to participate and contacted everyone who was recommended by interview participants. In total, I recruited thirty-three individuals to participate in the study, eighteen individuals associated with UCFS and fifteen with RBF. Twenty-five interviews with farmers, educators, designer/producers, industry strategists, board members, production managers, academics and product brokers (see Figure 3.3) took place between October 11, 2023, and January 24, 2024. Fifteen individuals from UCFS and ten from RBF accepted the invitation to participate.

3.2.5 Semi-structured Interviews

The interviews were semi-structured (Knott et al., 2022) so that prepared questions (see Interview Guide, Appendix A & B) aligned with the research objectives while the design allowed for open-ended discussion. The Interview Guide provided a general roadmap for framing the conversation,

however, in the style of semi-structured interviewing (Cresswell & Cresswell, 2018), I often followed the interviewee's lead on the direction of the discussion to keep my attention on the areas where they had the most willingness, interest or expertise to share. Additionally, it prompted new ways of asking the intended questions that would effectively draw out participant's insights.

As indicated in Chapter 1 (see section 1.3 on study limitations), more participants worked with wool than other fibres. However, because of their experience producing fibre and engaging with Fibreshed affiliates, I did not limit the discussion to any one particular regional fibre. Instead, their insights on the Fibershed organization, the goals of the network, alignment of objectives among network players and the degree of internal and external integration served as foundational data for conceptualizing the nature of regional fibre production and understanding the dynamics between network players.

To affiliate founders and board members, I asked specific questions regarding the structure of the organization, stakeholder engagement, decision-making processes and strategic planning. I asked all interviewees why they were involved in the fibreshed and how their involvement informed their knowledge of sustainable fashion. All interviewees were also provided with the interview questions prior to the interview. Before beginning each session, I asked and received each participant's consent to record the conversation and anonymously quote them in any publications resulting from the research. All participants granted their consent that their quotations be identified according to their region; for example, Southern Ontario Participant (SOP) or Northern Ohio Participant (NOP). All interviews took place virtually. The duration of the interview was, on average, 68 minutes, with 38 minutes being the shortest and 106 minutes being the longest. After the interviews, I transcribed the audio recordings using Turboscribe (turboscribe.ai) and saved the transcriptions with numbered identifiers to prepare for analysis.

3.2.6 Data Analysis

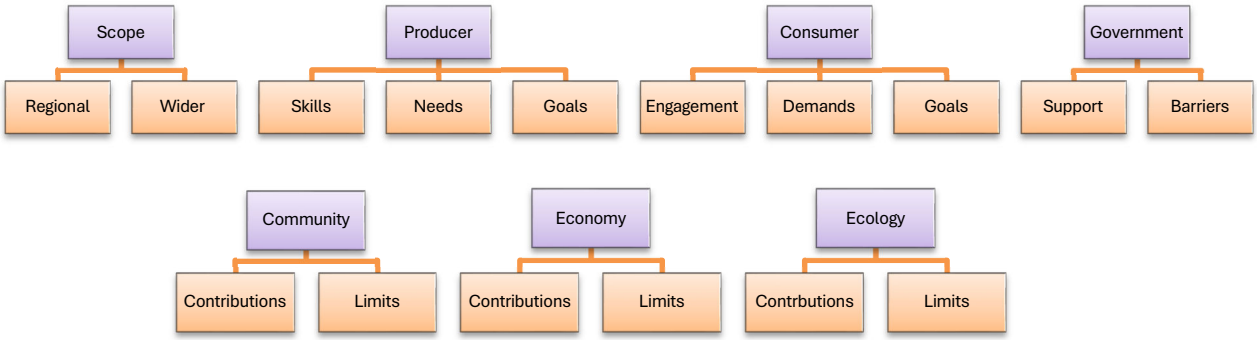
The interview data was prepared for analysis through coding, a common method to support data interpretation in qualitative research (Creswell & Creswell, 2018). Coding is the process of assigning descriptors to the data to organize themes and sub-themes. The exercise tends to initiate analysis before coding is completed, corresponding to the non-linear nature of data analysis in qualitative research (Mertens, 2009). Amatucci et al. (2013) even considers the data itself a process rather than

an object, a concept that captures the malleability of data in the hands of the researcher. I learned that coding prompted continual re-evaluation to assess whether I was interpreting the meaning that the interviewee intended, to fit the categories I established prior to beginning. Though the coding started out deductive, it became more inductive as the process of sorting led me to new categories and new ways to organize them. I found that an inductive approach ensured that codes were more likely to align with their original meaning, and thereby, as suggested by Gibbs (2007), improve reliability.

I relied on manual coding with the support of QSR NVivo 14, which not only made the process faster and less cumbersome, but it also made it easier to recognize the relationships between codes. A family of codes emerged from the data, including parent categories (labelled purple in Figure 3.4) and their children, or subcategories (labelled orange). In addition to the hierarchical coding frame, I used a flat coding frame for the four dimensions of network governance: heterogeneity, integration, network structure and operating function. Data was then sorted into its place into family codes as well as under one, or occasionally two, dimensions. Lastly, noteworthy quotes were categorized under their own code.

Figure 3.4

Code Framework



The tidiness of the coding frame above is misleading. Indeed, the way people understand phenomenon is unlikely to fit into delineated categories. I frequently discovered more than one code to categorize the data or that the data, such as the following quote, blurred the boundaries between categories: "*It's how every village started with a mill, not necessarily wool, but usually it'd be a*

woolen mill or a sawmill or grain-mill or something. And that became the core that grew the village, grew the community, supported the community" (SOP-4). Instead of trying to apply a single code, I marked the passage with all the codes that applied. This strategy often meant keeping quotes longer to capture the extent of what the interviewee was communicating.

3.2.7 Strengths of Research Design

The coding process illustrated the strengths of a case study design, in capturing an active subject matter. The real-world context of cases (Yin, 2014) lends an incompletion to the process of studying them, despite the presence of boundaries. The data reveals patterns to help discern the mechanisms that drive phenomenon; however the inconsistencies that emerge can be just as informative as they demonstrate the complicated nature of human relationships. Likewise, the data that does not fit into a category or fits into more than one category may be more insightful than what easily does. Such instances may be reminders of the limits of case study research. Nonetheless, by drawing attention to these points of weakness, the research approaches a more authentic version of real-life circumstances, according to L'Eplattenier (2009), whose rootedness is quite insecure because of what is unknown. Instead of undermining the results, these "destabilized narratives" (L'Eplattenier, p. 75) contribute to a more accurate picture of phenomenon. The truth is often fragmented by obstacles that limit audiences and access to knowledge, and it becomes difficult to decipher whether or not these barriers are accidental or deliberate and understand if they can be separated from each other. In my research, I took an approach to data collection and analysis that allowed for unpredictability and was occupied as much with raising questions as answering them.

Measures were nonetheless necessary to ensure validity and reliability in the design, including providing clarity and transparency to the research subjects when stating my objectives and in regard to how I plan to share the results. The reliability of my study depended upon consistent research protocols while the authenticity of it required flexibility. This balance can become more like an imbalance at times and the conclusions drawn may feel temporary. Yet they nonetheless contribute to a moving conversation that can shape decisions on how to make progress on sustainable production. The opportunity provided by a case study to gather a large amount of data makes the transferability of results to other contexts more likely (Merriam, 2001) and the use of analytical and visual tools in the analysis phase can help to expose larger patterns from a collection of individual

examples. Furthermore, drawing on two Fibershed affiliates, which can differ in a number of dimensions, contributes to a more robust understanding (Yin, 2014) of the features that shape fibreshed governance. As a result, the activity taking place in regional fibresheds over the last fifteen years can inform the decisions regarding future fibreshed development.

3.2.8 Limitations of Research Design

This study centered on fibreshed activity within the two designated regions but was not restricted to Fibreshed members. However, I found that because the organization provided a pool from which to draw the most participants and a means of accessing them, I concentrated my attention on members of Fibershed affiliates and risked overlooking non-Fibershed members. An initial survey may have been able to assess how many individuals are engaged in medium to large-scale fibre production in each region if recruitment challenges were addressed and the research timeline was expanded. As it was, only one individual declined participation in the study because they perceived it to be restricted to affiliate activity. Of the three remaining participants who declined participation, all three stated they did not have enough expertise on the subject to contribute.

Based on my location and familiarity with the Upper Canada Fibreshed, it was inherently easier to connect with Canadians involved in the fibreshed than Americans and, as a result, recruiting players in the States took more persistence. However, I benefitted from referrals provided by American interviewees. As the public face of the Fibershed organization is that of its producers, contact was much easier to establish with fibre farmers and educators in both regions rather than funders, including private investors and representatives of government agencies. Since I was unable to connect directly with funders, I relied on second-hand information from interview participants. Lastly, the greatest limitations to participant engagement were time and capacity constraints, which felt especially applicable to the individuals I interviewed who own their own businesses. One producer was given the opportunity to submit written answers to the questions when several attempts to schedule an interview were unsuccessful. Given the cyclical nature of on and off seasons for agricultural producers, I was grateful that my interview period occurred during late fall and winter.

After the recruitment and data collection phase, during the period in which I was analyzing the results, the Upper Canada Fibreshed changed their name to the Ontario Fibreshed. This change impacted the referencing of data that I had previously retrieved from the affiliate's site as some URLs

were no longer accessible and some directed users to the new site. Where this has occurred, I have listed both sites in References and indicated when I sourced from each site. Throughout my analysis, I used the affiliate's original name to reflect the organization's name when the data was collected.

3.3 Concluding Remarks

A case study lens on a new area of research like the fibreshed offers an expansive yet intimate look at the actors and the nature of their engagement in regional fibre and textile production. The interview data can capture the experiences of those engaging in the fibreshed, to gain insight into their interpretations of the network's structure, its range of players, how they are integrated and the network's operating function. This data provides an account of the fibreshed that reflects the realities of those directly involved in regional fibre and textile production in each region, which can shape recommendations for fibreshed development and future research. Furthermore, by drawing on input from a range of participants, it can capture multiple versions of the network, its role in the industry and the direction it is taking to reach its goal. Each contribution enriches the whole study – whether the perspective is shared or unique – just as each actor influences overall network performance. In the next chapter, I begin with an analysis of the network structure before examining the operating function, attributes of network actors and nature of their relationships.

Chapter 4
Network Structure

As discussed in Chapter 2, the first step in analyzing network governance is an analysis of the network structure. More specifically, this step is interested in studying how players within a network organize, the structures used to allocate and guide roles and responsibilities and arrangements which identify the direction of accountability (Gibson, 2011). As the Fibershed affiliates[7] are nested within a larger organization, the analysis in this chapter considers the structures of governance within each affiliate, as well as those that regulate the relationship between the parent organization and the affiliates. As network governance is shaped by guidelines on which affiliates can join the Fibershed organization and who can join affiliates, this chapter will explore the design and delivery of affiliate criteria, membership requirements, boundaries and operating scale, as well as the affiliate's place and identity within the wider Fibershed network. It is worth noting that the analysis of the network structure in this chapter is focused on the internal network, rather than on the internal *and* external structures. This is due to the stage of development of the network and the natural fibre industry. Whereas a network in a more established industry, such as the wood energy sector in Benedum and Becker's (2021) study, is more likely to be characterized by structures between network and external players, there are currently minimal structures between fibreshed and external players. As such, any integration between network and external players is covered in Chapter 7 (see section 7.2).

4.1 The Fibershed Organization and its Affiliate Program

While the Fibreshed parent organization was not the focus of this research, it is worth discussing its governance structure in relation to the affiliates. The parent organization is governed by a board of directors consisting of four members, including a treasurer, secretary, general board member and the executive director, who is founding member Rebecca Burgess (Fibershed, 2025d). The board oversees nine staff who manage the Northern California Fibershed as well as the Affiliate Program (Fibershed, 2025c), which consists of 72 affiliates globally (Fibershed, 2025a).

[7] As indicated in Chapter 1, when referring to Fibershed, the parent organization, the Fibershed organization, Fibershed [organization] is used. Affiliates are referred to be their names or as Fibershed affiliate. The fibreshed concept is spelled with a lower-case f and Canadian spelling.

The parent organization does not stipulate formal guidelines for affiliates, however they provide guidance on physical boundaries and mandates of the affiliates, by nature of what they espouse in the Northern California Fibershed. Prior to 2020, there was no formal process to apply to the affiliate program, however they have since formalized the application process and, in the past year, temporarily closed the program to new applicants due to "limited capacity" (Fibershed, 2025a). While the decision on who can join the affiliate program is ultimately up to the Fibershed organization, their only stated stipulation is that the affiliate cannot be used to front a business (Fibershed, 2025a). If accepted, there is no fee to join (Fibershed, 2025a). In terms of what the parent organization provides affiliates, the Fibershed organization offers a listing in the affiliate directory, a website template, access to affiliate resources and webinars, promotion of affiliate events in Fibershed organization's e-newsletter, calendar and social media platforms, regular virtual meetings with the affiliate network and the opportunity to receive microgrants from the Fibershed organization (Fibershed, 2025a). While RBF joined before the restructuring of the affiliate program in 2020, an RBF member provides more details of the process in establishing the affiliate and the autonomy the Fibershed organization grants affiliates:

> *We started our affiliate back in 2018. So I think the process has been refined a bit, because when we started, there were only 15 or maybe 20 others. Now there are 72 and it's worldwide. So they also didn't have the position of an Affiliate Coordinator back then. And they do now …I think one thing that's interesting about it, and this still exists, I know, is that all affiliates can kind of take their own, once we've like established the basics of what we're all trying to do here and make sure that that's aligned, affiliates can kind of take their own direction…But it's kind of up to your affiliate, like the projects that you want to do. So there's no, like if we think of a project where we find a grant or something, there's no like approval that we need to get or anything like that in order to make sure that we do that* (NOP-6).

Both affiliates have received multiple micro-grants from the Fibershed organization for program activities; in fact, these grants are the only funding to date, other than what was donated by member's themselves, that UCFS has received (SOP-2).

4.2 The Affiliate Network

There is an awareness among members that their affiliate exists in a wider network, but there is also some ambiguity about their place among other affiliates, even though connecting with the larger network appears to be a goal among many affiliate members. As indicated, there are currently 72 Fibershed affiliates across North America and the world (Fibershed, 2025a). Some cover small areas,

such as the Salt Spring Island Fibreshed, and some cover much larger regions, for example, Fibershed Brazil. The potential to link these regions, to strengthen a network's "global" structure by connecting with its wider network (Carlsson & Sandström, 2007), is promising to members. As one participant shares:

> *I've always been of the mind that Fibersheds [affiliates] should collaborate. So you have, like, the Upper Canada Fibreshed should collaborate with this one down here that does things that are a little bit unique to them. And so I think there should be back and forth* (SOP-3).

As another participant expresses, "*what I really love also is this feeling that you have different Fibersheds [affiliates] in different places, and they're small, and then one group can connect to another group, can connect to another group*" (SOP-9). SOP-6 agrees: "*I think, yeah, absolutely, we should be working with other, you know, small to medium scale Fibersheds [affiliates] or independent people who are sort of moving in the same vein as the ideas that we're putting forward*" (SOP-6). However, when participants were asked what types of collaborations were happening with other Fibershed affiliates or between individuals in different fibresheds, their answers were vague. One participant witnessed informal exchanges between members of different affiliates but could not provide specific examples:

> *I've seen a few things, you know, somebody in England, somebody in Australia. So I think it's a really good thing. I don't know how, I think it is happening by the sound of it, that people are kind of watching it and it's grown out of, you know, Rebecca [Burgess]'s initiatives. And so I think people do keep contact with, you know, each other and others doing it. But I think that kind of organically happens* (SOP-4).

Similarly, one participant explains that conversations are the main forms of connections between affiliates:

> *We haven't specifically [collaborated] on projects. We've chatted, like we had a display at Rhinebeck and someone from one of the UK ones was there and like we chatted for a little bit. But we haven't yet. Just on Instagram, you know, social media and stuff and the affiliate meetings* (NOP-6).

These observations give the impression that connections between fibresheds are either happening minimally or happening, but few people are talking about them.

Members may also not think about reaching out to other fibresheds because of differences between regions, in terms of growing conditions and climate. As one participant conveys:

> *Regenerative farming in California looks very different. Like their focus is on water. That is all their focus. And while we need to focus on water, that is not what our main focus should be here. Like we need to focus on soil. We are growing corn and soybeans and tilling and watching our soil blow away every year. And it's like we have a different problem compared to California* (NOP-5).

An emphasis on regional development and differences between regions may result in members sharing learning resources or promotional materials rather than working on a fibre production project together. As one participant explains:

> *We have passed on a lot of our projects and made them open source to other Fibersheds [affiliates], which has been really great, especially the One Year One Outfit project and the flax project. So other people are doing very similar projects, because we report out, typically, grants that we have. So other people have been doing a lot of the projects that we've been doing* (NOP-1).

In the U.S. where there are currently 41 affiliates (Fibershed, 2025a), there are monthly meetings to share updates and compare challenges. According to one member based in the U.S., these meetings are organized by the Affiliate Network Coordinator and based on affiliate concerns. As an RBF member explains:

> *We could email the Fibershed affiliate organizer capital F, Mother Fibershed California. I have this idea. I would like to share with people. Maybe it could be a call coming up. And then they say, Sure, great. Or, you know, we've organized a couple of working groups that way as well. So there's like a bast fiber working group, which is like hemp, flax, nettle, that sort of thing. And then there's a waste wool working group, you know, because those problems started becoming a little bit more specific and we didn't want to use the affiliate meetings. We also wanted to open that up to like community members who might be interested in joining a waste wool working group that aren't like necessarily a Fibershed [affiliate] organizer. So those sorts of things are like spinning off as well. So really, it's like the power of the network, not necessarily like the centrally held information from Fibershed [parent organization]… [interviewer's follow-up question] …I would say yeah, California is this space holder, and they create the container, and the organization and all the communication. So without that, it would be a lot more tricky, somebody else would have to take that on. Right? But you know, they're like, they're the person that does the main organizing. But then within that, it is community led. I think there are times where the affiliate organizer, will say, like, I've been hearing from a lot of people that we need to do, for example, like the policy, right? I've been hearing from a lot of people that like, we have questions around, for example, forming nonprofits was one that came up, like, right? How do I do that? What do I do? So she was the one to receive all that information, sort of be like, I think we should make something around this. And so, you know, she's sort of like the central person who's organizing, but definitely, it's a collaborative effort* (NOP-6).

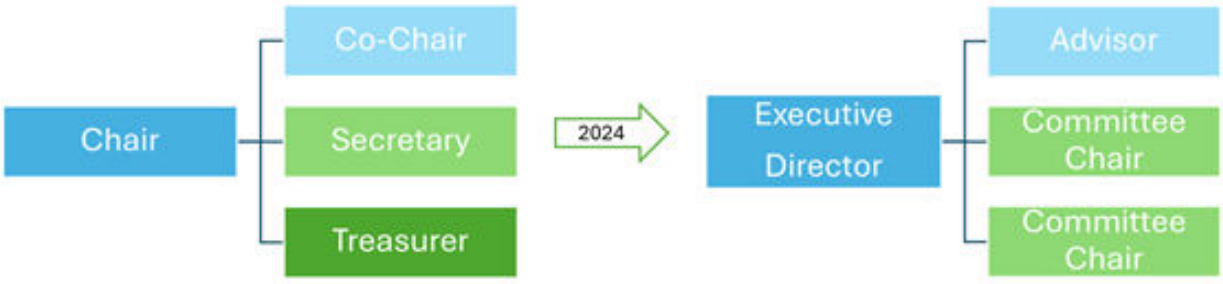
While NOP-6 indicated that non-Americans join these calls, none of the Canadian producers I spoke with have participated. A Canadian counterpart of affiliate meetings, which happened several times during 2023 and 2024, does not involve Fibershed's Affiliate Network Coordinator. Instead, they are organized by a fibre producer in central Canada, who is also establishing a site for Canadian producers, which despite having the logo of the Fibershed organization, does not appear to be directly associated with the organization (Canada Fibreshed Network, 2025).

4.3 The Structure of the RBF and UCFS Affiliates

The two affiliates in this study, RBF and UCFS, both chose a board structure of governance, whereby a board of directors, consisting of four to six individuals, was selected by members based on recommendations put forward in addition to a call for volunteers (as indicated by interviews with board members). Figures 4.1 and 4.2 illustrate the board roles of each affiliate at the time interviews were conducted as well as recent structural changes. Prior to 2024, the UCFS Chair held the position of meeting facilitator, media spokesperson, orientator of new board members and liaison between board and general members; the Co-Chair acted on the Chair's behalf when they were unavailable and was assigned specific responsibility on an as-needed basis; the Secretary was responsible for maintaining board and affiliate records (other than financial) and recording meeting minutes; the Treasurer managed the affiliate's financial responsibilities, including the annual budget and tax return, monthly financial reports, the Financial Committee and internal financial policies (Upper Canada Fibreshed, 2024e).

Figure 4.1

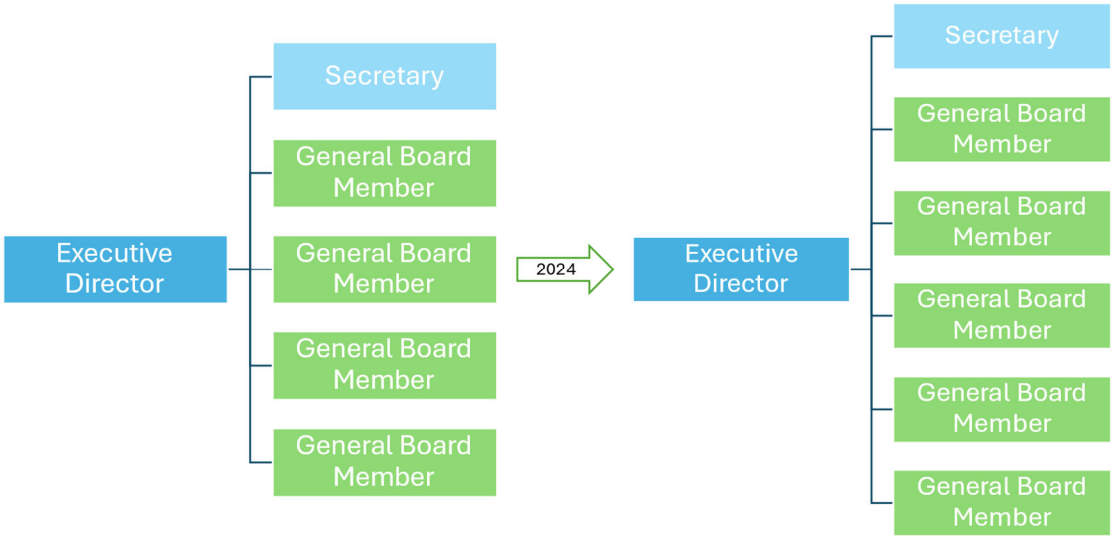
UCFS Board of Directors (including 2024 changes)



At the end of 2023 and early 2024, UCFS was seeking new board members; in addition to those listed above, they were also recruiting Committee Chairs in the following areas: markets, engagement and education, as well as one to two Advisors with expertise in an area that the board decides to pursue, such as strategic planning (Upper Canada Fibreshed, 2024e). The process resulted in several changes to board roles, including the addition of two Committee Chairs and one Advisor, the removal of the Co-Chair and Treasurer, and the replacement of the Chair by an Executive Director (Upper Canada Fibreshed, 2024a). RBF's board, on the other hand, includes (see Figure 4.2), an Executive Director, who is responsible for facilitating events and outreach, a Secretary, who oversees partnerships and programming, and four general board members at the time of the interviews, which has since grown to five (Rust Belt Fibershed, 2025e).

Figure 4.2

RBF Board of Directors (including 2024 changes)



There is a flexible arrangement between the parent organization and affiliates which allows affiliates to choose structures of governance in alignment with the capacity of regional players and, as Markelova et al. (2009) indicate, are thus more likely to adhere to them. If affiliates adapt to the

dimensions of their regional context, this arrangement is meant to ensure that governance structures are accountable to the players of each fibreshed rather than the parent organization. However, it can also lead affiliates to adopt a structure that is most common among the wider network, such as a board of directors, without closer consideration of a structure that suits its own members. In this case, neither network – whether affiliate or parent organization – had measures to guarantee producer representation in governance structures, such as a spokesperson for each fibre industry on the board. The attributes of board members of both affiliates are discussed in more detail in Chapter 6 (section 6.1).

4.3.1 Membership Model

The Fibershed organization does not require affiliates to adopt a formal membership model, which creates some ambiguity regarding membership. Each of the affiliates studied had a different model, despite sharing similarities in their approach over time. During the study, UCFS had a paid membership model and was considering converting to free membership, which they introduced in July 2024 (Ontario Fibreshed, 2025b). On the other hand, RBF was previously offering free membership but in April 2024 adopted a paid model (Rust Belt Fibershed, 2025c). Prior to this transition, an RBF member describes their membership model:

> *We don't have any formal membership right now. So there's no pay a fee. Everybody is technically. You know, there's no, like, there's people that know each other, I guess is the way to say it….those listed on the website, they're not paying a fee. They're people that have either reached out to us or we know them, we say, hey, would you like to go on our website?* (NOP-6).

Since restructuring their producer directory program, RBF now charges a sliding scale fee starting at $45 (Rust Belt Fibershed, 2025c), whereas the fee for UCFS's producers was $50 and is now free (Upper Canada Fibreshed, 2024c). Membership criteria for RBF, despite the fee change, remain the same. Members are required to be located within the 250-mile radius of Cleveland, Ohio and engaged in fibre farming, processing or designing. Similar to UCFS producers, RBF producers are not expected to source all material from within the fibreshed, given its limited infrastructure for spinning fibre and availability of sewing thread and notions (Rust Belt Fibershed, 2024b; Upper Canada Fibreshed, 2024c). On its website, RBF clarifies the guidelines for joining their Value Chain Directory:

> *You must be aligned to our mission and vision: helping develop nested bioregional textile systems within 250 miles of Cleveland, Ohio that create opportunities for economic integrity, ecological stewardship, and connection to people and place* (Rust Belt Fibershed, 2025c).

If their personal goals align with RBF's approach, producers are invited to complete and submit a short application form (Rust Belt Fibreshed, 2025c). The process to apply with UCFS begins more informally; individuals are asked to submit an initial form with contact information and business details for the board to review (Ontario Fibreshed, 2025b). While the guidelines for RBF membership are more defined since restructuring their producer directory program, there is still a degree of subjectivity to the membership approval process. As a result, views may be different between affiliates and between members themselves, as SOP-5 acknowledges:

> *I personally take a very expansive view of what qualifies to be someone as part of the fibreshed. To me, any farmer who's making any fibre is part of the fibreshed. And maybe there's kind of a hierarchy or something. I hate to say the word hierarchy, but maybe like there are degrees to which people embody the ethos of the Fibershed [organization] more or less, but I would not exclude anyone. Anyone who's making fiber is part of the fibreshed in my, that's not an official position from the UCFS but, and so I would support any of those farmers* (*SOP-5).*

There has been a reversal of membership models since the changes have taken place at each affiliate. UCFS used to offer various monetary levels for producers who wish to provide additional financial support to the affiliate, from $25 to $250 annually (Upper Canada Fibreshed, 2024c). In 2024, they modified the options so that individuals have two options, to join as a producer or donate to the organization (Ontario Fibreshed, 2025b). Meanwhile, with the updates RBF made to their producer directory program, individuals who wish to support the work of RBF can join the Supporting Partners Directory, which, like their Value Chain Directory, is also available at a sliding scale fee, from $45 up to $300 (Rust Belt Fibreshed, 2025c). This option is available for individuals or groups who fit under one of the following categories: Individual Partner; Organization/Group; Artist; or Retailer (Rust Belt Fibreshed, 2025c).

Since the restructuring of membership models occurred following the interviews, it is difficult to assess the factors that prompted the change. More information was gathered from UCFS on changes to their boundaries (and discussed further in section 4.4.1) as the issue was raised at the 2023 Annual General Meeting. The affiliates may have carried out structural changes to the board of directors to adapt to the members' needs, however several issues at the board level, including high

board turnover and vacant board seats, indicate that not all structures in the network are sustainable. Several UCFS who were interviewed suggested that UCFS continues to recover from the setback of a mid-pandemic transition in leadership. A different structure, such as RBF's where board members are given priority areas that relate to operational goals rather than generic board roles, such as secretary or treasurer, may be more resistant to turnover. Additional benefits may be that board members feel more accountable to their portfolio and general members are more attentive to the network's needs and more responsive when they have skills to match them. Nonetheless, the issue of leadership sustainability was apparent in both networks as their current structures rely heavily on several individuals doing most of the administrative and organizational work, confirming a common scenario in network settings (Provan & Kenis, 2008). Nurturing relationships in the affiliate network can provide opportunities to leverage their support to boost the network's resilience, whereby global structures reinforce local structures (Carlsson & Sandström, 2007). In which case, additional measures are necessary, such as regional-specific working groups, to ensure regular collaboration with other affiliates, while strengthening governance structures of the home affiliate to maintain the accountability players have to their network.

