Fish as Food:

Examining a Place for Fish in Newfoundland's Alternative Food Networks

by

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ABSTRACT

Alternative food networks have been developed to reexamine and challenge the conventional globalized food system by emphasizing localized and alternate ways of producing, distributing, consuming, and thinking about food. In Canada, the idea has taken off in the agricultural sector, with the promotion of farmers markets, community-supported agriculture and local food movements. For the most part, the inclusion of fish in such networks has been limited because fish, and the fisheries, are valued more for their role as an export commodity than for their contributions to livelihoods, culture and the local food system. This absence is particularly striking in Newfoundland where fisheries are historically and culturally significant. The current export-oriented structure presents a major concern to local food security and sustainability, as well as to the viability of small-scale fishing communities. By means of the interactive governance perspective, this thesis examines the values and principles that shape emerging alternative food systems in Newfoundland's fisheries, including a seafood traceability project and fisheries education initiatives. Specifically, through in-depth interviews with fisheries stakeholders, the study identified significant opportunities by enhancing the relationships between actors along the fisheries supply chain, and examined the 'alterity' of these initiatives in contrast to conventional market practices.

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have given me something to look forward to in trying to finish my thesis and move back home. This thesis is dedicated to my partner, Christopher, who left a life to move to Newfoundland so I could follow my passion. Without your support, I would have never had the courage to start this journey, let alone finish it, and for that I am beyond grateful.

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LIST OF ABBREVIATIONS

AFN: Alternative food network

CETA: Canada-European Union Comprehensive Economic and Trade Agreement

CSA: Community-supported agriculture

CSF: Community-supported fishery

DFO: Department of Fisheries and Oceans

DFA: Department of Fisheries and Aquaculture

FAO: United Nations Food and Agriculture Organization

FFAW: Fish, Food and Allied Workers Union

FSN: Food Security Network of Newfoundland and Labrador

MSC: Marine Stewardship Council

NAFO: Northwest Atlantic Fisheries Organization

CHAPTER 1: INTRODUCTION

The following chapter provides a review of key literature that will define the scholarly and practical contexts for this thesis. An overview of prevailing food systems issues and critical food studies concepts will be presented, with an emphasis on alternative food networks (AFNs). Building on this literature, fisheries will be framed within food systems, leading to the presentation of the theoretical framework, the leading research questions, and the outline of the thesis.

1.1 Food systems issues: examining alternatives

Food systems can be defined as a set of relations, processes, and institutions that are involved in not only the components relating to the production of foods, but the broader elements that pertain to distribution, research and eating, and at different scales (Olson et al., 2014). In other words, a food system encompasses all elements required to get food from farm to plate. A food system can incorporate globalized processes, with sites of production and consumption being geographically distant, and a long and complex supply chain. Conversely, food systems can be localized, with production and consumption taking place in the same geographic area, and with a short, more direct supply chain, requiring few actors in production and distribution processes.

Food production has increasingly become a globalized and industrialized activity in part due to the advent of the 'Green Revolution' of the early 1950s, in which new technologies were introduced to food production, particularly in the form of

mechanization, and synthetic fertilizers and pesticides (McMichael, 2009; Wittman, 2009). The prevailing market-led governance arrangements of food systems have lead to 'food from nowhere', which describes both the geographical placelessness of globalized food production processes, and the opacity of the industrial and corporatized food supply chain (Campbell, 2009; McMichael, 2009). The social and economic structure of rural landscapes have equally changed as a result of conventional agriculture, as fewer people were needed to produce food (Wittman, 2009). While producers and consumers are increasingly connected to globalized food networks, they have become disconnected from the natural environment, through a loss of sense of place and traditional knowledge, and with each other (Kneafsey et al., 2008). Consumers are often geographically and socially distanced from food production, and have limited access to information about their food and how it was produced (Campbell et al., 2014). The consequences of disconnection for the consumer are anxieties related to food safety, accessibility and reliability of food sources, and issues of inequality and social justice in accessing healthy food (Kneafsey et al., 2008).

The resulting inequalities of the conventional food system have been attributed to the dominating role of market actors in food governance, as the economic value of food has been given precedence over its socio-cultural and ecological values (Marsden, 2000). While market and state actors continue to direct food governance, civil society plays a key role in countering globalized, corporate-led food production, distribution and consumption processes (Marsden, 2000; Renting et al., 2012). Food systems localization has become a prominent strategy in offsetting the impacts of a globalized food system, by

looking to shorten the supply chain, reduce carbon footprints and retaining local control and decision-making abilities. Local food movements have gained significant attention in literature and in popular media, with the increasing popularity of farmer's markets, community gardens and other direct-marketing strategies (Mount, 2011). Criticisms of localization have emerged with regards to the view that local is considered to be inherently economically and environmentally sustainable over globally oriented food supply-chains, and with the nationalistic sentiments that are often linked with local food campaigns (Allen and Hinrichs, 2008). Some critics also warn against creating boundaries to what can be considered 'local', as a geographically bounded understanding cannot account for the diversity of circumstances that shape different localities and food systems (Hinrichs, 2003; Mount, 2011). As well, the creation of niche markets around local food's quality attributes, ethics, and environmental implications softens the transformative potentials of food systems localization (Mount, 2011).

Localization is only one aspect of creating a more sustainable food system, particularly when considering the complexities of food systems governance. Alternative food networks (AFNs) offer a way to build sustainable, democratic and localized food systems that value the relationships between producers, consumers and the natural environment (Maye et al, 2008; Harris, 2010). This perspective on alternatives in the food systems pays particular attention to the relationships between actors along the supply chain, especially in terms of building trust between producers and consumers, redistributing values, and implementing a participatory mode of governance (Follet, 2008). In sum, AFNs present alternative ways of thinking, producing, marketing, distributing and eating

food, and are a response to environmentally and socially harmful practices associated with conventional agriculture (Harris, 2010). In order to achieve a more sustainable food system, AFNs have oriented themselves around the concept of 'reconnection', in which alternative initiatives attempt to re-embed food within place and production practices, as well as establish connections between producers and consumers (Harris, 2010).

The notion of 'alternative' in the context of food systems is seen here as more nuanced than being simply put in binary opposition to 'conventional' food production practices (Dowler et al., 2010). As such, the relative 'alterity' of AFNs can be considered in order to determine how much they deviate from conventional food systems, and their transformative potential (Andrée et al., 2014; Watts et al., 2005). Alternativeness can be examined in many ways, and not simply in binary opposition to the conventional food system (McCarthy, 2006). Examining the degree of alterity of food networks can provide insight as to what elements make these initiatives 'alternative' in relation to conventional food systems (Kirwan, 2004; Watts et al, 2005; Harris, 2010).

AFNs are generally categorized as either strong or weak initiatives (Table 1.1). Weak initiatives are based on the product itself, and are most often associated with food quality and labeling concerns (Watts et al., 2005). These initiatives focus on the characteristics of the products as being 'sustainable', 'organic', or produced in a particular place, which often increases the value of food through the creation of niche markets (Watts et al., 2005; Maye et al., 2008).

Table 1.1. Key characteristics of conventional food systems, weak AFNs, hybrid AFNs and strong AFNs

Key Characteristics	Conventional Food System	Weak Alternative Food Networks	Hybrid Alternative Food Networks	Strong Alternative Food Networks
Chain Location	Globalized Production and Distribution	Place-based production, global markets	Combination of local and global processes of production, distribution and consumption	Localized production, distribution and consumption
Production Methods	Production methods based on scientific and technological innovation	Ecologically-responsible methods based on technological innovation	Ecologically-responsible methods and reduced inputs, small-scale producers	Ecologically-responsible methods based on traditional knowledge, alternative techniques, minimal external inputs; Small-scale production
Governance	Top-down, market-based governance led by multi-national corporations	Top-down governance led by state and market actors; limited involvement of civil society	Transition towards democratic and inclusive decision-making processes involving state, market and civil society actors	Democratic decision-making processes involving state, market and civil society actors

(Source: Watts et al., 2005; Wittman, 2011; Renting et al., 2012)

Weaker alternatives are more ambiguous in their alterity, particularly as many initiatives do not seek to challenge the conventional food system, and the concerns addressed, generally food safety, nutrition and quality, are more limited (Watts et al., 2005; Maye et al., 2008). Strong initiatives are referred to as process oriented alternatives, as they focus on the actual activities, actors, and dynamics that take place along the supply chain (Watts et al., 2005; Maye et al., 2008). These networks address a broader range of concerns, and are typically the result of political and social mobilizations (Holloway et al., 2008). While alternatives allows for a range of different food systems to be described, certain alternatives partaking in 'stronger' practices do nonetheless engage in

conventional food systems processes to a limited extent. These types of alternatives are described as 'hybrid', and rely on aspects of the conventional food system, such as retailers, distributors and processors that are necessary for the survival of businesses (Andrée et al., 2010).

A notable example of an AFN is the organic agriculture movement that was founded in the 1960s as an attempt to counter environmentally degrading farming practices (Guthman, 2008; Pollan, 2006). Organic agriculture has grown in such a way that it has become a weaker alternative, as a large portion of organic growers rely on industrialized operations and globalized distribution networks (Guthman, 2008). Place-of-origin and certain eco-labels that focus on food products as being 'specialty' and 'quality' are also examples of 'weak' AFNs (Maye et al., 2008). Examples of 'strong' alternatives characteristically include projects that embrace ethical and environmental goals, such as local community food projects, co-ops and buying groups, which aim to bring equitable access and availability to healthy foods (Maye et al., 2008). Community supported agriculture (CSA) initiatives are frequently depicted as strong alternatives, due to their broad range of environmental, social and economic goals and values (Maye et al., 2008). These include the revitalization of local food systems and rural economies, increasing food security, and supporting small-scale and environmentally sustainable farming operations (O'Hara and Stagl, 2002; Hinrichs, 2000). A CSA provides a direct market and connection between producers and consumers, in which risks and benefits associated to production are shared: consumers receive quality, environmentally sound and locally sourced products, while farmers are ensured a stable income. (O'Hara and Stagl, 2002).

Looking at AFNs as being 'weak', 'strong' or hybrid allows for the consideration contextual differences in local food systems, and the extent of their interactions with conventional processes. AFNs do not operate in isolation of the conventional food system, and in certain context 'hybridity' may be necessary for the survival of businesses (Mount, 2011). However, 'strong' AFNs are best positioned to enact systematic changes in the food system, allowing for greater socio-economic and environmental sustainability.

1.2 Fisheries as part of food systems

In scholarly literature and government policy, food systems have almost exclusively been discussed in the context of agricultural food production, despite the similar ecological and socio-economic issues faced in freshwater and marine fisheries (Lowitt et al., 2013). Commercial fisheries developed in similar ways to agriculture, particularly in terms of the industrialization of operations, and the globalization of markets and trade. Technologically efficient catch methods, and larger, more powerful vessels developed following World War Two enabled fishing fleets to dramatically increase catches and to travel further offshore (Clover, 2006). Overfishing is a serious global issue, and the use of destructive gear types has lead to the degradation of marine ecosystems (Ponte, 2008; Chuenpagdee et al., 2003; Konefal, 2012). Increasingly, fisheries resources are managed in a way that limits access through quota fisheries, such as individual transferable quotas (ITQs), which privileges the monetary value of fisheries over their value as a food source, and their contributions to coastal livelihoods and culture (Lowitt et al., 2013; Campbell et al., 2014). The industrialization and globalization of fisheries created socio-economic consequences in fishing communities, and for consumers. The supply-chain and number

of actors involved in the harvest, processing, distribution, and retail of fish have grown, leading to a lack of traceability of fish and seafood (Lowitt et al., 2013). Similarly to land-based food systems, a long supply chain creates disconnection between consumers and producers, and an overall lack of knowledge about where and how fish is caught.

The inclusion of fish in conversations of sustainable food systems governance is also limited, particularly as they are managed and characterized primarily as a natural resource (Olson et al., 2014). While the ecosystems and economic values of fisheries are recognized, their value as a food source is largely unmentioned in policies and research (Olson et al., 2014). There are emerging AFNs in the fisheries, most notably community supported fisheries (CSF), based on the model of CSA initiatives. Similarly to CSAs, CSFs provide a direct and local market for fish, and foster relationships between harvesters and consumers (Campbell et al., 2014). Out of the Slow Food movement, emerged the Slow Fish movement, based on the same principles that aim to promote food as multidimensional, and a way in which to develop community and reconnect people with nature (Honoré, 2004; Slow Food, 2014). The Slow Fish movement recognizes the importance of fish as food, as well as the contributions of small-scale and artisanal fisheries to food security, culture and livelihoods (Chuenpagdee and Pauly, 2005; Slow Food, 2014). While AFNs are positioned as solutions to issues of conventional food production and have begun to include fish and seafood, AFNs in the fisheries are nonetheless much less developed than those taking place in agriculture, and scholarly research focuses mainly on land-based food systems.

Problems brought on by industrial and globalized production processes are apparent in Canada's fisheries, as, for the most part, fisheries policies support larger-scale and export-oriented operations, and fail to recognize the importance of fish in assuring food security, and sustaining local economies and food systems (Food Secure Canada, 2011; Chuenpagdee, 2011). These challenges are especially apparent in Newfoundland's fisheries, keenly demonstrated through the impacts of the collapse of the Atlantic cod fishery in 1992, which led to a decline in small-scale, inshore fisheries, and put the sustainability of rural coastal communities into question (Kurlansky, 1997; Schrank, 2005; Bavington, 2010; Song and Chuenpagdee, 2015). Since the moratorium on commercial cod fishing, the size of the fishing fleet and the processing industry have dramatically reduced, and the focus is now on shellfish, such as snow crab and northern shrimp, which are high value export species (Schrank, 2005). The structure of rural communities has also shifted significantly as a result of reductions in the capacities of the fishing industry, leading to declining populations and incomes (Schrank, 2005). More recently, there are growing doubts about the sustainability of the shellfish industry, in which shrimp stocks have declined due to intensive harvesting and environmental changes (Mather, 2013). The challenges faced by the Newfoundland fisheries have disproportionately impacted small-scale inshore fisheries, with provincial and federal policy privileging profits generated by industrial, offshore fleets (Song and Chuenpagdee, 2015; Mather, 2013). These small-scale and inshore fisheries contribute directly to the livelihoods and durability of coastal communities, and to local food systems (Lowitt, 2013). Historically, Newfoundland's fisheries contributed greatly to food security, with fish being a healthy and nutritious food, and the increased challenges faced in terms of

local access to fish and seafood and the sustainability of the fisheries leave many coastal communities vulnerable (Lowitt, 2013).

In response to these issues, there have been emerging AFNs in the fisheries, to help build relationships between fish harvesters and consumers, improve traceability, and enhance access to and availability of sustainable and local fish and seafood. However, AFNs have been particularly slow to emerge in Newfoundland's fisheries compared to other coastal provinces in Canada. This is despite the important role that fisheries played in the socio-economic development of Newfoundland, and continue to contribute significantly to the economy and the food system (Kurlansky, 1997; DFA, 2013). Export-oriented fisheries policies have created complexities in determining availability of fish and seafood. At the federal level, the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) aims to facilitate the export of Canadian fish products to foreign markets by eliminating tariffs (Song and Chuenpagdee, 2015). This type of trade agreement can reduce local control of fisheries, and there are conflicts between the fundamental principles of the agreement and the social and cultural values relating to small-scale fisheries (Song and Chuenpagdee, 2015). Provincial legislation has also created challenges to the access and availability of locally harvested fish and seafood, as direct sales of fish are strictly prohibited in Newfoundland (Dunne, 2010). These policies create significant legislative barriers that limit the establishment of alternate and direct markets, and hence AFNs, in Newfoundland's fisheries (Murphy and Neis, 2012). Though AFNs in the fisheries are limited, the number of AFNs in Newfoundland's

agricultural food systems has increased. There is a growing network of farmers' markets and direct marketing schemes for agricultural products in the province, as well as a rich history of self-provisioning practices in terms of berry picking, hunting and recreational fishing (Temple and Carter, 2012; Lowitt, 2013). With AFNs increasing in Newfoundland's local food systems, it is imperative to consider how fish and seafood may be integrated in these strategies, seeing as the province has access to local, fresh and healthy food through the fisheries.