4.3.2 Membership Benefits

A result of the restructuring of the producer directory program for RBF has been a refinement of their communication on the benefits they offer to members. Their website outlines the following items included in membership: a listing in their Value Chain Directory and accompanying interactive map, promotion of events in the network calendar and across social media platforms, an invitation to annual meetings and an online private forum with other producers, a discount on registration fees to RBF events and the opportunity to purchase RBF marketing materials at cost (Rust Belt Fibreshed, 2025c). Everything included in the membership package represents opportunities to increase the points of interaction and extent of engagement among producers and between producers and consumers. As one RBF member explains, the affiliate's principal role, and that of its directors, is in facilitating connections rather than directing activities:

> *It's interesting, because our role as Rust Belt Fibershed is kind of like in making those connections, because I'm not going to run a mill. This is a unique position, I guess, being part of this that's different for me, is because I have a tendency to want to kind of spearhead the project, you know. But really, this role that we're finding ourselves in is just, is the connector. That's the purpose of it. And so it's like, okay, cool. You have money, you have a space, you*

> *have the know how. You guys all know each other now. So do your thing. And, you know, trust and hope that it works and give them support if they need it, if it's in our capacity, you know. So that's been really fun, more so like just watching things unfold, like making those connections and then watching things unfold* (NOP-1).

In the early days of UCFS, the affiliate organizers found themselves occupying a similar role:

> *We'd get a membership and then I would call them and I would interview them, like what do you need? What are you? Tell me about your, like, kind of what you're doing right now? So I got to know a lot of the members and especially the ones that were willing to talk to me and that were nice. Then you just kind of develop a relationship and then they would come to mind, right? Like, oh, [name of designer] is looking for this specific thing. Before, I would get people like hey, do you? We got so many random emails from people in the community. They're like. I want to do this. Who can you connect me with? And then, since I had had those conversations and somebody would just mention something kind of offhand and I'd be like, oh actually you should talk to this person* (SOP-2).

This position of connecter between producers, is consistent with the responses I received when I asked participants what role the affiliate serves. For example, according to one participant, "*the Fibershed [affiliate] is really the key way that we're finding and being able to connect with fiber producers in the area*" (NOP-3). Likewise, an Ontario participant sees the impact of the Fibershed organization on producers as they become familiar with each other and the products they offer: "*it's been a good way for fibre farmers to connect and know who's got what*" (SOP-12). Another participant has also witnessed the network-making generated by the Fibershed organization: "*They're really connecting all of the dots. Like, they're pulling it all together. They have this network basically started and they're working on mapping that all out so that, you know, they can be that resource*" (NOP-5). This network-making not only aims to build connections between fibre producers, but also between producers and consumers, which I will discuss in more detail in the following chapter.

4.4 Defining the Fibreshed

Before moving to the network's operating function, a closer look at the network's boundaries, scale and identity is required to understand the factors that define the fibreshed. A regional network typically has formal boundaries that define its jurisdiction, but these boundaries can become fuzzy because of the multiple ways they are interpreted and traversed by insiders and outsiders (Amin, 2004; Jessop et al., 2008; Passi, 2017). In the case of the Fibershed, the parent organization adheres to regional boundaries and a regional scale, and this framework is adopted by the affiliates. How

UCFS and RBF and their members navigate these boundaries and forge their identity in the context of the parent organization are discussed in more detail here.

4.4.1 Boundaries

As discussed in Chapter 2, the boundaries of a regional-based network like the fibreshed should be viewed with a moderate perspective to acknowledge the territorial and relational interpretations of the designated area. In this respect, as Passi (2003) highlights, it is important to pay close attention to boundaries, specifically who chose them, the process of their decision-making and the implications of their decisions.

During this study, UCFS proposed a significant change to its organizational boundaries. It surveyed members and received endorsement to expand the fibreshed to the entire province. As SOP-6 shared, "*part of the AGM, I think, that I was really glad to see was [UCFS] talking about, hey, we need to expand the definition of [UCFS]. Because, you know, I think that's absolutely necessary*" (SOP-5). With this change, the board also updated the name from Upper Canada Fibreshed to Ontario Fibreshed, reflecting the area it now serves as well as disassociating itself from the colonial implications of its original name. According to one participant, "*there's been talk about changing the name for some time now. Yeah, for various reasons, even like, you know, colonial sort of, you know, overtones to it*" (SOP-3). Ontario Fibreshed now serves a much larger area than it previously had, a move which, according to SOP-3, is appropriate: "*I think it's a good idea to include maybe the boundaries of Ontario and just welcome anybody within the boundaries of Ontario*" (SOP-3).

The expansion opens possibilities for producers outside of the previous boundaries, particularly those in remote areas of Northern Ontario. As another UCFS member affirms, "*we do support Ontario wide, but I mean, to me, it's more like, northern isolation and exclusion is so real. And I don't want to sort of be a part of an organization that is, like, deliberately exclusive*" (SOP-10). During the discussion on boundaries, one member suggested moving the centre of the affiliate north, for example from Toronto to Huntsville, rather than adjust the physical size of the network (UCFS Board Member, 2023). The opportunities in less densely populated regions can offer potential for growth, as one UCFS member discovered when they established their fibre business in a predominately rural region. While they were initially hesitant to operate in "*one of the poorest areas in all of Ontario*" (SOP-4), they realized they were not only able to contribute to regional

development, but they also found it easier to access all levels of government support. Their location turned out to be less limiting than they originally thought:

> *We're finding that we are central enough that we're getting farmers from all over Ontario, Northern Ontario, Eastern Ontario, Western Ontario, definitely coming in. We're on the major 400 highway and thousands of people go by, and we've got one of the big blue signs, you know, the Ontario signs, and the number of people that just go, fiber mill, pull in here, you know, it's amazing* (SOP-4).

The change to Ontario Fibreshed, specifically the adjustment of its physical boundaries, can uncover fibre initiatives that have been, up until now, happening outside the designated fibreshed and also relieve the pressure to produce within 250 kilometres. For, at times, 250 kilometres can feel constrictive, especially when processing infrastructure is so limited. One participant reflects on the difficulty of restricting themselves to sourcing solely from the fibreshed:

> *I think that's maybe one of the biggest challenges is that we limited ourselves by what we would consider a fibreshed product, right? And we were pure. Instead of trying to figure out how do we do this like 1% better every day? It's like no. We need to do this 100% today or it's not a project* (SOP-2).

The boundary can also feel arbitrary. Participants face the dilemma of choosing between the fibreshed or outside of it when making processing decisions. As one individual shares:

> *If you want to get your fibre processed in Cleveland, you have two options. You can go to Cincinnati, about 250 miles, 251 miles away, which is just outside of our fibreshed. Or you can go to [a producer], to Stramba Fiber Mill, also about five and a half hours away in upstate New York* (NOP-3).

While the second option is further than the 250-mile RBF radius, an affiliate producer has connections to it, so members are more likely to go there than to a closer facility. Some players have reconciled themselves with the tension between inside or outside the fibreshed, maintaining that external products and producers can still uphold the values of the fibreshed. According to one participant:

> *It's also important to sort of say, like, yeah, it doesn't have to be materially, physically, within 400 kilometres of one point on a map for it to be of value or of interest. And I think that, sort of the problem with a geographic boundary is, sort of, things that happen outside of it* (SOP-6).

Enlarging the fibreshed can relieve some of the pressure that producers face but it can also detract from the fibreshed goal of building regional capacity. Extending the supply chain to players outside

of the region may make it more feasible or faster to build a fibre industry, yet at the same time it may complicate the delivery and marketing of regional fibre products. Players feel this tension between establishing physical boundaries and building relationships that cross these boundaries.

4.4.2 Operating Scale

At the same time, participants in both study regions expressed their concern that a larger network may not capture the particulars of a place or encourage mobilization at a local level. For example, one participant considers what small, hyper-local fibre initiatives might look like, perhaps more aligned with fibreshed's objectives:

> *If you want to have these, like, little projects, then I think it could be far more centralized and community focused. But then it has to be kind of different? Yeah, I don't know. I'm not sure that the structure really lends itself to the goals of the organization. You know what I mean?* (SO-2).

While SOP-2 envisions these projects independent of a formal organization – "*I feel like the network could be so much more emergent and less directed and more decentralized if you just had pockets of people in the same geography*" – another participant believes they could still exist within a larger network:

> *Hopefully, [the UCFS board] are kind of thinking about that, of expanding out, but then encouraging little groups, because that's the thing that's missing right now that we used to have. And so, yeah, that would be a really good idea to encourage, oh, have a little activity that's centered around Ottawa. Have one that's centered around Chatham* (SOP-3).

This vision of nested fibresheds depends on the strength of the affiliate network. However, among the wider network, there is tension between broadening capacity and concentrating energy on regional development. Broader collaboration can conflict with the operational scale, but by engaging with other fibreshed affiliates, there are opportunities to alleviate some of the tension surrounding scale. The support of other affiliates, through reciprocal learning and data sharing, contributes to a system of integrated fibresheds, like Lengnick et al.'s (2015) vision of a network of foodsheds or Manzini and M'Rithaa's (2016) distributed systems. Collaboration can create a global web of connected networks. Furthermore, partnerships between groups in the affiliate network could help alleviate the burnout that can happen when a small number of dedicated volunteers do the majority of the work, as is common in network settings (Provan & Kenis, 2008). Yet, there is currently limited coordination on

this scale, and as with enlarging the fibreshed, there is a sense that widening the scope conflicts with the fibreshed ethos.

The understanding of the fibreshed as place-based among theorists and practitioners (Burgess & White, 2019; Fletcher, 2018; Grimstad Klepp et al., 2022, Rissanen, 2017, Thackara, 2019 and Whitty, 2021) is consistent among research participants. Specifically, that the concept is centred on harnessing regional resources. As one participant states, it is to "*look at our fibre landscape [and ask,] what do we have? How can we use it?*" (SOP-1). Yet, while fibreshed advocates agree that sourcing is regional, there is less consensus on a regional operating scale. There is tension among players as to the optimal scale for progress. On the one hand, the regional scale was expressed by some as too big because the lens is too wide to capture the specific particulars of a place, the fibre resources and human capacity that exist at a hyper-local level. On the other hand, according to others, the regional scale may not be big enough. If attention is too concentrated on one area, it misses peripheral opportunities that can contribute to a circular treatment of the resource and more effectively harness the capacities of fibreshed players. As such, the fibreshed concept has been bounced along the scale spectrum, mostly landing at the regional scale but at times, pulling closer to local or alternatively, to a wider scale. It stays predominately regional because it is rooted in this delineation; the fibreshed identity is regional.

If someone needs to go outside the region to source materials, there is a sense among fibreshed players that the model has failed, even though there are gaps in the region's supply chain. As a result, Fibreshed players can feel constrained by a regional scale, just as Massey (2004), Passi (2002) and others (Amin, 2004; Foster and Barnes, 2012; Hudson, 2001) find territorial definitions of regions can be limiting. As one participant reflects, "*I don't think it's explicitly that, okay, we only want, we're only going to focus here. But I think that's what implicitly happens, right? Because the two fly against each other*" (SOP-6). If an individual sources fibre or carries out processing outside their fibreshed, then it may not be seen as something to publicize. Yet, one individual realizes that their purchase from a producer 4,000 kilometres away could actually be considered collaborative if fibreshed goals were weighed differently:

> *I've used cotton from California from Sally Fox[8], and that's I guess what made me start to think, well, I'm kind of, in a way, collaborating with California Fibershed [affiliate]. We can't make cotton here. So, why not? So, yeah, I think it's good. And it's just, we can only be stronger by kind of pooling our resources, and just using our main ethics for textiles. And as you say, not duplicating things, necessarily. So, yeah. Yeah, makes sense* (SOP-3).

If the fibreshed scale needs to be expanded, as in this case, it may threaten the foundation of the fibreshed identity.

At the same time, there is pushback against a definition that could limit the adoption of the fibreshed in each individual place. In fact, just defining it can take away from the opportunity for the fibreshed to develop in tune with a place. The simple act that one participant describes, of looking at a fibre landscape to see what can be used, is "*very much from the ground up, as opposed to, we want it to fit into this concept*" (SOP-1). The fact that the fibreshed is difficult to define or to allocate a fixed scale is part of its appeal. It is at once universal and particular. By emphasizing that the connection between place and clothing is shared, the fibreshed vision is broader than a regional mandate. In this respect, proponents of regional production, each from their own fibreshed, are advocating in support of fibresheds everywhere, what one participant referred to as their vision of "*any number of million, zillion overlapping lowercase f fibresheds*" (SOP-5). Moreover, being place-based and connected to social, historical and cultural expressions of identity, the fibreshed is infinitely indefinable. Even though a regional scope is fundamental to understanding it, the fibreshed nonetheless has a different meaning in each context, and whenever the term is used in a new place (Whitty, 2021), a tension can emerge in respect to its meaning in a previous place.

4.4.3 Identity

The design of the fibreshed, because it invites participants to pay closer attention to the material connections present in their lives, has the potential to draw awareness to the impacts of eroding those connections. However, its potential to repair connections to place and to the histories and identities embedded in them may be limited because the network remains inaccessible to participants outside of a predominant socio-economic and cultural identity group. As a result, the fibreshed may not be able

[8] Sally Fox is a cotton breeder. In 1988, Fox produced her first species of naturally coloured cotton which could be spun on machine, one of several cottons which she has marketed to brands such as Levi's L.L. Bean and Esprit (Oliver, 1994).

to benefit from the ideas and experiences of the individuals outside of this group, who may carry the greatest potential to impact the fibreshed's ability to disrupt traditional modes of production. These circumstances may be the result of the network forming itself around the parent organization and deriving its identity from it. One study participant, while relaying their challenges with explaining the model to rural fibre producers, concluded, "*the fibreshed is a little nebulous*" (NOP-1); in other words, the concept may be difficult for outsiders to understand except in the context of the model as it is portrayed in Northern California. When an individual learns about the concept and the organization simultaneously, it may be difficult to differentiate between the two. Although the Fibershed parent organization provides minimal structural direction to affiliates, its presence still guides affiliate functions by way of branding influence and funding. Accordingly, the fibreshed is associated with an identity that is urban, liberal and trendy which may not appear welcoming to outsiders. The location of the parent organization can also be problematic because California is considered an idealized setting whose conditions, both climatic and social, are hard to replicate elsewhere. Several research participants expressed their concerns with adopting a California model to their region (see section 7.1.3 and 7.1.4 on social integration and barriers to integration), signifying the inherent challenges of replicating a model that is regionally based. A California context bears the connotations of California fibreshed users, individuals who are presumed to be young urbanites who are well-educated, socially engaged and wealthy. By association, the fibreshed takes on these references, which players recognize they must continually challenge against, in order to prove network accessibility. As one participant reflects:

> *There's such a depth of learning that has to happen with Fibershed [organization] and just starting a regional system of any kind like, what are the specific access points that's going to make it palatable and interesting and inviting for all of these different groups of people, you know, so that a friend of mine won't be like, oh, yeah, for rich white people? And I'm like, what? How did I miss this?* (NOP-1).

The identity of the Fibershed organization is tied to specific regions where producers organize yet it nonetheless maintains its connection to the parent organization and thus, players will continue to face the implications of this relationship.

4.5 Concluding Remarks

The structure and organization of the affiliate is regionally based, as designated by the Fibershed organization. However, there are several points of tension related to boundaries, scale and identity. More specifically, the affiliates encounter challenges with distinguishing themselves from the parent organization, Fibershed, in Northern California, on the one hand, and from affiliates in the wider network, on the other hand. At the same time, members express interest in building cross-connections with affiliates and individual members outside of their fibresheds. Consequently, players in both regions face tensions between defining territorial boundaries and pushing against them. In fact, one affiliate widened its boundaries to be more inclusive. Changes to network structures such as boundaries and membership models illustrate the limitations of generalizing these results as it is difficult to capture participant's evolving opinions while these changes are taking place. However, it also exhibits how structural dimensions have wider implications when considered in their social context.

Chapter 5
Operating Function

As discussed in Chapter 2, a network's operating function is similar to what Foster and Barnes (2012) conceptualize as a network's agenda or a set of operating instructions, established by network members, to reach a goal (or multiple goals). To understand a network's agenda, considerable attention is given to how it is perceived by its members (Foster & Barners, 2012), more specifically, to how players interpret the function of the network and if they perceive the direction the network takes, and the decisions leadership make as the best approach to achieving its goals. A study of the operating function, therefore, evaluates the degree of alignment between operations and objectives and between objectives and outcomes. Accordingly, the indicators of alignment include the consistency of objectives between network members and between members and the public's perception of the network; then, how well these multi-dimensional objectives measure against network outcomes. Therefore, this chapter first considers the mandate of each affiliate according to fibreshed players. It then examines three areas where network objectives diverge, specifically in serving consumers or producers, supporting hobbyists or professionals and building community or a regional textile industry. As internal assessment tools can assist in measuring outcomes against objectives, the use of these tools by network players are also considered.

5.1 Promoting Regional Fibre

As indicated in Chapter 4 (see section 4.3.2), the Fibershed organization positions itself as a connector between producers and consumers. Its operating function is to facilitate interactions and transactions between these two parties: in other words, to inform consumers while supporting producers. To do so, it promotes regional fibre and regional fibre producers. It builds awareness of local fibre, both the concept and specific goods of fibre producers. During its 2020-21 strategic planning session, UCFS identified three focus areas, outlined in Figure 5.1: 1) building community; 2) raising awareness; and 3) promoting local economies. This mandate was shared by a member of the Strategic Planning Committee and is not currently reproduced on their website. Similarly, RBF's focus areas were shared by the board's Executive Director and are not explicitly stated on their website. They are: 1) Regional Manufacturing; 2) Soil, Air and Water; and 3) Advocacy/Education.

Figure 5.1

2021/2 UCFS Strategic Focus Areas



Note. From "Strategic Plan Package 2021-24" by UCFS Strategic Planning Committee, 2021, p. 16.

The Fibershed organization does not engage financially in transactions between producers and consumers, as a broker or distributor would. Instead, it concentrates on drawing awareness of local options for those who are looking for products. As one participant states: "*If somebody is looking for a certain kind of fiber, they can find a producer producing that and that producer can find that customer that wants it*" (NOP-5). As a result, its audience is limited to a segment of the population who has some fibre knowledge. Another participant explains:

> *Sometimes, just to even have the conversation, you needed a baseline understanding of what we were doing. So, it really has to be somebody already in the know, Like a weaver, spinner, somebody who knits and then is like, I didn't even know you could get Ontario yarn* (SOP-2).

This group of fibre artists and makers is small, "*you're talking about small scale niche market*" (NOP-5), and the network generally concentrates its publicity here. This consumer base is further limited by the fibreshed's regional scope. As a result, to broaden its audience, affiliates must adapt their

promotional strategies. One campaign, for example, brought together fibre farmers and artists to create project-specific kits that would appeal to makers:

> *One of the things the [UCFS] Fibreshed has done at least once, maybe twice, that I think was really good was they were pairing producers with, you know, weavers and spinners and making a little product kit almost. And that's fantastic, right? Because not only does it introduce people to people, but it also gives you an opportunity to maybe make something marketable and just kind of push this big social media machine to say, hey, this is a thing that we're capable of. Because I think it's hard, like, if you're, like, simply someone who's going to purchase textiles and you just don't know what it is that you can purchase, how do you know what you're going to buy or what you can buy if you have never seen it made before?* (SOP-6)

This campaign expands marketable products within the fibreshed's traditional customer base, that is, makers within the region. As one participant shares, the affiliate focuses the majority of their attention there, whereas individual producers may reach out to a wider audience:

> *Our outreach was always to farming community and knitters and guilds. There wasn't a lot of direct public outreach. It was pretty niche. I'd say we considered those to be our public. But I think individual producers did a lot of community-based events. Like [specific producer] had open farm days and had people come out. I know a lot of other people would have open shearing days or they would do farmers markets. They had their own farm stands. Ours was always pretty, like our Instagram and our social media was, of course, public facing and was meant for the public on the website and all our events. It was all very public facing, but we had a very targeted audience. We didn't do any general info campaigns* (SOP-2).

Regional specificity, according to the above participant, hampers the affiliate's ability to tap into a wider audience. Yet, several producers expressed interest in expanding their outreach by increasing public knowledge of regional-based production. As one individual states, "*Fibershed [affiliate] would need to decide like, are we just gonna work with like the guilds and smaller groups like that? Or do you push for like larger scale public education cause that's completely different*" (SOP-14). Likewise, another Ontario participant considers attracting a wider audience the next step in developing the fibreshed:

> *It's almost like the Fibershed [affiliate] needs to go to the next level of, like, interaction. It's, you know, good to keep the grassroots thing going, but they need to sort of be communicating with these kind of places that can have a bigger impact* (SOP-3).

As SOP-14 indicates, broadening the audience requires investing in education. As a result, its publicity is not simply to promote products but an understanding of the concept of regional fibre. The fibreshed's emphasis on community indicates a commitment to expanding public involvement,

however, opinions differ among fibreshed players as to which avenues will be most effective at achieving this goal.

5.2 Promoting Regional Fibre through Education

There is however consensus among members when it comes to the affiliate's role in promoting the concept of the fibreshed and the educational investment that is required to do so. As one participant emphasizes:

> *We need to grow our market base, grow our consumer base. So we need to educate the public. I would also say that, you know, there is so much value in the education we can offer to the public or to our members about just everything that has to do with us* (SOP-5).

Education was discussed by every interview participant, more than 100 times in total, and most frequently in the context of fibre consumers and the wider public. Participants conveyed that education was one of the network's most effective ways of broadening the audience and in turn supporting producers and developing the industry. Much of both affiliates' outward-facing appearance online maintains this education theme. While only RBF explicitly states it as, together with advocacy, one of their three focus areas, education is implied in UCFS' description of their second area of focus:

> ***Raising Awareness***
>
> *Advancing the conversation on the environmental, and the social and economic benefits of a decentralized fibre supply chain.*
>
> *This includes learning about and elevating myriad traditions, stories and practices (traditional and modern, Indigenous and settler) from our communities, helping to mitigate the loss of collective fibre and craft knowledge, and sharing our evolving understanding of the practices required to heal our local ecologies.* (UCFS Strategic Planning Committee, 2021).

Study participants also expressed this emphasis on education. However, while the above statement directs the practice of education both inward and outward, most participants focused on educating the general public. They expressed the importance of fostering an appreciation of regional fibre and its qualities, which begins by promoting regional fibres and leads to opportunities to educate on regional fibre systems. For example, for one participant, education is initiated by sharing their love of wool:

> *My appreciation for my wool garments is enormous. I think about like all the hands that touched that. And it makes me treat it different. You know, it's special. That's important too, as part of our mission is making people appreciate what we have* (SOP-5).

Learning about a product and its origin generates appreciation for it and oftentimes builds an awareness of other fibre products grown or raised in a region. As one participant explains:

> *Someone might on a whimsy take a class about sheep shearing, and then suddenly, you know. Maybe they're never going to be a sheep shearer. Maybe they live in urban downtown Toronto, but suddenly they know more about this whole thing. And they're just knowledgeable. And now they look at their wool t-shirt and they're like, wow, like, someone sheared this and cleaned it and graded it and, you know, went through all the processes* (SOP-5).

Knowing how an item is made can also make it easier for producers to convey to their customers the limitations of regional manufacturing. As one individual shares:

> *I might make three jackets with this fabric and ten jackets with that fabric. And it's become part of my marketing that I explained to customers, you know, not only is this special, because it's, you know, it's rare, and it's not coming back once it's gone. But I get to tell them also how, you know, why that is, and connect my consumer more directly to the means of production* (NOP-2).

In sharing their experiences in making a product, both successes and challenges, producers contribute to customer learning, a process that can be much longer and more involved than in typical clothing purchases.

It is very different than how consumers have been programmed by the conventional fashion industry to engage with the clothing they buy. As a result, much of the consumer learning that fibreshed players invest in is in communicating the shortcomings of fast fashion. They recognize a need to educate the public in order to convince them of an alternative. In fact, it is clear in the interviews that one precludes the other, as their discussions on developing the regional fibre and textile industry usually involve a judgment on fast fashion:

> *I think the system of capitalism under which we currently exist has done a very good job of, especially my generation, and I think to some degree my parents' generation, were fairly divorced from the production of textiles and the fact that they are made by human hands even, to some degree. I think there's a lot of people who just think, well, a t-shirt shows up at the store, right? Like that's their extent of their knowledge. It's sort of the same way that people are separated from the realities of the production of food* (SOP-6).

According to another participant, consumers are also separated from the realities of the disposal of garments, "*we're in the land of Walmart and Meijer and Target and all that, just the big box stores, you just go buy it, and when it wears out, you throw it out and get something new*" (NOP-4). The fibreshed, on the other hand, offers something more authentic than fast fashion, to this network member: "*I'm so separated from, in many ways, the reality of life versus the plastic wrap, Styrofoam, buy it on the shelf, life that, you know, [has] been created. And now we're going having to go backwards to where it should be*" (SOP-12). Regional fibre products may not be instantly available like fast fashion is, but there is value in giving more attention to the production process:

> *To not expect that everything is available right now and cheaply, that people have to kind of wait for, you know, the care and investment to be put into something so that they can enjoy it in time. It's a very different way of thinking about consumerism* (NOP-2).

There is also value in sharing the making process with the consumer, as it offers an alternative to the distance and disconnect that they may feel from producers of the readily available garments in most retail stores:

> *[Fibresheds] are the antithesis of fast fashion, which is not transparent, and takes advantage of it's, you know, the producers, the makers of fashion, and is not sustainable, and creates low quality end products. And so we are trying to be transparent, and good to our workers, and sustainable, and create high quality end products* (SOP-5).

The dichotomy between the two forms of production, the industrialized system and a regional textile system, is what fibreshed players are trying to illustrate to the public.

In this respect, education can be a means of widening the fibreshed's audience. A participant explains how in one campaign, their affiliate was able to highlight the problems of the fast fashion industry while leaving the viewer with a viable alternative:

> *[RBF has] this presentation that they give whenever somebody gives them an opportunity to speak at, you know, I saw them speak at the WARP Conference[9] they had at Kent State. And it was fantastically done, like, honestly. It's like, you know, when you start talking about the global fiber industry, it can be like nothing but doom and gloom and awful. And obviously, like, we need to make sure people are hearing about it because it's important. But then they quickly pivot to all of the things that are happening right now in the local fibreshed and all*

[9] Weave a Real Peace (WARP) Annual Meeting was held July 13 to 16, 2023 at Kent State University. WARP is a non-profit organization that brings together individuals and groups engaged in textile arts (WARP, 2025).

> *the little things you can do to support the fibreshed and just to support not a global thing* (NOP-5).

RBF's presentation can be used across multiple social media platforms and in a variety of contexts, such as classrooms, conferences and other public events. This kind of resource can draw in new interest in regional fibre because it offers a brief overview of the fashion industry before introducing the fibreshed concept. It is exactly the kind of resources that an Ontario participant wants their affiliate to invest in:

> *I've always thought it's just reteaching the public about textiles and why they take time and where they come from and what that supply chain looks like. So it's great to have these concepts come into the media through newspaper articles, which we've had, and through videos and things like that. So, I love what's happening down in the original Fibershed [parent organization] with the kind of partnerships with universities and research because that's where people get a chance to really, you know, make sure that this stuff is true and real and, you know, think through and all that. And then to take that and then get it at digestible pieces that can be then brought to the public. So seeing it as, like, I mean, it starts as this network where it can bring people, you know, who are interested in this industry together, but also facilitating the programming, right? So the educational programming, that's what you're seeing. And, you know, what they can share about what's involved in fiber production to the general public. Or to those in specific contexts, like, you know, future fashion students or future brands* (SOP-3).

Fibreshed players are keen to use education to connect with the wider public beyond the established network of regional fibre enthusiasts:

> *Because it's all well and good preaching to the club, you know, here we are. Oh, yes. But the strength in numbers to say, okay, and having festivals or articles or whatever, to educate that, you know, properties of wool, what's happening on farms, what does regenerative farming mean? What is the process from one to the other? That kind of stuff* (SOP-4).