1.3 Interactive governance perspective

The natural and socio-economic systems in which fisheries operate create a unique set of governance challenges that differ from agricultural food systems, as they are a wild and common-pool resource (Campbell et al., 2014; Jentoft and Chuenpagdee, 2009). The social, natural and governing systems implicated in fisheries are fundamentally complex, diverse and dynamic (Jentoft and Chuenpagdee, 2009). Governance problems that arise in fisheries and coastal resources are difficult to define and resolve, and are characterized as 'wicked' due to the need for constant reevaluation and resolutions (Jentoft and Chuenpagdee, 2009). Interactive governance highlights the relationships between actors as crucial to examining barriers and creating opportunities to resolve issues, as interactions determine in what ways and to what degree various stakeholders' interests and motivations are expressed and included in governance processes (Song et al., 2013).

Issues faced in local and alternative food systems are similarly complex, as they operate at diverse scales, and involve competition and often-conflicting interests and values (Mount, 2011). In governing alternative food initiatives, Mount highlights the

need for a reflexive governance approach: "A reflexive approach to governance, based on the negotiation of accommodations, acknowledges the inevitable influence of the unexpected, the diverse priorities of participants, and the need for flexible yet tenable decision-making in a context of uncertainty," (2011, p.116). Here, interactive governance provides an ideal framework with which to examine governance in the context of AFNs, as it accounts for the inherent and systematic complexities and dynamics that occur in food systems. The particular strength of this governance framework is in the consideration of meta-level governance, which defines the underlying rationales and values that influences decision-making processes (Song et al., 2013). In the context of Newfoundland's fisheries, this perspective allows for the analysis of the diverse interests of stakeholders, and the potential mismatches between competing interests (Song and Chuenpagdee, 2015).

1.4 Research statement, questions and objectives

The purpose of this research is to examine the opportunities and limitations that exist in developing AFNs in Newfoundland's fisheries. The three initiatives examined in the study are: (1) a traceable seafood project managed by the Fish, Food and Allied Workers Union (FFAW) in the Port aux Basques area; (2) the network of retailers and restaurants in the St. John's area seeking to include and promote locally caught and sustainable fish; and (3) stewardship and conservation education initiatives taking place in Petty Harbour on the Avalon peninsula, which aim to reconnect people with the fisheries, marine ecosystems and Newfoundland culture. The selected initiatives embrace goals, principles

and values that are alternative to conventional practices, including environmental sustainability, social responsibility, and localized food systems and markets.

While there are currently no formalized AFNs in Newfoundland's fisheries, these cases provide an opportunity to examine emerging alternatives, in terms of how they arise, organize and operate. This study will also examine the ways in which these alternatives may help create a place for fish in the local food system in Newfoundland. In this, my research will use a governance perspective to look at the contributions of fisheries to local food systems, and whether fisheries AFNs are able to present a sustainable and appropriate alternative to conventional practices. The guiding research questions for the thesis are:

1. What are the actors and institutions at the state, market and civil society levels that govern the alternative initiatives?
2. What are the key characteristics of the alternative initiatives in Newfoundland's fisheries?
3. What are the opportunities and limitations regarding the development of AFNs in Newfoundland that include fish and fisheries?

The research questions meet the following research objectives:

a) To identify the food system and fisheries actors that play a role in governing alternative initiatives;
b) To describe the key values and principles guiding the selected fisheries alternatives; and

c) To discuss in which ways the development of AFNs in fisheries has been limited, and what opportunities may exist to enable their growth.

1.5 Thesis outline

This is a manuscript-based thesis, with two main chapters written as scientific articles for peer-reviewed publication. The first manuscript (Chapter 2) examines the reconnections taking place between food systems actors, culture and nature as a result of emerging fisheries alternatives in St. John's and Petty Harbour. The second manuscript (Chapter 3) considers the governing principles of the seafood traceability project based in the Port-aux-Basques area as a means to determine the alterity of the initiative. The final chapter provides an overview and discussion of the research findings, as well as potential policy implications, and ways forward to develop AFNs in Newfoundland's fisheries.

1.6 Co-authorship statement

Authorship is shared with the thesis supervisors on Chapters 2 and 3, with the student being the first author on each paper. The student conceptualized and conducted the research, data collection and analysis, and thesis writing. The supervisors provided significant feedback at all stages of the research, as well as editorial suggestions during the writing and revision of the thesis.

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CHAPTER 2:
RECONNECTING PEOPLE, PLACE AND NATURE: EXAMINING ALTERNATIVE FOOD NETWORKS IN NEWFOUNDLAND'S FISHERIES

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Fisheries have played a significant role in the economic development of Newfoundland, and continue to contribute to coastal livelihoods and to local food security. However, the access and availability of locally harvested fish and seafood in the province is notably lacking, particularly as federal and provincial policies have emphasized the development of export-markets in the fisheries over local ones. In an effort to resolve these issues, market and civil society actors in St. John's and Petty Harbour have sought to better include fish and seafood in the local food system through developing alternative initiatives. These include localization of fisheries supply chains, enhancing social cohesion between food systems and fisheries actors, and creating public awareness about fisheries culture and the marine environment. Employing the interactive governance framework, this paper explores the social, cultural and natural values of the fisheries as means to build reconnections between consumers and harvesters, and people with fishing culture and the marine environment. The reconnections are the foundations of alternative food networks, which look to develop more environmentally and socially sustainable, and localized ways of producing, distributing, retailing and consuming food.

Key words: reconnection; alternative food networks; fisheries; governance; values.

2.1 Introduction

With concepts such as food security, food justice and local foods becoming part of the popular lexicon, there has been an increased attention given to a wide range of food issues, and with this, an equivalent growth in the perspectives by which to consider them. Food security was conceptualized in light of mounting international food issues in the 1970s, and primarily sought to address hunger and nutrition concerns from an economic perspective in developing nations (FAO, 2003). The concept has since evolved to include

a broader range of concerns and contexts, in order to ensure that all people have access to food that is culturally appropriate, and that a healthy and active lifestyle can be achieved (FAO, 2003). While food security addresses the inequalities in food distribution and access, it is limited in addressing the broader, systematic concerns of the overall food system, including those related to environment and power. These issues have been attributed to conventional food production, which employs highly globalized industrial practices that have led to greater inequalities in terms of food access and availability, environmentally destructive production and distribution practices, and consumers that are ill-informed and disengaged from their food system (Galt, 2013). The food movement, from which concepts such as food justice, community food security, and food sovereignty have developed, look to address these deficiencies through building a food system that is democratic, decentralized, and in which the environmental impacts of food production and distribution are minimized (Holt-Gimenez and Shattuck, 2011). These movements have generated a wide range of strategies, with many being focused on localized community and grassroots mobilization, and feature a complex network of institutions and actors (Holt-Gimenez and Shattuck, 2011).

Alternative food networks (AFNs) have arisen within the food movement as practical and localized actions that are a response to the growing concern of the wide-ranging socio-economic, cultural and environmental impacts of conventional food production. One of the main tenets of AFNs is the creation of shortened and localized supply chains as a means to address food issues. The conventional food system has resulted in a disconnected arrangement, in which consumers are largely unaware of the processes and

scales of food production (Harris, 2010). AFNs seek to re-connect consumers with their food and those involved in getting it from farm to plate, as well as to promote environmentally, economically and socially sustainable practices. There are a number of different strategies and mechanisms that aim to create spaces for 'alternative' foods, including direct-marketing schemes, such as community-supported agriculture (CSA) and farm-gate sales, farmer's markets and community gardens (Harris, 2010).

AFNs have been developed based on agricultural food systems; however, they are equally relevant to the diverse and complex challenges faced by the fisheries. Much like industrial agriculture, commercial fisheries are part of a highly globalized, technology-driven and resource intensive food system. The advent of highly efficient catch methods has resulted in the overexploitation and degradation of marine resources, particularly in light of a rising global demand for fish and seafood (Ponte, 2008; Chuenpagdee et al, 2003). Lengthening supply chains are of equal concern in the fisheries, in which consumers and fish harvesters have become increasingly distanced both socially and geographically (Lowitt et al., 2013). In this, the notion of disconnection highlighted by AFN literature can provide insight on ways to localize and simplify fisheries food systems.

While local and sustainable food movements have seldom sought to include fisheries, certain approaches derived from agricultural contexts have been adapted to enhance the access to locally sourced and sustainably caught fish (Loring et al., 2013; Lowitt et al., 2013). The Slow Food movement, for instance, seeks to target issues of ethics, sustainability and food culture in order to counter a globalizing and homogenizing

food culture through awareness campaigns, and has looked to include fisheries in developing the Slow Fish movement (Honoré, 2004; Chuenpagdee and Pauly, 2011 Slow Food, 2014). Community supported fisheries (CSF) present a more recent opportunity to look towards increasing the availability and access to localized and sustainable fish and seafood. This direct marketing scheme functions much the same way as CSAs, in which members receive product directly from an individual or a group of producers, and share in the economic risks associated with food production, such as poor yields (Brinson et al., 2011). CSF are seen as a way to shorten supply chains, as well as create social connection and increased interaction between fish harvesters and consumers, enhance access and availability of locally and sustainably caught fish, and help increase incomes for small-scale harvesters (Brinson et al., 2011). While AFNs that include fish and seafood have emerged, there remain significant questions with regards to how AFNs in the fisheries operate and look like, especially as the institutional, socio-cultural, and economic contexts of fisheries are vastly different than agricultural food systems.

This paper examines the opportunities and limitation of developing AFNs in the context of Newfoundland's fisheries, and explores in what ways AFNs can help create a place for fish in the local food system. The research also aims to fill the gap in critical food studies literature in which fisheries have been not featured strongly. It focuses in particular on reconnections in the food system and fisheries that are taking place on the Avalon Peninsula, in the St. John's metropolitan area and in Petty Harbour-Maddox Cove. Drawing from an interactive governance perspective (Kooiman et al. 2005), the research looks at the contributions of fisheries to local food systems, and explores ways in which

fisheries AFNs may present sustainable and appropriate alternatives to conventional fisheries harvest, market and consumption practices. The major themes pertaining to reconnections were identified through looking at the meta-level of governance, in particular, the values that stakeholders expressed. In the following sections, these themes will be examined in order to identify the opportunities and limitations that exist in developing AFNs in the fisheries.

The subsequent section provides an overview of central AFN concepts, linking these with fisheries issues in Newfoundland and the theoretical framework informed by the interactive governance theory. The research methods are then presented, followed by the research findings, which includes the identification of relevant governing actors at the state, market and civil society levels, and the values pertaining to reconnections in the fisheries. The discussion and concluding sections reflect on these values in order to understand the types of reconnections taking place and the underlying motivations for seeking these connections.

2.2 Key Alternative Food Networks Concepts

Critical and more contemporary perspectives of AFNs evoke a broad definition and appearance of 'alternative foods' to reflect the diverse contexts in which alternatives take place, rather than simply presenting 'alternative' in a dichotomous opposition to conventional food production (Winter, 2003; Holloway et al., 2008; Andree et al., 2010; Harris, 2010). This deliberation has given way too much emphasis around what 'alternative' signifies, particularly as many originally 'alternative' approaches have been

absorbed into mainstream and industrial practices (Guthman, 2008). As AFNs do not operate in a void, it can be difficult to determine the boundaries between conventional and alternative, which makes it problematic to assume that AFNs are intrinsically sustainable as they may take on characteristics and practices associated with more industrialized production in order to remain competitive (Andree et al., 2010).

In order to discern differences, 'alterity' is used to describe the degree to which the food item, practice or initiative deviates from conventional food production. This allows for the recognition of the diversity and complexity of AFNs, with 'weaker' alternatives focusing on the attributes and characteristics of food products, such as quality and place, while 'stronger' alternatives emphasizing the processes and networking practices (Holloway et al., 2008; Watts et al., 2008). 'Weak' AFNs are more ambiguous in their alternativeness, particularly as many initiatives do not seek to challenge the conventional food system, and the concerns addressed by these are generally limited to food safety, nutrition and quality (Watts et al., 2005; Maye et al., 2008). Organic agriculture is an oft-cited example of a 'weak' alternative, particularly as it has grown to become an industrialized practice (Guthman, 2008). The concerns addressed by 'strong' AFNs are related to the activities, actors, and dynamics that take place along the supply chain, and frequently take the form of political and social mobilizations (Holloway et al., 2008).

In the context of weak AFNs, food system localization is a value-adding process through shortened supply chains, enhanced relationships and product quality, and often leads to potential price premiums for producers (Mount, 2011; Sonnino and Marsden, 2006). Stronger AFNs are characteristic of what is termed 'reflexive localism', which

views localization as a democratic process embedded in a myriad of social issues and power struggles, and attempts to contradict the notion of particular ways of eating as 'perfected' and 'right' (Dupuis and Goodman, 2005). In other words, reflexive localism is conscious of the more elitist and nationalistic notions that can taint the localization of food systems, and attempts to advocate for a conceptualization of local that is inclusive and accounts for multiple valuations of food and eating practices (Dupuis and Goodman, 2005).

The answer to the question of what makes AFNs 'truly' alternative can be found through the concept of 'reconnection'. 'Reconnection' has become a central notion in many leading AFN discourses and actions, as the connection between consumers and producers is one of the key drivers behind direct marketing schemes and other alternative initiatives (Winter, 2003; Campbell et al., 2014). Put simply, "'reconnection' implies the bringing together of different elements of the food system – producers, consumers, markets, knowledge and nature," (Dowler et al., 2010, p.205). The complex social and natural systems, and governing institutions that are involved in and 'mediate' reconnection are better viewed as a process rather than simply as an end goal, (Dowler et al., 2010). Reconnection should also not give place to nostalgia for a bygone food system that is idealized for its perceived simplicity, wholesomeness and sustainability (Mount, 2011; Dowler et al., 2010).

Kneafsey et al. (2008) highlight the diversity of actors and relationships, and define three 'discursive constructions of reconnection' employed by food system actors: reconnecting producers with their market (enhancing localized market opportunities,

adding value), consumers with product-process-place (enhancing social and cultural connections to food), and people with nature (connecting ecological and social systems). Of these three discourses, the reconnection of producers with their markets tend to be economically motivated, rather than based on a motivation to create a more ethical and ecologically sustainable food system (Kneafsey et al., 2008).

The reasons behind seeking reconnection in food systems are equally multifaceted and have been linked to an 'ethic of care', which refers to personal concerns and care for ecosystems, culture, local economy, sustainability, and local communities (Dowler et al., 2010). These cares are the outward expression of values that people hold, which influences the choices they make, which in this case refers to acts of consumption and eating. Choices and preferences are the combined result of behaviours that are learnt through social and economic institutions, and transmitted by culture and society, by means of personal relationships (O'Hara and Stagl, 2002). Consumers make food choices based on self-interested cares, such as enjoyment, health and nutrition, and based on outward cares, such as a care for others, the local community and the natural environment (Kneafsey et al., 2008). The 'ethical-values' associated to reconnections can also be described as being biological, in reference to natural systems and limits; social, in terms of building relationships, perceptions and feelings; and moral, relating to the ethical foundations (Dowler et al., 2010). These values are at the basis of the choices people make regarding their food, in terms of production and consumption, and contribute towards building reconnections (Dowler et al., 2010). Essentially, looking at the concept of reconnections allows for an examination of the values that affect people's food choices

in terms of consumption and production processes, which leads to an understanding of how AFNs emerge and what motivates people to partake in alternative practices in their food system. Reconnection is thus a central concept to this study, in that it provides a basis by which to examine the unique social, cultural, and economic values that shape Newfoundland's fisheries, and how these values can lead to reconnections in the fisheries.