For SOP-5 education is the key to expanding the fibreshed's impact: "*we need to create awareness in the next generation of people involved in production. So that's one way that education is important*" (SOP-5). However, players have different recommendations on the types of resources the affiliate should develop. For example, one study participant would like to see UCFS's presence at the Royal Agricultural Fair in Toronto, Ontario[10]:

> *It might not be like the most ideal, like educational setting, but a lot of the guilds that show up, I mean, they have their poster boards up, and they're talking about their work that they*

[10] According to previously listed events on their site (Ontario Fibreshed, 2025a), the Ontario Fibershed exhibited at the 2024 Royal Winter Fair, held November 1-10, 2024.

> *prepared and all this stuff, right. But yeah, I think, I feel maybe at some point, if it becomes a bit of a larger thing, the Fibershed [affiliate] could interface there, that would be a cool thing to have happen, because that fair is already sort of promoting local agrarian things. And I think that we sort of need to underline the fact that textiles are actually an agricultural product* (SOP-6).

On the other hand, another Ontario participant sees an opportunity in investing in traditional educational resources: "*I want us to be in fashion school curriculum. I want every fashion student to know we are a thing*" (SOP-5). They continue:

> *I would love to have so many classes, you know, so much education. I think that I hate to say this, but I think that that will take a disproportionate amount of our resources that will be hard to justify in light of all our other goals. But I think it's important. I think the way I can justify it in part is I feel like it's part of our mission. And I feel like it will help to legitimize us as a viable organization. That's important because if we do want to grow in all the ways that we've talked about already, I think we're going to need, you know, big investment, either from the private sector or the government. And, you know, nobody's going to invest if we've got a one page website. But if we can say, hey, we're capable of doing all this and look at all these education materials and, you know, these are, you know, I'm all about show me, don't tell me, right? I shouldn't need to tell you why you should invest. I should be able to look at a rich array of offerings that we have. And these can give you a flavor for what we're about* (SOP-5).

Investments in education, for this participant, can have a two-fold effect by raising awareness of regional fibre and drawing attention to the work that is being done by fibreshed players so that more investment is generated.

For many participants, educational opportunities are not limited to formal settings. For example, one individual sees the benefit that hands-on participation has on building fibreshed appreciation. They started a project inviting community members to work in urban fibre gardens. The sessions, called "*playdates*", encourage participants to draw connections between cultivating the plants in the garden and the clothing they wear instead of having them listen to a presentation on the problems with fast fashion where the pressure to do something can be overwhelming and is often difficult to direct into meaningful action:

> *It's just a space where you can connect with this thing that we were talking about. Because when you talk about material culture, not everybody understands that. Really thinking about the farm to closet process and reconnecting people with the steps to really get them to understand, to have conversations on sustainability and really using that process as being something that's relatable and understandable. Everybody has a t-shirt. Everybody knows what a t-shirt feels like. I'm using a t-shirt, but it's like a basic garment. But not all the time*

> *do we think about the steps that brought that garment to be. So examining the farm to closet process through this element of a playdate was really a way to be like, hey, did you know this is how this happens? Look, we're spinning, we're breaking flax, we're doing some natural dyes, we're harvesting plants. You have to plant the seed in order so that you can harvest the plant. You have to take care of that. All of these steps that we take for granted, I can't even say take for granted. We just don't think about them anymore. This was a way to get people to start thinking about that. And the moment they start thinking about that and understanding all these steps, then they begin to question, wait a minute, pricing on this doesn't make sense at the other end. And then they also, once you understand all those steps, you understand it's work and that people who you think about or maybe don't think about, but we talk about production and garments coming here, but there are artisans, I say, it's not just a sewing machine operator. These are skilled workers, they're artisans, and it takes time and it takes effort and understanding in order to be able to do all of that and all things that we kind of take for granted. In fashion design, you talk about the designer, but you don't really talk about the craftsperson who put it together to make it. And we don't think about design or clothing really as a commons. As being, it's not one person. Our society kind of values the one, the figurehead that we see without understanding that that figurehead is not, it's not that person who does all the work. There is a myriad of people behind that person who puts it together, who helps that thing come together. And beginning to understand that also begins, we begin to value our clothes differently because we understand that this is not one little thing. This material culture is transdisciplinary, it's intersectional, it touches so many different aspects of culture and society. It can be that it's the basis of culture and society in many respects. So, by beginning to get people to think about that just with a garden is the opening. It's really just the beginning of delving into these deeper conversations* (SOP-9).

Like other fibreshed educators, this participant's objective is to develop an understanding of the intrinsic relationship between clothing and the physical environment, a connection that has eroded in the mainstream fashion industry (Burgess & White, 2019; Fletcher, 2018; Grimstad Klepp, 2022; Rissanen, 2017). The input from producers demonstrates that their goal in growing a customer base who appreciates the fibre identity of their region is similar. Their marketing strategy, therefore, is not only to sell products, but to engage directly with their customers.

5.3 Marketing Regional Products

The network's investment in education appears to be making progress. According to one Ontario participant, "*people are definitely better educated than they were*" (SOP-12), and over the last several years, they spend less time explaining the purpose of developing the fibreshed or the rationale for investing in regional fibre and textile production. Similarly, an Ohio participant describes the feedback the brand they work for received after publishing a white paper on domestic apparel manufacturing:

> *When you say you want to bring manufacturing and you say you want to bring jobs back and within fashion, everybody, there's been a lot of excitement. And the reception has been really high, a lot more than I expected, really. So I kind of see like this growing positive energy and focus into really wanting those jobs and the facilities to be in Ohio. And we published [the white paper] about three weeks ago and I was really, really surprised at how many people reached out and were like, I can't believe this is available. We've had this huge wave of intern applications from publishing that white paper, that all of a sudden, students who are interested in, who are studying sustainability, students who are studying economics, students who are studying fashion, all of a sudden, we had this completely new audience, just for putting out that level of information. And then there's a lot of brands, or like local companies who are very invested in, like, the made in Ohio. They're not in fashion, but they're an Ohio company, they're passionate about being an Ohio company and so then you come and you say hey, do you want your company gear to also be made in Ohio, that story has been really powerful* (NOP-3).

NOP-2 is also encouraged by the region's response to fibre development: "*there is energy around investing in mills and machinery and building stronger kind of development partnerships. And a lot of that, I think, is because of Fibershed [affiliate]*" (NOP-2). They are witnessing increasing interest from retailers in producing textiles domestically, "*[they] seem to want to talk to their customers about, you know, look what's being made here. And, you know, treating that with pride that I hadn't really seen when I started*" (NOP-2).

Intrinsic to raising awareness of regional fibre is the marketing regional products, yet in both regions, there is no shared understanding of the affiliate's role in promoting fibreshed producers and products. For example, marketing as a term is not widely used across the affiliates' websites or literature. In addition, there are no specific board roles dedicated to marketing or promotion in either affiliate. Instead, key operational areas are designated as outreach, engagement, consumer advocacy or education. Yet, marketing was recognized as a need from a number of interview participants and an expectation of the affiliate's role by several. For example, one participant shared the following:

> *Those who are busy doing stuff don't have the time or means to market that kind of thing. So to have that, [the affiliate] there, making those connections, doing that kind of marketing, doing that kind of educating, lobbying, I think is a really, really important role* (SOP-4).

Similarly, when asked what members' greatest requests were, another participant indicated, "*marketing and a place to sell our products for sure. So, like, the opportunity to be able to get their product into people's hands*" (SOP-2). Of the total references to marketing in the study's interviews, less than half were in respect to the affiliate's role. Instead, they were predominately referring to

advertising carried out by individual producers. In addition, two board members spoke of marketing only in terms of bringing in experts who could lead workshops for affiliate members on product promotion. The discrepancy among members and specifically between large and small-scale producers on the role of the affiliate in promoting producers and their products was evident.

Several participants expressed the importance of visual impact in demonstrating the significance of regional products to the public. Showing their value can be done when the affiliate collaborates with its producer members, to showcase products. For example, one participant has been experimenting in textile design with another producer and finds that when their work is displayed online, it can benefit from further exposure on the affiliate's social media platforms, because it shows what is possible with regional products and taps into a wider customer base. They explain:

> *I think also a lot of people that buy from [an Ontario mill], I think they're buying something that they can see, right? So that's part of the thing with the supply chain and the state of sort of the industry as it is right now, is that I don't think people totally understand what it is that we can do. Some of the things that we are doing sort of collaboratively on occasion is stuff to just throw out on Instagram online as a way to say, hey, we did this. This is a thing we're capable of. By the way, you can call us* (SOP-6).

Similarly, an Ohio participant sensed the impact of being able to "*connect [their] consumer more directly to the means of production*" (NOP-2) when they shared with their customers why stock of a particular product was low or appealed for donations of waste food for dye purposes. In doing so, customers experience the ebbs and flows of production along with the producer, like the Community Supported Agricultural (CSA) model[11] whereby a dry season or a pest infestation is shared by all members:

> *[It] has been very daunting for me in terms of how to communicate those ideas, those ideals to my customers in a way that they believe in supporting financially. And that project becomes much easier for me, when I'm part of a broader network, i.e. the Rust Belt Fibershed, that is amplifying, you know, these realities far beyond what I can do independently and beyond what I even want to as, you know, primarily as a designer trying to run a business. So I've come to really rely on Rust Belt Fibershed as, you know, kind of lending, you know, it's there, they are educating my consumer, and they're lending credibility to my product* (NOP-2).

[11] CSA is a risk-sharing model in which producers prepay for produce grown by a farmer in their region, with the goal of supporting local producers, reducing the ecological costs of food transport and accessing fresh food (Parot et al, 2024).

This endeavor to promote regional fibre is not undertaken by one group alone; rather, one participant envisions it as a combined effort by the affiliate and producers:

> *I wouldn't want to sort of lay at the feet of producers alone, the notion that you have to educate everyone, because by God, that's a job, that's an entire job that is on top of all your other entire jobs, and you have several already. But I do think that it's important for producers to be open to the idea that you can do some of that. And I think what I'd love to see from the Fibershed [affiliate] in that regard is sort of supporting that and starting the conversation for people, opening people to the idea, you know, by going to events, by holding, you know, Landmade*[12] *and the other things that they've been doing. Getting sort of the word out there that we exist, and also that textiles can be made locally and are made by hand, you know. But I feel like it's a shared responsibility in some ways* (SOP-6).

The affiliate backing can give producers more confidence to promote their work, to push themselves and their craft, to, as SOP-6 puts it, "*come up with excuses to make things to say, hey, this is a thing we can make*" (SOP-6) and to demonstrate the value of regional fibre products. As a result, producers will feel the support of the affiliate when trying to sell their products, as another participant explains:

> *I find as a brand, it's hard to walk that line where I can get customers or, you know, potential customers excited about my design, excited about the values behind my design, without pushing them away by being heavy handed, or, you know, dire in the way that I talk about why my work is important. And so I think it's really helpful to get to partner with organizations like Rust Belt Fibershed that can. I really enjoy talking to customers and educating customers. But I'm also aware that that's not always what my customer wants from me. And we're getting to work with Rust Belt Fibershed to kind of collaboratively tell that story* (NOP-2).

In this way, the task of promoting regional fibre is shared across the network.

Moreover, with the backing from the affiliate, the producer can then expand their relationship with the consumer beyond simply marketing. In fact, as the community activities described in Chapter 7 (see section 7.2.5) further demonstrate, some producers engage their customers directly in production. A collaborative dye project, for example, proved to one network member that their products became more meaningful when customers participated in the manufacturing process themselves:

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[12] Landmade was launched in 2017 by UCFS members as an annual one-day market in Toronto that showcased Ontario fibre. March 15, 2025 is the first time it will be held since 2020 (Landmade, n.d.), in partnership with The Creative School, Toronto Metropolitan University and independent of the Ontario Fibreshed.

> *We've done experiments like that over the years, and people are really proud to be a part of that. And I see my work now more, you know, out there in the community, people are wearing my pieces, and they tell me that, you know, they tell me that they're proud of it, and they tell their friends, you know, how the shirt they're wearing came to be. And that's more impactful than any, you know, marketing that I can do on my own website, or, you know, more impactful than using the right word that, you know, really, you know, the right buzzword at the right time* (NOP-2).

Customers become advocates when the producer engages them in understanding the making process and in the making itself.

Fibreshed players also shared some of the challenges they face when marketing regional fibre production; in particular, when the fibreshed they present does not always fit preconceptions people have about farming or about fashion. One Ontario participant used the term "*pastoral propaganda*" to describe the version of farming that the public has been fed through films such as *The Biggest Little Farm* (Chester, 2018) and unrealistic depictions of farm life on social media. Another participant in Ontario elaborates on this concern:

> *Marketing is such a challenge. Communication with people is such a challenge because they have this. There's the idea of the red barn and that's what farming looks like. It's very ideal, like you know, and people want that, and then we also cater to it. In all of our Instagram posts and all of our marketing, we're like yes, it is beautiful like this. Meanwhile, nobody sees the like frustration and how dirty you are and how hard it is and the fact that you don't make any money at it. So, yeah, there's a real challenge there* (SOP-2).

Curated scenes and edited descriptions do not accurately capture the time and money farmers commit to running a farm:

> *I think a lot of these projects kind of sell a bit of a bit of bill of goods. It's not realistic, it's not at all realistic. And that's a shame, because even if you can do it for a short period, eventually you burn out. It's just too much work* (SOP-1).

Without exposure to real farm life, the public anticipates a more idyllic, simplified version of it and some producers feel that the industry, particularly influencers within it, feed these expectations. It also undermines efforts to share capacity with other producers. For example, when they label the finished fibre with the name of the animal it comes from to make it more marketable to consumers, then producers lose the opportunity to pool fibre. As an Ohio participant explains:

> *We've run into that in a conversation with our farmers about fibre pools, you know, so people not wanting to pool their fibre, which would be a fabulous solution to like a really big*

> *problem. But people kind of want their own yarn, you know, from their own animals* (NOP-1).

Despite the cost benefit and reduction in material waste when combining fibre, "*no [farmer of a] small flock is going to do, because they want every colour, they want the names of the sheep*" (SOP-1). A label on a skein of yarn with the sheep's name or a reel romanticizing flax processing caters to consumer's misconstrued expectations of farm life and farm products and misses the opportunity to share the actual details of the labour involved in making fibre.

5.3.1 Marketing Challenges

Fibreshed players also shared their difficulties with navigating consumer perceptions on fashion and, in particular, assumptions about slow, sustainable, or local fashion. As research indicates, garments that are marketed as sustainable are presumed to be less fashionable (McNeill & Moore, 2015), a perception that regional fibre producers are trying to circumvent. According to one participant, they work to "*create products that challenge the idea that we're just sort of granola*" (SOP-5). However, the care and attention they put into designing and producing a garment often renders it more costly, another expectation of sustainable fashion (Joshi & Rahman, 2015). Rather than reassess costs, producers may market their products as luxury items to justify the price to consumers. However, with farm-made products: "*there's not that perception of luxury, even though the level at which small goods are made by is a luxury. That is a luxury product to the level of time and money*" (NOP-3). As a result, NOP-3 and their colleagues aim to change consumer opinions about what constitutes a luxury item:

> *We have been really trying to show that like we're making simple clothing but it is very like it's a luxury product and luxury doesn't need to be this high-end, avant-garde piece of clothing, it just needs to be well made and well-fitting and, and like have proper investment to go into it and that's where that price point comes from* (NOP-3).

According to an Ontario participant, this is where the affiliate can help defend the higher cost, by providing consumers with a context of the production process and the producer's craft through visuals and narratives. These marketing strategies can legitimize the efforts of producers in accurately allocating prices:

> *I think that part of the work that a lot of [producers] are doing, whether they think it or say it or not, is kind of working against that idea that, you know, it's best if it's cheapest. And I think*

> *sort of the education and outreach and activism, in a sense, that an organization like the Fibershed [affiliate] could offer, would be really useful* (SOP-6).

Again, a collaborative approach is one way that producers can better manage and respond to consumer expectations.

A higher price tag on regionally made goods, however, means that these items are not accessible to all consumers. As indicated above, sustainable fashion is presumed to be more expensive. While this criticism is not completely accurate nor does it address the skewed pricing common to the fashion industry, the inaccessibility of sustainable fashion is a legitimate concern. In our discussions, study participants demonstrated their struggles with negotiating the merits of regional fibre products with their unaffordability, for example, by sharing ideas on less expensive products and by questioning how to improve future marketing strategies. One participant describes their vision of a more accessible product: "*I would love to see, I've been saying this for years and [another producer] is on the same page as me and like, we're gonna get there. But I want us to make a t-shirt. The plainest t-shirt possible*" (SOP-5). They go on to describe the garment in more detail and how restricting manufacturing to only the essential steps will keep costs down:

> *What I'm getting at is we can eliminate as many steps as possible to make this a less expensive process so that the end price, and then we can scale up production which is something we can do with a t-shirt. And those things will all help to bring the end product price down, while still preserving the profit margin for the makers along the way, and then hopefully make it accessible. That is my goal. And, in contrast to that, what I see a lot of are just, you know, absolutely gorgeous end products. But for example, sweaters that are cable knitted and, like, that unfortunately, they're absolutely beautiful and I support their production 100%. But they're not going to launch us into a more accessible space for the world to produce, and they're going to have a more limited market* (SOP-5).

Addressing the inaccessibility of regional fibre products is paramount to fibreshed progress, according to another participant: "*I think that if we don't tackle that, then we will just sell to, like, rich people, you know?*" As they reflected on this issue, they referred to a marketing goal that many affiliates have, a *Made in the Fibershed [affiliate]* tag for all regionally produced products. These tags are considered to be the ultimate accomplishment when it comes to fibreshed development. However, much as it may signal progress in establishing producers and manufacturing infrastructure, it does not signify that steps are being taken to ensure all consumers can participate:

> *This story of where your clothes came from as far as, like, marketing the sheep and their name and their, you know, putting it all on the hang tag and saying this is [name of Fibershed affiliate], which is really cool…That's a way to make it important. But that's not going to speak to the people who help us create a local textile system that's accessible, you know?*

5.4 Goal Alignment

The nature of a network is that members will be driven by different factors, yet it is necessary to pay attention to misalignments between objectives as they could interfere with the fulfillment of goals. For that reason, the operating function as a network governance dimension may be more accurately described as operating function alignment to capture the collective approach of goal setting and delivery. Therefore, in the case of Fibershed affiliates, it is important to examine how players interpret the network's function in order to assess how well efforts support network targets; more specifically, if they see the network serving producers or consumers, supporting hobbyists or professionals and building community or a regional textile industry.

5.4.1 Serving Consumers

While the majority of the affiliates' members are producers and are rurally situated (see section 6.1), six of the nine rural producers I spoke with expressed concerns that the affiliates were prioritizing consumers over producers. For example, an Ontario participant feels that the network is being predominately directed by consumer needs: "*what I have seen is it has not been driven by the farmers that are actually growing and has been driven by the end users*" (SOP-1). This outlook may be derived from an underrepresentation of rural and producer voices in the governance bodies of the Fibershed affiliates, as identified in section 6.1, or reflective of a general underappreciation of the realities and needs of farmers, as discussed further in section 7.1.2. One producer referred to producers as being in a "*farm bubble*" (UCFS Strategic Planning Committee, 2021), which, while it may be self-imposed to some degree, also signifies a divide between farmers and non-farmers. An Ontario participant gave an example of the affiliate pitching to an accelerator as evidence of how little the external community knows about fibre and fibresheds:

> *You can't say fiber, nobody knows what fiber is. Like, we are a fibreshed. How can I not? They're like nobody knows what yarn, nobody knows what a textile is or what fiber is, so you can't use any of those words. They really didn't get it* (SOP-2).

To those whose livelihoods are not tied to fibre production, it is difficult to fully relate to fibre farmers. As a result, producers feel unseen and misunderstood. Yet, the objective in designing the fibreshed was to look to farmers and producers within one's region for their insight, contribution and leadership in improving regional fibre production. As SOP-1 explains, "*this is unfortunately part of what Fibershed [affiliate] has really looked at is the [fact that] farmers have not been involved, and it doesn't matter if it's flax farmers, dye farmers, none of them have been included*" (SOP-1). This divergence may be a product of the emphasis on fashion and the decision to concentrate on educating the consumer on the problems with the fashion industry more so than on the wealth of a fibre region. They elaborate:

> *It's really kind of sad, and I am partially responsible for that, because when [the affiliate] started it was about kind of local and getting it out there, but it switched to fashion. So it just, it was kind of what happened and I don't know whether or not we could have looked back at that, think we would have really understood, because fashion was also what people understood* (SOP-1).

The affiliates' education initiatives continue to dominate the time and capacity of affiliate facilitators, while the curriculum may not be aligned with what producers have to offer. For example, education directed toward consumers can allude to a sense of fashion that is incongruent with what is currently available. Instead, if producers had the opportunity to share the kind of marketing needs that would better align with their products, it might be more successful for them. As one participant explains,

> *I guess there's a split too on whether you're just educating like hand knitters or targeting a larger audience say, cause I do pillows and bedding, like that's a much bigger audience than some local hand knitters or the guilds, right?* (SOP-14).

A shift to an emphasis on textiles, rather than solely fashion, may be more representative of the currently available products and can provide consumers with feasible choices.

Another critique producers shared was that there was not enough attention paid to non-sheep producers. As one Ontario participant simply states, "*I find [UCFS] very, sheep centric*" (SOP-8). For another participant, an alpaca farmer, the lack of multisectoral attention is particularly disappointing because, as with flax farmers (see section 7.2.1), there is less industry support for fibre farmers who are not producing wool, "*I know the sheep board and that there's a ton of stuff available for them. But once you get away from being a sheep farmer, there's nothing*" (SOP-12). Again,

attention on a wider variety of fibre products will give consumers more opportunities to support regional producers.

In fact, the fibreshed's emphasis on fashion is another limiting factor, one that also affects how its design is conceptualized because it diminishes the potential for circularity. One participant argues that the Fibershed organization is too fashion focused. When UCFS started, "*it was about local and getting it out there, but it switched to fashion*" (SOP-1). According to them, even the term local fashion can be restrictive because of its connotations with local, and associated with an identity that is young and progressive, and, as Hinrichs (2000) suggests, detached from activities that occur at a wider scale:

> *I think in some ways, local food and local fiber have been detrimental, because it's kind of really siloed agriculture into these things like local food and then local fashion and it's like, yeah, but there's so many other things that we know nothing about* (SOP-1).

Here, they refer to the multiple uses for fibre at each stage of production and post-production, such as biocomposite and non-garment textile manufacturing. Broadening the fibreshed beyond fashion moves it closer to accessing opportunities for circularity. As another participant explains: "*if you're going at this, you know, because of the influence of looking at it systemically at, you know, all pieces of the supply chain so that we're using every piece more effectively, every piece of the plant*" (NOP-8). Another network member recognizes how essential it is to integrate with other industries besides textile production:

> *What we're trying to do within the knit lab very specifically is to be much more industry facing. So, trying to participate in research and development, not just for fashion, but also things like furniture, medical applications, knit applications, architecture, just a number of different kinds of things, because in part, if we can, in this idea of localized manufacturing, you may not be able to just subsist on fashion alone* (NOP-7).

If the fibreshed is to pursue the circularity that it proposed in its conceptualization, it needs to deemphasize fashion and instead, accentuate the multiple uses of regional fibre.

5.4.2 Supporting Hobbyists

While the affiliates' stated objective is to support producer members and promote regional fibre economies (UCFS Strategic Planning Committee, 2021; Rust Belt Fibershed, 2025c), the Ontario affiliate is currently better suited and more responsive to hobby farmers than professional farmers.

Several Ontario participants indicated that the network did not meet their goal of advancing their business. One participant recognizes this shortcoming, while reflecting on the outcome of their 2020-21 strategic planning process:

> *It was an extensive undertaking, if you will. Lots of ideas came from it. I think part of the challenge has always been prioritizing, you know, what it is that the Fibershed [affiliate] actually wants to tackle. And some of what contributes to that challenge is, you know, I think the Fibershed [affiliate] is made up of quite of a number of different players, if you will, who all have their own sort of interests. And so I think a big part of my takeaway personally is it's almost that there's a crisis of identity of who are we and who do we really want to be and how does that serve our members? And I think that's something that we're still grappling with today…* [elaborates on the proposal to expand the boundaries]*…I think all of that is, you know, while it's in good spirit, I think it misses the point in focusing on who are the members today and what do they actually want from the Fibershed [affiliate]. And so it's, you know, my take, from my point of view, is they want a voice. They want somebody who can, you know, collectively be that spokesperson for them on matters that actually make a difference in their own lives. And I think that's where, you know, we can focus a bit more on bringing that kind of value to members* (SOP-13).

Another Ontario participant indicated that it is the lack of input from professional producers on governance decisions which effectively reduces UCFS's capacity to respond to their existing needs:

> *If you don't have actual producers or people with skin in the game on that kind of a board, it loses its drive at actually supporting like sort of the, I don't want to say making side of the business, but yeah, if no one in that board or anything, like if they're not actually, if they're just doing it for fun, I think that takes away from some of it* (SOP-14).

Similarly, one participant identifies two types of members according to their fundamentally different needs: "*That kind of comes back a little bit to, are you doing it for fun or are you trying to create a viable business?*" (SOP-1). Not all members are aware of this distinction, as another Ontario participant realizes when they shared their interest in boosting operating funds to better support members:

> *I remember making a comment to a [UCFS] member once about like, you know, how I wanted to make, you know, bring in money or something. And they were literally like, why? And I was so surprised that, you know, this producer member didn't see that they, I think they kind of thought of us more as like a club. And like, you know, we kind of can get together and it's just like an informal sort of knowledge sharing and social thing. And I just, I don't view it that way* (SOP-5).

Whether the producer is a hobby farmer who, as one network member suggests, has less "*skin in the game*" (SOP-14) or they do not consider the Fibershed organization a viable backer, the reality for

many of the producers I heard from is that the network's current capacity does not support professional fibre producers. In fact, one study participant believes that the organization is actually best suited to serve social rather than economic needs:

> *I think the Fibershed [affiliate] is a great social outlet, I think that it could go a long way. I hope this isn't taken wrong because it's such a missing piece of the puzzle in rural development, is a good cultural, it could replace church. Folks aren't going to church anymore, but they believe in the land, they believe in nature, they believe in something foundational and grounding and spiritual, I think Fibershed [affiliate], the way we can use it in Canada anyway, could serve that fellowship purpose* (SOP-11).

Whereas they may be unable to serve professional industry, Fibershed affiliates are nonetheless significant for fibre enthusiasts seeking community who are able to find others who share their values.

5.4.3 Building a Social Network

Creating a community of regional fibre producers and supporters is a clear goal for both affiliates, however, the economic requirements of developing this community are less defined. As seen in Figure 5.1, UCFS' three focus areas (*building community*, *raising awareness* and *promoting local economies*) are so intertwined that each description could fit under each title with little modification. For UCFS, it is evident that developing local economies is an implicit component of community building. Similarly, for Rust Belt Fibreshed, one of their three focus areas, advocacy, involves community building. An RBF member explains their program:

> *Our third bucket, which is consumer education, consumer advocacy and education, or I think it's advocacy/education. And so, you know, talking with them about, just giving talks, doing community projects. So, the Flax Project, our One Year One Outfit Project, and the Student Ambassador Project, Yale Packer Research Project. Those are all projects that we've done that have been really rewarding and most of them have been community building. And so that's where we kind of focus a lot of our efforts, just because it's low capital. It's a lot of sweat and equity or time, but low capital. And really rewarding because you get to see people coming together* (NOP-1).

Community building is a consistent theme that runs through both affiliates' literature and is closely tied to the development of a regional fibre economy. One of RBF's three focus areas is regional manufacturing, and visitors are welcomed to their home page with the following statement: "*we are a bioregional textile community growing hope and resilience through local fiber, local color, and local labor*" (Rust Belt Fibershed, 2025b). Their goal is a community that can support regional fibre

producers and address the lack of resiliency of regions that individuals witnessed during the pandemic. An Ontario participant describes the recent shift in attention toward regional modes of production:

> *One of the things that to me was glaring to me in the pandemic is how insecure we are from a food supply perspective, right? And if you think about the war in Ukraine and the impact that's had on prices and that kind of stuff, it's like we've become so dependent on things being imported. I think it's only a matter of time before we see a shift back to being a bit more self-reliant. And so from that perspective, you know, I would always be, yes, let's do it locally. Now, not to do it in a foolish manner. We still need to make sure that we're doing it in a manner that's economical, that's sustainable* (SOP-13).

UCFS and RBF intend to build regional fibre economies by connecting the people who are engaged in regional fibre production, making links between supply chain players and making external community members aware in order to increase investors, both consumers and financiers. However, up until now, the community remains more socially than economically connected. That may be a result of the infancy of the domestic fibre industry or a limitation of the network. One study participant, who stepped down from leading an affiliate to concentrate on their own fibre business, was eager to market their product and could not get there fast enough with the Fibershed organization:

> *I feel like with Fibershed [affiliate], we felt like we kind of hit a ceiling of the things we knew we needed to do. We didn't see Fibershed [affiliate] being the vessel to kind of get us there. Like thus we started [our business] because we want to just grow and sell seed and we want to get to selling fiber* (NOP-8).

Members recognize the progress of the organization, as a connector between producers and consumers and as a voice for producers, as one network member expressed (see section 5.3). However, economic progress has come as a result of the work producers have put in themselves, with the financial support of grants or private investment (further discussed in sections 7.2.2 and 7.2.3). Members feel the effect of the affiliate's promotion of regional fibre, awareness-raising which can increase purchasing, but the infrastructure and investment-building that is so crucial to the developing industry has not yet materialized.

On the other hand, it is not completely clear as to which type of networks would be more beneficial to producers. An industry association specific to the flax fibre industry is one opportunity, similar to what the Canadian Wool Council and Campaign for Wool has provided Canadian wool

producers. The Canadian Wool Council (CWC), as a member of the International Wool Textile Organization (IWTO), is similar to a Fibershed affiliate except that it is country rather than region specific. Whereas the Fibershed organization was launched in 2013, the Campaign for Wool began shortly after, in 2014, upon the initiative of then Prince Charles of Wales. Subsequently, its implementing partner, the CWC, was established (Canadian Wool Council, 2025a). Incorporated as a non-profit, the CWC is funded both privately and publicly. A second federal grant was awarded in December 2023, coinciding with the IWTO's annual Wool Round Table, which was held in Montreal (Canadian Wool Council, 2025b). As one Ontario participant explains:

> *The most recent [grant] was announced when we had the IWTO, the International Wool Textile Organization Conference. Canada had never had a seat in that organization, which has been the global leader of the wool industry for 93 years, I believe. Campaign for Wool/Canadian Wool Council secured Canada's first seat at that table in 2022 (SOP-11)*

The federal government support has been a tremendous boost for the CWC, validating the work they have invested in the creation of the Wool Plan in 2021, the Carpet Plan in 2022 and the Canadian Wool Standard in 2023 (Canadian Wool Council, 2025c):

> *The government has copied verbatim the work of the Canadian Wool Council as this is like they're throwing their weight behind the Canadian Wool Council. They're not talking about wool growers. They're talking about Canadian Wool Council as where they are doing the majority of their work. And the messaging, the language was exactly what we have constructed. So we feel that there's a solid relationship with the federal government and with Canadian Wool Council. And if we keep doing our job well, I can't see why those subsidies or those grants won't continue and increase* (SOP-11).

A number of Fibreshed players have enlisted a CWC strategist and business consultant to support supply chain logistics and promotion. As one participant explains: "*we contracted [the consultant] to work with us on, basically on a daily basis a year and a half ago. So, without [the consultant], our wool thing would have never worked, like, there's no possible way*" (SOP-7). Similarly, another Ontario participant reflects on how well the CWC has integrated industry players who historically have been disconnected:

> *Part of the issue in the Canadian industry or just the Canadian wool industry is that no one talks. It's all in different silos. No one knows who's who or what anyone can do. I mean, that's changing. Like [the consultant] and Campaign for Wool have done a lot of work on that. So that's changing* (SOP-14).

SOP-15, who is involved in the CWC, explained that their goal was two-fold, to support existing infrastructure by building partnerships along the entire value chain and to tell the story of Canadian wool, to "*give [it] a global platform*" (SOP-15). The impetus for establishing the CWC was there was little collaboration among industry players and Canadian wool producers were not adequately being served by existing industry associations. According to one participant, "*the meat part has been the driving part of the industry*" (SOP-15) and the wool products, specific to Canadian flocks, were undervalued: "*[producers] were beaten down by the very organizations that were meant to help them*" (SOP-15). The CWC has built a reputation that reflects favorably on Canadian wool producers, by demonstrating the significance of Canadian wool on a global scale.

Similar to the CWC but specific to flax fibre producers, the North American Linen Association (NALA), answered the call for an industry association concentrating on regional linen production. The evolution of the industry over the last few years, along with the preliminary work of the Fibershed organization, set the groundwork for establishing NALA. Having only been active since 2022, it is hard to say what kind of impact they will have on the industry. However, in speaking with fibreshed players involved with NALA, the organization is committed to stakeholder collaboration, as well as with building relationships with producers across the country. In fact, as one study participant shares, there is a sense that collaboration beyond the regional network is the only way to lift the industry up:

> *I think [collaboration between regions] is totally what we need, especially in an industry like this, which doesn't really, within the industry, have that much support and resources. We need to be able to share it, you know, in order to scale up, in order for people to start recognizing this is about having value* (NOP-8).

They elaborate on the benefit of connecting with producers across a wider network:

> *That's what NALA is really part of it. If we come together and start to really hammer at some of these pieces together, we'll have a lot more momentum than doing that alone. But I would say the holes are the same for every group. And maybe a little nuance depending on where you are, what kind of equipment you'd want or what scale, but it's all the same* (NOP-8).

Industry groups have the potential to be more effective than regional networks because they are able to cast a wider net. Whereas the Fibershed organization is represented by affiliates across the country, the continent and to a lesser extent, the world, the regional focus embodying its ethos gives precedence to a specific area and its particular fibre assets and infrastructure needs. As this Ohio

participant suggests, prioritizing a region over an industry may make it harder to generate the level of support that producers need:

> *There are these nationwide, and yes, Fibershed [organization] is nationwide, but these nationwide organizations might have a better reach because they have better funding, they're spread out a little bit more. It seems like whenever you try to draw something down, funnel it down to that local, regional, hyper-local amount, things just get harder* (NOP-4).

The seeds for starting a regional fibre economy are the producers; connecting them and drawing in their consumer neighbours will build a cohesive system. However, the regional emphasis of the fibreshed design may prohibit it from ever reaching the scale that is required to kickstart an industry.

5.5 Internal Assessment Tools

As with an agenda, integral to a network's operating function is the opportunity for players to assess its goals (de Leeuw & Groenleer's, 2018; Foster & Barnes, 2012). Internal assessment tools can assist by collecting data that evaluates outcomes against network objectives. UCFS initiated a strategic assessment plan in 2020 when affiliate facilitators were experiencing burn-out. They recruited external moderators to carry out discussions, each with their own theme, over twelve weeks (UCFS Strategic Planning Committee, 202) and invited all members, including those new to the organization, to participate. The approach was two-fold: firstly, to identify network objectives and areas of weakness, and secondly, to build network unity during the planning process. In this sense, it was both relational and operational.

While UCFS' strategic planning initiative was a means to envision goals and the steps to achieve them, producer participation was limited, at only 29% (UCFS Strategic Planning Committee, 2021). Furthermore, the network's growth also requires regular assessment tools to measure objectives against performance. While surveys are used to invite feedback following a community event, as in the case of RBF, or as an internal (for member's only) annual procedure, as in the case of UCFS, it is not clear if and how the data is applied in future network planning. As one board member stated:

> *We tend to want to do a survey every year, but not actually do much about it.* [Follow-up question from interviewer: Is that because there's too many diverse ideas about where they want it to go?*] I wouldn't say so. No. You know what? I actually think it's just a matter of, if I can be blunt, I would say there isn't that stick with it-ness, if I were to use that phrase. So we have a list of maybe six or seven different things. And I just don't know that we've necessarily*

prioritized it and said, okay, let's just, you know, maybe we can only do number one and two. And let's just focus on number one and two for the year.

Goal setting and reevaluation is crucial in the network as it adapts to industry changes and producers' needs. To operationalize their focus areas, affiliates need multiple assessment tools to be able to gauge players' evolving needs, interests and capacity. At each stage of development, the network will need to decide if a multidirectional operating function is feasible and if, in practice, it is able to serve network players.

Fibreshed affiliates established themselves to serve consumers and producers, support hobbyists and professionals and build a social and economic network. This multidirectional operating function is only feasible if it is able to meet the needs of its members, but it continues to face challenges in doing so. As a new network, the fibreshed is still in a learning phase, which involves understanding the industry, its players and their needs. The restructuring of RBF's membership model may be indicative of a direct response to producer input; however, the last producer survey was completed more than two years prior (NOP-6) so it is not clear if the results were considered in this decision. Likewise, UCFS's strategic planning session is significant, but producer participation was limited. As the structure dimension demonstrates, more representation of producers in leadership positions is needed. In addition, assessment instruments should be reevaluated, as well as their integration in network structures and processes of decision making. At the same time, producers need to continue to speak up about what they need from the network, and from external partners, and specify how the network can support them in achieving their objectives.

5.6 Concluding Remarks

Examining the player's understanding and assessment of the network's operating function provides insight into the affiliate's mandate and its delivery in each fibreshed. It demonstrates how education is integral to product and program promotion as network players counter consumer perceptions on regional fibre. All players recognize the network's role in governance of supporting producers through consumer education. There is nonetheless discrepancy among them regarding the direction and delivery of education, and the degree of support that the network generates for producers. As a result, I recommend renaming the operating function dimension operating function alignment to more aptly reflect the relational aspect of goal development in a network. Misalignment in networks is

often shaped by individual contexts, an area which is explored in the heterogeneity assessment of the following chapter, and by the nature of interactions, which is addressed in the assessment on integration in Chapter 7. I thus extend this analysis of the network's operating function to the elements which shape and are shaped by the governance decisions of fibreshed players.

Chapter 6
Heterogeneity

As discussed in Chapter 2, a heterogeneity analysis examines the range of network players and their attributes, specifically their professional backgrounds, personal skills and socioeconomic contexts. A closer look at the players provides an initial sense of network capacity. Furthermore, a heterogeneity analysis emphasizes that the structures of governance are ultimately accountable to network players, not to an external authority. Accordingly, their individual contexts and the nature of their interactions are fundamental to understanding how governance is carried out. Thus, this phase of analysis considers the professional and personal backgrounds, hard skills training and values which shape the decisions players make within their role in the network (Carlsson & Sandström, 2007). Typical to heterogeneity analyses, it pays attention to the professional contexts of participants, whether they originate from industry, government or citizen groups and where they intersect and overlap (Benedum & Becker, 2021). In addition, it looks at the urban and rural context of network players because of historical challenges aligning members' goals in natural resource management amid the complexity of climate change and growing economic disparity (Shellabarger et als, 2019). Lastly, to ensure that the fibreshed network is not exacerbating systemic economic and racial barriers (Hinrichs, 2000; Meredith, 2005), this analysis assesses if the network includes adequate representation of marginalized groups.

6.1 Network Demographics

In governance settings, decision-making is impacted by the skills and values players bring to the network, but also by aspects of their personal circumstances, such as income and experience in the field. To enhance the interview data on demographics, secondary data was collected from UCFS and RBF's online producer directories, which, in July 2024, consisted of 40 producers in RBF and 55 in UCFS. In these directories, producers encapsulate all those contributing to the production and processing of the fibre (Upper Canada Fibreshed, 2024d; Rust Belt Fibershed, 2024). The secondary data provides a broad view of producers regarding their location – whether rural or urban – and the age of their business. The combined data is consistent with the findings of several scholars (Benedum

& Becker, 2021; Höhler & Kühl, 2018; Peltier et al., 2024) that heterogeneity in agricultural and other resource-based sectors is increasing as players from outside the field enter the space.

Increased heterogeneity has an impact on operating function and network integration. Within the fibreshed, the heterogeneity dimensions that are most influential are aspects which Höhler and Kühl (2018) categorize under member-level heterogeneity (see Figure 2.7), such as income, purpose in joining the network, and industry experience (see Table 6.1).

Table 6.1

Examples of Höhler and Kühl (2018)'s Heterogeneity Dimensions in the Fibreshed Network

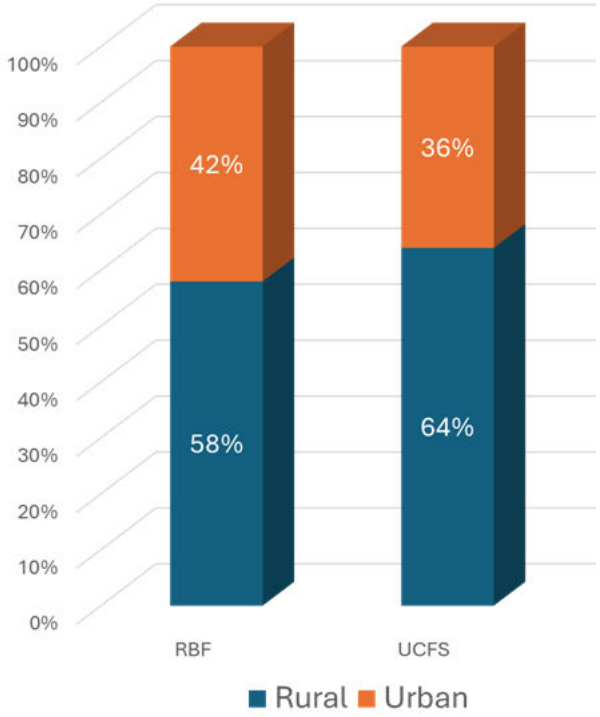
Type of Member-Level Heterogeneity:	Exemplified in:
Personal	age, experience, income
Temporal	duration of involvement in network
Participatory	level of commitment to network
Motivational	purpose in joining the network

Additional Member-Level Heterogeneity:	Exemplified in:
Spatial Identity	rural or urban context
Professional	industry experience
Sectoral	private, public or civil positioning

An individual's location, which Höhler and Kühl (2018) consider spatially and situate it at the farm-level (see Figure 2.7), could instead be considered at the member-level because an individual's urban and rural context impacts their personal identity. Therefore, it can be categorized as spatial identity heterogeneity (see Table 6.1). As illustrated in Figure 6.1, not all producer members are located in rural, traditionally agricultural settings. 23 of the 40 RBF producers are rural while 35 of the 55 UCFS producers are rural.

Figure 6.1

Urban to Rural Proportion in Fibershed Producer Membership



Note. Data collected during May and July 2024 from UCFS and RBF producer directories. (Upper Canada Fibreshed, 2024d; Rust Belt Fibershed, 2024)

Similarly, Figure 6.2 and 6.3, which capture the age of producers' businesses, demonstrate that many producer members are new to the field. The age of farms is spread relatively evenly across UCFS membership with middle-aged farms representing a majority and older farms representing a minority, whereas in RBF (see Figure 6.2), younger farms form the majority of its membership. Of 28 UCFS farms, nine farms are 10 years or younger, 13 farms are between 10 and 20 years, and six farms are older than 20 years. Of the 20 RBF farms, 13 farms are 10 years or younger, three farms are between 10 and 20 years, and four farms are older than 20 years. A higher ratio of new farmers in RBF may be the result of the organization being a younger affiliate and the fact that it can take time for established fiber farmers to assess a membership organization before committing to it.

Figure 6.2

Age of Fibre Farms in UCFS

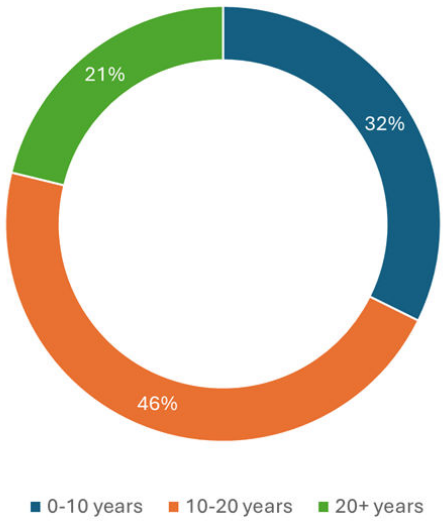
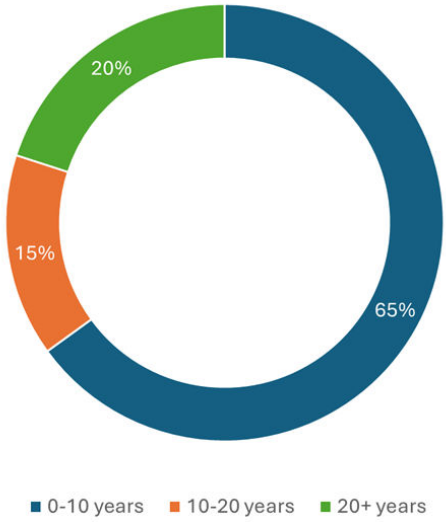


Figure 6.3

Age of Fibre Farms in RBF



Note. Data collected during May and July 2024 from UCFS and RBF producer directories. (Upper Canada Fibreshed, 2024d; Rust Belt Fibershed, 2024)

Producers who are entrenched in fibre farming, whether by interest or inheritance, and have been engaged in production for 10 years or longer, are less represented in the Fibershed organization than those who are new to the field and have been farming or producing fibre for less than 10 years. One interviewee, who is part-owner of a family farm that has been in business for over 50 years, is a new member of UCFS, and joined because they were invited by a board member. However, there are few farms in the organization that are older than 25 years. Of the 50 fibre farms listed on the UCFS and RBF sites, only six were established prior to 2000. Of the nine fibre farmers that I interviewed, two have been farming for more than 25, three for more than 10 years and four have been farming less than 10 years.

Despite a producer-dominant membership, at the time of this study, RBF had one board member who was a fibre producer and one board member who was a textile designer, while there

were no producers on UCFS' board. The board's composition, according to one participant, may have been intentional to diversify the skills of the affiliate leadership: "*I think there was a movement away from like actual producers being on the board*" (SOP-14). Additionally, all members sitting on the UCFS board were based in urban areas, while three of the five members of the RBF board were located in urban settings. While producer membership is representative of both urban and rural settings (Figure 6.1), the boards' membership may be influencing the view that the Fibershed organization is driven by an urban perspective. While an urban-emphasis impacted one participant's choice to not renew their membership – "*I'm not really part of Fibreshed [affiliate] anymore. You know, it's mostly, it's people in the city*" (SOP-1) – the reality is that the membership of both affiliates is comprised of a rural majority (see Figure 6.1). In both RBF and UCFS, there is a higher percentage of rural members than urban ones. For many study participants, the rural or urban context of a member is considered to have a significant impact on their perspective concerning the organization and governance of the fibreshed and also that of wider society. Therefore, the nature of this impact as well as attitudes regarding the extent of its influence on fibreshed development will be discussed in more detail in Network Integration (see section 7.1.4).

While some larger-scale producers have joined the UCFS and RBF, the majority of members remain small business owners, indicating in interviews that they employ only themselves, their family members or one or two additional employees. For reference, one large-scale producer (or their staff) in each region was intentionally included in study interviews. These businesses are larger than typical fibreshed business, employing up to twelve or fifteen individuals, yet would still not qualify as large companies. With only one or two large-scale producers in each affiliate (Upper Canada Fibreshed, 2024d; Rust Belt Fibershed, 2024), they do not have strong representation from businesses with high revenues. It may be because owners of large farms do not see potential in fibre production or because agricultural businesses do not have enough of a financial buffer to engage in fibre production without a guaranteed return on investment:

> *You can't force a farmer that needs to make, that has a $1.5 million farm, needs to pay their mortgage, like, oh, yeah, please do this thing, because, well, that's your cost, like it's there, they are clearly taking all the risk and they're putting all the money up front for very little* (SOP-1).

The same risk applies to smaller fibre producers, as one Ontario participant indicates, with the producer having the most to lose if investment does not pay off: "*Our farmers are, they're not making a lot of money. And they're working really hard. And, you know, a bad year for them can be catastrophic. And costs are skyrocketing for them*" (SOP-5). The costs of investing in fibre production, which are prohibitive to many, is clear to SOP-1, who recognizes that they were able to purchase land and start a business only because of their financial situation:

> *I'm lucky my husband comes from a higher socioeconomic class than I do, so he got his inheritance early to be able to put a down payment, even though he had a very good job and he had a good business plan. If it was me, not a hope, not a hope, like it would have been a pipe dream, yeah, so you need to be very privileged to do this* (SOP-1).

Without the availability of a lump sum investment, the prospect of launching a fibre production business is out of reach for many. Moreover, if they manage to successfully launch, like many new businesses, they may continue to struggle to establish itself: "*It's something every business, you know, every startup business, it's not unique to me. When you're trying, you're walking a tightrope to survive and as you're getting established, there's always that*" (SOP-4). Like SOP-1, without access to external funds, in their case a combination of private and public grants, SOP-4 would not have been able to start their business: "*it was definitely the support that I needed to feel that I could do this*" (SOP-4). As a result, it may still take time to earn enough profit to live comfortably. The situation is similar for another participant, "*people like me who, for whom it's a business, we're not making a ton of money*" (SOP-12), often not even enough, as SOP-1 shares, to consistently pay themselves an adequate wage:

> *Like, yeah, our second car is a tractor, cause, it's literally that simple. Like, yeah, basics like glasses, like I don't really even get paid. Yeah, no, I can't pay myself. Theoretically it's in my budget, but it never actually works out that way. It never goes into my bank account* (SOP-1).

Likewise, one participant, whose business have been operating for decades, expresses the financial precarity of it:

> *This year will be the expansion year or we'll be bankrupt, one or the other. Because we have to, and this is a huge problem that I'm going to need to figure out, is like we are covering the costs up front for almost a year of all of the stages of production until we can finally sell something* (SOP-7).

Producers have had to find alternative income to subsidize the fibre portion of their business, such as through supplementary animal products, agri-tourism or a second job off the farm. Fibre alone is not

enough to generate profit, as one participant confirms "*if you sell the wool from an animal, that will still not pay for that animal*" (SOP-14). Even enhancing the product is not enough:

> *We do a lot of value adding, which meant we actually had to go more into debt than we would like. Yeah, but you know, there's no other way of doing it, particularly if you are on a smaller property* (SOP-1).

Given these efforts, they conclude that, "*what works in fiber, does not work financially. It's that simple*" (SOP-1).

Producers invest time and money into producing, enhancing and marketing items that they themselves do not have the income to purchase. As one participant shares: "*you're never getting in as much as you're outputting. And so a lot of farmers, and probably in all areas, they can't even afford to buy the things that they're producing*" (NOP-4). Likewise, another participant recounts a similar experience: "*I was making blankets at the time and just the price point on these things was like, none of us could afford to wear any of it. Like, no. None of us could afford any of the products*" (SOP-2). Yet there is also the perception that the membership of the organization, both the parent organization and the affiliates, consists predominately of individuals of medium to high socioeconomic status. According to one study participant, "*you might want that diversity, but it's kind of hard to get on your high horse about being inclusive and you look around the table and it's all a bunch of moderately wealthy white women*" (SOP-11). Another participant echoes this sentiment, though they make a distinction between producers and other members:

> *Part of the disconnect I was talking about between farmers and people who are trying to respond to fast fashion, the socioeconomic divide there, too. And a critique I would give of the Fibershed [parent organization and affiliates] is that we are very white and female, mostly. And I think that, you know, this mill that they've proposed in California, I mean, it's been years ago now. They have gorgeous plans. I don't know if you've seen them? Gorgeous. A beautiful mill. And it's going to cost like tens of millions of dollars. And it's just, I think that that is coming from a context of people who are of a socioeconomic class who have friends who are architects or engineers, who they can lean on to build these plans, but then there's really no basis for doing that, like, there's no actual, I say this definitively, but I shouldn't because I don't know this is a fact. But my perception is, there's really no cost benefit analysis that makes sense for that*.

Acknowledged by the above member, the reality is that not all producers are high income earners. Again, the board membership may be influencing the view that the organization is driven by a middle

to upper-class perspective. Notwithstanding, it is nonetheless missing representation from people with various income levels in its overall membership.

In addition, racialized peoples are significantly underrepresented in the Fibershed organization. This fact is acknowledged by the organization and what led to the development of the Black Fiber Cohort, which receives financial support from The Fibers Fund (Fibers Fund, 2025b), an initiative of the Fibershed parent organization and Sustainable Agriculture and Food Systems Funders (SAFSF). The fund was established in response to the "capital gaps identified in the SAFSF Fibers Roadmap Report and through the Fibershed Regional Fiber Manufacturing Initiative" (Fibers Fund, 2025a) in order to "support small U.S. natural fiber and textile producers and processors, with a specific focus on environmental equity" (Fibers Fund, 2025c). The program is the kind of investment that Canadian producers are looking for as well, specifically, public sector financial support for Black entrepreneurs working with fibre. One study participant addresses the gap in funding for racialized producers, and is speaking here in the voice of collective Canadian society:

> *We don't have enough people, but we're also not helping people, but the people aren't going to be the traditional people that we have thought would run farms. Since they're not going to be white. They're going to be different colors and different cities* (SOP-1).

The Fibershed parent organization and its affiliates need to provide more opportunities to support increased representation from Black, Indigenous, and other racialized peoples in all roles within regional fibre and textile systems.

6.2 Sector Representation

As indicated, heterogeneity analyses are interested in sector representation in the network and how it impacts integration (Benedum & Becker, 2021). While professional heterogeneity is relatively high in the fibreshed, sectoral heterogeneity is low. For the most part, network players are from civil society and the private sector, with minimal representation from the public sector, affecting external integration. Sectoral heterogeneity, therefore, is the second category proposed as an addition to (Höhler and Kühl's (2018) dimensions of heterogeneity in networks (see Table 6.1).

The majority of individuals involved in the fibreshed, as business-owners, represent the private sector, though not necessarily from the agricultural industry. Instead, they originated from civil society, having held other professions before becoming involved in the fibreshed or running

businesses in industries outside of agricultural. Those who were already established in the agricultural industry prior to their engagement in the fibreshed are fibre farmers and constitute a small fraction of agricultural production in the studied regions. The contribution of North American fibre producers is undocumented by federal agencies in either the US or Canada. Many of these producers are small scale because the industry itself is small. Moreover, interview data suggests that producers tend to be operating their business for profit and for social purpose. While the degree to which the results can be generalized is limited due to the small sample size, the data suggests that entrepreneurship in the network represents both civil society and the private sector.

Both the fibreshed concept and the Fibershed organization established its roots in civil society, as an experiment by one individual in one location, who tracked her progress and shared her experiences online (Fibershed, 2025b). This context shapes the nature of representation and involvement from the public and private sectors as the fibreshed develops. Because it did not emerge from industry and its members are comprised of non-producers, such as educators and advocates, the fibreshed network accesses the business community indirectly. In fact, because of its social facet, it may appear to align more closely with public agencies and education institutions than with private businesses. Moreover, the Fibershed organization, by formalizing fibreshed principles, is better equipped to access government agencies and academic institutions than individuals can on their own. However, because of the underdevelopment of the agricultural fibre industry, there are few established channels of communication or points of integration between fibreheds and the public sector. Outside of cotton, North American fiber crops are not designated in their own category or administered by government agricultural agencies separately from food or animal farming. For example, according to one study participant, "*fiber flax is not considered a specialty crop. It kind of fits in with the grain crops*" (NOP-8). Fibreshed players, therefore, must find unconventional avenues for engagement with the public sector. The points of entry they have established contribute to the network's attributes and therefore, I have identified them here. However, the specific characteristics of these multisectoral relationships will be explored in the Integration analysis (see Chapter 7).

One way for fibreshed players to access government is through agency funding programs. The Fibershed organization's non-profit status gives them eligibility to apply for grants, however it does not automatically transfer to affiliates as they are legally separate from their parent organization.

As one Ohio participant explains, "*an affiliate nonprofit…doesn't even have their own 501c3* [non-profit] *status. You know, so we can't really, even getting grants, we have to go through Fibershed [parent organization] and kind of have a fiscal sponsor*" (NOP-8). Access to funding can also impact fibreshed players access to policy channels. Without their own non-profit status, affiliates have varying access to different policy tools, depending on jurisdictional legislation. Whereas affiliates such as Fibershed Netherlands can register to lobby the E.U. government (Lobby Facts, 2025), American affiliates, as non-profits, are not permitted to lobby the U.S. government. As a result, after forming and running a Fibershed affiliate for eleven years, one participant made the decision to incorporate their own business as a trade organization; one reason being the access to policy tools that they could not obtain as an affiliate. Alternatively, individual affiliates can register as non-profits in order to expand their eligibility for government funding and corporate sponsorship.