2.3 AFNs and Fisheries in Newfoundland

While the motivations for seeking alternatives in the fisheries are relatable to those in agriculture, there is a need to understand the differences in the social, biological and governing systems that create a new and unique set of challenges. In this, the idea of 'reflexive localism' is especially important to define locality in a way that takes into account context and is receptive to change (Harris, 2010). Geographic limits play a role in localizing food systems, though it is equally important to consider temporal scales, particularly as 'local' foods conceptually includes the adoption of a seasonal-diet, which can limit the choices and availability of fresh produce throughout the year depending on climate (Parkins and Craig, 2009). Both the geographic and temporal scale of fisheries is dissimilar from that of agriculture, and many regions are simply not located in areas that can support commercial fishing (Campbell et al., 2014). While biological factors, such as seasonal migrations and spawning, play a role in determining the availability of fish and seafood, fisheries management regulations determine when and how much fish can be caught.

The fisheries in Newfoundland hold an immense cultural and historical significance, and are highly complex in terms of actors, institutions and ecology. The province's cultural identity and its economic development are intrinsically linked with the fisheries, particularly with regards to Atlantic cod (Kurlansky, 1997). Newfoundland's fishery has gone through dramatic changes and challenges in the last century, specifically with the collapse of the commercial cod fishery in 1992 following nearly 50 years of intensive overfishing (Schrank, 2005). While the subsequent moratorium on the commercial Atlantic cod fishery significantly impacted coastal communities and livelihoods, fishing is an important source of revenue and employment in Newfoundland. Snow crab and shrimp have replaced cod as the primary commercial and export species accounting for 83% of the capture fisheries landed value, and have become more lucrative than the cod fishery was prior to the collapse (DFA, 2013; Mather, 2013). There remains a restricted commercial quota for Atlantic cod and a limited recreational fishery (DFA, 2013; Mather, 2013).

More recently, the sustainability and durability of the Northern shrimp fishery has been brought into question, as the stocks have been in decline since the 2000s due to increased catches and unfavorable environmental conditions (Foley, 2012). There is also a push to re-establish the cod fishery, with some evidence pointing to the recovery of Atlantic cod stocks (Mather, 2013). Other significant challenges to the fishery include a shrinking workforce due to aging and outmigration, as the seasonal, economically prohibitive and

often-insecure nature of the fishing employment discourages new entrants (Schrank, 2005; DFA, 2013).

Although AFNs in the fisheries are developing in many coastal communities in Canada, they have been particularly slow to emerge in Newfoundland, comparing to other coastal provinces. Two CSAs have been established in Canada: Off the Hook, based out of Halifax, Nova Scotia, and Skipper Otto's in Vancouver, B.C. Though AFNs in the fisheries have yet to develop, the number of AFNs in Newfoundland's agricultural systems has increased. There is a growing network of farmers' markets and direct marketing schemes for agricultural products in the province, as well as a rich history of self-provisioning practices, including fishing, gardening, hunting and berry picking, that have contributed significantly to food security (Teitelbaum and Beckley, 2006;Temple and Carter, 2012; Lowitt, 2013). However, alternative food initiatives in the fisheries have been much more limited in Newfoundland, as there are significant barriers that limit alternate and informal markets in terms of provincial and federal legislation (Murphy and Neis, 2012; Dunne, 2010). Competing interests in the fisheries and the commercial value of fish has lead to opposition of direct sales, particularly with processors and fish workers (Dunne, 2010). There are, nevertheless, certain alternative strategies that are emerging that may play a role in creating AFNs in the fisheries by providing spaces in which awareness, access and availability of locally caught and sustainable fish is enhanced.

The focus of the study is on the St. John's metropolitan area, and the community of Petty Harbour-Maddox Cove (henceforth referred to simply as Petty Harbour), both located on

the Avalon Peninsula on the east coast of the island. These cases offer an opportunity to examine emerging alternatives, in terms of how they arise, organize and operate.

St. John's is the capital city of Newfoundland and Labrador Province, located on the Avalon Peninsula, and is the province's most densely populated area, with a population of approximately 200,000 residents. St. John's serves as the economic and administrative center of Newfoundland and Labrador, with tourism and the offshore petroleum industry generating significant revenue (City of St. John's, 2014). The local and sustainable food movement has become increasingly prominent in St. John's, with a number of agriculture-oriented AFNs that are developing in the region, including direct farm sales, CSA, and farmers markets (Root Cellars Rock, 2014). In terms of the fisheries, there is a growing network of businesses that are looking to include and promote local and sustainable fish, and many actors and business have gained public attention through their efforts (Gollner, 2014). Many businesses have integrated environmental and ethical values and goals into their mandates (Gollner, 2014).

The community of Petty Harbour is an important fishing and tourism hub that has developed and engaged in marine stewardship practices (Protected Areas Association of NL, 1996). The collective of fish harvesters and workers in this area have proved unique in their long-standing commitment to sustainability, as well as their active involvement in local fisheries governance (Protected Areas Association of NL, 1996). These efforts lead to the establishment of the Petty Harbour Fisherman's Co-operative, which has aimed to create a fishing enterprise that is socially just and sustainable, while reinvesting in the

local community. Moreover, efforts to reconnect people with the local environment and their fishing heritage have been arisen through the creation of the Petty Harbour Mini-Aquarium and the Island Rooms.

2.4 Food Systems Governance

Theoretical framework

Looking at AFNs from interactive governance perspective (Kooiman et al. 2005) can offer a broad understanding about how they function in the larger food system, and the interactions that take place between different actors and institutions. This perspective can also fill a gap in AFN research, in which few studies have been done on how government policy and governing institutions can affect the growth and development of AFNs (Andree et al., 2010).

When considering AFNs in the context of local food systems governance, the different appearances and scales of alternative food initiatives, as well as the diverse perspectives and values of producers and consumers present significant challenges (Mount, 2011). To address these issues, a 'reflexive' approach to local food systems governance is required. This approach allows for the renegotiation of boundaries in order to overcome unforeseen challenges, and the recognition of the multiple and diverse motivations of participants (Mount, 2011). As such, 'local' and 'alternative' are flexible concepts that are cannot be pre-defined in terms of food systems governance, and need to be adapted and negotiated to suit the needs of different contexts (Mount, 2011).

Interactive governance provides a broad and holistic lens to examine systematic issues that create and perpetuate problems, and offers ways to look, not only at solving problems, but also at creating opportunities to address complex societal problems (Kooiman and Bavinck, 2005). While this perspective largely been applied in the context of fisheries governance, it is equally appropriate in addressing the complexities of food systems governance, as it enables the consideration of multiple ways in which AFNs may operate according to local needs and contexts, and the institutions and policies that may affect them. Fisheries governance is a classic example of complex issues, referred to as wicked problems, and is characterised by the difficulties in both defining and solving them, as they are intrinsically linked with other, broader problems (Jentoft and Chuenpagdee, 2009). The same may be said about food systems governance, particularly in terms of the complexities in defining scales, cultural, social and environmental components (Stroink and Nelson, 2013).

The interactive governance perspective compliments AFNs in its emphasis on interactions as the drivers for understanding and resolving governance issues. In the case of AFNs, the main governance issue is that of social, cultural and environmental disconnections taking place along the food supply chain, which affect the sustainability of the food system. The concept of reconnections in AFNs, as defined by Dowler et al. (2010) are founded by interactions between different stakeholders, and within and between the natural, socio-economic and governing systems. The interactive governance perspective posits that looking at interactions can help to understand how people relate to one and other, how stakeholders relate to the ecosystem on which they depend on, and

how they relate to the various policies institutions and actors that govern the natural resource (Jentoft and Chuenpagdee, 2009; Chuenpagdee, 2011). Complex issues, such as those faced in fisheries and food systems governance require inclusive and participatory approaches that encourage interactions and collaboration, such as co-management (Jentoft and Chuenpagdee, 2009). Likewise, AFNs look to democratic decision-making processes and inclusivity along the supply chain in order to reconnect the social, cultural, political and natural aspects of the food system (Renting et al, 2012).

In order to examine interactions, the interactive governance perspective looks to the 'meta-level' of governance, which is defined as the set of values, images and principles that guide decision-making processes and frame interactions (Kooiman and Jentoft, 2009). Examining the meta-level of governance, specifically values, allows for an understanding of the ethical motivations that lead actors in the food system to seek out different types of reconnection.

Values are the ethical foundation of governance in that they are at the base of decision-making processes (Song et al., 2013). Looking to commensurable and incompatible stakeholder values can help determine governing barriers and opportunities by clarifying ethical reasoning and power relations (Kooiman and Jentoft, 2009; Song et al., 2013). In the context of AFNs, values provide an understanding of the opportunities for reconnection between food systems actors. Values are a fundamental component of food choices and the motives of consumers to chose alternatives; identifying these motivations are therefore crucial to understanding consumer behaviour and the 'demand' for

sustainability (O'Hara and Stagl, 2002). Song et al. (2013) undertook a comprehensive review of fisheries governance research, which revealed 24 thematic value-types that are categorized under four value orientations. These value orientations are related to the 'ethics of care' performed through reconnection in alternative food networks, and include 'better world' values (altruistic, common good), 'good life' (personal wellbeing), 'personal virtues' (inner personal qualities), and 'outward aspirations' (relationships with others and objects) (Song et al., 2013).

2.5 Methods

The study employed semi-structured in-depth interviews that covered a set of identified themes relating to the fisheries and food systems sustainability and governance in Newfoundland. This method allows the possibility to ask probing and follow-up questions, and enables respondents to provide answers in their own words, which implies that detailed and individualized description of perspectives, experiences and understandings could be revealed (Cope, 2006; Mason, 2004). The selected themes are drawn from the interactive governance framework, which provided a comprehensive description of the fishery and food system, focusing particularly on the interactions within and between the different components of the system (Song and Chuenpagdee, 2010). The themes looked at the meta-level of governance to discern the underlying values that govern the decision-making processes of actors participating in alternative food initiatives in Newfoundland's fisheries. These elements of meta-level governance were drawn from the selection of themes previously identified in fisheries governance literature by Song et al. (2013).

Respondents were selected using purposive sampling methods, in order to target a range of actors engaged in alternative food practices. A total of 13 interviews were completed in the St. John's and Petty Harbour areas, each lasting between 15 to 45 minutes. Participants were restaurant owners, chefs, retailers, fish harvesters, and local food promotion and conservation education organizations. The interviews comprised questions in which participants outlined their roles and relationships in the fishery and/or food system, as well as their involvement in enhancing alternative markets, spaces and knowledge for fish and seafood. Interview data was analyzed thematically, based on the categories outlined by the governability assessment. Nvivo 9 software (QSR International) was used to facilitate and refine the analysis.

The interviews were complemented by an analysis of secondary data, including academic and grey literature, in particular news articles, podcasts and documentaries, in order to provide a social, cultural and economic and historical context to the interview data. Federal and provincial policy documents were considered to examine governing actors and institutions in Newfoundland's fisheries, and potential barriers and opportunities for emerging AFNs.

2.6 Results

A. Governance Actors and Institutions

In the majority of food systems governance research, the market and the state have been the primary focus, while civil society actors and institutions have seldom been included.

The interactive governance perspective advocates that when looking at major societal issues, all three types of actor must be considered (Kooiman and Jentoft, 2009). Civil society in particular plays a key role in the governance of AFNs, unlike in conventional food systems where market and state actors and institutions are prevailing (Renting et al., 2012). The 'governance triangle', used by interactive governance and in food systems governance, can provide a method by which to examine the state, the market and civil society as institutional mechanisms (Renting et al, 2012; Kooiman and Jentoft, 2009). The following section looks at the key actors involved in governing fisheries in Newfoundland, as well as the actors implicated in alternative fisheries initiatives.

State

i. Federal

Local access and availability of fish and seafood in Newfoundland is strongly influenced by fisheries regulations and legislation at the federal and provincial levels. The federal governing body for both commercial and recreational fisheries is the Department of Fisheries and Oceans (DFO), which governs Canada's marine resources within the 200-mile Exclusive Economic Zone (DFO, 2008). DFO is responsible for oceans science and habitat conservation, the implementation of species management plans, including total allowable catches (TACs) and gear restrictions, and the administration and enforcement of individual fisheries quotas and licenses (DFA, 2015). With the province's fish and seafood export being valued at $766 million, the priorities of federal policies have been to develop external markets for Newfoundland fish and seafood, rather than the limited local one. The federal government has sought to facilitate the export of Canadian fish and

seafood through the Canada-EU Trade Agreement, which would eliminate nearly all European Union tariffs on fish products (DFO, 2013). There have been significant criticisms that the arrangement will negatively impact the small-scale inshore fisheries, threatening livelihoods and food security in rural coastal communities (Song and Chuenpagdee, 2015).

Locally caught fish may be accessed through the recreational Atlantic cod fishery in Newfoundland, also referred to as the food fishery, which is regulated and monitored by DFO. With a majority of the population living on or near the coast, the recreational cod fishery provides residents of Newfoundland with the opportunity to access a small amount of Atlantic cod (10 fish per person per day) during the five weeks period when the fishery is opened (BriLev Consulting, 2008). However, federal policy undervalues the contributions of recreational fisheries to food security, and some argue that the access to the fishery is too restrictive with shorte seasons, rising fuel costs, and limited quotas (Lowitt et al., 2013). With regards to access to commercially caught local fish, only licensed fish harvesters may keep a portion of their catch for personal use, as long as it is reported to DFO through the Dockside Monitoring Program, which is responsible for recording and monitoring fish landings (DFO, 2003). After harvesters claim fish and seafood for personal use, DFO cannot prevent them from selling directly to consumers, seeing as it is a matter of provincial jurisdiction (Song and Chuenpagdee, 2015).

ii. Provincial

At the provincial level, the main governing body is the Department of Fisheries and Aquaculture (DFA), which is responsible for regulating aquaculture operations,

processing facilities, and establishing quality standards for landed fish and seafood (DFA, 2015). While DFO governs fisheries resources and fish harvesters, DFA primarily regulates post-harvest activities, including processing, marketing and sales (DFA, 2015). Similarly to policy actions at the federal level, DFA has worked to market Newfoundland fish and seafood internationally, with a particular focus on Asian markets (DFA, 2014). Access to commercially harvested fish is also directly limited by provincial regulations: the direct sale of fish and seafood, including live lobsters, by harvesters to individuals and food premises, restaurants and individual retailers, is strictly prohibited under the guise of food safety and to protect the fish processing industry (Dunne, 2010). The regulation states that individuals are prohibited from buying fish for marketing or processing without a fish buyer's license or a fish-processing license, unless the fish is not intended for human consumption (Tucker, 2007). Individuals may only directly purchase fish for personal consumption through a licensed processor or fish buyer (Tucker, 2007). Newfoundland is the only Canadian province to enact such strict policy, with all other provinces allowing some form of direct sale (Dunne, 2010).