Partnerships with academic institutions are another opportunity for multisectoral integration. Affiliates may look to build these partnerships for funding, research or policy purposes. RBF, for example, has collaborated with Kent State University's School of Fashion on funding proposals and undergraduate research programs. UCFS has contributed to research at the University of Toronto and the University of Guelph. Fibreshed players have individually collaborated with institutions, either to receive funding or student interns for their own businesses. As external partnerships increase, whether they are initiated by affiliates or individual members, they shape fibreshed development and the governance structure of the organization. The nature of these relationships, therefore, requires, more analysis in Chapter 7 (see section 7.2.4).

6.3 Education of Players

Before moving to the last dimension of network governance, however, further analysis of the players' attributes is necessary to provide a more complete picture of the representation of players engaged in the fibreshed. As Höhler and Kühl (2018) indicate, the players' professional experiences impact the decisions they make on network development. In fact, while Höhler and Kühl (2018) include education and experience in the personal heterogeneity category (see Figure 2.7), an individual's professional context could be considered its own dimension, called professional heterogeneity (see Table 6.1). Like many of today's agricultural networks (Höhler and Kühl, 2018), the fibreshed attracts increased professional heterogeneity. Rather than through intergenerational circumstances,

individuals are drawn to fibre production from urban centres and non-agricultural professions. As a result, a diverse range of professional experience is introduced to a field that has been previously limited to those trained in agricultural.

While the degree to which this data can be generalized is limited due to the small sample size, the interview data gathered on participants' professional backgrounds is consistent with the data on sector representation regarding a high representation of the private sector in the membership. Accordingly, study participants have formal and informal education in entrepreneurship as well as education, agriculture, social science and fine arts. For example, SOP-11 has a degree in fine arts, a certificate in project management and extensive entrepreneurial experience. SOP-15 has a business degree. Four study participants were trained in education. SOP-7 completed a social science degree before joining the family farm business. Likewise, NOP-10 has a social science degree and training in agriculture.

The experiences of research participants reflect a range of disciplines but one area, design, dominates, no matter which field they currently work. For instance, NOP-2 was trained in design though not initially in fashion:

> *I'm trained as an architect, actually, but I kind of found this work while I was living in China, working as an architect, but living near the garment district where I started making clothing samples kind of just for fun on the side of my work. And of course, one thing led to another. And now I'm back in Cleveland making clothing full time* (NOP-2).

Similarly, while SOP-5 was subsequently trained in another field, their first training was in design: "*I had also gone to design school for interior design before that and had kind of already begun to turn my mind to the sustainability of design generally, including fashion and textile design*" (SOP-5). Several participants learned design as part of their technical arts training, such as SOP-3:

> *[I] was encouraged to go to OCAD [*Ontario College of Art & Design University], *and there I, you know, kind of explored textiles, but I was always sort of really rooted in kind of, you know, where did all this come from. And so I liked historical textiles* (SOP-3).

In a similar way, SOP-6 did a degree in sculpture at OCAD, during which they enrolled in a "*course that covered natural and synthetic dyes*" (SOP-6) where the professor had an impact on them: "*She sort of got me into it. And I kind of like the interplay between science and art. So I was already interested in a lot of different things where those converge*" (SOP-6). Those who were not formally

trained had similar experiences, by learning design while applying it to a particular craft. One participant, for example, was a "*self-taught spinner*" (SOP-12) and worked as a custom knitter before they "*learned to shear [their] own animals*" (SOP-12), including sheep, mohair goats and alpaca. They discovered the value of their unique skills in fibre farming and animal husbandry when new farmers and fiber mill owners offered them jobs: "*I had a skill set that they didn't have*" (SOP-12). NOP-5 undertook informal training and was mentored in spinning, dyeing and felting as well as operating fibre processing equipment, because they recognized the combination of technical and design skills required for their job. These occupations are what one participant characterizes as "*farmer designers, you know, people who are, like, farming, but also maybe making their own wool*" (NOP-1).

Several participants were specifically trained in fashion design. SOP-9, for example, was trained in the industry as a fashion designer, building skills in merchandising, marketing, pattern making, technical drawing, fashion styling and sustainability. NOP-3 has an undergraduate and graduate fashion degree as well as extensive training in the industry, yet they felt that they learned more as a production manager for a sustainable clothing brand than in the courses they took and in previous employment roles, particularly regarding the specifics of manufacturing:

> *I started my work always very interested in sustainability as a kind of a general term. And through that, I was originally very interested in suiting and just like very classic fashion and trying to do it in an ethical way. And then I learned how to knit, became really interested in knitwear and being able to have a closer relationship with the actual materials that are going into clothing…*[elaborates on job experiences in the fashion industry]*...And so for me feeling, being a domestic laborer and being a skilled laborer within fashion, I've been able to see kind of the good and the bad of it. And also just how little understanding there is of our materials that happens in the fashion industry. Like I now have two degrees and have been invested into this for almost a decade. And I, I'm learning so much about fiber right now that I never had access to in any of my academic institutions and through any of my jobs* (NOP-3).

Similarly, NOP-7 noticed a gap in industrial ecology in the design courses offered in undergraduate fashion design programs, while they were a student and as a teacher themselves. Here they explain some of the motivation behind the decision to make a first-year sustainability class compulsory:

> *Part of the reason that we made it is because there were so many students that were in their junior, you know, the third and fourth year that said, you know, gosh, this should be required. And if I had known all about this at the beginning, I would have approached my education in a very different way* (NOP-7).

The course confirmed to them how integral design is to how students think about sustainability in fashion:

> *We talk about different components of sustainability in the supply and value chain, you know, talk about systems thinking, as much as a freshman level can absorb. And then, in the lab, we have a lot of hands-on kinds of opportunities where students are asked to, you know, the grading threshold is very low because they're just experimenting. Because, as a generation, especially, they're very, very hesitant to potentially be wrong, which is essential in kind of thinking of larger ideas…*[elaborates on their teaching approach]…*Design is inherently all about being wrong. You make mistakes more than you get it right. Which, then my argument is, in trying to get the class approved by the faculty at large, is that it helps set the precedence for all classes. You know, we've all agreed that sustainability is a huge issue that we must address but it's also that we're talking about how do you create a space where students feel that they can make mistakes, that it's important to be able to have some kind of flexibility and to accept that you may be wrong. And what do you do in those instances to make it, you know, to find out what the possible correct answer might or might not be, or that you may never have a right answer* (NOP-7).

Design work can give students the confidence to approach a problem and continually experiment with how they might solve it.

Moreover, design experience in one field can give individuals a perspective which they might then apply to new pursuits. SOP-2, for example, adapted their training in environmental design, first to their job in urban agriculture and then to their own farm business. Farming shares similarities with landscape architecture and, with a design perspective, it can also offer the challenge of systems thinking in a microcosmic, hands-on way. As SOP-2 explains, farming provided an opportunity to apply the concepts they learned in school: "*I was just so steeped in environmentalism and the ethics of farming, and there was a huge movement of young people quitting jobs to go be farmers. And I was 100% that person*" (SOP-2). Similarly, SOP-1 was led from design to farming:

> *I was a graphic designer and web designer. Actually, my original training is in fine arts and technical and scientific illustration and web design…*[discusses previous work experience]… *I'd always wanted to farm…I was actually at school for technical and scientific illustration, was very unhappy, ended up switching to animal husbandry and ended up having a work placement in both a vet office and a farm. And I fell in love with the farm* (SOP-1).

Similar to what NOP-3 found as a garment production manager and what students in NOP-7's labs can test, farming provided SOP-1 with the opportunity to apply the design principles they had been taught in previous study programs.

6.4 Motivations of Players

The interview data was also used to gather insight on participants' motivations for joining the fibreshed network. According to Höhler and Kühl (2018), members' commitment to the network can vary according to their level of economic motivation for joining it. Therefore, motivational heterogeneity is determined by the value members see in joining the network. While the extent to which this data can be generalized is limited due to the small sample size, the motivations for individuals participating in the fibreshed reflect overlapping personal, economic and social factors. Figure 6.4 illustrates these factors and weights them by frequency, based on how participants responded to Question 4 (see Appendix A & B): *Why are you and/or your organization involved in the fibreshed?*

Figure 6.4

Motivations of Study Participants for Engaging in the Fibreshed



The results suggest that the fibreshed attracts those from civil society who are interested in local production and sustainability, oftentimes individuals who begin producing specifically to manifest their values. Their intent may have been building slowly through everyday circumstances or been initiated by a major life event. For one participant, for example, sourcing local fibres aligned with how they already conducted their business: "*And of course, I just, by nature of what I believe in, I've always used natural fiber*" (SOP-4) so they looked to the fibreshed when they brought their business back to the region after twenty years away. Whereas another participant turned to agricultural after the Northeast Blackout of 2003 as it offered a more intentional way of living than what they found in their current profession:

> *There was a massive power outage and that kind of definitely stirred something in my husband and I, particularly me. So I was like, okay, want to be more self sufficient and resilient, ended up going into a, I think it was the Goodwill store in Guelph, found a book by Toby Hemingway and the Intro to Permaculture book, used, brought them home and went wow, this is exactly it. And it was something that fit really well because I instantly got it, because it's how I saw the world anyways* (SOP-1).

The Fibershed organization endorses principles that align with a renewed emphasis on ethics in agriculture (Fibershed, 2025c), such as no-till practices, permaculture and regenerative farming (Rhodes, 2012), approaches that have been predominately explored outside of mainstream industry (Maye, 2016; Page & Witt, 2022). In doing so, it offers them a place of connection, a community of people engaged in the work they aspire to do to, that they may not have been able to find elsewhere:

> *We were talking about climate change and just so many issues, and never once did we talk about clothing. And then I found I stumbled onto Rebecca Burgess's blog, I have no idea how. There was a picture of her holding a sheep, wearing this sweater and standing with the farmer. And everything clicked. I was like, oh my God, we are not talking about this. I'm working in Ag and we are not talking about clothing and other textiles as being an agricultural product that has the same kind of significance and emphasis and need as the slow food movement, as, like, 100 mile diet people. This is just as, if not more, significant and we are not talking about it at all. So I saw a niche there and just was like this is, and I think the timing of it too coming out of my Master's in Capacity Development. I really wanted something that I could sink my teeth into, that was development oriented but had that rural economic kind of lens and it was very people focused* (SOP-2).

By connecting the climate crisis to something tangible like clothing, the fibreshed concept simultaneously makes individual impact feel feasible. Two other study participants, who initially

learned of Burgess (2011) through her book on natural dyes, were also drawn in by her fibreshed experiment:

> *It was interesting to think about, I had never thought about where my clothes come from, or my textiles come from, just where my food comes from. And so it really opened up such a portal for me to start questioning these things*…[discusses being drawn in by Burgess' work with natural dyes]… *And, you know, started looking into what she was doing in California, and she started this thing called Fibershed [organization]. And we're like, what's that? And then, you know, fast forward, maybe five or six years…we started [RBF]. And because we thought it just married everything, you know, all of our interests, and felt like it was something tangible that we could do* (NOP-1).

For another participant, Burgess's (2019) work captured the personal argument so effectively:

> *I've always been passionate about textiles, really interested in fabric and textiles, and more so from a, like, home furnishings perspective. But yeah, then when I saw Rebecca Burgess's book, you know, it just started making me contemplate, you know, our whole international fashion travesty. And yeah, and so it kind of became a dream of mine to make my own clothes. It's a very much in progress, baby steps dream. But you know, that was kind of a personal agenda, not a global change agenda* (SOP-5).

The Fibershed organization connects individuals, who are each taking their own action, so that their commitment feels less solitary and thereby reinforces a greater sense of purpose. For example, one participant, a designer who produces textile from regionally sourced fibres, recognizes their individual responsibility toward their natural environment because of their engagement with their fibreshed: "*my work indirectly contributes to stewardship of the land*" (SOP-3). At the same time, they appreciated how textiles could connect them to a place's history, just as another participant recognized how growing and processing flax "*tied in with [their] cultural history [in Central Europe]*" (SOP-8). The immediate impact, for these individuals, was the feeling of being connected to something larger than themselves.

One network member was initially recruited to provide consulting services for the affiliate during the strategic planning process and remained involved because they had the opportunity to contribute meaningfully:

> *It's the stuff that lends purpose to yourself and your time. And so that's always nice because I'm not, you know, I guess I was at a point where I was tired of just working to help a company make more money. So to speak. And it's always been, you know, a goal of mine to I don't want to say to give back. But, you know, my dad always taught me that it's incumbent upon those who are better off to help others* (SOP-13).

It's a similar sentiment that SOP-12 feels every time they sell their products. The revenue earned represents both income and consumer influence: "*it lets you know that what you're doing is making an impact. You know, and more than just financially, it's opening people's eyes*" (SOP-12). They find that a large part of their business involves education:

> *You know, just trying to gently steer people in the direction, okay, you need to stop and take a look at this and from a different perspective. So it's, you know, I think it's a continual, I don't think it'll ever stop. It's an educational process* (SOP-12).

Similarly, one participant has discovered that their experiences in the fibreshed equips them with the knowledge to be able to educate their wider community and to address the ethics of clothing production with more nuance and complexity than conventional sustainable fashion marketing allows:

> *Being connected with the Rust Belt Fibershed and now starting to meet farmers and the last year understanding the actual reality that there's so much raw material, that there is an absolute disconnect between the raw materials that exist in the U.S. and the actual clothes being produced, that there's just a complete gap for that whole supply chain. And it's an issue that really has only come up in the last two generations but that nobody knows how to solve and bring that machinery back. It's been really like appalling, honestly, really, really shocking. It's kind of become just a huge, huge passion of mine. I've always been a big advocate and very interested in animal welfare, but I've always really understood and cherished my first job in leatherworking. That was kind of my foundation of like when you're actually working with hides and having that as the basis for producing, seeing the vegan leather movement is quite painful* (NOP-3).

For these individuals, participating in the fibreshed and the feeling of working alongside others, has bolstered their commitment to their work and contributes to the sense of purpose they derive from it, justifying both the personal and communal quality of it. There is also a degree of urgency to it, reinforced by the climate health narrative running through all communications of the Fibershed organization (Fibershed, 2025c), which can lend even more passion to their work:

> *That is another piece, with climate change, it's starting to…like I kind of joked to my husband that I feel like we're trying to save linen from extinction, but it kind of feels that way. How expensive it is right now, it's never been this expensive, and that's not a good thing* (NOP-8).

For many members, their motivation in joining the network is mutually related to their commitment to it. By engaging with their fibreshed, participants find incentive to actualize and advance their social and environmental values. The network provides a community of people engaging in likeminded work, a designation for this work, and an organization pursuing their objectives.

6.5 Concluding Remarks

The heterogeneity analysis confirms that producers dominant the space, but not necessarily in leadership roles in the Fibershed organization. In addition, established producers are underrepresented in general and board membership. Consistent with previous research (Benedum & Becker, 2021; Höhler & Kühl, 2018; Peltier et al., 2024), the increased heterogeneity in agricultural networks impacts operating function and network integration. In Fibershed affiliates, the heterogeneity dimensions that are most influential are aspects of member-level heterogeneity (Höhler and Kühl, 2018; see Figure 2.7) including income, purpose in joining the network and industry experience (see Table 6.1). In this case, I recommend three additional categories to Höhler and Kühl (2018) to provide more specificity of analysis, including spatial identity heterogeneity, sectoral heterogeneity and professional heterogeneity. Within the fibreshed, heterogeneity's impact may be more significant than the influence of network structure. Increased heterogeneity may mean that network players make decisions about the development of regional fibre initiatives without fully considering the value of accumulated agricultural knowledge. In this context, urban players can undermine rural and urban differences, or, conversely, exaggerate them as a result of their inexperience with rural realities, which can impact internal integration. At the same time, some players perceive aspects of Fibershed affiliates as homogeneous; specifically, that its general and board membership predominately represent middle to high incomes and live in urban centres but this assumption does not completely align with the interview data. However, it nonetheless warrants a closer look at why these perceptions exist and what effect they have on network integration. Moreover, the lack of representation of racialized groups is unquestionable and conflicts with the fibreshed's principles of nurturing community growth and improving accessibility to governance mechanisms.

Chapter 7
Integration

As discussed in Chapter 2, while network heterogeneity is concerned with network actors and their qualities, network integration is interested in the relationships they form, a shift in focus that Kenis (2022) describes as a transition "from monadic variables (attributes of actors) to dyadic variables (relations between actors)" (p. 149). Furthermore, an analysis of integration between players requires an assessment of collaboration within the network, as well as between network and external players, to understand the impact of these relationships on achieving network goals. In this context, the means of assessing internal and external integration is by evaluating the nature and degree of collaboration between players. This chapter, therefore, takes a closer look at the internal integration among fibreshed players, more specifically, the features of economic and social integration and the barriers to internal integration. Subsequently, the second section of this chapter discusses external integration, namely, the connections between members of the affiliates and industry associations, adjacent industries, the public sector, academic institutions and the wider community, and the corresponding impacts they have on funding, policymaking and research in regional fibre production and on the development of fibreshed goals.

7.1 Internal Integration

The social and economic rationales, as discussed in Chapter 6, that prompted many fibreshed players to connect with their fibreshed, influences the collaborations that they seek out. While there are social and economic reasons for pursuing partnerships, one or the other typically has a stronger influence based on the circumstances and prior experiences of the individual players. Yet, even for those who collaborate for economic return, the social impacts are still relevant. A collaborative approach, in fact, is indicative of the desire to attain mutually beneficial outcomes, an objective that can be economically and socially driven.

7.1.1 Economic Integration through Knowledge Sharing

The fibreshed network creates space for opportunities to educate, not only for the general public, but for players as well. Farm to fashion initiatives, modeled after local food partnerships linking farmers

and chefs[13], connect fibre producers with designers to showcase local products. They also generate learning opportunities for the individuals who are matched. An Ontario study participant was paired with a farmer for one such event and recognized its shared benefit: "*It was good in a way because, you know, me, I learned more about [the farmer]'s situation and on the farm. And she (the farmer) learned more about what it takes to put something together. It was a good cross pollination*" (SOP-3). Similarly, for one RBF member, the success of their affiliate's farm-to-fashion project is that it brings together individuals with diverse skills and experiences so that they can learn from each other:

> *[The Rust Belt Linen Project] feeds our One Year, One Outfit project. So people who participate in the One Year, One Outfit project are looking for local fiber. And then it's really cool because there's a collaborative between these growers who typically are gardeners, like a lot of them are just gardeners who are interested in that, not designers or people who have knitted or done anything like that. And then people who are interested in designing their own outfits. And so there's this fun, like collaboration that happens there (NOP-1).*

The dynamic between players may have a greater effect than the publicity to the wider public. As a network member elaborates here, one farm to fashion project initiated a collaboration that proved more impactful than the marketing opportunity it intended:

> *We were supposed to make a blanket for Prince Charles's visit to Prince Edward County. [The other fibreshed member] might have mentioned that, but it was a big deal for us. And it really, it kind of fell flat, really, just because of the person that was kind of on the other end. But still, it kind of motivated [the other member] and me and the farmer and the mill to kind of work together. And it was, in a way, pivotal. Like, it was one of those things that kind of was a catalyst for other things. So we're sorry it didn't get more attention because of our interest. But it did kind of prove to us that we could do it. So the producer and the farm kind of get highlighted. I think that's why the model sort of came into being. Because it already had happened, and it was successful (SOP-3).*

As farm to fashion projects generate mutual learning, they also address gaps in fibre education, which occur to a lesser extent than gaps in agricultural education but still need to be addressed. These are the shortcomings that SOP-12 encounters at fibre businesses when "*the people [who] work there, they don't necessarily know what they're talking about*" (SOP-12), and the opportunities for learning which fibreshed programming aims to provide. Many members see the reciprocal learning of farm to fashion projects as integral to the fibreshed. Indeed, education is a key component of the Fibershed

[13] Farm to table or farm to fork initiatives, introduced by Alice Waters in the 1970s, partnered farmers with chefs to highlight regional products and producers (Pesci & Brinkley, 2022).

organization's mandate, which includes learning for members *and* public education. Accordingly, learning between members impacts the content and delivery of the organization's programming to the wider public. In fact, it shapes the collective understanding of a fibreshed.

What was common among several individuals who shared their experiences was that the fibreshed environment was most productive when it prioritized learning and created a space that welcomed trial and error. This study participant describes the setting:

> *At that time too, [UCFS] was really a place that you could kind of promote what you're doing and your interests and collaborate. And there were, you know, a lot of projects kind of on the go that you could just sort of start to experiment and do things. And so every opportunity that came up, you know, we just grabbed (SOP-3).*

This is a setting similar to the classroom (see section 6.3), where fashion design students demonstrate more confidence when they are given opportunities to experiment. Similarly, the following participant became more self-assured during a collaborative project with another designer:

> *There was this real, you know, high energy designer from LA who came to live in Ontario. And she was kind of more versed in the fibreshed, being from California. And so she connected with me and wanted me to weave for her. And, you know, there wasn't a lot out there, but she would bring me like garbage bags full of fibre that she got from here and there. And we just kind of combined it together. So it was like, okay, I'll start doing this. And it just got me going and gave me the confidence. And then from that, I was able then to think, well, I can approach farmers, I can do what she's kind of been doing. And then I started to seek out, you know, wool breeds and types that were appropriate to what I wanted to do (SOP-3).*

These learning opportunities lead to new economic opportunities. For example, one study participant benefits from cumulative research conducted by student interns because it builds and improves their product line over time:

> *I just kind of produce things when they're ready. That has allowed for this project with my interns to, I think, really flourish because we get to approach it as a research project. And each set of interns, kind of, you know, they pass along what they learned along the way to the next group of interns (NOP-2).*

They find the experimental and collaborative format of their business approach productive, not only in an economic sense but also in terms of the learning outcomes for everyone involved. Other fibreshed businesses benefit, in turn, because the opportunities and research results are shared across the fibreshed. As another Ohio participant explains:

> *The communication has been huge. I mean, we only started this like, less than a year ago, and I found that every direction where we ask a question and we're like, oh, do we need to figure that out? Hey, yeah, there is somebody. Like, it's a huge benefit. There's so many people working and asking these same questions right now that it's just like being able to get enough conversation to know where to look for those answers. There's so many, like, really amazing, I would say, small research projects going on and like, yeah, every single direction that we've looked into, we found that there's somebody who asked the same question within the last five years and has been trying to get it answered (NOP-3).*

These experiences demonstrate an openness to learning that encourages fibreshed players to look to their network for help with solving problems and in doing so, find new opportunities as well.

Members also recognize that capacity-building can effectively harness the individual skills of players for collective advantage. One participant observes that collaborations allow them to focus on honing their own skills rather than trying to learn everything: "*it also lets you work with really interesting skilled people who have skills that I just don't have the time to mature*" (SOP-6). Accordingly, they have structured their business model on collaboration: "*It's where I think I'm most comfortable*" (SOP-6). They go on to explain:

> *The way that I got into dyeing was through collaborative work with [a designer]. She was the first person who approached me when I was doing dyeing more as an artistic exercise. Would you like to collaborate on something? And it just kind of spiraled from there. So I had started as a sort of dyer for hire, and I liked that model. I like working with people who understand the value of your labor, and I liked not having to have the expertise for every step in the process of making something. So I can say, I'm really good at this aspect, and I can hand this off to other people who have better skills than I do in knitting or weaving or whatever production method, and trust them to make something interesting with it (SOP-6).*

For this participant, it makes economic sense to contract out the parts of the job that they do not have the skills for.

Another participant shares an example of being on the other end of such a transaction. They offered their expertise and capacity to process fibre for other farmers who do not have the time or skills to do the work themselves. At the same time, the exchange reduced overall fibre waste and allowed time for the producer's fields to regenerate:

> *I just had 115 pounds of fiber delivered to me two weeks, or not even two weeks. A week before Christmas. I've had two other farms contact me since then because they've heard that I buy fleece. So one of them has about ten animals, the other one has four, but they don't know what to do with it. So it sits there. So, and for us, we're selling so much now that we've spent years rebuilding our pastures because they were badly overgrazed. So instead of risking*

> *destroying them and wrecking all that work by bringing in more animals, this way they're growing it, they're shearing it. I just, they give me a price on it and I take everything. So it works out both ways (SOP-12).*

In this case, both parties benefit from the partnership but not every collaboration translates into immediate gain for both parties. One participant highlights the kind of voluntary cooperation that happens regularly in the fibreshed, when players promote other players without a guaranteed payback:

> *I think [the fibreshed]'s been a good way for fibre farmers to connect and know who's got what, being able to work together. You know, like I said before, if I don't have it, but I know Romy has it, I'll send somebody to her. Or if I know Laura has it, I'll send somebody to her, or Kate. I think in that way, it's kind of given everybody a boost* (SOP-12).

Through the network, players have a better sense of each other's capacity so they are able to mutually-support each other.

7.1.2 Barriers to Economic Integration

Reciprocity, however, is not always achieved in collaboration. What happens in a network is that some individuals have more to learn than others (Provan & Kenis, 2008). This dynamic, as a result, requires more from the most experienced producers. One fibre producer recognized that what they can provide may be more than they can glean from their membership in the Fibershed organization:

> *So we're super eager and happy to participate or at least I am like as an individual with a group that is trying to do that on a larger scale. Just like between you and me, there's probably not a lot of value that I'm going to get out of it but I hope that we can provide that.*

Notably, most study participants had no or minimal farming experience before engaging in the fibreshed. However, several individuals with farming experience emphasized that they were farmers before they learned about natural fibres. While this path would be typical for members of an agricultural association, it is less so for a member of the Fibershed organization. Yet, they all felt that their farming experience proved beneficial for building network capacity.

One participant, who, "*went into sheep backwards*" (NOP-4) by raising animals long before they learned to knit, realized that their farm skills provided valuable input in a collaborative project designing clothing:

> *I had the opportunity, I was a designer in the Dayton Emerging Fashion Incubator, DE-FI, and so I got connected with these people, other designers. One of the designers was the*

> *teacher down at Hocking College and so we got to know each other. And they're, like you said, they're all focusing on the design part and the finished product and how that's going to be and everything. I'm like, hi, I grow the stuff that you can work with. I was kind of literally the black sheep out there because I was coming from such a different angle than everybody else. And so we had some really great conversations about just working with fiber and when it gets into fabric, how that the breed of sheep makes it drape differently and cut differently and all of that stuff (NOP-4).*

Similarly, an Ontario participant felt that starting their business as a farmer rather than as a fibre producer gave them an advantage that they do not want to overlook: "*I wanted to farm this as a farmer, not as a fiber person, which I think probably gives me a slightly different perspective*" (SOP-1). These participants recognize the value of agricultural education for understanding the nature of the finished product.

However, in the fibreshed, farming experience is less common than fibre knowledge, even though it is considered essential for upholding fibreshed principles. Considering Fibreshed's objectives in building connections between land and clothing, some affiliate producers feel that agricultural knowledge is quite limited among members. As one participant remarks: "*I think that part of the education has been very lacking, and also the agricultural part of the education as well*" (SOP-1). For one study participant, any of the organization's programming offering farm-specific learning would be considered inadequate, given their own extensive farming experience: "*I'm trying to say this without seeming arrogant but like, we are now the experts. You know, like we ourselves don't operate a facility but [we] would be the ones who would be teaching the seminars*" (SOP-7). A participant in Ohio agrees; remarking on RBF's promotional material that was designed for producer audiences, they suggest that it may not adequately honour the degree of knowledge farm producers have by highlighting the ecological shortcomings of contemporary farming instead:

> *[Fibreshed has] a presentation for just the general public, but they also have a presentation for producers about, like, basically agricultural practices that are ecologically sound. I don't know how well that is going here. It's a little, it's a tough audience, honestly. But so, I know that they've had some blowback from producers, and they've changed a little bit of the language they use (NOP-5).*

As a result, the situation becomes as much a learning opportunity for the organizers as their audience. Experienced fibreshed producers, several of whom were interviewed for this study, carry accumulated farming knowledge and a history of witnessing changes in the industry. Consequently, they have a

deeper awareness of the uncertainties of farming and the conditions that can greatly impact fibre quality and farm revenue.

Experienced fibre farmers, however, are limited in the fibreshed. One Ontario participant learned how to process flax fibre by experimenting themselves but also by gathering knowledge from outside the fibreshed network, from older farmers they encountered while demonstrating flax processing at fairs and other events. Most of the present-day knowledge, including what has been inherited, is focused on seed and oil cultivation rather than fibre (MacFadyen, 2018), such as the practice of burning flax straw after seeds are harvested. Without mentors to draw from, hours of field experience are required to successfully farm flax for fibre. Therefore, this participant wonders if "*the knowledge about retting…is that going to be too much for a farmer to learn, to want to learn how to do that properly for the return that they're going to get?*" (SOP-8). The same is true for sheep farmers. This individual believes that many fibreshed players require additional learning on sheep farming:

> *I would almost argue that fibre producers need maybe more education on like, maybe animal care side because generally, they're a smaller flock. They're smaller farms. So, you know, they might actually be less educated on actual sheep care (SOP-14).*

Likewise, a participant in Ohio sees gaps in shepherding knowledge, especially with more people with less agricultural knowledge entering the field and a greater diversity of opinions raised on how fibre is being produced:

> *As things get to be more, you know, green, sustainable buzzwords, you know, policies, politicians, people start to just feel like they know just enough to know the right answers and don't have any experience in what actually it's like to shepherd sheep. Or to do, you know, like for example, one shepherd was telling me about her experience with someone coming in and saying, you can't eat meat, you shouldn't be eating them if you want the certification. And she's like, well, what happens when you have a ram who's gonna kill the other sheep? You know what I mean? Like, these are like the real problems that we do have to deal with. And they're like real issues. And people don't like to talk about that side of it (NOP-6).*

According to these experienced fibreshed producers, the agricultural context of fibre, the learned practices of growing plants or raising animals, is not adequately understood or appreciated by all fibreshed players, thereby putting internal integration at risk.

7.1.3 Social Integration

There are also many examples of collaborative efforts that are predominately socially driven, or that are initiated for economic interest, but the social outcomes become more impressionable. As one participant remarks: "*I don't think you can undervalue how important that social connectivity is in these things*" (SOP-2). The fibreshed vision of drawing community together begins with the bonds forged between individuals. As another Ontario participant shares, "*having a forum where you can discuss ideas and cheer each other on is very good*" (SOP-7). For individuals who have been engaged in the fibreshed for a long time, the feeling of kinship was most apparent when the group was small, and the community was new. One participant reminisces: "*There were very few people back then and we almost had, like, kind of like, such synchronicity, we were all on the same page, we'd finish each other's sentences and that kind of thing*" (SOP-3). The sense of community found in the network is something fibreshed business owners wish to emulate. One network member explains why their business hosts a community textile event each year:

> *I want this to grow into sort of a cultural textile festival, because in every culture, we beautify things. And so that idea of sharing, teaching, showing your own stitching, that's the kind of thing that I want to be developing and enforcing* (SOP-4).

Another participant expresses their joy that their business has become a place that brings people together: "*I think about my brand now, as being a kind of a platform for community collaboration, experimentation, network building. That I mean, this current iteration of [my brand] has felt like the most fully realized*" (NOP-2). Reaching this milestone, they acknowledge that it represents a goal that they did not always have but now feels the most authentic.

There are, however, fibreshed players who feel that the affiliates are only filling a social purpose and that its economic objectives are unrealistic. As SOP-11 affirms, "*I sort of came to my belief that Fibershed [affiliate] serves a social need, but it can't serve an economic need if we are copy pasting out of the Northern California model*" (SOP-11). To elaborate, they describe a typical UCFS gathering: "*They knit, they share stories, they exchange. They make a pot of tea and connect. I think that they connect to each other, and they connect to the land, that's where I see its value*" (SOP-11). The ability of the Fibershed organization to build community is significant. The legacy of the early days of UCFS, expressed by several long-time UCFS members, speaks of shared goals and synchroneity: "*we were all kind of on the same page, we'd finish each other's sentences*" (SOP-3).

Ultimately, it was a "*place to connect with people*" (SOP-3) and a place to share interests and concern about contemporary fibre production and use.

It was a similar feeling for another member, who plays a leadership role in the organization. They realize that their affiliate was effective at bringing together individuals interested in local fibre, particularly when engaging the public on issues of textile sustainability:

> *We really found that what we could do best, given that [another member] and I were both in education, is community projects and community programming, we could also do those with very little capital. And so we found that in our specific fibreshed, what really was needed was education around the piece of where your clothing came from. Because it seems very clear to us that when we started talking about the cost of what would be [a] locally produced sweater, right from our shed, that very many people were just like, well, why would I pay that if I could go to Walmart, you know, or Forever 21 or whatever the demographic is, you know, most people had a cheaper alternative, and didn't understand why they would pay more money. And so we're like, oh, well, maybe if we start at the other end, if we start with the consumer and kind of build the market that way, maybe we'll be able to do this. You know, maybe we'll be able to actually get some interest, garner interest, garner support financially, and, you know, build something from the other way while we're still building up producers and talking to people, but we really fell down the community project way of doing things. So that's kind of how we fell into our roles* (NOP-1).

This consumer side of fashion relocalization is where the fibreshed concept originated, when Burgess first wondered if she could source everything she wore from her immediate proximity. Her intention was to learn, and help others learn, about regional fibre resources. When the organization started, it drew in members of civil society, as the heterogeneity analysis (see Chapter 6) demonstrates. It continues to fill a gap in consumer knowledge, but because the producer side of the picture is less understood, the programming can misalign with producer realities. Its approach to designing and delivering programs, which the above participant described as a "*humanities lens*" (NOP-1), raises the question of if the affiliates are addressing the greatest needs of their members or adapting to particular skill sets among them. On the other hand, producers may be drawn to the humanities focus because it relies on supporting producers. Many producers have experienced the lack of industry associations, either none existing or not feeling properly represented by the ones that do exist (see more in section 7.2.1). In addition, small-scale producers, those on the fringes or unable to tap into larger industry, of which there are many in regional fibre and textile production, are more likely to join the organization, as was evident in the heterogeneity analysis.

7.1.4 Barriers to Social Integration

The disconnect between consumers and producers that is maintained by the global fashion industry also exists within a fibreshed. Most people, for example, do not know the realities of fibre producers who live near them. This disconnect also unfolds in UCFS and RBF with the convergence of urban and rural players. Interview participants who shared their experiences expressed it as a physical, economic, cultural or ideological divide. Rural producers feel physically removed from the centre of the affiliate's activity, despite representing a majority in both affiliates, as indicated in data included in the heterogeneity analysis. One Ohio participant shares:

> *Obviously since they were located and most of them were located in the Cleveland area, they were doing the programs up there, most of the programs up there. And so getting, and that kind of touches back to, is 250 miles too big? Because if I run a farm, I have an off-farm job, there's no way I'd be able to drive up to Cleveland and go to an event, drive home and get everything taken care of that I needed to (NOP-4).*

Financial differences between rural and urban habitants are also evident. Here, an Ontario participant comments on the financial divide:

> *Once you get out of urban areas, you can't even sell eggs for the same price that they're being sold in [the city]. There's such a disconnect and it's nobody's fault, it just is. But it's also very difficult for people in urban areas to get out and people from rural areas to get in (SOP-1).*

Economic differences are often easier to see than cultural or ideological differences. They can also contribute to assumptions about dissimilarities between urban and rural communities. As a result, one group may feel caricatured by the other: "*I think, you know, a lot of people that go into fashion have their idea of [what] farming is, you know, coveralls and a pitchfork and standing out in the field*" (SOP-12). The truth may be less exaggerated, however, with more than six years of fibreshed experience, one participant still perceives "*a lot of cultural disconnect. I'm seeing the urban rural differences, for sure*" (NOP-6). Another participant remarks, "*there's many ways that it can lead to exclusion inclusion for those farmers. And it's already difficult for urban people to tap into the mentalities of rural folks*" (NOP-5). The disconnect is easily visible to those individuals who bridge the two realities. Another network member, who participates in RBF events in Cleveland yet resides in a rural location, describes the responses they have received when discussing their work with members of their rural community:

> *Rust Belt is based in Cleveland, which is a very urban area. We're pretty rural down here. Nobody really seems to know and or care, to be honest about it. Local fibers are still kind of a weird thing around here. I mean, yeah, I've lived in this, near this town my entire life. And so I know a lot of the people here, obviously, there's been a lot of shifting of demographics and everything as far as just whatever. But it's still, people are like, you have sheep? I mean, especially since they know we used to have cattle. And cattle, okay, they can understand cattle. But what are those little funny brown and black and white colored things? What do you have sheep for? What do you do with them? And so, I tell them I'm in a fiber business, and I sell the wool. And they're like, oh, well, you can just go buy that. Yes, I know. I know, but it's not the same (NOP-4).*

This type of reaction may be just as common in urban settings, however, what is striking is that rural producers cannot expect their neighbours to automatically recognize opportunities in regional fibre production just because they know rural realities. As another participant acknowledges, "*that disconnect, and it's definitely a rural urban issue, that's not going to be easy to, you know, break into*" (SOP-12). Even when producers are introduced to the concept of the fibreshed by other producers, there is still hesitancy. Over the years, fibreshed players have tried several ways to bridge the divide. One participant, who is based in the city, describes their attempts to engage rural producers in the fibreshed:

> *Sometimes I meet farmers that I feel, you espouse everything that I hold to be valuable about the fibreshed, but they don't necessarily want to come on board because it's like, there's people out there that don't really think that maybe the fibreshed has the principles that they uphold" (SOP-3).*

After they become more acquainted with one farmer over the years and witnessed them "*[living] by the fibreshed principles*" (SOP-3), they invited them to become an UCFS member, but the farmer joined the *Society for Biodynamic Farming & Gardening in Ontario* instead. For rural farmers, the Fibershed may be seen primarily as an urban organization. This urban/rural divide is not a new phenomenon. As MacFadyen's (2018) research on flax production demonstrates, a disconnect between urban flax promoters and rural producers was present in Ontario in the late 1800s:

> *Promoters and farm scientists tended to endorse the fibre side of flax production, and despite centuries of repeated attempts they almost always misunderstood the crop. They failed to see that the fibre was a mill-directed system, and due to periodic wartime cotton shortages, promoters routinely overestimated flax's viability as a substitute fibre for cotton in light textile manufacturing. The average North American farmer simply had no experience with flax, and when he or she did read an expert's advice, it was often propaganda based on alchemy and outright disinformation. Despite the extensive resources dedicated to its promotion, including programs by US and Canadian departments of agriculture, wartime*

> *rhetoric, and a plethora of media coverage, farmers remained unconvinced (MacFadyen, 2018, p. 5).*

As Gibson's (2017) research on governance demonstrates, rural residents often feel underrepresented or misunderstood by their urban counterparts, and their circumstances overlooked in regional economic decision-making. If outsiders try to give business or regional development advice to rural residents, they will likely be met with a fair amount of skepticism. One participant foresees the outcome when "*young designers from Cleveland*" bring their business plan to their rural surroundings: "*I think they're going to find a tough crowd when they start going farm to farm*" (NOP-5).

As a young farmer with close friends in RBF leadership roles and with several years of farming experience, one producer finds themself in a unique position: "*I'm the farmer's voice in the room in [RBF] meetings*" (NOP-5). In this role, they must reconcile Fibershed [parent organization and affiliates] goals with the realities of farming in their particular locale:

> *The national Fibershed has laid out like all of these regenerative agricultural practices that are part of a requirement to be a part of the Fibershed [organization], which when you try to translate that to Ohio, I really feel like it's alienating a lot of farmers. And I did try to say that in our first meetings. Like, I think it's too soon to start saying that you're going to adopt these farming practices…and so I think, yeah, that's always going to be the issue with non-farmers trying to come in and tell farmers how they should be farming, like to make things better (NOP-5).*

The language used, such as terminology like regenerative agriculture adopted by the Fibershed organization, may be contributing to the disconnect between urban advocates and rural producers. They continue:

> *I understand like, you know…the idealistic view of the California Fibershed. And so when I first started reading through all that, like, like zero carbon or something and thinking to myself, like, I can't even talk to farmers about not spraying their hay field. Okay? Like, I have tried a couple times just to say like, hey, have you ever considered like not spraying? I'm just never gonna do that again. Because it is just not well received. It's just not well received. And so like, I was picturing this topic being tried to be presented to farmers. And I just, yeah, I feel like it's gonna prevent a lot of forward progress to, you know, pound away in this direction is gonna get us nowhere (NOP-5).*

The experiences of rural producers demonstrate that the ideological divide may be the hardest to mend. However, just as the distance to a rural fibre business seems further to urban visitors than rural residents – "*apparently driving to Tamworth is like the ends of the earth*" (SOP-12), this divide may

appear larger than it is. Maintaining the notion of a disconnect may persist even if members of affiliates are able to make headway.

One of the reasons farmers may feel they are on the outside of activities, economic advantages and conversations on climate is because they are less represented in regional populations. According to one participant, "*there are very few farmers in Canada, like it's less than 2% of the population*" (SOP-1). Participants in this study shared their apprehension about regions losing farmers, the rising cost of land and the decline in successive family farming. Feeling the vulnerability of the industry and the precarity of sustaining their livelihood (Hendrickson et al, 2008; Qualman et al, 2018), they may not always have the capacity or the desire to collaborate. According to one individual, "*farmers and producers like have this mix of wanting to share their trade secrets and also protecting their trade secrets*" (SOP-7). However, one study participant, who has been farming for more than fifty years, is reassured by the young farmers and fibre producers they see represented in the Fibershed organization. On the other hand, the reverence younger fibre farmers hold toward established farmers was evident among the pool of research participants. In the process of establishing themselves, new fibre producers encountered a scarcity of fibre farming and fibre production knowledge. As one Ontario participant laments, "*there's not a lot of people to consult on a weaving mill or spinning mill*" (SOP-4). Likewise, an Ohio participant acknowledges, "*knowledge that had been so commonplace in the 19th century [has] really been lost in our time*" (NOP-1). Throughout this study, fibre farmers who have been producing for more than twenty-five years were regularly recommended as interview candidates by the younger fibre farmers, either because they are a minority among members or because of their knowledge on the industry. According to a young fibre farmer:

> *[NOP-9] is a farmer mentor. [He's] been raising sheep for a really long time. So, he's watched the industry. Like, he used to sell wool to the co-op, to the mid-state co-op. So, he would have an interesting perspective because he's been doing it for a really long time (NOP-5).*

Similarly, among Ontario producers, established farmers were recognized as having "*done an incredible amount of work*" (SOP-1) to move the industry forward. Among study participants, established farmers have a reputation among newer farmers and fibre producers, not only because of their extensive experience but also because of their retention in an industry that has gone through a lot of change.

Despite indication of informal mentorships between new and established producers, participants also shared instances where social and economic goals between players diverged, suggesting that the values that led players to the fibreshed did not necessarily align with those of other players. These ideological challenges can persist and prohibit progress toward supply chain integration. Conversely, they can distract from finding industry-specific opportunities for collaboration, such as partnerships between urban textile designers and rural producers as seen in Lowe and Vinodrai's (2020) research on the Carolina Textile District. However, with heterogeneity expanding in the agricultural industry, it has the potential to build capacity in the Fibershed affiliates. Maintaining social goals in the network can foster a space for mutual learning, as long as reciprocity is emphasized so that everyone participates in learning. For example, new producers and urban textile-makers and designers can benefit from on-farm learning opportunities by entering the field open-minded with a willingness to listen to established producers and build relationships that lead to collaborative governance.

7.2 External Integration

In addition to the various forms of engagement within the fibreshed, players also reach out to individuals and groups external to the network for peer support, business development, funding and research. Facing limited financial resources and underrepresentation of the fibre farming industry, fibreshed players seek external partnerships to enhance network skills and opportunities. Their pursuit is also driven by the intention to integrate every step of the supply chain that is integral to the fibreshed design. They seek out mutually beneficial partnerships in interactions with industry associations, adjacent industries, academic institutions, the public sector and the wider community, but as with internal integration, benefits are not always equally shared. A closer look at these relationships demonstrates that players put energy and effort into relationships when they feel reciprocated, which they may feel at a personal, industry or community level.

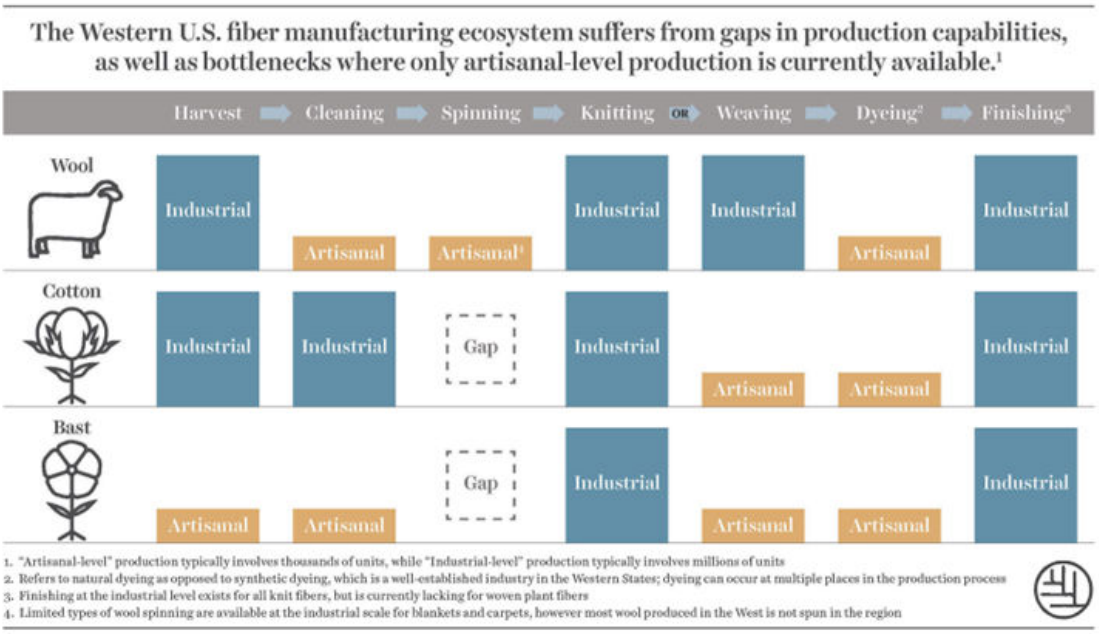
7.2.1 Industry Associations

While the Fibershed parent organization is a non-profit rather than a trade organization, it was established at a time when there were few associations in North America representing producers of bast fibres for textiles. The Canadian Hemp Trade Alliance and the Hemp Fiber and Grain

Association represent both fiber and grain producers in Canada and the U.S. (Canadian Hemp Trade Alliance/Alliance Commerciale Canadienne du Chanvre, 2025; Hemp Fiber and Grain Association, 2025). While groups representing flax oilseed producers exist in both countries, specifically the Flax Council of Canada, which was established in 1986 (Flax Council of Canada, 2025), and AmeriFlax, funded by the North Dakota Oilseed Council, which was founded in 2002 (AmeriFlax, 2025), flax fibre is not currently part of either organization's mandate. Given that hemp and flax are adaptable to a range of climates (Vandepitte et al., 2020) and have wide applicability – including seed, oil, textile and biocomposites – domestic fibre development could be beneficial to other agricultural sectors. At the same time, their textile use could be seen as a threat to their food or supplement use. Without representation in industry associations, fibre producers do not have the benefit of combined support to engage in research, marketing and development of their industry.

Figure 7.1

Current Capabilities of Western U.S. Fiber Manufacturing



Note. From "The Regional Fiber Manufacturing Initiative" by Fibershed, 2025. (*https://fibershed.org/programs/regional-textile-economies/the-regional-fiber-manufacturing-initiative/*). In Public Domain.

Fibershed recognized the lack of support for plant fibre producers and the limited support for wool fibre producers. In 2020, they formed the Regional Fiber Manufacturing Initiative (RFMI), whose mandate was to address the infrastructure gaps in the supply chain of regional fibre production, by attracting entrepreneurs and funds (Fibershed, 2025e). The preliminary research conducted by the group demonstrated major gaps in spinning cotton and bast fibres and limited infrastructural across multiple stages of production in the Western U.S. (see Figure 7.1). Infrastructure inadequacies in the Eastern US was a consistent theme discussed by every producer in the interviews I conducted as well. The research and groundwork of the RMFI led to the establishment of the North American Linen Association (NALA), which was incorporated as a trade association in 2022 to advance the flax fibre industry. One study participant who was on the manufacturing committee of the RFMI and an advisor to their board, recalls the discussions that took place before launching an organization explicitly for flax fibre development:

> *NALA was loosely kind of like, we all agreed there needed to be some sort of umbrella organization or something to bring all these groups together. But [their business partner] and I kind of took that piece when the RFMI was over and ran with it* (NOP-8).

In the area of flax fibre, NALA took over where the RFMI left off, demonstrating what collaboration can look like in some instances. If one group reaches capacity, it can still sow the seeds of a new initiative. The Fibershed organization, subsequently, became one of the founding members of NALA and members of Fibershed affiliates, such as NOP-1, are part of NALA working groups. With a mandate to support the development of commercial fiber flax, bast fiber processing and textile manufacturing (North American Linen Association, 2025), NALA responds to the most immediate needs of the continent's flax fibre producers. On an international level, NALA can also tap into parallel organizations across the globe, specifically where flax farming is established in Northern Europe, creating a "*pipeline*" of communication to enrich regional industry development, identified by Bathelt et als (2004) as a key component in knowledge creation. According to NOP-8,

> *It was the CELC [Confédération européenne du lin et du chanvre] and now it's the Alliance for Flax-Linen, and Hemp. And there, we've met with them multiple times. We've been over and visited mills over there and a lot of things. They've done so much legwork for the industry that we often just point, like we don't have to recreate some of these things. We can just point people to them because they've done so much work. And they are supportive of us over here. I think they want us to be, we all know linen needs to be lifted up. We need more of it. The price has become, it's scaring everybody, but there is also in the back of my mind, we are*

> *kind of direct competition in the market, you know? So there's a kind of a dance there…* [*interviewer's follow-up question: Is that something that you feel or do you feel that there may be some of that coming from them too? Like, if we support you too much, you're competition?*] *...I think it comes from them too. I mean, like I feel, well, I think they wanna be a part of what we're, and I'm making this very global, like the whole group over there, but Europe would like to be a part of what we're doing versus not having any idea what's going on over here. They are the leaders of this industry and they never stopped. They've been doing it. And they wanna help so that we can have quality fiber come into the market. And so if we're gonna get machinery from them, it doesn't help them if we have a bunch of failed projects with their machinery. They want us to be successful because it's, you know. So I feel more support from them than I do, but there is, you can feel, yeah, I think I'm just mindful of knowing that China mostly spins flax. They're not really growing in first stage processing. Whereas we're trying to set up kind of what Europe is doing, exactly. Even with their machinery and their expertise. So I think we're always very mindful of that and how we, like, yeah, how we approach that* (NOP-8).

The above quote captures the delicate balance of partnerships between industry players where the benefits are not always equally shared. Without a standardized market value for flax and limited commercial infrastructure, North American flax fibre producers are receiving support that weighs heavily on trust, crucial for strong governance in networks (Powell, 1990; Provan & Kenis, 2008). Nevertheless, it goes a long way in contributing to the kind of external support required for developing flax fibre production in Canada and the U.S.

Similar to flax fibre producers, when the Fibershed organization began, Ohio and Ontario wool producers were facing a dearth of industry groups that were able to meet their needs. In 2013, wool producers in the vicinity of RBF were served by the Mid-States Wool Growers Co-operative, wool brokers who operated from 1918 until 2023 (Farm & Dairy, 2025). According to one participant,

> *There was a wool producer's organization that would buy the wool from people. Pennies on the dollar, so you weren't getting hardly anything for it. But they never wanted any of the natural color wool. It had to be the white [wool] because they just shove it all together, do whatever with it, and send it on its way* (NOP-4).

Over the last decade, the price dropped dramatically, from 50 cents to a penny per pound (Farm & Dairy, 2025), which is hardly motivation for sheep farmers to put the time into producing quality wool: "if you were just giving them a penny a pound for wool, then what incentive did they have to actually produce good wool? Zero" (NOP-5). Like Mid-States, the Canadian Co-operative Wool Growers (CCWG) began the same year but are still grading and marketing wool fibre today

(Canadian Co-operative Wool Growers Limited, 2025a), though not at the price that Canadian wool producers would like. According to one participant, Canadian wool is "shipping for pennies to China" (SOP-15) even though the fibre, when accessed by wool experts, is deemed more valuable than it is selling for. Producers feel "beaten down by the very organizations that were meant to help them" (SOP-15) and look elsewhere for opportunities to revive the industry. With a fibre-specific mandate and a favourability to small-scale, new or beginning producers, the Fibershed organization "filled that niche" (SOP-2) as the options for them were limited in an industry dominated by meat producers.

Like with flax, the wool fibre industry is overshadowed by an adjacent sector, the sheep farming industry. Ontario Sheep Farmers, the producer-run organization overseeing CCWG, represents all aspects of sheep raising (Ontario Sheep Farmers, 2025) but, as the majority of producers in the province are raising sheep for meat, that is where their emphasis is. As one participant states, "*the meat part has been the driving part of the industry*" (SOP-15). Similarly, in Ohio, the Ohio Sheep and Wool Association, according to another participant, is "*more focused on meat animals and production wool not the small-scale farmers and producers like I am with 24 sheep out there in natural colors, which blows a lot of people's mind*" (NOP-4). According to one participant, who spoke with the General Manager of Mid-States, the co-operative closed because producers were more interested in meat than fibre: "*he blamed it, of course, the closing after 100 years, on the farmers. He said, everybody is crossing these breeds because, you know, they want meat, they want better meat*" (NOP-5). In Ontario, another participant witnessed the same in their region and a corresponding response from industry associations, "*farm organizations like Ontario Sheep, it's not really wool, they're really just meat. Ontario Wool Growers, they don't know a lot about the little guy*" (SOP-2). They go on to explain:

> *I had a conversation with the I can't remember his name, but he was the chair of the Canadian Wool Growers, and I was like, can you tell me about the different breeds that you know of, and do you like Rambouillet? Do we have it? He's like, we don't have any of those in Canada. I'm like, okay, I can give you a list of five producers that I know personally that have Rambouillet* (SOP-2).

With large mandates, expansive operating areas and the majority of the members representing another sector, these associations, like the Flax Council and AmeriFlax, cannot currently serve fibre

producers, at least, according to them, not sufficiently. The small-scale producer has an especially hard time feeling represented. For example, one participant remarks,

> *Canadian Cooperative Wool Growers, our national wool broker that's existed for 104 years, has in their bylaws that you must be a farmer, and you must have sold them 100 pounds of wool minimum in the previous year in order to qualify for their board* (SOP-11).

Small producers, who are likely to benefit most from resource supports have more difficulty integrating into governing bodies. Yet, they do not usually have the capacity to collaborate with other small producers to start their own organizations. As a result, they continue to put time into building relationships even when, with limited staff and revenue, they may not have a lot to spare.

Some established organizations may be more receptive to broadening their membership. For example, the National Farmers Union (NFU) is well-positioned to advocate for smaller producers as a grassroots organization representing farm families since 1969 (National Farmers Union, 2025a). As their mandate is the promotion of agroecology and food sovereignty, they may be considered more progressive in the industry than other groups. This year, they published a video series profiling member families highlighting Black, Indigenous and Queer farmers across the country (Natural Farmers Union, 2025b). One participant spoke about their experiences attending NFU's annual convention this year, being one of the only fibre producers present but feeling the responsiveness of the organization to support small, young, new and underrepresented farmers:

> *It was really interesting to me to be at that convention, and talk to all these farmers, and even seeing how the landscape of farmers are changing, and, like, an organisation like the NFU that's been around for over 50 years now, I believe, how they're even evolving, and changing, and looking at the policies that they're putting in, and they're even having a more, it's a holistic viewpoint that they're bringing into, so the policies and the resolutions. And the things that we talked about wasn't just, okay, well, who can graze where, but it's, like, what about our climate action policies? Having conversations on farmers and whatnot in Gaza, and having those conversations, where do we stand on this? More political than they ever would have been, right? And that was really interesting for me to see, and just having such a strong youth caucus as well* (SOP-9).

In addition to the Youth Advisory Committee, which has been operating since NFU's inception and maintains two positions on NFU's board, the organization also consists of a Women's Caucus and a BIPOC Caucus, which was established in 2020 and accompanied by an amendment to the NFU's constitution, requiring two representatives from the BIPOC Caucus on NFU's board as well as a minimum of one representative on the National Executive Board of Directors and on each of the eight

Regional boards (National Farmers Union, 2025). For the NFU to expand their mandate beyond food, to fibre, would support fibreshed players, not only in Ontario, but across Canada.