Market

i. Restaurants and Retailers

In the St. John's area, several restaurateurs and chefs are looking to embrace Newfoundland culture and cuisine in new and innovative ways, and seek out fresh and locally produced ingredients. The establishments surveyed have made local and sustainable foods a part of their business plan and appeal, with an emphasis on locally caught fish and seafood. As such, these restaurants have become key actors in the local

food system in terms of making available fish and seafood supply and in creating consumer demand for local products. The increased national and international attention awarded to the St. John's restaurant scene has also raised the profile of Newfoundland cuisine and products (Gollner, 2014). A new food trend has emerged where chefs are looking to provide new and innovative takes on traditional Newfoundland fare, while using often overlooked and undervalued local ingredients, particularly seafood. Cod remains a staple item on the menus of the restaurants interviewed, in the form of fillets, salted cod, as well as cheeks and tongue. Salmon, lobster, cold-water shrimp, halibut, mackerel, capelin, scallops and mussels are also species commonly served. However, many restaurant owners and chefs have reported difficulties accessing locally harvested fish and seafood, particularly specialty products, such as whelk and octopus, which are destined for export markets.

ii. Commercial Fisheries in Petty Harbour

Petty Harbour is originally a cod fishing community, though Atlantic cod became a secondary species following the cod moratorium, replaced by shellfish as in most other coastal communities in Newfoundland. The fishery is inshore and the harvesters engage in a multi-species fishery, harvesting lobster, capelin, squid, lumpfish, mackerel, herring and flounder, with crab as the most economically viable fishery. Because the small local market is seen as a barrier to profits for harvesters in the area, the vast majority of the fish and seafood landed is destined for international markets, particularly those in Japan and the United States, as both crab and capelin are high value export species. There is a limited quota for Atlantic cod, and, with post-harvest facilities shifting from processing

cod to shellfish, the fish landed is intended for the local market in Petty Harbour and St. John's. As such, the overall access to locally source fish was stated as being reasonably good in Petty Harbour. Many fish harvesters retain their catch for 'personal use', and a number of local residents engage in the recreational cod fishery.

Civil Society

i. Fisher's organizations

Acting on behalf of fish harvesters and fish workers, both the federal and provincial levels, is the Fish, Food and Allied Workers' Unions (FFAW/Unifor), which acts as a link between fishing people and the government. The FFAW is a significant lobby group that plays a role in determining policy for Newfoundland's fisheries. The union represents a diverse group of people and interests, including large-scale and small-scale fishing operations. Since the cod moratorium, many have found overcapacity to be a significant issue in Newfoundland's fisheries, leading to lower incomes for harvesters (Schrank, 2005; Song and Chuenpagdee, 2015). The FFAW, along with the provincial government, has supported measures aimed at downsizing of the industry to increase profitability, which predominantly favors industrial offshore fleets over small-scale inshore harvesters (Song and Chuenpagdee, 2015).

The Petty Harbour Fisherman's Co-op has been an important organization in terms of ensuring fisher's livelihoods, community viability and environmental sustainability. Even before the co-op was established in the mid-1980s, the fish harvesters in the community were active in fisheries governance, participating in federal fisheries management

decision-making processes, and through a long-standing Fisherman's Committee established in the 1920s (Protected Areas Association of NL, 1996). The community has worked to limit the use of gear types deemed destructive, such as longlines and gillnets, through the creation of a Protected Fishing Area in 1961, in order ensure environmental sustainability and preserve traditional methods and culture (Protected Areas Association of NL, 1996). The president of the Petty Harbour Fisherman's Co-op stated that the community has helped pioneer the concept of Marine Protected Areas in Newfoundland, and have been advocates for sustainable fishing methods. The Petty Harbour Fisherman's Co-operative was formed as a means to ensure fair prices for local fish harvesters, and in response to the long-held negative relationship between fish harvesters and processors. In the 1980s, the local fish harvesters recognized the growing export market opportunities for capelin and squid as food products; however, local processors were not interested in purchasing these species. Prior to the cod moratorium, the co-operative built and operated a cod processing facility in Petty Harbour, though, currently, much of their premises are no longer in use. The president of the co-operative expressed a keen interest in returning to cod fishing on a larger scale, and the co-operative has been looking at ways to harvest and hold cod in a live state to increase quality and add value.

ii. Local food advocates in St. John's

The Food Security Network of Newfoundland and Labrador (FSN) and the St. John's Farmer's Market (SJFM) are significant advocates for local and sustainable foods in the city. The FSN is a non-profit organization and their mandate is to support community-based food security initiatives and organizations throughout the province, including a

wide variety of programs such as community gardens, bulk-buying clubs, and initiatives with schools. FSN also provides education and awareness about food issues in Newfoundland, and leads food policy action. One of the main concerns addressed by FSN is the limited amount of food that is produced in the province. The group works to increase awareness of, as well as spaces for, local foods, particularly through the establishment of farmer's markets and the creation of a 'buy local' map identifying sources for locally produced foods on the Avalon Peninsula. Through their work, they have identified a significant gap in research around fish as part of local food systems in the province. Nonetheless, due to limited capacities and resources, FSN has focused on agricultural food production in the province, and has yet to create a specific program that addresses fish and seafood access and availability.

The SJFM was established in 2007 in order to create an alternative market for local and small-scale producers on the Avalon Peninsula. The market takes place on Saturdays from June to December, and has grown immensely to include over 200 vendors. It is not strictly a producer-oriented market as wide varieties of fresh produce, international foods, baked goods crafts, and art pieces are sold. As such, the market manager describes the SJFM as a community market, in which the local population can engage in a healthy lifestyle through increased access to local and fresh foods, as well as participate in organized wellness activities on the premise. Despite a growing number of vendors and variety of products, fish and seafood have not been sold at the market. The main reason being that the current space the market occupies limits the types of food that can be prepared, according to provincial food preparation and safety regulations. The market has

also outgrown this space, and the board of directors is in the process of obtaining new premises in which the sale of fish products may become possible and the market will be open year-round.

Many of the restaurant owners and chefs have been active in supporting the local food movement through participating in community events that highlight locally produced foods and traditional food culture. While the local food movement was initially slow to emerge in Newfoundland, the demand for local products has since grown, and locally sourced foods have become more prominent and available in St. John's. As well, the relationships between restaurants has improved owing largely to the emergence of the local food movement, which has allied restaurant owners and chefs toward achieving a common goal of raising the profile of locally grown and caught foods. This is particularly apparent with the formation of a buying group comprising most of the restaurants interviewed, in order to gain access to sustainably caught and traceable seafood from Newfoundland's west coast operated by the FFAW.

iii. Stewardship and conservation organizations in Petty Harbour

The Petty Harbour Mini-Aquarium has recently become a prominent tourism feature and advocate for marine conservation in the community. The facility is a non-profit organization that is currently in the final year of a three-year pilot project seeking to raise awareness about local marine habitats and animals. The aquarium is a catch and release facility operating from May until October, retaining only rare animals, and features 30 tanks, including six interactive touch-tanks. The Petty Harbour Fisherman's Co-op has

been instrumental to the development of the Mini-Aquarium in providing the premises – the aquarium is located in the unused cod filleting room of the co-op-owned processing facility, and in providing the live fish for the exhibit. The mini-aquarium noted that the proximity to the co-op might also provide an opportunity to develop activities in partnership with the local fishers, allowing visitors to learn about the fisheries as well.

A more recent endeavor in the community is the Island Rooms of Petty Harbour, a fisheries and Newfoundland culture education program aimed at children and youth. The project grew out of the founder's concern for the growing disconnection between young Newfoundlanders with nature, the fishery and their heritage, and the program is aimed at letting kids experience and learn about fishing and the natural environment. This program is also meant to engage youth in traditional Newfoundland food practices rooted in self-provisioning, including fish harvesting, processing and preserving, gathering wild foods, and gardening. The founder also hopes that the participants may eventually be able to be mentored by the local fish harvesters and provide fish for their school lunch programs. Due to provincial policy restrictions on direct fish sales and licenses, the program is in the process of seeking specialized permits to engage in fishing activities.

B. Reconnecting place, people and nature in fisheries

The values pertaining to reconnections were identified through looking at the meta-level of governance, in particular the values stakeholders expressed. The identification of these values helps to understand the types of reconnections taking place, and the underlying motivations for seeking these connections. Three primary value types were identified in

the interviews: food system localization, social cohesion, and education and conservation. In the following section, these overarching values will be examined in order to identify the opportunities and limitations that exist in developing AFNs in the fisheries.

i. Food system localization

The interview respondents interpreted local in different ways and associated different benefits and values to localizing food systems, and these values pertained predominantly with developing market opportunities. The scale of 'local' in terms of Newfoundland's fisheries is characterized as being larger than that of land-based food production. In terms of the fisheries, fish and seafood products originating from the whole island were referred to as being 'local', while 'local' for agricultural products was generally seen as encompassing only the Avalon Peninsula. As well, fish products originating from Atlantic Canada was viewed as relatively local, as the foods were caught in the same waters. The reasons restaurants and the retailer indicated for choosing locally harvested fish and seafood were centered on varied notions of quality. Most replied that local fish was preferable as the product 'hasn't travelled', in terms of product freshness and overall environmental footprint. Better taste, nutrition, and an overall higher product quality were also mentioned: one restaurant owner viewed Newfoundland waters to be more 'pure and clean', resulting in better tasting fish and seafood. Certain restaurant owners also expressed a preference for purchasing fish and seafood from small-scale fishing vessels as these were viewed as engaging in more sustainable harvest methods and better product handling practices. Another motive for purchasing locally caught fish that many respondents noted was supporting the local economy, particularly rural fishing

communities. One fish harvester interviewed also expressed similar opinions in terms of the benefits of localness in terms of product quality, saying: “locally caught fish right out of the water are the best that a consumer can have,”. All respondents viewed frozen fish and seafood as being of a lesser quality, due to deteriorated texture and taste when compared to fresh product.

The interview respondents all expressed degrees of difficulty accessing locally harvested fish and seafood, either for their business or personal consumption. The seasonality of fish and seafood was one reason that affected local availability of certain species, due to both biological limits and fisheries management. The restaurant owners and chefs that have made local a part of their business plan change their menus according to seasonal variability, and turn to in-house methods of preservation for local fish, meats and produce to overcome limited product availability especially in the winter. Some respondents did, however, note that for some species, the fishing seasons enforced by DFO are restrictive and do not align with tourism season in the province (generally from June until September). The restaurants and retailer found that the halibut and lobster fishery in particular are restrictive, and either had to resort to frozen product, in the case of halibut, or imports from the mainland, as in the case of lobster.

The export-oriented approach to fisheries in Newfoundland was another reason frequently listed as a cause of limited access and availability to locally harvested fish. As well, the limited size of the local market due to a small population is seen as a barrier to profits for fish harvesters. One fisher based out of Petty Harbour stressed that export

was necessary to make a living. The fishers interviewed noted that the species with the highest local demand is cod, although quotas and seasons are very restricted resulting in low profitability. The main species harvested by the Petty Harbour Fisherman's Co-op, crab and capelin particularly, are of a high value on the export market, while the local demand simply isn't there. The one species all of the restaurants and the retailer interviewed reported no issues accessing locally was cod; it is the access to other species, such as whelks, squid, crab and octopus that are caught locally and destined for foreign markets, or for use as bait, that poses a significant challenge. The restaurants in St. John's are limited only to what is available through their suppliers, as they cannot purchase fish directly from harvesters, as per provincial regulations. They are equally limited in the form of the product, with minimum processing requirements affecting making it difficult to access fish whole.

> "We love codfish and it's a great protein, but there's so much more available, that are beautiful to eat and undervalued and not really recognized by the local market and people generally. So we try to be as interesting as we can in the menus, so we try to source out things other restaurants don't really have. A lot of our work is in the sourcing of the product than maybe even the preparations. Half the work is actually finding it," *Restaurant Owner 1, St. John's.*

The director of the FSN noted that accessing local fish in St. John's seems to be more challenging than in more rural communities, due to the proximity of active fisheries. The likelihood that individuals in these communities directly involved in the fishing industry is higher, meaning that they can catch their own fish, keeping a small portion for their own personal use, as do the fishers interviewed in Petty Harbour. One restaurant owner indicated that while living and working in a rural fishing community in Newfoundland, it was

much easier to develop networks and personal relationships with harvesters, which allow her to access locally caught fish in a more direct manner. These relationships with fish harvesters were viewed as being very difficult to build from within the urban St. John's area by the restaurants.

ii. Social cohesion

The most important value identified throughout the interviews was that of social cohesion, which refers to the processes of social connection, interpersonal relationships, and community values (Song et al., 2013). All respondents recognized a major disconnection between consumers and fish harvesters in Newfoundland, and valued a relationship with actors along the fish supply chain. One respondent noted that this has impeded the flow of information about the process in the food system:

> "We try to support kind of small fishing enterprises as much as possible. But it gets a little difficult sometimes because we can't buy directly from fishermen, then I'm relying on a middleman, and I don't always know exactly where he gets his fish from. So I try to make those connections where we can," *Restaurant Owner 1, St. John's.*

The motivations of respondents to seek personal relationships are focused on increasing the knowledge about the product itself and the processes of harvesting fish and seafood. The current structure of the fisheries supply chain impedes traceability; there is limited, if any, information available to retailers, chefs and consumers about where, how and by whom fish was caught. With an increasing network of alternatives in the agricultural sector in Newfoundland, restaurateurs and consumers are able to build personal relationships with local food producers. Restaurants in St. John's are able to purchase directly from both local farmers and licensed hunters, but must rely on wholesalers to

supply their fish and seafood due to provincial policy: "We can develop relationships with all kinds of farmers, all kinds of producers of everything, and I have a personal relationship with them, but I can't have a personal relationship with my fisherman," said a restaurant owner. An opportunity for creating social connections, albeit at a distance, is the seafood traceability project headed by the FFAW on the west coast of the island. This initiative, adapted from Ecotrust Canada's ThisFish project, allows consumers to connect with fish harvesters on an online platform by means of a traceable tag on fish and seafood products. The group of restaurants in St. John's seeking to access the traceable fish see an opportunity to engage consumers with their food and the fishery, and, to a limited degree, the project may help in creating some social connections between fish harvesters, restaurants and consumers.

While formalized food networks for fish and seafood are exceedingly difficult to form between harvesters, retailers and consumers due to provincial policy prohibiting direct sales, there are nonetheless informal food networks, particularly in rural communities. One respondent in Petty Harbour noted that she had no trouble accessing local fish in the community due to personal relationships with fish harvesters: "when the commercial fishery starts up, then that's not a problem for me personally because I have a brother in law whose a commercial fisherman. But if you're not, if you're outside the harbor, you're going to have some problems…" In Petty Harbour, an informal network did seem to take place with regards to cod. One fisher explained: "Fishermen do it, fishermen take chances and do it for a few extra dollars. That's the way it is in all the communities". Employees of the Petty Harbour Mini-Aquarium have noted an informal trade in the community, and

their location beside the co-operative has made them a link between local consumers and tourist that are interested in finding fresh, local seafood.

iii. Education and conservation of culture and nature

As the fisheries in Newfoundland are fundamentally intertwined with culture, history and community, it is no surprise that alternative initiatives are seeking to integrate traditional values and practices. Respondents indicated a concern for the lack of consumer knowledge about fish as a food product and the fisheries, which impacts food choices. Community actors and restaurants have stepped in to try to educate people about food traditions, skills, and the natural environment, in order to create a demand for and interest in locally harvested fish and seafood.

A number of restaurants in St. John's have developed menus that featured not only local products, but also traditional Newfoundland dishes. As well, many have sought to diversify consumer tastes for seafood to include a wider variety of species. 'Fish' is synonymous with cod in Newfoundland, and consumer demand for other species that are caught locally is low. The restaurants and the retailer interviewed have reasoned that this contributes to the local availability of certain species, which are exported to markets where demand is higher.

> "There's so much around us that we don't take advantage of, and the fishery is the biggest example of that. You talk to Newfoundlanders about fish and they'll basically just say cod. So, I mean there's dozens of species around us that are being harvested that are out there. But we're pretty stuck on what fish is in NL," *Restaurant owner 1, St. John's.*

Another issue lies in the lack of food skills; people often have limited capabilities and knowledge in preparing fish and seafood, which restricts what they will purchase. A seafood retailer in St. John's noted that this issue did affect what he sold to local consumers: "Yeah, I mean people on the local level especially don't really know what to do with anything other than cod, shrimp, stuff like that. I'm sure people around the bay certainly know what to do with it, but as far as bringing any of it in to try and sell it, very hard, very hard to do."

Seeking to increase food skills in consumers can also help in increasing food security and in solving food related heath issues in the province. FSN, through their Root Cellars Rock! project, has sought to emphasize the importance that traditional food skills, such as berry picking, preserving, gardening and fishing, have played in past and the ways they can contribute to ensuring food security and self-sufficiency. Fish and seafood specifically are readily available and healthy, nutritious foods. As well, the director of FSN sees these skills, as well as fish, as a solution to the numerous food issues and health concerns, particularly as Newfoundland faces the highest rates of obesity and diabetes, and other chronic diseases related to lifestyle and diet in Canada.

The matter of building self-sufficiency in Newfoundland's food system has been a concern for the founder of the Island Rooms in Petty Harbour. This project looks to remedy the disconnection that has arisen between young Newfoundlanders and their fishing heritage.

> "So much of our culture has been wrapped up in fishing…. So we're talking about kids growing up and they've never sat in a boat

> and been out on the water, and they don't know what that music means. And it's their culture. I think it's sad that they're growing up and not knowing what their grandparents did for a living," *Founder, Island Rooms Petty Harbour*.

This lack of knowledge about fisheries heritage reveals a stark contrast of how fisheries were viewed in the past. A fisher in Petty Harbour maintained that when he was growing up, fishermen were seen as the heroes in the community, and "it was easy to fall into the fishery trap". The Island Rooms program looks at using food and fisheries as a way to reengage youth in the food system and with nature by developing food skills in terms of fishing and other forms of self-provisioning. With the workforce declining in Newfoundland's fisheries, the founder of the Island Rooms hopes the project will introduce young people to a possible career in fishing, and would like to organize mentorships with local fish harvesters.

The growing disconnection with nature has wider implications on the food system, as people are unaware of the impacts that food products has on the natural environment. The Island Rooms and the Mini-Aquarium have seen a need to reconnect people to the marine environment through natural conservation education. The Petty Harbour Mini-Aquarium provides an opportunity for people to reconnect with the local marine environment by learning about and seeing the animals and their habitats. The organization has formed a close partnership with the Fisherman's Co-operative, which has been a leader in environmental stewardship in Newfoundland. While the Mini-Aquarium is mostly concerned with public education, it has also provided this connection for fish harvesters as well, through bringing the 'ocean up to eye level' and letting fishers experience their local environment and the species they harvest in a new way. The members of the co-op

had never seen a codfish swim before the aquarium, and were unaware of some of the characteristics and natural behaviors of the species they fish. In turn, they were also able share their knowledge and experience of the marine environment with the employees of the aquarium, and there are potential plans to create a program in which the visitors to the aquarium would also be able to engage with the local fishers.

2.7 Discussion

Access to locally sourced fish in Newfoundland is a challenge, particularly in St. John's, though there are many potential endeavors that, together, may help in developing AFNs in the fisheries. Opportunities to develop these alternatives lie in the reconnections that are taking place between food systems actors, with nature, and with Newfoundland culture.

This study found that re-emergence of traditional Newfoundland cuisine provides a unique prospect to reconnect with culture and the fisheries. In this, consumers are able to gain an appreciation for and a better knowledge of food that is available locally, which in turn can help in creating a demand for locally source seafood. Food choices are an expression of preferences and taste, as well as a manifestation of culture and identity that is established by family, social and economic institutions, and biological factors (Dowler et al., 2010; O'Hara and Stagl, 2002). Education initiatives such as the Island Rooms and the Mini-Aquarium, as well as the efforts of restaurants in St. John's to develop a taste for locally sourced fish, can help in altering local consumer preferences. O'Hara and Stagl (2002) assert that preferences are dynamic and continuously adapting, and it is

through education and learning opportunities that 'preferences, goals, capacities, skills, and values' can be altered.

The Island Rooms, FSN and the Petty Harbour Mini-Aquarium are key actors for promoting awareness and engaging in public education about the food issues, the fisheries and the natural environment. These efforts may help in re-connecting individuals with the local marine environment, their heritage, and the local food system. The restaurants interviewed in St. John's play a role in public awareness and education in terms of food culture and product availability. Crafting menus around seasonally and locally available products, especially fish and seafood, can make consumers more aware about what is being harvested in Newfoundland. As well, the restaurants are helping to re-instill a pride of place and culture locally and with visitors. Restaurants and chefs can be key actors in promoting locally sourced food and sustainable food systems, though many promote the intrinsic qualities of local foods, therefore weaker alternatives, rather than the large social benefits (Inwood et al., 2008). While quality was a major reason for preferring locally harvested fish, most chefs and restaurant owners listed supporting fish harvesters and rural communities, as well as sustaining local cultural as important motives.

Encouraging the diversification of fish species consumed locally is a fundamental part of developing alternatives in the fisheries. Yet, the respondents indicated that the consumer demand for fish and seafood remains limited to a relative few species compared to what is caught locally. A lack of food preparation skills can impact the food choices by

limiting foods that are beyond individual's cooking capabilities, and can prevent people from accessing healthy foods and participating in food cultures (Stead et al., 2004). The retailer and restaurant owners interviewed noted that consumer preferences were shaped by food skills, as the knowledge needed to prepare a diversity of fish and seafood species in a healthy manner is lacking. As well, self-provisioning abilities have also declined. The Island Rooms and FSN are attempting to revitalize self-provisioning skills in order to reconnect people with local foods, and with nature. By teaching fishing skills, the founder of the Island hopes to encourage more young people to participate in the recreational cod fishery, where they can access a traditional food source outside of the conventional market.

Despite considerable opportunities, there remain complex and challenging limitations to developing AFNs in Newfoundland's fisheries. More expressly, fisheries policies at the provincial and federal levels create barriers to accessing locally harvested fish and seafood in Newfoundland (Neis et al., 2014). Andrée et al. (2010) found that in regions where export-oriented food production policies were implemented, AFNs are more challenged, as governments support international markets rather than local ones. This is the case in Newfoundland's fisheries, where government at both levels has sought to develop external markets to the detriment of the local one. The policy enacted by DFA that prohibits direct sales of fish by harvesters creates a direct barrier to developing AFNs. A report commission by the provincial government examining the direct sales of fish in Newfoundland found that the current regulatory situation is unfavorable for many actors in the fisheries, and recommended that direct sales to individuals and food

premises be allowed in some form (Dunne, 2010). Enforcement of this regulation has proved to be impractical, and a great number of fish harvesters have found means to curtail barriers and sell fish directly to consumers (Dunne, 2010). It was discovered that, with Atlantic cod especially, harvesters will use a portion of the catch they claim as 'personal use' to supplement their income by selling directly to food premises and consumers (Dunne, 2010).

This study did find that an informal food network occurred in Petty Harbour, where fish harvesters were willing to sell or give away a portion of their catch to consumers, despite legal obstacles. Many respondents indicated that cod was the species that was easiest to access locally, and there are rumored direct sales of crab and cod that have taken place in Petty Harbour. As well, personal relationships, through family ties or social circles, with fish harvesters allowed some to access locally harvested fish more readily. It was found, however, that these networks and relationships may be harder to form for to those living in urban areas, such as St. John's, and lacked a direct connection to the fisheries.

While there are significant legislative barriers to accessing locally harvested fish in Newfoundland, there is a clear interest in accessing fish directly from fish harvesters. Despite this interest, fish harvesters must, nonetheless, rely on export markets for the majority of their catch due to the small size of the local market. This may lead to a more 'hybridized' version of AFNs, in which food producers continue to depend on some conventional aspects of the food system in order for their business to subsist, while waiting for the local demand to expand (Watts et al., 2005; Andree et al., 2010). As with

the fisheries in Newfoundland, this hybridity can often be the result of policy environments that encourage and incentivize all producers, including those engaging in alternative practices and niche markets, to participate in the conventional supply chain (Andree et al., 2010). The strength, or 'alternativeness' of AFNs in these environments can be difficult to sustain, though direct marketing strategies can offer "an important means of maintaining an alternative identity within a context of hybridity," (Mount, 2011, p.112).

The social connections between harvesters and consumers have been maintained through informal food network that have enable the direct sale of fish and seafood. Nevertheless, these networks are geographically and socially limited to those near active fisheries and to those who know fish harvesters. In order for social reconnections to take place between actors in the fisheries, direct sales would need to take place in a way that is more accessible. The restaurants interviewed desired a personal relationship with their fish harvesters, in order to support harvesters economically and to have a greater control over how fish is processed. The seafood traceability initiative manage by the FFAW may provide a way for restaurants to form these connections to fish harvesters, albeit at a distance. Legal direct sales of fish may soon become a possibility. In the past year, the provincial government has stated that is will be considering the recommendations listed in the 2010 report drafted by Dunne (McLoed, 2014). Allowing direct sales has the potential to increase food security in the province, by providing better access to a locally source and healthy food (Neis and Ommer., 2014). As well, it would better enable the development of formalized alternatives, such as community-supported fisheries, which

may help in enhancing small-scale fisheries and coastal community livelihoods (Neis and Ommer, 2014).

2.8 Conclusions

While the concept of AFNs is appropriate to the fisheries, the socio-economic, environmental and political context is highly complex. The interactive governance perspective used to examine the multiple values of fisheries and food systems actors reveal key motivations behind food choices, and opportunities for reconnections occurring in the food system and fisheries. The values identified demonstrated that choosing locally harvested fish and seafood was not simply related to personal ideals, such as quality, health and nutrition, but to values related to outward aspirations, such as environmental sustainability and enhancing coastal communities.

The question of how alternatives can be developed in Newfoundland's fisheries is best answered by looking at the reconnections taking place within the food system, especially in terms of re-engaging consumers with their food through culture and traditions. Although formalized fisheries AFNs currently do not take place in St. John's and Petty Harbour, there is a demand to develop alternative practices that can increase access to locally harvested fish and create a more socially and environmentally sustainable food system. Market actors and civil society organizations play a key role in promoting locally sourced fish, and in instilling a pride in Newfoundland fisheries culture and traditions. Fish and food is used as a way to re-connect with place and history, and promote Newfoundland culture to visitors as well as locals. Potential AFNs in Newfoundland

would need to take the cultural importance of fisheries into account, especially in terms of Atlantic cod, which remains a staple food item.

Formalized AFNs are needed in many cases in order to enable consumer-producer connections, which can take place in many different ways, such as through direct marketing, local retailers and restaurants. While these are important strategies to consider in terms of providing locally harvested fish for many, there is a need for improved access to local fish and seafood in a diversity of contexts in Newfoundland. Along with formalized AFNs, these informal food practices enhance the food system in Newfoundland, and can provide opportunities to develop alternative practices in the fisheries. As such, there needs to be more work done on informal networks in the fisheries, particularly how they may be impacted by legal direct sales. While illegal, these networks challenge conventional markets in the fisheries, and important social features in coastal communities and contributors to food security. Self-provisioning practices, including the food fishery, are also alternatives to conventional market practices, and important features of Newfoundland heritage.

AFN literature is limited in its ability to address these informal practices, despite the fact that many of these are, by all current definitions, AFNs. Conceptually, AFNs are positioned as a response to conventional food production practices, while informal networks, such as those taking place in Newfoundland's fisheries, existed before conventional practices were developed. Peoples have historically bought fish directly from harvesters on the wharf in Newfoundland long before the provincial legislation

prohibiting direct sales was enacted. As one fish harvester put it: “I mean it was done for year and years and years before all this [provincial legislation] came in”.

Many have criticized the practical implementations of AFNs as catering to higher income and more privileged groups, as strategies such as CSA and farmer’s markets can prove costly (Guthman, 2008). In these cases, central values to AFNs, such as social justice, democracy and inclusivity are neglected, especially as only certain groups have access and are able to participate in alternatives (Guthman, 2008). This is somewhat true of many actions taking place in St. John’s in terms of the market, with the restaurants most active in supporting local fish being higher end. For more resounding and systematic changes to take place, more actions is needed to promoted local fish by civil society organizations such as FSN, which links food security to access of locally harvested fish.

The emphasis on relationships and reconnections in AFNs allows for the recognition of the multiple actors involved in building alternative markets, and how they relate to one another. The examination of these relationships in further strengthened by the interactive governance perspective, which examines the interactions between these fisheries and food systems actors, and identifies the multiple values of fish as a natural resource and part of the local food system. This study found that while the fisheries hold important socio-cultural values in Newfoundland, they are primarily value for their economic contributions, particularly in policy, which has created a significant barrier to building AFNs. Conversely, recognizing these alternate values may be key to strengthening the

local access and availability of fish, especially those that relate to and build on Newfoundland food cultures and traditions.

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CHAPTER 3:
A PRINCIPLE-BASED EXAMINATION OF THE 'ALTERNATIVENESS' OF THE FFAW SEAFOOD TRACEABILITY PROJECT IN NEWFOUNDLAND

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The globalized and industrialized nature of conventional fisheries has led to significant issues in terms of ecosystem health, as well as threatening the sustainability of rural coastal communities and culture in Newfoundland. In an attempt to enhance the viability of inshore, small-boat fisheries, the Fish, Food and Allied Worker's Union (FFAW) developed a seafood traceability project that has created opportunities for harvesters to build relationships with consumers and enhance the local market for Newfoundland fish and seafood. While there are significant policy barriers that have restricted the inclusion of fish in the local food system, and the FFAW traceability initiative has created significant opportunities in enhancing the access and availability of locally harvested fish in Newfoundland. This paper is founded in the interactive governance perspective, and examines the governing principles of the seafood traceability project in order to assess how they deviate from those related to conventional fisheries, and the opportunities and limitations of developing fisheries alternative food networks (AFNs). Alternative food networks (AFNs) provide a means to address these wide-ranging socio-economic, environmental and cultural issues of conventional food production. The key governing principles of the FFAW traceability initiative are contrasted with those expressed by 'weak' and 'strong' AFNs, and with the governing principles of the dominant seafood sustainability label, the Marine Stewardship Council (MSC). The study finds that the FFAW traceability initiative is similar to 'strong' AFNs in terms of supporting social and environmental sustainability, yet engages in a highly globalized supply chain, as is the case with the MSC and 'weak' AFNs.

3.1 Introduction

The globalized and industrial development of commercial fisheries has given way to an array of concerns regarding sustainability. Not only have marine ecosystems been severely impacted by use of destructive fishing gear and over-exploitation of resources, commercial fisheries have put into question the viability of coastal communities and the overall sustainability of the food system. One of the responses to these issues is the

growing global movement for sustainable seafood, which has led to certification schemes and consumer guides, effectively creating a market for sustainably caught fish (Konefal, 2012; Silver and Hawkins, 2014). The emergence of eco-labels in fisheries has been in part due to rising consumer concerns for where their fish is coming from and how was caught, as well as the impacts of fishing on ecosystems (Loring et al., 2013). With fisheries implicated in a globalized and complex supply chain, consumers are both physically distanced from where their fish is caught, and socially distanced from fish harvesters (Clausen and Clark, 2005; Loring, 2013). For the most part, the sustainable seafood movement has aimed primarily to reduce the impacts of commercial fishing on the natural environment, and has neglected the wider impacts of fisheries on the food system (Konefal, 2012; Olson et al., 2014). The emphasis on market-based governance in the sustainable seafood movement has led to increased consumer awareness and improved access and availability of 'sustainable' seafood products, but has yet to challenge the systematic issues in fisheries, such as overexploitation and the growing corporate control over resources, that continue to contribute to environmental degradation and social inequalities (Konefal, 2012). In this, significant concerns remain as to the potential social and cultural impacts of the sustainable seafood movement on coastal communities and on small-scale fisheries, particularly as participation in certification schemes can prove costly for fish harvesters (Ponte, 2008).