7.2.2 Adjacent Industries

With its soil-to-soil emphasis, the fibreshed design requires the integration of players along every step of the supply chain, from seed or livestock suppliers to those managing textile waste. Moreover, fibreshed advocates contend that a holistic approach to production also necessitates collaborating with non-textile industries to maximize use of the entire plant. One participant explains why partnerships with industries outside of textiles is part of their goal:

> *To be very mindful that so much of the plant does not go towards fabric and there's all these other industries, composites, building materials that are quite large. So we're definitely trying to put more effort in our messaging of how we bring in more of a complete picture of the whole chain* (NOP-8).

The fibreshed approach means widening the lens to look beyond the fibre-to-clothing supply chain, to new areas of collaboration and to individuals and groups with skills outside of the scope of fibreshed players. Business development typically involves enlisting external consultants, which a number of study participants indicated doing when starting their own companies. As one individual shares:

> *I did call in, I think there were about half a dozen different people, some who had textile experience, some who maybe business. I was working with a hand weaver, you know, somebody who plants flax but has business, you know, experience* (SOP-4).

Drawing on external expertise, according to another participant, is crucial because it can disrupt the homogeneity of skills in a network: "*we need to hire people who can help us, who are not from our immediate circle*" (SOP-5). However, branching out even further was emphasized by a number of fibreshed players. For example:

> *What I think will be interesting is some of the connections said between, like literally different industries. Besides food, some of the other initiatives is, like I want to talk to manufacturing people. I want to talk to the chemistry people. Things I know nothing about, but I know you're going to know about. You're going to know other things that I don't know, but here, try this. I think that's going to be really interesting* (SOP-1).

The growth phase of the fibre industry allows for this type of research process, but it is also constrained by minimal resources. Finding commonality among bast fibre industries, because of the similarities in agricultural practices and processing infrastructure (Chen & Lui, 2010; Vandepitte et

al., 2020), can combine efforts in research and development where resources may be limited. For example, flax producers can gain insights from progress in the hemp industry, which has been steadily garnering public sector support and recently received a "*massive injection from the Quebec government to process hemp fiber*" (SOP-11). Lessons learned from the offshoring of industry and the loss of equipment during the 1980s has taught producers to be deliberate about rebuilding infrastructure, as they consider whether to purchase machinery from manufacturers in Europe or build the equipment domestically. Here too, collaborating with producers in other regions can inform their decisions. One study participant, after years researching the industry and now serving as industry strategist for NALA, sees a combination of bought and built equipment as the most feasible solution for North America. They recount that much of their work to address flax fibre's infrastructure needs has been spent developing partnerships: "*A lot of it has been just us building the relationships with machinery manufacturers in Europe*" (NOP-8). Networking, in this respect, is not only performed inward to enhance the skills within a network but also extended outward, to develop ties to peripheral players that can create short and long-term opportunities.

Consistent among all fibreshed actors is the recurring need to look outside the network for funding. The "*greatest needs is always money*" (SOP-4) was a sentiment shared by more than just one individual, and securing funds by appealing to private investors is one way to address the limitations with grant program criteria. As indicated in section 6.2, in the U.S., the Fibershed parent organization's non-profit status does not automatically transfer to affiliates. After NOP-8's experience facing this constraint while steering the affiliate, they made the decision to incorporate when starting their own flax fibre-based venture:

> *We officially launched [our business] as an LLC in 2017. And then last year we transitioned from an LLC into a corporation. So we've been- Yeah, and that allows us to raise, do more fundraising or different types of fundraising and just kind of, we were finding an LLC had a little bit of a ceiling of what we could do* (NOP-8).

While in Canada, even though UCFS is its own non-profit organization, members of affiliate boards found it difficult to categorize themselves to fit sector-specific funding programs. As one participant explains:

> *As a not-for-profit, there is no product, right? Like, it's a decentralized network that you're supporting. Other people's business. Yeah, so it's such a hard pitch. We don't really qualify under an ag grant because we're not really ag. We don't really qualify under an Ontario Arts*

> *Council grant because we're not an arts group; we're an ag group. We couldn't figure out where we fit in any of those things or what language to use* (SOP-2).

Furthermore, there are few options for capital funding. The equipment cost for farming and processing fibre is just too high for most grants or they pay retroactively. SOP-1 describes the dilemma:

> *I need a piece of equipment that's $50,000 to just start and then I have to start testing it because it hasn't been done before here. Like that's a much longer term and that isn't really, it's not really seen in the funding landscape and I've heard this through all sectors of manufacturing…there are a bunch of systemic barriers within the system to stop a lot of this, even the ag funding. So there is ag funding out there, but you have to pay for it up front. So if you want to improve something, if you want to have a new idea, it's like, oh yeah, okay, we'll do a 50% cost share. You still have to pay for it all up front. You show them an invoice, and then you get it back six or eight months [later] (*SOP-1).

As a result, grants are not often a viable option: "*from a farmer's perspective, is like you know what, if I could have paid for it up front, I would have, and I wouldn't have asked you for money in the first place*" (SOP-1). A participant in Ohio faces similar circumstances:

> *Grants don't fund capital. But that's what I would say is like the conundrum that we're facing right now is just like, how do we get capital? And then when we don't have necessarily the research to back it up, and we would obviously need that first* (NOP-6).

This problem propels affiliates to look to private investment instead. As one individual shares:

> *I would love to take a model that is, in my observation, more American, which is, I would love to find private investors who can help us establish an endowment, the fund, the interest of which we can use to fund our operations. I would love to have like $50 million in the bank, you know, or $10 million in the bank. And, you know, that's being managed for us. And interest, and that's our annual budget* (SOP-5).

What affiliates are looking for is expertise in finance and investing, not only the funds, so that they can dedicate their time and energy to developing products and services. Part of their education mandate, therefore, is in "*educating [their] investors*" about the Fibershed organization and its producers. Several fibreshed players have already had success with the private investment model. According to one individual, "*last year we were able, we brought in two investors*" (NOP-8) and in RBF, there is potential for more as awareness and interest in the fibreshed grows. One Ohio participant shares details about the relationships they are building with investors:

> *They're outside investors who are interested in working with brands and farmer. We have some like vacant spaces in Cleveland because, you know, it's a rust belt city and there's some,*

> *you know, just vacant buildings. And so people are interested in, you know, remodeling those and reusing those for some sort of mill work and workshop spaces and that sort of thing… [interviewer's follow-up question] …They are investors. So, like foundations and people who would like to see this sort of thing happen in our area but are not in the industry* (NOP-1).

Affiliates continue to look for creative ways to engage outside investors to support the developing fibre industry.

7.2.3 Public Sector

Despite the limitations of government funding programs, several fibreshed players have successfully received grants. One Ontario participant has been the recipient of provincial government grants, in addition to funding from a group of business owners in their region:

> *Because I'm in the north, I can apply for Northern Ontario Heritage Fund equipment funding. So I was able to get some grants to reimburse part of the equipment costs. And that's been incredibly helpful. I've won an award. There's the Founders Awards that different communities have. And so I won a $10,000 award there and then a few other organizations [from] which I've gotten smaller grants. And I'm now even working with some of the government programs to reimburse sort of apprenticeships. They aren't apprenticeship programs, but internships I guess is what they call them* (SOP-4).

Another Ontario participant was funded by Circular Opportunity Innovation Launchpad (COIL), an accelerator funded by municipal, regional and federal government agencies (City of Guelph, 2025), supporting circular enterprise in the food and environment sectors. SOP-1 explains how the partnership allowed them to purchase equipment for processing waste wool:

> *It wasn't actually until COIL came up, which is the Circular Opportunity Innovation Launchpad out of Innovation Guelph. So it's very much about circular economy. So instead of saying manufacturing, it's now a circular economy and circular manufacturing. They recognized that wool was a waste product, not necessarily a textile, so they were actually they, I got grants, frankly, to buy this equipment. I couldn't have done it otherwise* (SOP-1).

Similarly, the company where an Ohio participant works, has partnered with an organization funded by the state:

> *I would say, in terms of government focus, there's huge tax breaks being offered and certain levels of funding. And then with Ohio in particular, there's quite a few like manufacturing incentives. It's a lot of, there's Magnet, which is a capital growth fund that's specifically for Ohio manufacturing that we've formed a relationship. And they've been super, super excited about soft goods and eager to invest in textile production* (NOP-3).

These players have been able to successfully secure funding for capital costs. However, as another Ohio participant explains, "*most of the grants really focus on, you know, how many jobs are you creating?*" (NOP-5). As a result, they have been working with a non-profit organization, Lattice, whose mandate is described here by NOP-3:

> *Lattice's function is as kind of a fundraising body and that focuses on the natural fiber ecosystem within Cleveland. And the long-term goal of Lattice is actually to build a nonprofit manufacturing facility that will be making, we'll be processing wool, hopefully processing bast fibers as well. And then from raw materials to finished goods, we're attempting to make a nonprofit vertically integrated production facility that will be located in Cleveland* (NOP-3).

For NOP-5, who is already in the process of establishing a mini processing mill on their property, collaborating with Lattice has allowed them to adapt to available funding:

> *Jobs Ohio is a big funding source and they are eager to bring manufacturing jobs back. The only issue with my mill and those grants that are available, which I think that's where Lattice comes in to help me with stuff. I'm not, the mini mill is going to be me and my partner for a little while and we'll be hiring one other person to work on the mill. It's not like a lot of jobs…And so, what the benefit of partnering with Lattice is, is that they're using it as like a scaling up to, you know, a lot of jobs* (NOP-5).

If fibreshed players can find government funding opportunities, they often first need to establish creative partnerships with other individuals and groups in order to acquire them.

Participants have also made progress engaging with public policy development. Despite the limits to lobbying capacity, as identified in section 6.2, Fibershed in California was able to provide input on the Farm Bill by forming a partnership with Sustainable Agriculture and Food Systems Funders (SAFSF), a member association supporting foundations, investors and other funders of sustainable agriculture (Sustainable Agriculture and Food Systems Funders, 2025). One study participant was also able to contribute to the development of the Farm Bill, once they incorporated their business venture as a trade organization and acquired permission to lobby:

> *And that's another reason being a 501c6* [trade organization]*, we have the ability to [lobby]. And there's a lot of discussion about that right now. We did a lot of work on the farm bill. [Business Partner] and I spoke at legislative sessions* (NOP-8).

In addition, the NALA board which they are part of, have been advocating to the U.S. Department of Agriculture for changes to flax's categorization, from a grain crop to a specialty crop: "*things like that, like changing that could open up grants. It opens up, you know, definitely a lot of work on that*

for sure" (NOP-8). By demonstrating their expertise in the industry, fibreshed players can build the kind of cross-scale linkages outlined by Carlsson & Sandström (2007) that are instrumental in creating and shaping public policy that will support the management of overlapping fibre regions and extend an impact beyond their particular fibreshed.

7.2.4 Academic Institutions

As outlined by Gibson (2011) and Keast (2022), the integration of private and civil society, and the pursuit of partnerships with public sector, education institutions and other non-private organizations is common in governance settings. With academic institutions in particular, fibreshed players have been building relationships for the purpose of research and student internships, which indirectly contribute to research and development. As one participant emphasizes, colleges and universities have the financial means to conduct the research that fibreshed players need: "*I think the biggest strength that Fibershed [affiliate] needs to lean into right now is partnerships. We don't necessarily need to bring our own funding. There's people who are bringing it into study exactly what we're trying to do*" (SOP-10) For example, one individual, who has been contributing to both the Ontario and Quebec fibresheds, has received research support from a professor at Université du Québec à Montréal (UQAM) on a fibre garden project in Montreal: "*there is a lab run by [professor] and she was really helpful, like, I love working with her. And they came out and they helped by doing soil tests*" (SOP-9). Similarly, an Ohio participant shares details of the research collaboration between their affiliate and academic researchers:

> *We've partnered with a couple research facilities, professors to look into carbon farming practices and, you know, soil tests for mitigation for chemicals for growing flax. Does it remediate the soil, that sort of thing. And we're just in the process of those tests. But I'd like to do more of that, because it feels like we have like a couple, you know, a couple interests from professors who want to take on some students and do that* (NOP-1)

Another participant collaborated with an institution to test the development of fertilizer pellets from wool waste: "*our first thing is the fertilizer pellets, which we're having lab tested and we're doing testing. We're doing a growth trial with Brock University*" (SOP-1). NALA, which operates across the continent, partnered with Oregon State University (OSU) to conduct seed trials:

> *They have like an organic research farm. That's where we started growing our trials for varieties and stuff. And then we also work with a seed breeder who was a professor at OSU. She just retired last year. So we have a lot of connections and work with them pretty closely…*

> *[interviewer's follow-up question] …they definitely supported us in getting going and kind of continue. The OSU has a lot of seed breeders and OSU has the Hemp Innovation Center that they recently did. And so, we're slowly talking with them a lot because there's a lot of parallels with hemp and flax and how it's processed and certain parts of the chain, there's a lot of overlaps. So, we're working a little more with them* (NOP-8).

In Ohio, a fibreshed producer has been putting in the initial work for students at Kent State to "*start prototyping Ohio raised Ohio spun sweaters*" (NOP-2). They explain further:

> *As far as my prototyping goes, there's no official partnership. But every semester, [my brand] has three Kent State fashion interns. And they have helped me program the Stoll machines to prototype. You know, I worked with interns to reach out to all of these farmers to source the right wool for the project we imagined, and then to prototype that sweater on the machinery at Kent State. So that's where we are now. I'm kind of sitting on some of those prototypes at the moment and trying to figure out how best to pursue producing those designs in small batches* (NOP-2).

According to one of the farmers who provided the wool for the prototypes, "*The fashion department at Kent State had received a grant to help entrepreneurs in the fiber industry locally. And so I actually spun up some yarn to give to Kent State to try in their Stoll machines*" (NOP-5). Students are also given the opportunity to intern directly with the affiliate through the RBF Student Ambassador Program. As one participant explains, affiliate members reached out to professors in the School of Fashion to gauge their interest in the RBF and share their vision for an internship program. The first year was spent sharing the fibreshed concept with the professors so they could promote the opportunity to students:

> *We trained the professors first because then they knew how to speak to it when they were kind of marketing it to their students and people on campus with questions. And then they put it out to their students. And then now, you know, for the second year, the professors can step away, and it's just a student organization. And we train the students to be able to talk about it. Like I said earlier. It's a year long, and the first semester is, and we're only in year two of this pilot program, but the first semester is training and experiences. So, you know, we go watch a sheep shearing, we do some mending, we do some natural dyeing, that sort of thing. And then the second semester is they have the opportunity to put a project together* (NOP-1).

While the collaboration with Kent's School of Fashion is the most developed, affiliate members explicitly designed the program to be interdisciplinary:

> *The way that we built it was actually to break down any silos of majors, so that while the majority of kids that do it are fashion majors, we had an interior designer in there, an engineering major last year, an architectural major. And we even had an aerospace engineer* (NOP-1).

This type of programming is not yet established with education institutions in Ontario, however there are some initial developments. Like NOP-1, one Ontario participant sees the potential in sharing the concept with educators to get them interested in integrating it into college and university programs:

> *[Sheridan College] had approached me to be an advisory thing for a sustainable textile program that they're going to be teaching. Humber's been in touch, you know, a lot of the schools would be, certainly be interested because they are now starting to look at what the fibreshed is* (SOP-4).

From the perspective of one participant in academia, they want to hear from regional fibre and textile producers: "*We're really trying to say, all right, what do you need industry?*" (NOP-7), in order to design and deliver education programs that align with industry needs.

7.2.5 Wider Community

Fibreshed players also engage in conversation and in active work with community members. In fact, facilitating programing that integrates the community is part of the mandate of the Fibershed organization. Activities such as mending circles, harvest days and community dye projects invite the general public to participate in fibre production. For example, the Rust Belt Linen Project, a flax plant-along draws in community members, either to grow flax or help with the harvest. Participants in the flax-to-linen project come with a range of experience:

> *Some have already been a part of other [RBF] projects and others are new and learn about RBF through the project. The participants have diverse backgrounds and a range of growing experience or none at all. Participant's geography also varies. We have participants from both rural and urban spaces* (NOP-10).

If an individual signs up to grow flax, the affiliate provides them with seed, training on farming and processing techniques, and assistance with harvesting:

> *They sign up for the project and we take them through. We talk about like soil techniques. We talk about solarizing their soil. We talk about input. And so there's a seed saving component to it. So there's a lot of like environmental, you know, ecological education tied into it as well. And then there's like community building. So we have like potlucks and flax processing days and that sort of thing as well* (NOP-1).

In the 2024 season, the Rust Belt Linen Project involved more than 50 individuals and groups, including schools, museums and research and education centres across Michigan, New York, Pennsylvania and Ohio (Rust Belt Fibershed, 2025f). Since there is no limit to plot size, RBF provides the supplies and support is available, there are few barriers to participation: "*It's something*

that anyone can do at any scale. And so we don't cap the scale. We don't do like a square yard or anything. Some people grow, you know, four square feet and some people grow 400 square feet" (NOP-1). Similarly, participants of the plant-along hosted by UCFS were growing flax on a range of plot sizes, from backyard lots to half acres, and consisted of both affiliate members and non-members. However, the 2023 session, the first and only session the affiliate has run, was virtual, which improved accessibility for some and limited it for others, and there was a fee to participate, although an audit-only option was also available. The opportunity, therefore, centred on shared learning rather than shared labour.

These projects emphasize community engagement, where the opportunities to learn are valued as much as production, sometimes even more so. The One Year, One Outfit project is another example. This RBF initiative is supported by the Rust Belt Linen Project, since designers use the harvested fibre to create garments. Participants are asked to design an outfit completely from materials found within their fibreshed: "*many outfits are created in partnership with other members of the cohort and with farmers, fiber guilds, community gardens, and/or local art studios*" (Rust Belt Fibershed, 2025d). The dye phase of fibre and textile production, in particular, is an ideal occasion for collaboration, given the nature of the process. One fibreshed initiative, Praxis Fiber Workshop, a weaving studio in Cleveland, launched a dyeing co-operative last year, of which one study participant is a member:

> *They're raising indigo on a vacant lot nearby and they've developed an indigo co-op where we're now, you know, harvesting the indigo together and now sharing an indigo vat and they have plans to expand that program* (NOP-2).

Sharing dye vats is cost-effective for artisans and if the activity is organized into a community event, it can introduce the craft to outsiders. One Ohio participant, who has been hosting dye days on their farm for decades, recently partnered with RBF to welcome fashion students to participate:

> *I built burners and stainless-steel pots and we would have a dye day a couple times a year and people would come to our farm. We would put out a big shed and they would, you know, sort of pick the tables and they would come and go* (NOP-9).

Similarly, an Ontario participant has also been able to engage community members in the production process, including several individuals who volunteer on a regular basis. They explain how community members have contributed not only to business operations but also training new volunteers:

> *Something else that's been a godsend is that I have had a few senior volunteers. And so, skills that people have been accumulating all of their lives….and so I've had the benefit of four different seniors on almost a full-time basis. So, putting together equipment, making parts for the old equipment, building rooms and booths and things like that, dyeing, starting our dyeing program, starting our felting program. So, these are textile artists that have incredible skills and a lifetime of experience. So that's been a great help. So, we've got young people coming in that we're training and we've got seniors holding down the fort and training and having a whale of a time. They don't have to worry about anything. They can just come and work and play. So it's really been a lovely mix* (SOP-4).

Despite being located more than two hours from a major city, they receive daily requests for tours of their fibre processing facility, during which individuals and groups can witness the extent of community involvement. They also host an annual textile festival each summer, which finished with a fashion show displaying participants of the inaugural Ontario Wardrobe Challenge this year. Similarly, the One Year, One Outfit project culminates in an art show, hosted by rotating galleries across the region, and provides an opportunity to introduce the wider public to RBF and the concept of regional fibre and textile production:

> *The project ends with a gallery show, which is really fun because people get their name up on the wall and they're like, you know, they're an artist in a gallery. And it's really another really cool installation and a great educational opportunity for people* (NOP-1).

In addition to special events, the affiliate hosts an online platform, a space to discuss anything related to regional fibre and textiles, that is open to both members and non-members:

> *We have actually a whole community platform that we use, which has been amazing, because you were talking about [another affiliate] kind of fielding emails and saying, you can buy from this person, or who can I buy cloth from, you know, and we have this platform called Circle where anyone, you don't even have to log in, but anyone could kind of go there. And check out. Like a forum. It's kind of like a Facebook page but with no ads and no algorithm. And people can post mending swaps up there. And they can post, you know, anything that's happening in their community. And, in my opinion, for our size community, there's about, maybe 250 people that use it, which I feel like is a pretty good number* (NOP-1).

Another example of an ongoing interaction is the avocado pit drive organized by another study participant, who has found a way to engage with their community on a regular basis, by soliciting their help in gathering dye materials. They partnered with a local business to collect the materials which they can use to dye the clothing they produce:

> *We set up a basket with a local, you know, sandwich shop, and people are bringing in their avocado pits, and then they see that we use their pits to make, you know, blush pink t-shirts.*

> *We've done experiments like that over the years, and people are really proud to be a part of that* (NOP-2).

The opportunity to engage with the public, whether they are customers or not, has been one of the most fulfilling aspects of their business:

> *In the last few years, I've worried less about kind of screaming into the void, worrying how people out there abstractly might perceive our brand, or, you know, how we're producing clothes, or what words we use to describe how we produce our clothes. And I'm focused much more now on working directly with people in my community. And in that way, my work is finally reflecting what I've wished for, for years and years, but always had a hard time achieving was that, you know, I can spend all day talking to, you know, my own team internally about what to put on the website, and how people might perceive it. Or I can, you know, go work with Rust Belt Fibershed to co-host the community dye pot, and talk directly to people about what they care about and what's exciting them, and what, you know, is turning them off in the industry. And that way, I've been able to not only get my customers more excited about what we're doing, but I'm actually getting myself more excited. Because, you know, without working directly with my community, and my potential customers in kind of co-authoring this movement, this, you know, we make our clothes here, we make it together movement. It makes the whole project feel much more important than my own, maybe, whatever, my own selfish drive to make clothes, you know, and make a profit* (NOP-2).

For this participant, a collaboration, whereby community members contribute to the conversation and to the work of fibre production, is much more rewarding than the typical more one-sided approach to doing business. As seen here, new farmers, young farmers and urban textile producers engage with consumers more easily than more established and rurally situated farmers, at times collaborating with them directly in fibre cultivation and textile processing.

7.2.6 Concluding Remarks

Fibreshed players are building relationships, internally and externally, which are shaping the direction of the fibreshed. Knowledge sharing within the network leads to economic opportunities, however collaboration is affected by the variation of experience among members and the minimal representation of experienced fibre producers in the network. Similarly, social integration is impacted by the different contexts of fibreshed players. In particular, network heterogeneity, such as differences in players' education, industry experience, location and income, create challenges to internal integration.

In terms of external integration, efforts by fibreshed players have led to better representation by an industry association specific to flax fibre, more capacity to attract funding, increased research

through academic partnerships and deeper embedment in the wider community. However, this analysis reveals the network's limited capacity regarding access to public and private financial resources. Low sectoral heterogeneity provides fewer opportunities for fibreshed players to integrate with wider industry as well as with individuals and institutions in the public sector, diminishing their capacity for external funding and research support.

Chapter 8
Conclusion & Recommendations

Before summarizing this study's contributions to theory and practice, I first revisit the research questions to consider how this work builds a better understanding of fibresheds and fibreshed governance. As elaborated on below, this knowledge informs future research, not only in regional fibre systems but also in other regional based production systems, by contributing to theories on how network players navigate the social dimensions of regional governance and proposing specific ways to refine the research tools. I then address how the results can be applied to the fibreshed network by providing specific recommendations to fibreshed practitioners on how they can expand capacity and impact while pursuing community-minded goals within the limits of their current available resources. Lastly, I put forward two potential areas of future research.

8.1 Revisiting the Research Questions

This study explored the organization and governance of fibre production in two regions in North America using network governance theory and ideas on region and place from the field of fashion, sustainable fashion and regional development. Interviews were conducted with 25 key players in regional fibre and textile production in a comparative case study to answer the following questions:

1. **How is a fibreshed defined?**
2. **How is a fibreshed organized and governed?**
3. **How can a fibreshed contribute to sustainable fashion?**

The answers to these questions illustrate that fibresheds are physically and socially determined spaces which are governed by private and civil actors, whose engagement and interactions are directed by personal attributes along with the conditions created when these features come together. The study's response to each research question is discussed in more detail below.

8.1.1 How is a Fibreshed Defined?

The results of this research are consistent with Burgess and White's (2019) conceptualization of the fibreshed as a means of relocalizing fibre and textile production, by demonstrating that it modifies the

scale of conventional fashion production by supporting manufacturing that is attuned to local resources and capacity and emphasizing the agricultural context of clothing production. As seen in Chapters 5 and 7, fibreshed players reduce the distance between producers and consumers and empower citizens to participate in fashion production in ways not permitted in the global fashion industry. Product marketing (see section 5.3) and consumer involvement (see section 7.1.1 and 7.2.5) reveal that the fibreshed fosters connection with a place, its inhabitants and resources, to develop care for it, and it draws attention to the origins of clothing and the people and processes involved in production.

However, the results also reveal the social factors that are influencing and influenced by the regional scale which challenge the emphasis that the fibreshed places on physical boundaries. When the network parameters are modified by its users, as in the case of UCFS when they renamed themselves the Ontario Fibershed, it demonstrates the instability of regional designations whereby boundaries can be adjusted despite significant differences in geography and identity. The network can be defined and redefined by the personal circumstances and relational experiences of the players and thus the model is configured differently in each region according to the needs and goals of participants.

Moreover, the fibreshed is also defined by players' engagement with the social constructs operating in the space. While the fibreshed provides opportunities to confront and reshape these constructs by emphasizing the value that is placed on producers (see section 7.2.1), the region is not insulated from its external environment. As such, power dynamics and inequalities persist and affect access and opportunities differently across a region's population (see section 4.4.3 and 6.1). In other words, as an alternative to the global fashion industry, the fibreshed is not detached from it, by nature of the relational aspects of a globalized world and its interconnected citizens. Therefore, the care of place espoused by the fibreshed includes attention to land and fibre, as well as attention to the ways people engage with these resources and the political and economic factors that impact their development. Fibreshed players acknowledge the global context of regional decisions when they commit to anti-colonial education (UCFS Strategic Planning Committee, 2021) and implement inclusive membership models (see section 4.3.1).

However, these steps are incremental, and fibreshed players acknowledge that the network still has barriers excluding individuals and groups. Moreover, the local/global binary of many regional models (Khan, 2021) exists in the fibreshed, as evident in the tension that fibreshed players face when distinguishing their fibre region and strengthening economic and social ties with other regions. As a result, the fibreshed has not fully embraced a 'more than local' (Khan, 2021) approach, which would ensure that *care*fulness for what is known and valued by one individual does not disrupt what is known and valued by another.

8.1.2 How is a Fibreshed Organized and Governed?

As discussed in Chapters 4 to 7, the following features guide fibreshed players in governance, including the nesting of affiliates within the larger Fibershed organization (Chapter 4), guidelines on membership, boundary and scale (Chapter 4), multiple operating functions (Chapters 5), individual attributes (Chapter 6) and integration points (Chapter 7). In practice, players must contend with the relational aspects of these features, including modifications to network parameters, conflicting agendas, ideological divergence and economic discrepancies. These findings and their implications are summarized in Table 8.1.

As illustrated in Chapter 4, the Fibershed parent organization provides governance guidance, while the affiliates organize and manage members and programming in each fibre region. The convergence of members of Fibershed affiliates and non-members, such as former members and supporting players, along with the recent changes to the membership model (see section 4.3.1) create ambiguity between members and non-members yet align with network goals of improving accessibility. Removing the membership fee, in the case of UCFS (Ontario Fibreshed, 2025b), and continuing to offer free-to-community events, in the case of RBF (Rust Belt Fibershed, 2025a), indicate that affiliates seek to improve accessibility. Like membership guidelines, regional players contend with additional structural aspects, including boundary and scale, demonstrating the tension between clear delineations required to adhere to the network's regional identity, market products and build local capacity and the relational factors that muddle these delineations.

In addition, the results illustrate a decentralized network, where the affiliates represent a range of producers in different agricultural sectors. As domestic fibre production continues to grow, the efforts of the Fibershed organization provide the groundwork for establishing fibre-specific

associations to support producers, as is the case for North American flax (see section 7.2.1). In the meantime, producer representation in the leadership of the Fibershed organization is crucial, and wherever possible, sector-specific representation. If structures are in place to capture their input and feedback, then governance practices can respond more effectively to stakeholders' needs.