Food systems can be defined as the set of processes, actors and institutions implicated in getting food from farm, or ocean, to plate (Olson et al., 2014). The conventional food system is highly complex, and takes place at a global scale with a large

number of actors involved in harvest, processing, distribution, and retail activities. This type of food system is resource intensive and high impact, as production relying heavily on mechanization and technology to maximize yields (Pollan, 2006). The globalized nature of the supply chain implies that production and consumption activities are generally distanced, and transportation accounts high environmental costs in terms of carbon emissions (Anderson, 2008).

In an effort to counteract the high environmental and social impacts of conventional food systems, alternatives have emerged that seek to reduce the length of the supply chain in terms of geography and number of actors in an effort to create sustainable food systems. While scholarly literature and actions relating to alternative and local food initiatives have focused predominantly on agriculture, they have begun to be adapted to the fisheries, and seek to build relationships between fish harvesters and consumers through direct marketing strategies (Loring et al., 2013; Olson et al., 2014). Alternatives in the fisheries have arisen in Canadian coastal communities in response to growing environmental and socio-economic concern, most notably in the form of community-supported fisheries (CSF), which are similar to co-operatives or buying groups in that consumers pay a set fee at the beginning of the fishing season, guaranteeing a set income for fish harvesters (Lowitt et al., 2013). Equally, while fish and seafood traceability has been predominantly used as a tool to ensure food safety and product quality, it is being promoted as a method to increase ecological and socio-economic sustainability in fisheries by governments, industry and non-governmental organizations (NGOs) (Magera and Beaton, 2009). However, alternatives have been particularly slow to emerge in Newfoundland's fisheries comparatively to other

provinces. Despite the role that fisheries have played in Newfoundland's history, culture and economy, their value as a food source has been underrated, particularly in government policy (Lowitt et al., 2013). The legislative emphasis on export, and the prohibition of the direct sales of fish by harvesters to consumers has impeded the development of alternatives food initiatives in the fisheries (Murphy and Neis, 2012).

Even with significant challenges, efforts have been made to develop relationships between fish harvesters and consumers, and to enhance the access and availability of locally harvested fish by means of a seafood traceability project managed by the provincial Fish, Food and Allied Workers' Union (FFAW). The FFAW, working in partnership with ThisFish, a project run by Canadian environmental organization Ecotrust Canada, allows consumers to access information about how their fish was caught, where and by whom. In addition to providing consumers with knowledge about their food, the project allows for consumers to communicate with harvesters online. The traceability project aspires to raise the profile of Newfoundland fisheries globally, while promoting sustainably caught, high quality fish and seafood to local consumers.

By investigating the traceability project, this study examines the ways in which seafood traceability can enhance the inclusion of fish in local food systems, and contribute to the development of AFNs in Newfoundland's fisheries. This research therefore asks: what are the guiding governing principles that inform the traceability project, and can these be qualified as being 'alternative' to conventional market practices? In order to answer this question, fisheries will be framed within the broader food system by means of critical food studies literature on alternative food networks (AFNs), which emphasize the re-localization of food systems, and the reconnection of

actors along the food supply (Kneafsey et al., 2008) Employing the interactive governance perspective, this paper aims to examine whether the traceability initiative in Newfoundland provides a more sustainable and alternative means of marketing fish and seafood, and in what ways the project can contribute to the local food system.

The subsequent section provides an overview of AFN literature and current fisheries governance issues in Newfoundland, which guide interview research conducted with stakeholders participating in the FFAW's traceability project. Later, the research methods are presented, followed by the results, which include an examination of governance actors implicated in the fisheries and the traceability project, and the key governing principles identified through the interviews. These principles lend themselves to a discussion of how alternative the traceability project is in contrast to the governing principles of 'weak' and 'strong' AFNs, and the MSC label. The paper concludes with a discussion of the opportunities that the FFAW traceability project in creating a more localized and sustainable food system that includes fisheries.

3.2 Food Systems and Fisheries Governance

Fisheries are largely governed as a natural resource, rather than a food product, with conversations around fisheries contributions to food security taking place at an international level and in terms of stock management (Olson et al., 2014). Looking at fisheries as part of the food system requires an understanding of resource management practices, as well as the actors and institutions involved in post-harvest and processing

activities, such as transportation, distribution, retail and consumption (Olson et al., 2014). Food systems governance literature has predominantly focused on the governance mechanisms of market and state actors and institutions, while the role of civil society has been overlooked (Renting et al., 2012). Similarly, the notion of governance in fisheries has often been synonymous with 'government', and markets-based approaches have increased in fisheries management practices (Kooiman and Bavinck, 2013). Complex governance issues, such as those that take place in fisheries and food systems, require that responsibility and actions be shared between markets, government and civil society, each conveying unique capacities and values (Kooiman and Jentoft, 2009). The relationships and interactions between these actors affect how problems are identified, and how governing decisions are made and carried out (Kooiman and Bavinck, 2013).

This perspective is complimentary to AFNs in that it provides a holistic and systematic examination of complex governance issues, emphasizing that both issues and solutions to these issues are context dependent and there is no one right answer (Jentoft and Chuenpagdee, 2009). The contexts in which AFNs take place are highly variable, with different social, cultural, natural and political boundaries, and a diversity of actors and institutions, which inevitably create complexities in terms of governance (Mount, 2011). As such, local food systems governance must present adaptable solutions and overcome unexpected challenges (Mount, 2011). The interactive governance is an adaptable perspective that accounts for the integral dynamics and complexities of food systems, and is well positioned to examine governance in the context of AFNs. In terms of AFNs and Newfoundland's fisheries, interactive governance allows for the consideration of diverse and sometimes competing stakeholder interests and perceptions,

which complicate governance processes (Song and Chuenpagdee, 2015). In order to address and resolve governance issues, interactive governance calls for an examination of interactions, which define and shape decision-making processes, and make clear governance obstacles and opportunities (Chuenpagdee, 2011; Song et al., 2014).

In order to examine what drives interactions, the meta-level of governance, i.e. the core values, images and principles that governing actors hold, must be examined (Kooiman and Jentoft, 2009). Song et al. (2014) conducted an in-depth review of fisheries literature in order to identify the principal values, images and principles associated with fisheries governance practices and theory. Principles are noted as having the most explicit applicability, as they are essentially a set of operating parameters and the foundations of fisheries guidelines and standards (Song et al., 2014). In other words, principles illustrate how governance should be carried out; for instance, the principle of 'transparency' calls for governance practices that are open and allow for the dissemination of information (Kooiman and Jentoft, 2009, p. 825; Song et al., 2014). Interactive governance theory advocates for a set of basic and general principles by which characterize an adaptive and flexible management model, including accountability, inclusion, and responsiveness (Kooiman and Jentoft, 2009; Jentoft et al., 2010; Chuenpagdee, 2011). As well, contextual principles should also be recognized to account for the variances in cultural practices and values, although a balance between these and universal principles should be sought to minimize conflict (Kooiman and Jentoft, 2009).

Examining governing principles can provide an understanding of how policies are implemented, and shed light on conflicting goals of different fisheries institutions and

actors (Song and Chuenpagdee, 2015). A significant challenge in terms of the governance of Newfoundland's fisheries was found to be the inclination towards principles favoring global economic integration, rather than principles that help to retain cultural and support local community viability (Song and Chuenpagdee, 2015). Thus, such principles supporting a 'free-trade' doctrine threaten the sustainability of rural coast communities and the inshore, small-boat fisheries in Newfoundland, favoring the economic growth associated with large-scale, export-oriented enterprises (Song and Chuenpagdee, 2015).

3.3 Alternative Food Networks (AFNs)

AFNs are defined as alternative ways of thinking, producing, marketing, distributing and eating food, and are a response to the significant socio-economic, ethical and ecological impacts of the conventional food production (Harris, 2010). At an environmental level, the high input and industrialized practices of conventional agriculture have resulted in soil degradation, water pollution and losses of biodiversity (Wittman, 2009). Conventional agriculture is also linked with higher corporate control over food production, distribution and retail, in which producers and consumers have less control over their food system (Wittman, 2009). While these practices have increased food production, the used of efficient technologies have diminished labour needs, and the number of farms, along with farmers' incomes, have subsequently shrunk (Wittman and Desmarais, 2014). More specifically, AFN literature argues that conventional food production has resulted in disconnected arrangements along the supply chain, effectively disengaging consumers from food itself, and food production processes and actors

(Kneafsey et al., 2008). As a result, AFNs seek to build relationships between actors along the food supply chain, reconnect people with their food, foster decentralized and democratic decision-making processes, and re-localize food systems (Watts et al., 2005).

The particular strength of AFNs is in the emphasis on reconnections, between producers and consumers, consumers with food products and processes, and with nature and place (Kneafsey et al., 2008). AFNs can take many forms to enable localized and shortened supply chains, for instance, community supported agriculture, farmer's markets, and community gardens (Harris, 2010). While physical proximately evidently plays a role in localization and the establishment of relationships between food systems actors, reconnections can equally take place at a distance. Internet-mediated food schemes can provide consumers with the opportunity to exert a form of control over and gain knowledge about their food, as well as reconnect with the places and people involved in food production (Holloway, 2002). These internet-mediated food schemes challenge the idea that consumer cares and ethical food choices are fundamentally limited by physical distance (Kneafsey et al., 2008). Holloway (2002) notes that in internet-mediated schemes, a virtual trust and relationship can emerge between producers and consumers leading to a sense that the processes of localization can take place on a larger scale. The potential for consumer care and ethical food choice can therefore be impacted by technologies, and there is limited research that has been done on the relationships built along the food supply chain by means of the Internet (Kneafsey et al., 2008).

Critical food studies have questioned what exactly constitutes 'alternative' in AFNs, as a simple juxtaposition against conventional practices does not account for the variability and contextual disparities of different strategies (Kirwan, 2004). This has

given way to a distinction between the relative degrees of alternativeness of initiatives by ranking them as being 'weak' or 'strong', based on their divergence from conventional practices. 'Weak' AFNs focus on the characteristics of the food product itself as being alternative, such as quality, rather than the processes of production. Examples of weaker AFNs include strategies such as place-based labels, fair trade certification and organic agriculture, which are more vulnerable to becoming adopted into conventional food systems (Watts et al., 2005). For an AFN to be qualified as 'strong', the networks by which food travels from producers to consumers must be alternative and localized. This type of alternative refers to strategies that operate outside conventional markets, such as farmer's markets, food boxes, community-supported agriculture and community gardens (Mount and Andree, 2013). However, many producers that engage in alternative practices are faced with pressures that undermine their 'alterity', particularly in regions where policy favours external markets (Andree et al., 2010). These AFNs are therefore categorized as being 'hybrid', as they engage in both alternative and conventional practices and markets (Andree et al., 2010).

'Weak' AFNs are centered primarily around the principles of quality and localization, which are most often expressed in food safety policies and in place-based labeling initiatives (Watts et al., 2005). Economic viability is also a key principle in weak AFNs, particularly as these types of AFNs seek to add value and create niche markets for alternative food products (Watts et al., 2005). In essence, the principles that guide weaker alternatives are centered on the product itself, and a concept of localization that can be qualified as 'defensive', meaning that there are set boundaries that define what constitutes 'local' (Hinrichs, 2003). Defensive localism doesn't account for the cultural,

social and environmental systems that can shape diverse meanings of 'local' (Hinrichs, 2003).

'Strong' AFNs are governed by principles that pertain to 'reflexivity', highlighting the contextual, socio-political and biophysical elements that shape local food systems and the boundaries of local (Mount, 2011). The governing principles of 'strong' AFN are chiefly adaptability, social justice, democracy, human welfare and values, participation and transparency (Hinrichs, 2003; Maye et al., 2008; Mount, 2011; Song et al., 2014). Reconnections are central to AFNs, and these can be expressed through the principles of social cohesion and environmental stewardship.

3.4 Marketing Sustainable Seafood

The sustainable seafood movement has largely been a combined effort of market and civil society actors, using market-based governance mechanisms (Konefal, 2012). From this, the movement has aimed to create a market for sustainable seafood, by means of influencing consumer choice and behavior through labels and purchasing guides (Ponte, 2012; Silver and Hawkins, 2014). Purchasing guides are most often created by environmental non-profits, and provide consumers with a generalized idea of what fish to purchase based on the status of the stock and how they are caught (Konefal, 2012). Notable guides include the Monterey Bay aquarium seafood watch and Ocean Wise (prepared by the Vancouver Aquarium), which provide consumers with pocket guides they can bring to seafood markets and restaurants (Konefal, 2012; Olson et al., 2014; Vancouver Aquarium, 2015).

The most notable fisheries certification scheme is the Marine Stewardship Council (MSC), which developed through a partnership between the World Wildlife Fund (WWF) and Unilever, a multi-national corporation and one of the largest purchasers of seafood globally (Ponte, 2012). MSC employs a third-party certification process that evaluates individual fisheries based on a set of sustainability criteria, and fishing enterprises, processors and retailers can then apply for a chain of custody certification to use the MSC logo on their product (Ponte, 2008).

There have been significant criticisms of the MSC certification process, particularly with regards to the prohibitive costs that have led to the exclusion of small-scale and developing country fisheries from the growing sustainable seafood market (Ponte, 2008; Olson et al., 2014). In an attempt to become more inclusive, the MSC has taken steps to engage fisheries in developing nations through the Fishery Improvement Program (FIP), which allows fisheries to implement actions to improve sustainability in order to pass the MSC certification process in future (Marine Stewardship Council, 2013). The FIP allows fisheries to work towards achieving the sustainability criteria outlined by MSC prior to assessment, increasing their chances of success while undergoing the actual certification process (Marine Stewardship Council, 2015). Additionally, the effectiveness of private-led market governance, such as MSC certification, as a replacement for state-led management has been questioned, as well as the actual sustainability of the certified fisheries (Ponte, 2012). Evidence has surfaced pointing to unsustainable practices occurring in certain MSC certified fisheries, such as high by-catch levels in the Nova Scotian Atlantic swordfish fisheries, and consumers are not receiving enough information about their fish through an eco-label (Zwerdling and

Williams, 2013). A more general criticism of market-based fisheries governance and sustainable seafood movements contends that the consumption certain species of fish on the basis that they are more 'sustainable' perpetuates overfishing, whereas an overall reduction in the consumption of fish is warranted (Konefal, 2012).

The governing principles utilized by the sustainable seafood movement are aimed at managing fisheries resources at the market level, rather than relying on state-led management which is seen as ineffective (Ponte, 2008). Actions and guidelines are based primarily on biological measures of ecosystem health and fisheries stock assessments, and these are used to determine what fishing practices and gears can be deemed sustainable (Olson et al., 2014). The governing principles of the MSC, for instance, are centered on the responsible management of the targeted fish stock, the reduction of fisheries impacts on marine resources, and strengthening the fisheries management systems and standards in place at the local, national and international levels (Ponte, 2008). On the other hand, consumer-purchasing guides aim to modify consumer choices and the types of fish and seafood offered by retailers (Konefal, 2012). The guides base their assessments of 'sustainability' on fisheries management practices, gear types used, scientific stock assessments, and the impact of a given fishery on the marine ecosystem (Olson et al., 2014). The governing principles that the organizations use to create these guides are rooted primarily in conservation, scientific information, precaution and responsibility (on the part of consumers in terms of food choices).

Seafood traceability has been sought by market and state actors as a method to increase transparency of fisheries supply chains, as well as a means to ensure that sustainable practices are being employed (Jacquet and Pauly, 2008). The need for

traceability has arisen as a result of frequent mislabeling of fish and seafood products, which can have economic, social and ecological impacts. The economic repercussions of mislabeling practices are the most apparent for governments and consumers, as these practices affect the efficacy of the market and global trade (Jacquet and Pauly 2008). Most commonly, low value fish and species are substituted for high valued ones of similar appearance and then priced accordingly (Miller et al., 2012). As such, mislabeling seafood products the potential to disempower consumers by removing their ability to make informed choices about their purchases through misinformation about country of origin, harvest practices, and species (Miller et al., 2012). Consumers seeking to purchase ethical and environmentally sustainable fish and seafood rely largely on eco-labels to inform them about the harvest practices, and mislabeling can undermine eco-campaigns and conservation goals (Jacquet and Pauly, 2008). For governments, there are also concerns about the circumvention of policies intended to prevent illegal, unreported and unregulated (IUU) fisheries, which contributes to overfishing and the harvest of threatened species (Jacquet and Pauly, 2008). The United Nations' Food and Agriculture Organization (FAO) reports that IUU fishing occurs in all fisheries, and poses a significant threat to the sustainability of global fisheries as well as food security and coastal livelihoods (FAO, 2012). Proper labeling practices have been deemed necessary in fisheries as well as agriculture for food safety reasons, in order to prevent fish with high toxicity levels from being sold to consumers (Jacquet and Pauly, 2008).

Traceability is therefore sought as a measure to prevent IUU fishing, mislabeling practices, and provide additional information to consumers about how their fish was handled from harvest to retail. Compared to other nations, particularly those in Europe,

Canadian labeling standards are lacking (Lowitt et al., 2013). While species and product of origin are required to be on fish and seafood labels, there is no requirement to label whether the product was wild-caught or farmed, and if there are any added preservatives or colourants (Magera and Beaton, 2009). Traceability, while supported at the state level, remains voluntary for agricultural and fish products, and there have been increasing market pressures to adopt more comprehensive standards in order to compete in international markets (Magera and Beaton, 2009). In light of the lack of state-led traceability initiative, market and civil society actors have stepped up to create traceability standards and labels, which can allow fisheries to increase their product value and meet demands (Magera and Beaton, 2009). Eco-labels, either third-party certification schemes such as MSC, or second-party industry-led initiatives, can also provide a measure of traceability by setting transparent standards for fish harvesting, handling and processing practices (Jaquet and Pauly, 2008; Magera and Beaton, 2009).

The traceability initiative in Newfoundland and the ThisFish project are internet-mediated approaches to reconnecting consumers with their food and with those who produce it. The project in Newfoundland was conceived through a partnership between Ecotrust Canada and the FFAW, in order to provide a venture that was appropriate to the Newfoundland context. In essence, the FFAW's traceability project aims to build consumers' knowledge about their fish and seafood, as well as provide harvesters with a means to market their product and build relationships with their customers.

AFNs can provide an appropriate perspective by which to address the socio-economic, cultural and environmental issues relating to lengthening supply chains and disconnected actors. Long supply chains create issues with regards to transparency in

harvest and processing practices, and diminish the portion of the retail value of fish that harvesters receive (Lowitt et al., 2013). Emerging AFNs in the fisheries attempt to build relationships between fish harvesters and consumers, traceability, and improve access to and availability of sustainable and local fish and seafood. Fisheries AFNs have been modeled after alternative initiatives in agriculture, such as community-supported fisheries (CSF), which employ similar strategies as community-supported agriculture to connect food producers with consumers (Brinson et al, 2011). Operating principles in AFNs are similar to those highlighted in fisheries literature, with different principles expressed in 'weak' and 'strong' alternatives.

3.5 Research Methods

The research project looked at the Port-aux-Basques area, located on the southern-most point of the west coast of the island, where the majority of the harvesters participating in the FFAW traceability initiative are located. Channel-Port aux Basques is the largest municipality in the area, and the fisheries are an important source of employment along with the Marine Atlantic Ferry service, which connects Newfoundland to the mainland (Labour Market Development Division, 2007). Fishing and fish processing also plays a role in the local economies of the smaller towns in the area, such as Burnt Island, Iles aux Morts and Rose Blanche (Labour Market Development Division, 2007). Currently, the only buyer and processor in the area is located in Codroy, with a smaller processor based in Burnt Islands shut down in 2014.

The study primarily employs in-depth, qualitative interviews targeting stakeholders involved in the traceability project in terms of harvest, retail and management, which were selected using purposeful and snowball sampling methods. A total of 14 interviews were conducted with retailers and restaurants, fish harvesters, program administrators or managers, and fisheries union executives. The interviews took place in person or telephone in the Port-aux-Basques area and in St. John's. Fish harvesters and a restaurant participating in the traceability project were interviewed in the Port aux Basques area, where the traceable fish is landed and processed. The interviews with the traceability project coordinators and FFAW executives, along with the buying group of restaurants, were conducted in St. John's. Respondents were asked open-ended questions pertaining to their role in the fisheries and the traceability initiative, their perceptions of local access and availability of fish, and their motivations to participate in the traceability project.

A thematic analysis was done using Nvivo 9 software in order to determine the underlying principles that governed the FFAW traceability project. The themes were developed based on a set of 20 fisheries governance principles identified in Song et al. (2013), and on principles guiding AFNs that were identified in critical food studies literature, including quality, social cohesion and localization (Goodman, 2003; Mount, 2011). The study also relies on secondary data to provide an overview about the actors and institutions that govern the food system and the fisheries, as well as key governing principles. The review of policy documents at the federal and provincial level, academic reports, and grey literature was used as supplementary data.

3.6 Principle-based examination of Alternatives in Newfoundland's Fisheries

The following section explores the different governing actors involved in the traceability project in Newfoundland, as well as the actors and institutions in Newfoundland's fisheries. More specifically, the fisheries governing actors that are responsible for the Atlantic lobster and Atlantic halibut fisheries, which are the species included in the traceability project in Newfoundland, will be discussed. In order to determine the 'alternativeness' of the traceability project, the governing principles will be examined in relation to those associated with 'strong' and 'weak' AFNs.

3.6.1 Governance Actors in Newfoundland Fisheries

i. Civil Society

Traceability has become increasingly prominent in global fisheries and in agriculture, predominantly in Europe, in order to ensure food safety and better transparency throughout the supply chain, and the harvesters wanted to develop a project that was fisher-led rather than being government enforced. The traceability project, ThisFish, started in 2009 as a fisher-led project in British Columbia, in collaboration with a non-governmental organization, Ecotrust Canada, in which fish harvesters recognized the need to embrace traceability, for both market reasons and simply out of curiosity as to where their fish was going. The fish harvesters approached Ecotrust to find a way to better inform consumers about how their fish products were caught, handled and processed, and market these attributes, especially the higher product quality as a result of higher accountability. The ThisFish system was not only designed to build consumer knowledge, but also to provide a line of communication between harvesters and their

customers. In general, fish harvesters taking part in the program are provided with tags for their fish with a numerical code that consumers, upon purchasing of the fish, can enter on the ThisFish website. Consumers can use the code to identify the associated fish harvester, read their profiles, as well as make contact, if they wish to do so. These profiles contain pictures and videos of the harvesters, along with information about their boat, crew and gear types used. Currently, ThisFish has fisheries operating in all the Atlantic Provinces and in BC, and additional projects are emerging in the United States, Iceland and the Caribbean.

In Newfoundland, the FFAW was looking to create a traceability project, and thus partnered with ThisFish in launching an initial pilot project with federal government funding through the Atlantic Canada Opportunities Agency (ACOA) in 2011. The current project in the Port aux Basques area, now in its second year, began with lobster and has since grown to include halibut in 2015. Both fisheries are small-scale and inshore, with the lobster harvesters using traps and speedboats of approximately 20 feet in length, and halibut harvesters employing long lines with hooks and vessels of approximately 35 feet in length.

The FFAW is a union representing a broad range of fisheries actors, and are involved in marketing of Newfoundland and Labrador seafood products nationally and internationally. The traceability initiative is appealing to the organization in terms of creating recognition for Newfoundland products. In order to ensure that the initiative could be carried out at a large scale, the FFAW worked toward developing a way in which minimal effort was required on the part of fish harvesters to participate in the

project. According to the traceability coordinator for the FFAW, the only work required of fish harvesters is the creation of their online profiles. After these are completed, fish harvesters need only to tag their fish and respond to consumer's messages, if desired. While the traceability project operates using the ThisFish database, the FFAW has worked to create a more distinctive traceability tag on which it is immediately apparent that the product is from Newfoundland. This is being done in hopes to create a distinguishing brand for Newfoundland fish and seafood, in order to promote it locally and abroad.

ii. State

Two 'state' actors govern NL fisheries. Department of Fisheries and Oceans (DFO) is the governing body at the federal level, responsible for scientific assessments of fish stocks and ecosystem health, creating and implementing conservation plans, and managing commercial and recreational fishing licenses and quotas (DFO, 2008). The other is the Department of Fisheries and Aquaculture (DFA), the governing body at a provincial level in Newfoundland, responsible for post-harvest activities, regulating processing, distribution and sales of fish and seafood. The roles of these two state actors in the development of fisheries AFNs in NL are described and compared below.

DFO

Under the Fisheries Act, implemented over a century ago, and the more recent Oceans Act of 1997, DFO's role in the sustainable development of fisheries resources and the adoption of an integrated management approach in order to share responsibilities with

stakeholders is emphasized (DFO, 2008). DFO is also responsible for dockside monitoring to ensure compliance with quotas and measure landings (DFO, 2003). The main governing principles of DFO are conservation, participation, accessibility (in terms of resources users), responsibility, transparency, social justice and human welfare and values (in terms of recognizing multiple-use values of fisheries) (DFO, 2008).

With respect to lobster fisheries, there are currently 43 inshore small-scale fisheries and one offshore, while another fishery is closed for conservation purposes. Lobster fisheries are managed through designated Lobster Fishing Areas (LFA), with 16 LFAs off the coast of Newfoundland and Labrador (Temple, 2010; DFO, 2011). Seasons and quotas are determined separately for each LFA, as well as voluntary conservation measures (Temple, 2010). Conservation measures can include limiting the number of licenses issued in each LFA, implementing size restrictions on lobsters caught, and v-notching egg-bearing females (a way to identify gravid female lobsters so that they are thrown back for reproduction) (DFO, 2011). The fisheries currently participating in the traceability project are LFA 11, 12, 13a, 13b, 14a and 14b (ThisFish, 2015).

The Atlantic halibut fishery in Newfoundland is managed in conjunction with other groundfish species, such as cod, flounder and plaice, and there are commercial, recreational and aboriginal fisheries (DFO, 2014). The fisheries are divided by Northwest Atlantic Fisheries Organization (NAFO) fishing areas, as many of these species migrate outside of the 200-mile exclusive economic zones (EEZ) that delimit national oceanic boundaries (NAFO, 2015). The groundfish fisheries participating in the traceability project include NAFO divisions 3Ps and 3Pn along the southwest coast. In order to set the annual Total Allowable Catch in each area, DFO must consult on an international

scale to divide quotas for groundfish species between French and Canadian fleets (DFO, 2014). Many of the groundfish species in these areas are under a moratorium or have faced reduced quotas since the collapse of the groundfish fishery in 1992, and harvesters are required to complete logbooks in order to provide additional scientific information for DFO on the health of fish stocks (DFO, 2014). The majority of Atlantic Halibut quotas in Newfoundland are held by smaller vessels (under 65 feet) using fixed gear types (DFO, 2014).

DFA

Marketing of Newfoundland and Labrador fish and seafood products has become a key priority for the provincial government, particularly with regards to developing international markets (DFA, 2013). Sustainable management of species is stated as being imperative, and the provincial government has pursued certification to ensure market access for Newfoundland and Labrador seafood in the face of major retailers vowing to purchase exclusively MSC certified products (DFA, 2014). As well, the guiding governance principles of DFA are participation, scientific information and transparency (DFA, 2013). DFA has provided significant investment to help a number of species, including northern shrimp, clams, scallop and snow crab, achieve MSC certification, and is actively seeking MSC certification for lobster (DFA, 2013). The offshore Atlantic halibut fishery in Newfoundland (NAFO area 3NOPs), employing longliners with demersal long-lines, demersal trawls, gill nets, and handlines, became certified in 2013 (MSC, 2015).

DFA has equally recognized the importance of traceability in order to remain competitive in international markets, particularly in Europe where food traceability is commonplace, and has thus supported the FFAW in implementing the seafood traceability initiative on the southwest coast (DFA, 2013). From the perspective of DFA, the traceability initiative is primarily a marketing mechanism for Newfoundland and Labrador seafood, and a way to better ensure product quality.

Many fish species are subjected to minimum processing requirements implemented by DFA, which regulate how fish must be processed after landing and before leaving the province (Temple, 2010). Halibut must be processed 'head on gutted and packaged', while lobster is not subject to any processing requirements and can be sold live (DFA, 2008). In terms of sales, the province requires that fish be sold only to licensed buyers and processors, meaning that the direct sale of fish by harvesters to consumers is strictly prohibited (Dunne, 2010). This measure was implemented to support the processing industry, which provides an important source of employment to rural communities (Dunne, 2010). As well, provincial policy emphases the development of export-oriented markets, particularly in Asia, while local markets have been overlooked (DFA, 2014).

iii. Market

Restaurants and retailers in Newfoundland have long recognized the value of providing the province with sustainable fish and seafood, in order to meet demands from locals and tourists. Specifically, the Restaurant Association of Newfoundland and Labrador (RANL) has been active in promoting the use of locally harvested fish and seafood products in

restaurants and hospitality businesses throughout the province. They have brought local food to the forefront in tourism promotion, and have helped in supporting and organizing numerous events celebrating Newfoundland culinary traditions, food products and culture. RANL and other restaurants seeking the traceable fish have noted the limitations in terms of accessing locally harvested fish and seafood, particularly in light of restrictive provincial policy on direct sales and an emphasis on export-oriented markets. While restaurants are able to purchase wild game directly from licensed hunters, they are unable to engage in direct trade with fish harvesters. RANL have been working with the FFAW and a group of restaurants in St. John's in order to enable better access to traceable fish from the west coast of the province. Due to logistical barriers, including short seasons and transportation costs, there has been limited access to traceable seafood for restaurants and retailers elsewhere in Newfoundland. The price to transport lobsters and halibut across the province is prohibitive for businesses, particularly when they are able to access non-traceable products that are harvested locally. Currently, a restaurant in Port-aux-Basques, located in the area where fish is landed and processed, has been able to access both the traceable lobster and halibut. One fish and seafood retailer located in St. John's is currently distributing the traceable fish the group of restaurants, and sells directly to consumers as well. The FFAW's traceability coordinator has also worked to involve supermarkets in the traceability project to enhance consumer access to the traceable fish and seafood. As of this year, Newfoundland-based supermarket, Colemans, has begun to sell the traceable lobster and halibut (CBC News, 2015).

Fish processors and buyers are equally important in assuring the success of the traceability project. Up until recently, only one processor located in Codroy Valley, in the

Port aux Basques area, purchased and distributed the traceable lobster, and is currently buying and processing the traceable halibut. This processor engages primarily with wholesalers located on the Eastern Seaboard of the United States, with limited amounts of product being destined for local markets in Newfoundland. The logistics of transporting fish across the province are complex and costly, which has limited the distribution of fish to St. John's, which is a hub for tourism and hospitality. The FFAW wants to develop local access to fish as well as market Newfoundland fish and seafood abroad. As such, the traceability coordinator has worked to engage two more processors located on the East coast of the island, in Carmenville and Arnold's Cove. The processor located in Carmenville has recognized the underdevelopment of the local market in light of an emphasis on export, and has stepped in to distribute fish and seafood locally. This processor also has plans to install holding tanks for lobster, which will enable restaurants to have access to Newfoundland lobsters during peak tourism seasons, which often do not coordinate with fishing seasons. The proximity of these processors to St. John's has significantly improved the access to traceable products for restaurants.