Table 8.1

Summary of Research Findings

Governance Dimension	Key Findings	Implications
Network Structure	• The fibreshed has a regional identity (Burgess & White, 2019; Thackara, 2019; Whitty, 2019), however, Fibershed affiliates contend with the following points of tension: 1. Identity in relation to parent organizations 2. Ambiguity between members and non-members 3. Shifting territorial boundaries 4. Limitations to cross-boundary collaboration 5. Resistance to regional scale	As a physical and social space, the fibreshed is multi-dimensional and thus requires a moderate perspective (Jones, 2004; Varró and Lagendijk, 2013).
Operating Function	• The Fibershed and its affiliates are network facilitators and educators who promote regional fibre and regional fibre producers through education. • The organization's multi-directional operating function predominately serves consumers over producers, hobbyists over professionals and the goal of building community over establishing a regional fibre economy.	The Fibershed organization contributes to sustainable fashion through education. Alignment within the network impacts the operationalization of its goals.
Heterogeneity	• Heterogeneity is increasing in the fibreshed network. • However, sectoral heterogeneity is limited. • Players are motivated by economic and social goals.	The heterogeneity analysis confirms the findings of Benedum & Becker (2021) Höhler & Kühl (2018) Peltier et al. (2024) that heterogeneity is increasing in agricultural networks.

Integration	• Fibreshed players integrate for economic and social benefits.	Internal integration is impacted by increased heterogeneity. Low sectoral heterogeneity limits the extent of external integration.

As Chapter 5 indicates, the primary mandates of both affiliates are education and economic development. While they are not mutually exclusive, more attention is currently being paid to educational initiatives. Marketing and programs are delivered with more focus on changing consumer interests rather than responding to producers' needs (see section 5.4.1). In addition, UCFS leadership has designated education for members as part of their mandate, but general members do not fully support this goal. Player's personal contexts and capacity impacts the setting and implementation of the operating function, as evidenced by Chapter 6. Specifically, the analysis confirms the findings of Benedum & Becker (2021) Höhler & Kühl (2018) Peltier et al. (2024) that heterogeneity is increasing in agricultural networks which, as demonstrated in Chapter 7, impacts integration between urban and rural players, new and established producers and hobbyists and professionals. At the same time, external integration is affected by low public sector representation.

8.1.3 How Can a Fibreshed Contribute to Sustainable Fashion?

While the mandate of Fibershed affiliates is to promote regional textile economies (see section 5.4.3), the interview data demonstrates that the specific contributions to sustainable fashion cannot be fully conceptualized. Constrained by limited data on the ecological effects of regional production and consumer perceptions of it, network players nonetheless detected increased consumer awareness and opportunities to improve supply chain transparency through fibreshed development, suggesting an impact on shifting cultural understandings on fashion production and consumption. While it was difficult for study participants to pinpoint the exact contributions to sustainable fashion, the results reveal that the network invites players to engage in a process of self and collective learning about the social and ecological implications of the clothing they wear.

When considering how the fibreshed contributes to sustainable fashion, it is important to reiterate what was raised in Chapter 2, that the environmental benefits of regional production systems are still being debated. While this study reinforces the individuality of regional decisions in

determining the degree of impact, the fibreshed's contributions to ecological sustainability, such as on soil health or climate change, cannot be confirmed or measured without more research and data. Currently, this gap limits the extent to which producers are able to detect the environmental outcomes of their business decisions. However, many of them recognized a shift among consumers. For example, several famers remarked on witnessing a changing consumer consciousness over time, including increased familiarity with regional products and less resistance to prices that were set higher than conventional products. One study participant in Ohio acknowledged that producing and marketing regional products allowed them to be more transparent with their customers about costs and supply chain risks (see section 5.3).

The evolution in consumer response and expanded opportunities for increased transparency contribute to a changing cultural landscape regarding regional production. As local food initiatives have shifted the narrative on consumption practices, for example by normalizing seasonal eating, individuals have become more attuned to production inputs and outputs and the sustainability considerations of everyday choices. While the idea of regional food is more culturally embedded than regional textiles, the contributions of fibreshed players continues to expand consumer awareness. As indicated above, the affiliates are more successful at fulfilling their education mandate than their economic development mandate (see section 5.4.3) though this outcome may be a product of current economic and political conditions as much as efforts by the affiliates. In fact, given that the dominant mode of clothing production is a trillion-dollar industry (Ellen MacArthur Foundation, 2025), even limited progress in the education of regional based production can be considered a significant accomplishment. By drawing attention to the relationship between clothing and the place it originates, and highlighting regional fibre resources, the Fibershed organization and affiliates bring awareness to the value of each stage of manufacturing. In turn, consumers may be compelled to think differently about the clothing they own and the clothing they purchase. In this context, the Fibershed producer directory provides a tool to seek out regional fibre and support regional producers.

While this data only allows for a speculative perspective on the impact of the Fibershed organization on consumers based on the changes in purchasing behaviours witnessed by network players (see section 5.3), it gives a more accurate portrayal of the impact on network players themselves. Many participants, though notably not all, shared their commitment to the development

of the Fibershed organization and their belief that regional fibre production is more sustainable than global production systems (see section 5.2). For them, the Fibershed organization contributes to sustainable fashion most significantly by being "*rooted in real people*" (P9). This outlook, because it situates production with producers and values the relationships they form with consumers, means that regional production can support other forms of sustainable fibre production, as long as it upholds these principles. Theoretically, there is room in the fibreshed for a 'more than local' approach if practitioners do not presume the regional model superior to sustainable production in other regions. While the romanticization of local production, a risk of emphasizing the agricultural aspect of fashion (see section 5.3), can set policies that unfavourably impact producers both inside and outside the region, an emphasis on scaling out, rather than scaling up, can enable fibreshed players to work towards a goal of creating a network of interconnected regional systems that share resources and capacity. In the process, they will continue to wrestle with the expected tensions between global and local, economic and social, rural and urban, and sustainable policy and practice in a space of mutual learning.

8.2 Research Contributions

This research contributes to a better understanding of fibresheds and fibreshed governance in a number of ways. First, it identifies that sustainable fashion concepts and theories on regions from the field of geography and design inform a conceptualization of the fibreshed and its social-spatial dimensions, whereby regional parameters are not only shaped by larger political and economic circumstances but by the relational aspects of players converging in networks.

Secondly, this research on fibresheds informs future studies of similar regional-based supply networks including food, energy and other resources, whose membership is comprised of public, private and civil actors with integrated economic and ecological objectives. Given the limited research on the social dimensions of regional production systems, this study provides insight on the players contributing to these systems and the nature of their relationships. It demonstrates the need for governance structures that adhere to producer involvement in decision-making and the challenges of changing spaces in networks that are growing more diverse in participants' experiences and resources. Specifically, it confirms the increased heterogeneity of these networks and the impact of individual attributes on network capacity. This study is particularly applicable to networks with

urban and rural players where ideological differences and assumptions about differences may be affecting regional coordination.

This research provides a third contribution by applying Benedum and Becker's (2021) network governance framework to two fibreshed regions to analyze the dimensions of network structure (how fibreshed players are organized); operating function (their network goals and responsibilities); heterogeneity (the range of fibreshed players); and integration (coordination between them). In particular, it supports the effectiveness of a relational framework in measuring the social-structural aspects of governance practices, specifically in the heterogeneity and integration dimensions, and adds nuance to the analysis of governance dimensions operating in practice. It specifically recognizes an opportunity to emphasize the relational aspect of the second dimension, operating function, by renaming it operating function alignment so that it can be applied as an indicator of compatibility between players and consistency between goals and outcomes. In addition, this analysis identifies specific features of heterogeneity impacting the network's operating function and the integration of players and thus further refines Höhler and Kühl's (2018) heterogeneity categories by proposing the following three additions for assessing member-level heterogeneity in networks: spatial identity heterogeneity, sectoral heterogeneity and professional heterogeneity. This change provides more specificity to Höhler and Kühl's categories to improve its adaptability to future research in the governance of regional networks.

Lastly, this research contributes to a better understanding of fibreshed governance, an area which to date has been minimally studied. It identifies stakeholders, their formal and informal organization and the structures which guide their activities. Understanding the network's characteristics – its structure, operating function, heterogeneity and integration – provides guidance on further development of the network. The collected data captures a picture of each affiliate and indicates that governance capacity is strong in network facilitation (see section 5.1) and needs reinforcement in producer representation (see section 6.1) and further development in cross-sectoral collaboration (see section 7.2.3 and 7.2.4). By highlighting the limited integration between fibreshed and public agencies and institutions, it reveals prospective points of future intervention, including research and funding, that are essential for regional coordination in production systems.

8.3 Recommendations for Future Fibreshed Development

To inform policy, practice and advocacy by leaders, members and stakeholders in the future development of fibresheds and the Fibershed network, I provide three specific recommendations below. The following recommendations were developed out of the interview data, in response to concerns that resonated most strongly with study participants:

1. **Record and apply data**
2. **Seek Cross-Sectoral Collaboration**
3. **Integrate Producers**

While all three recommendations are necessary if the Fibershed is to pursue an objective that is threefold – social, ecological and economic – the third recommendation is essential if the fibreshed is to continue to pursue a social purpose. These recommendations are directed at all fibreshed players, not only the leadership of the Fibershed parent organization and its affiliates. Therefore, they will be delivered within a short report, compiled as a summary of the thesis objectives, methodology and results and shared with each affiliate and the Fibershed parent organization.

8.3.1 Record and Apply Data

Network members, particularly affiliate board, frequently expressed the need for more research to provide a better understanding of the scope of investment in domestic fibre production. However, they also acknowledged that the organization did not have the current capacity to pursue research projects. Given this limitation and their difficulty with receiving approval for funding applications to cover staff research time, the network should instead rely on existing producer-driven research as well as pursue institutional support, including colleges and universities, trade associations and R&D non-profits. This second recommendation requires further investment in collaboration, the second of my three recommendations.

While producers expressed time limitations, the data that their businesses have already been generating can provide insight into industry conditions. For example, one producer, when assessing the availability of regional fibre, discovered a significant amount of waste fibre being produced, which prompted them to invest in product development and processing equipment to address the surplus. As a result of their research, producers have a much better sense of the collective volume of

waste fibre. The network, in this case, offers its power in numbers, similar to how NOP-3, when faced with a new problem, encountered someone in the network who was already working on solving it. The network can also benefit from data generated by project participants. For instance, future flax plant-alongs could require participants to record data, such as cultivation conditions, plant performance and yields. The results could then contribute to context-specific data that informs further industry development.

While explicit data for Ontario and Ohio is crucial, research outside the fibresheds nonetheless provides insight. Here is where collaboration with other affiliates is useful, particularly if affiliates share project-generated data among themselves. However, the network should not restrict itself to members of the Fibershed organization. Rather, a wider scope to draw from would increase the chance that social indicators, in addition to economic ones, are considered. The work of SOP-9, for example, in increasing knowledge of material culture among urban park users, can track changing perspectives among citizens on global and regional fibre production. Another initiative with tremendous research potential is the Flaxmobile in Nova Scotia, Canada, which is connecting rural communities with a mobile classroom and flax processing station (Flaxmobile, 2025). As the largest flax fibre study in North America, the Flaxmobile is led by principal investigator Jennifer Green at Nova Scotia College of Art and Design, driven by research on transition design[14] and has gathered data on regional flax production since 2021. Research partnerships between industry and education institutions, such as Oregon State University's Global Hemp Innovation Centre (Oregon State University, 2022) and the KnitLAB at Kent State University (Kent State University, 2025b), are also broadly applicable, both to other regions and to other sectors. In addition, contributions are also being made by industry associations, such as NALA and the CWC, specifically on documenting domestic production and establishing industry standards.

One study participant takes this first recommendation one step further by emphasizing that the data be collected more intentionally and used more effectively. They argue that while there are

[14] Situated in the field of design and influenced by living systems theory, Indigenous wisdom, cosmopolitan localism and social practice theory among others, transition design guides research and practice on sustainable transitions, with the aid of a design framework (Irwin et al., 2022).

standard indicators and ways of measuring them across the industry, there is not a consistent understanding on how to apply them in relation to sustainability objectives. While Cascale, formerly Sustainable Apparel Coalition (Cascale, 2025), and Textile Exchange (Textile Exchange, 2025) have been able to translate some of the data into actionable goals, more training on the metrics and how to use them, specifically for industry sourcing agents, is recommended.

8.3.2 Seek Cross-Sectoral Collaboration

The expanding network membership over the last decade (Fibershed, 2025a) indicates that investment in fibresheds has been steadily building (see section 7.2.2 and 7.2.3). However, support is still needed from a variety of sources, including educational institutions, long-term investors and all levels of government. Development of the fibreshed involves partnerships that bridge industry and education, policymakers and practitioners, and rural and urban concerns. Strategies need to be carried out by government, industry and citizens and not in isolation from each other. Moreover, opportunities for collaboration cannot be restricted to the fibreshed region or to apparel fibres.

Fibreshed players must engage with the global network hosted by the Fibershed organization as it holds a wealth of resources on existing initiatives in regional production. In addition, the contributions of individuals and groups working independent of the Fibreshed organization, including with non-apparel textiles, should not be overlooked. Rather than reinvent a new space for local capacity and direct energy into building site-specific resources, fibreshed players should harness the power of the digital commons and connect to people already doing the work in their community and across the world. One example is the Discord App dedicated to textile mills and equipment, where individuals share instructions and design plans on processing equipment. One participant, Rosie Bristow, who began farming flax as part of her graduate studies in fashion and textile management, is building farm-size, open-source machinery for flax processing (Fantasy Fibre Mill, 2025). Online information on other bast fibre can also be useful for building a flax resource library, such as YouTube tutorials on growing and processing dogbane (Roots, 2025) and profiles of artists producing textiles from waste nettle cleared from urban parks (Ngan, 2022). Not all information on fibres can be sourced online as Indigenous peoples carry oral histories of fibre cultivation and use. Fibreshed members should seek out these resources and compensate knowledge-holders who are willing to contribute to a shared library.

Not only can Fibreshed players draw from a wider community of contributors, but they can also profit from expanding their audience. One available online tool takes little organization and no cost and has already been adopted by RBF. The Circle app is a platform where community can meet, share resources and organize themselves. The platform does not require registration and thus can be accessed by members and non-members. In the case of RBF, Circle is where network players can find fibre resources, industry and legislative news, details on upcoming events, updates on fibreshed projects and swap and bartering opportunities. The app expands the affiliate's reach yet at the same time, it creates space where one-on-one interactions can multiple. These encounters, often prompted by a specific need or interest, can spin into unexpected directions as the community builds and the skills and experiences of its members diversify. The value of this type of exchange to capacity-building cannot be underestimated.

Affiliate events that are open to the wider public and resources that are accessible to a broader community also contribute to a spirit of collaboration. They ensure that the fibreshed is not a closed entity, operating in isolation of regional inhabitants and ignorant of outside experiences and contributions. It demonstrates that members are committed to continual learning and disrupts the 'us versus them' dichotomy that is often assumed in an alternative model. Moreover, the care and attention paid to a place makes room for the possibility that each place deserves care and attention. It welcomes individuals to consider the many ways they can support a "*more than local*" (Khan, 2021) agenda while continuing to value local production.

8.3.3 Integrate Producers

The above recommendations must be carried out with producer involvement. As this research demonstrated, there are gaps in governance with consideration to producer's needs, specifically with respect to producers whose livelihoods are fibreshed-dependent. These producers need to be represented at points of governance within the network. The difficulty is that their time is so limited given the demands of small business ownership. Therefore, the network must be innovative with how they accommodate and integrate them in governance processes. For example, producers could hold advisory positions which include compensation rather than commit to board involvement. The network cannot presume producers' standpoints on fibreshed developments, such as infrastructure

and investment needs, without explicit input. Moreover, new producers must look to the expertise of longstanding producers in the fibreshed for insight on how best to move forward.

8.4 Recommendations for Further Research

This study also highlights specific areas that require additional research and attention. In particular, two areas surfaced during the literature review and reemerged during interviews with participants; first, the idea that regional models of production can build regional resiliency, and secondly, how to reconcile the agency over the material culture promoted by the fibreshed model with Indigenous sovereignty.

8.4.1 Regional Resiliency

The decentralization of fashion and the shift to synthetic fibres over the last hundred years instils nostalgia for domestic localized fashion production. Though wool has a deep history in North America, flax's history in the regions is also recognized and considered rationale for new investment in the industry (Jones, 2023; Tancock, 2024; Vujić, 2023). The aim of the Rust Belt Linen Project is to bring back production that has gone overseas (Rust Belt Fibershed, 2025f). Several study participants expressed their hope that relocalizing production can contribute to regional resiliency (see section 5.3.3). One approach for devising present-day strategies for sustainable development in regions is to look to past economic activity (Fröhlich & Hassink, 2018; Martin, 2018). However, the idea of returning to a previous state of self-sufficiency is regarded with some criticism because of the potential risk to progress (Evenhuis, 2017; Hassink, 2010). Building resiliency either by reviving pre-existing paths or forging new ones is an important debate and different accounts of history contribute to the tension between these two directions. Moreover, the relationship between relocalization and regional resiliency deserves more attention.

8.4.2 Reconciling Fibreshed Agency with Indigenous Sovereignty

Place-based concepts like the fibreshed, maintain that the fibre of clothing embodies an individual place. Characteristics of a locale have always made their mark on the dress of its inhabitants in subtle yet distinctive ways, but rarely is this phenomenon acknowledged or celebrated in contemporary fashion expression. Instead, the homogenization of fashion dulls these differences, as Twigger-Holroyd (2017) lamented in her study on folk fashion, so that a consumer is fed the same aesthetics as

someone on the other side of the world. In this context, climatic differences that distinguish one place from another which shape regional fashion choices no longer matter. One study participant, a sustainable fashion scholar, discusses the erasure of seasons in fashion production:

> *The idea that, you know, an environment or a locality has an imprint, has something that really needs to have a little bit more specificity. And we really don't do that. Not only do we not from a global perspective – we have this kind of homogenous westernized idea of fashion – but it also doesn't even take into account the different localities so that in any one fashion show, you have looks that look like they're spring and summer, and then you have fall and winter all in the same. So what's the point of having any of this, you know, seasons and all that kind of stuff. It's become so big that it doesn't work anymore*.

Not only are distinctions in dress between locations overlooked, but they are exclusively replaced by Western fashion which, as Khan (2021) critiques, is still considered the dominant producer of both fashion design and fashion scholarship. One location, however, is not entitled to a monopoly on artistic expressions or conceptualizations just as it is not emblematic of a singular expression of fashion.

For many fibreshed practitioners, engaging in regional-based production is a means of connecting to a place's natural and cultural history, a way to reclaim access to the fashion commons, to release themselves from what Twigger-Holroyd (2017) refers to as the fashion industry's hold on a shared resource. Accordingly, by learning how to process a fibre crop which has been grown on farmlands in their region for centuries, as several study participants have, or by mastering a weaving pattern that is historically characteristic to the place they live, as one participant did, these individuals have found a way to connect more deeply to their home. Yet, these processes cannot be carried out without acknowledging the impacts of political decisions that have shaped the social and economic landscape of a place, impacts that come from within and from outside of it, the exact directions of which are largely indiscernible. By nature of global citizenship, a place, its inhabitants and the norms they live by are not immune to the external world. Rather, as Massey (2004) emphasizes, it flows through each and every one, because the global is a product of the local, of individual places and individual people. Certainly, the term fibreshed can capture this fundamental connectedness of a place to a wider system. Moreover, the agency that a regional scale allows (Fletcher, 2018; Khan, 2021; Rissanen, 2017) can provide the opportunity for individuals to address the fashion industry's problems in immediate ways while experiencing a connectedness to others engaged in fibre and

textile production, including those without agency. As fibreshed players shared, it gives them a sense of personal and collective purpose. They can decide how they are going to engage with fibre, matching their needs with what is regionally available.

Furthermore, it is vital that engagement be carried out without jeopardizing the agency of others. This task may be impossible given that the territorial sovereignty of the Indigenous peoples who live or lived in the fibreshed has not been sufficiently recognized or reimbursed. Any fibreshed work risks contributing to this disenfranchisement, no matter if the intention is otherwise, conveying once again, as Massey (2004) stressed, how the local and global are intertwined. In a colonial context, Wiebe (2021) cautioned that any expression of bioregionalism, including bioregional fashion, can become cultural appropriation. To acknowledge this starting point, recognizing the original stewards of the land where fibreshed players organize, farm and carry out fibre production is fundamental. RBF's website includes a land acknowledgement (Rust Belt Fibershed, 2025), whereas the Ontario Fibreshed's new site does not (Ontario Fibreshed, 2025). Recognition, moreover, does not end with land acknowledgments. In addition to identifying that they operate on occupied Indigenous territory, network players must engage in active work toward reparation, by supporting Indigenous-owned and Indigenous-led fibre initiatives, providing compensation for Indigenous consultation and relearning the region's history. While several participants indicated they were drawn to participate in the fibreshed to connect to the past, the history of fibre production in the region is weighted by antiquated ideals and colonial prejudices. Moreover, there are few written records of the history of fibre production from an Indigenous perspective, which further disadvantages Indigenous knowledge in relation to Western bodies of research. This issue, as a result, would benefit from more intentional study.

8.5 Concluding Remarks

In summary, the fibreshed seeks to modify the scale of fashion production and to emphasize the place where clothing begins. It reduces the distance between producers and consumers created by the fashion industry. However, perceived accessibility must be accompanied by real opportunities for engagement. That is, participants must have mechanisms at their disposal to contribute to decision making and realize outcomes. Currently, the structures and mechanisms of fibreshed governance, specifically its various means of organizing, do not fully align with the economic needs of players and

are thus limited in their capacity to facilitate access and improve agency in fibre cultivation and textile making for both network and community members. However, within the constraints of a production system that destabilizes ecological and social integration, the fibreshed has nonetheless been able to make inroads in two specific areas: network facilitation and education. If fibreshed players take advantage of the increased capacity that comes with learning and connecting with others, they can shape how governance is implemented in the network and expand opportunities to engage in sustainable production and consumption.

8.6 Postscript – Tariffs

I wrote the last chapter amid the backdrop of an escalating trade war, the result of tariffs on imported goods introduced or increased by the current US president and the retaliatory tariffs imposed by a number of governments (Panetta, 2025). While the decision to tax goods entering the US from some countries, including Canada, was publicly justified as a means of tightening control over what enters the US, both legally and illegally (Blaze Baum & Singh, 2025), the outcome has had an immediate economic effect on manufacturing on both sides of the border (The Conference Board of Canada Economics Team, 2025; Mutikani, 2025). Increasing tariffs on imports has also been rationalized as an attempt to remove trade barriers and rectify the US' trade deficit with China, Mexico, Canada and other countries and to incentivize producers to bring supply chains back to the US. Despite oversimplifying trade imbalances and underestimating the economic and political damage of aggressive trade measures like tariffs (York & Durante, 2025), reshoring incentives could have a tremendous effect on domestic apparel production, building on such initiatives as the FABRIC Act (FABRIC, 2023-24) and the movement witnessed by one study participant prior to recent tariff adjustments:

> *It's been interesting to see the different reshoring initiatives that are happening right now. Through my research, I've mostly seen that a lot of the reshoring that's happening is actually large Chinese textile companies that are realizing that our energy cost is so much lower in the US. Now that labor wages are getting higher in China, it's actually becoming cheaper to produce textiles in the US (SOP-3).*

While large companies have the revenue to uproot operations and rebuild where costs are lower, consumers are unlikely to see an immediate difference in apparel prices. It will take years to fill the current infrastructure gaps in domestic production systems to significantly lower prices for US

consumers (Gupta et al, 2023); that is, if current pricing models continue. In the meantime, tariffs will increase the prices of nearly all consumer goods (York & Durante, 2025) and are unlikely to make individuals with low incomes, those unable to benefit from reductions in income tax rates, consider regional products. Similarly, the impact to small-scale regional producers will be a greater cost of living, which could jeopardize their participation in the industry. While assessing the effects of tariffs is not in the scope of this research, the current geo-political situation demonstrates how political decisions have cascading economic and social impacts on supply chain players, particularly those most vulnerable. This study displays the value of hearing directly from producers on how they contend with political and economic conditions, navigate the relational dimensions of production networks, and implement measures to promote institutional collaboration and consumer support in the industry.

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Appendix A

Interview Questions for Internal (Founding and/or Board Members) Members

Background questions

The first set of questions will help determine the individual's role in the fibreshed.

1. Tell me about your organization.
2. What is your role?
3. How are you and/or your organization involved in the fibreshed?
4. Why are you and/or your organization involved in the fibreshed?

Secondary Questions

The following questions will focus on defining a linen fibreshed.

1. How would you define a fibreshed?
2. How is a fibreshed defined in your region? Are there boundaries? If so, what are they? Who was involved in setting the boundaries for the fibreshed? What factors influenced the definition of boundaries/criteria?
3. Would you consider the fibreshed a business, NGO or citizen organization?
4. Has the fibreshed always included linen? If not, when and why was it included?

The following questions will explore the governance of the fibreshed.

1. What is the fibreshed's mandate or goals? (*prompt for founding members: what was your rationale for establishing the fibreshed?*)
2. Have you engaged with consultants or other professionals in the short or long-term planning of the fibershed? If so, who? In what capacity?
3. Who is involved in managing the fibreshed? Is it the same as it was initially? How has it evolved?
4. How is the fibreshed funded? *Eg. Membership-based, private investors, individual donors, government grants or programs*
5. Are there external policies/programs that have facilitated the development of the fibreshed? If so, what are they?
6. Are there external policies/programs that have hindered the development of the fibreshed? If so, what are they?
7. How does the fibreshed evaluate its progress? Are there internal practices in place?

The following questions will explore the network members of the fibreshed.

1. What is the criteria for becoming a fibreshed member?
2. How does the fibreshed connect with its existing members? (*prompt: how frequently? In what ways? Who initiates?*) How does the fibreshed recruit new members?
3. Who of the following are fibreshed members? (*Circle all that apply.*) What is their role within the network?
    - Fibre mills
    - Fibre farmers
    - Textile producers
    - Designers

- Educators
- Fibrecraft suppliers
- Menders

4. Who is currently missing from the fibreshed? Where are they missing from – board or membership? Why are they not involved?

The following questions will explore recommendations for future fibreshed development.

1. What are the strengths of the fibreshed? What are the challenges facing the fibreshed?
2. What recommendations do you have for the future of the fibreshed?

The following questions will explore the impact of the fibreshed on sustainable fashion.

1. Does the fibreshed contribute to sustainable fashion? If so, how? If no, why not? (*prompt for: resource use, consumption, circularity, regional resilience*)

The final questions will cover anything that may have been missed.

1. Is there anyone you would recommend I contact for this research?
2. Is there anything else you wish to add?

Appendix B

Interview Questions for Network Members

Background questions

The first set of questions will help determine the individual's role in the fibreshed.

1. Tell me about your business/organization.
2. What is your role?
3. How are you and/or your organization involved in the fibreshed?
4. Why are you and/or your organization involved in the fibreshed?

Secondary Questions

The following questions will focus on defining the linen fibreshed.

1. How would you define a fibreshed?
2. How is the fibreshed defined in your region?
3. How long has linen been part of the fibreshed?

The following questions will explore the stakeholders of the fibreshed.

1. Who are the main actors in the fibreshed?
2. Would you consider the fibreshed a business, NGO or citizen organization?
3. Does the fibreshed offer any programs or events? If so, who are they targeting? Who can access them?

The following questions will explore the governance of the fibreshed.

1. What in your opinion is the purpose of the fibreshed? Is it meeting its purpose?
2. Have you accessed fibresheds programs? If so, which ones and why?
3. Do you know of other programs that have been initiated by or developed as a result of the fibreshed?

The following questions will explore recommendations for future fibreshed development.

1. Who is currently missing from the fibreshed? Why are they not involved?
2. In your opinion, what potential partnerships would benefit the fibreshed?
3. What are the strengths of the fibreshed model? What are the challenges?
4. What recommendations do you have for the future of the fibreshed?

The following questions will explore the impact of the fibreshed on sustainable fashion.

1. Does the fibreshed contribute to sustainable fashion? If so, how? If no, why not? (*prompt for: resource use, consumption, circularity, regional resilience*)

The final questions will cover anything that may have been missed.

1. Is there anyone you would recommend I contact for this research?
2. Is there anything else you wish to add?