3.6.2 Governing Principles of the Traceable Seafood Project

Looking to governing principles provides insight as to the alternativeness of the FFAW's traceability initiative by highlighting the key operating guidelines. The interviews conducted with various stakeholders involved in the traceability project allowed for the identification of key governing principles, as well as how the project fits into the local food system in Newfoundland. Three sets of fundamental principles will be discussed that relate to markets, social relations, and building food systems.

i. Enhancing markets: transparency, accountability, quality and economic viability

The principal goal of the seafood traceability project is to create an information system for consumers so that they may gain an understanding of the processes involved in getting fish from ocean to plate. As such, transparency is an important governing principle for traceability in terms of information access along the supply chain. Most of the interview respondents noted the increase in consumer interest for knowing where their food comes from and how it is produced. Equally, harvesters have had limited knowledge as to where their fish goes after it is sold to a processor, and what prices consumers are paying for their products. As a result, the FFAW traceability project is intended to provide information to actors at both ends of the supply chain. Retailers and restaurants can also benefit from the increased transparency that the program provides, as consumers become more interested in learning about their fish. The program may also provide assurances in the actual origin of the product; one retailer indicated that he had paid a premium for Nova Scotia lobster, only to discover that they were harvested in Newfoundland when he entered the traceability code on the ThisFish website.

The principle of accountability is twofold in terms of the FFAW's traceability initiative. Firstly, the FFAW is accountable to harvesters in ensuring the appropriate administration and success of the project, and secondly, the fish harvesters are accountable to consumers in supplying high quality fish and seafood. The current traceability coordinator with the FFAW stated that initiative is intended to benefit harvesters, and it must therefore meet their needs and expectations. The union has invested in the initiative so that harvesters can gain a competitive advantage:

> "The FFAW represents harvesters, our project is your [the fish harvesters] project. So take this and run with it. This for you as leverage to say our fish is higher quality, we pay attention to handling, we pay attention to quality. Use it as leverage to get a better price. Use this as an investment." (FFAW staff, St. John's).

Transparency and accountability have, in fact, resulted in a higher quality of product, as fish harvesters have become more responsible for their products, as fish and seafood can be traced directly back to them. With fish harvesters being able to see where their fish is going and receive feedback directly from consumers, it has incited them to focus on best practices for food safety and handling.

> "You gotta be more conscious of what your doing, because you're not just selling your fish to a plant that's going to be mixed in with 20,000 pounds of fish that's going to be shipped off. It's going to be mixed in… well, it could be mixed in with 20,000 pound of fish but that fish is going to be tagged and when that fish comes out of this, it's a traceable item. So that goes all the way back to your boat." (Seafood retailer, St. John's).

There has been, however, apprehension on the part of processors and buyers on the impacts of the traceability initiative on their business. Historically, the relationship between processors, buyers and fish harvesters has been one of mistrust, as buyers and processors are in a position of power concerning prices. The traceability initiative has the potential to provide harvesters with more access to pricing information locally and abroad.

The former FFAW traceability coordinator noted that the participating lobster harvesters are engaging in a form of product grading, in order to ensure that their catch is made up primarily of top quality lobsters. Lobsters will drop a claw if they feel threatened, which lowers the product quality, and the traceability project requires that harvesters only tag animals with two claws. The FFAW hopes that, with the traceable seafood being of a

higher quality, harvesters will be able to receive a higher price for their products, and that the tags will help create a brand for Newfoundland seafood based on high quality products. From this, a new tag has been designed by the union, which emphasizes that the product was caught in Newfoundland, rather than using the standard tags issued by ThisFish (figure 3.1).

Figure 3.1 Former ThisFish tags (left) and the new prototypes for the FFAW traceability initiative (right)

Within the province, the quality of the traceable fish and seafood has encouraged restaurants to seek out these products. RANL and the restaurants in St. John's feel that they will be able to charge a higher price for the traceable seafood, as consumers are

seeking local, fresh seafood. This reflects the goal of the FFAW in achieving a higher price to add value to products that fish harvesters are already catching. The economic viability of the initiative is important for its sustainability; presently, the project remains a government-funded pilot, with the FFAW investing significant financial and human resources to lessen the workload for harvesters and eliminate the cost of participation. Value-adding through traceability will become necessary to support the initiative as it grows, and to expand the number of harvesters participating and species including in the project.

b. Social reconnections: social cohesion and participation

Reconnections are a key feature of the traceability initiative, and social cohesion is a guiding principle through building personal relationships along the supply chain. Due mainly to the provincial policies prohibiting the direct sales, consumers and retailers have been unable to form personal relationships with their fish harvesters while social connections may be formed with farmers and licensed hunters. In smaller coastal communities where there is an active fishery, the access to locally harvested fish, particularly where there is a fish plant from which consumers can purchase fish, is reportedly easier than in larger urban centers such as St. John's. As well, better access to fish in coastal communities may be due to people being directly involved in the fisheries, or having family and friends that fish, allowing them to build relationships and access fish through informal networks. While the legality of these informal networks is questionable, they play a role in ensuring food security and enhancing the access to locally harvested fish.

> "In this area, most people will get it through us. When I get in from the days catch, I get quite a few calls. They want to buy some of my fish." (Fish harvester, Port-aux Basques area)

The traceability project aspires to reconnect consumers with harvesters by means of an Internet-mediated approach, which circumvents policy barriers. Consumers have the ability to send messages to harvesters they trace, and harvesters also have the ability to reply. Consumers typically ask harvesters questions about their fish and how it was caught, as well as sending them thanks. Participating fish harvesters have received messages from consumers locally, nationally and internationally recognizing their hard work, and acknowledging the high quality of the halibut and lobsters they've caught. Harvesters have reported messages locally and abroad, with lobsters being traced as far as China and New Zealand. This new line of communication has helped develop a sense of pride in fish harvesters through recognition for their work on the part of consumers.

> "And I think it's a sense of pride and it gives a sense of pride to people who work in a profession that they haven't always been thanked. It's been you go out put a hard day's work, and who's getting the credit for it? The buyer that puts it to market. It's not that way anymore, the consumer can trace it back to the harvester and actually give thanks to the harvester. So that relationship is a little bit different. That's kind of where we want to go eventually, expanding to other species, other areas, to make sure the harvesters are getting the credit for their work." (FFAW traceability coordinator, St. John's)

The sense of pride achieved through the reconnection with consumers has been a major factor in the increased quality and better handling practices of the traceable seafood. These potential gains, both social and economic, have encouraged participation on the part of harvesters. The FFAW noted that current participants that were initially hesitant became more engaged as their fish got traced and they received messages from consumers. Many harvesters have been reluctant to take part in the project due to the use of technology and online mediums, as some of their personal information is accessible on

the ThisFish website. Many of the harvesters that have declined to take part in the project view the traceability initiative as a social media tool, which it is to a degree, and this has discouraged them from taking part. As well, the FFAW has found that technological know-how and the access to a reliable Internet source are barriers to participation. Unreliable Internet connections are a significant issue in more remote communities in Newfoundland, and have impeded the abilities of some harvesters to engage with consumers, as they are unable to receive and reply to messages. The FFAW has attempted to overcome these barriers to facilitate participation, as they are involved in helping harvesters set up and maintain their online profiles, and send them any comments they receive from consumers if they cannot access them.

iii. Sustainable food systems: localization, environmental stewardship, and human values

The current structure of the fisheries emphasizes export markets, which has created significant barriers in accessing locally harvested fish and seafood. Many restaurants in St. John's have looked into including local Newfoundland cuisine on their menus, and have sought to buy from local suppliers. The restaurants interviewed noticed an increase in consumer demand for local products, and more people have asked questions about where their food was grown or caught. In addition to creating a 'brand' based on quality, the FFAW hopes to create a link between the traceable fish and seafood, and Newfoundland culture. This linkage would ideally inspire local and external curiosity in the fisheries and coastal communities and encourage tourism. The restaurants in St. John's are also looking to celebrate Newfoundland culture through food, of which fish is an integral part. One restaurant owner described her reasons for wanting to buy locally

harvested fish, noting the higher quality, freshness and minimal travel, and also remarking on the potential benefits for coastal communities:

> "Importantly for me, is the cultural and socio-economic aspect. We were built on fish. But that's why NL established in the first place, because it was such a good source for fish. So historically and culturally, it's critical to our history. And going forward, it's critical that we support the people that are feeding us, and that would be the fisherfolk." (Restaurant owner, St. John's).

Despite the desire to include local fish on menus, restaurants face significant difficulties in accessing a reliable source of local fish and seafood. For certain popular species, such as cod, there are few access issues, however, more specialty species such as crab, capelin and squid are more difficult to access as they are high value export species destined for foreign markets. Both RANL and the FFAW observed that the limited access to locally sourced seafood is disadvantageous to tourism, where tourists are increasingly seeking out local food cultures and products. With the interest in local and traceable seafood from restaurants in St. John's, the FFAW and RANL have worked with processors and distributors to facilitate the transportation of seafood across the island. The FFAW has recently worked to engage a processor already supplying the St. John's area and with an interest in developing local markets rather than export ones, which will allow restaurants to access the traceable lobster. As of yet, there are still significant logistical barriers that impede the access to the traceable halibut from the west coast, as the processor in that area is geared primarily to export markets. In order to develop consumer access to the traceable seafood, the traceability coordinator is also committed to developing partnerships with grocery chains across the province.

While the traceability project aims to enhance access to locally harvested fish, the market in Newfoundland remains limited in size with such a small population. As such,

promoting the project in domestic and foreign markets has been deemed necessary to ensure the economic viability and sustainability of the project. The efforts to develop local markets have also been focused in the St. John's area, as the local food movement is already established in the city, with a farmer's market and community-supported agriculture (CSA). The former traceability coordinator remarked that the mentality is different in more rural coastal communities in Newfoundland, where fish is more locally and directly available.

> "Cause we're so used to, in coastal communities, people go down on the wharf over the years and either been given fish or paid very little for it directly from harvesters. And so that was what was done, so harvesters have essentially devalued their own product by doing that over the years. So that's kind of in the way of life, the traditional type thing to do. And so to go somewhere now and to pay a high price, even if it is traceable, doesn't go over very well in the smaller communities." (Former traceability coordinator FFAW, Port aux Basques).

The traceability project also encourages harvesters to employ more sustainable harvesting methods, as consumers are able to become aware of how fish was caught and the impact of fishing gears and practices through the ThisFish website. Lobsters are caught by trap, and the halibut is caught by hook and line, and most of the harvesters in the Port aux Basques area have chosen not to use gillnets. The fish harvesters interviewed expressed a commitment to sustainable fish methods, and most of the conservation measures in the Port aux Basques area are voluntary, such as the v-notch of egg-bearing female lobsters.

Ensuring the viability of coastal communities through the fisheries is equally important to the FFAW, and one respondent hoped that the inclusion of fish in Newfoundland's growing local food movement would contribute to the revitalization of fishing communities. The FFAW has equally only included small-scale, owner-operated vessels in the traceability project, which have been vital to the Newfoundland economy

and culture. The union views the small-scale, inshore fisheries as being a unique and important feature of coastal communities, with benefits in terms of lower impacts and higher quality products that industrial off-shore fisheries.

3.7 Discussion

The FFAW's traceability initiative has benefitted fisheries stakeholders throughout the supply chain, and provides a way for consumers to connect with their food and with the fish harvesters who catch it. While the market-oriented benefits of the project are clearly illustrated through the value-adding processes that traceability has brought, particularly with regards to product quality, the impacts of the initiative on the local food systems are equally important to consider. By identifying the key governing principles of the traceability initiative, the following section looks to understand the alternativeness in relation to conventional market practices in the fisheries, as well as in relation to the governing principles of the dominating MSC eco-label (Marine Stewardship Council, 2010b; Marine Stewardship Council, 2011) (table 3.1).

Of the market-oriented benefits generated by the FFAW traceability initiative, interview respondents most often mentioned the enhanced quality of the traceable fish and seafood. 'Quality' is a somewhat contentious concept in AFN literature as it is associated with weaker alternatives in which the characteristics of the food products themselves are deemed alternative, rather than the production processes. In the case of weaker AFNs, quality and alternative are used in order to create niche markets and increase profitability (Watts et al., 2005). As well, 'quality' itself is a complex notion that is embedded in local

Table 3.1 Governing principles characterizing strong, weak AFNs, the MSC labeling criteria, and the FFAW traceability initiative in Newfoundland (Continued)

Thematic Categories	Strong AFN	Hybrid AFN	Weak AFN	Seafood sustainability label (MSC)	FFAW traceability initiative
Economic *Quality*	Production practices and characteristics of food products	Characteristics of food products	Characteristics of food products		Characteristics of food products and handling practices
Economic Viability	Higher prices for producers through shortened supply chains	Niche markets; value added products; higher prices for producers	Niche markets; value-adding based on quality and place	Eco-label as value adding, building demand and markets for sustainable fish	Traceability adding value through higher quality products
Localization	Adaptable and context dependent; direct and local marketing	Context-dependent; local is not geographically bounded	Geographically bounded and value-adding characteristic of food		Enhanced local markets for fish and seafood
Ecological *Environmental stewardship, precaution, conservation*	Sustainable and less intensive production and distribution practices	Sustainable and less intensive production practices (i.e. organic agriculture); eco-certification schemes	Sustainable and less intensive production practices (i.e. organic agriculture); eco-certification schemes	Precautionary approach; Low-impact fishing practices	Voluntary conservation measures; Low-impact fishing practices; Small-scale operations
	Reconnecting people with nature	Reconnecting people with nature			
Socio-cultural *Social cohesion*	Reconnecting producers and consumers locally	Reconnecting producers and consumers both locally and globally			Reconnecting producers and consumers locally and at distance
Social justice	Food justice				
Human welfare and values	Rural community viability; Food security	Rural economic development	Rural economic development		Coastal livelihoods; Sense of pride in fisheries; Promoting Newfoundland foods and culture

Thematic Categories	Strong AFN	Hybrid AFN	Weak AFN	Seafood sustainability label (MSC)	FFAW Traceability initiative
Management *Accountability*	Producers are accountable	Producers are accountable; third-party certifiers are accountable (i.e. organic, fair trade certification bodies)	Third-party certifiers are accountable (i.e. organic, fair trade certification bodies)	Third-party certifiers are accountable	Harvesters are accountable
Adaptability	Context appropriate solutions	Context appropriate solutions		Certification takes into account local, national and international fisheries laws and institutions	Adapted to suit Newfoundland's social and cultural contexts
Participation	Democratic and participatory decision-making processes	Transition to democratic and participatory decision-making processes		Top-down governance process; Stakeholders involved in certification process as needed	Fish harvester-led initiative; Stakeholders involved throughout the fisheries supply chain
Transparency	Shortened supply chains and direct marketing	Context dependent		Transparent assessment processes and criteria	Harvesters' identities, conservation measures in place, gear types, and harvest locations are transparent
Use of technology as tools; Scientific information	Traditional knowledge and practices privileged over science and technology	Mix of scientific and traditional knowledge	Science and technology prioritized	Reliance on fisheries science to set criteria, use of social media to promote label	Traceability and reconnections achieved through technology

(Sources: Marine Stewardship Council, 2010b; Marine Stewardship Council, 2011; Andrée et al., 2012; Renting et al., 2012; Song and Chuenpagdee, 2015)

cultures, ecosystems and geographies, and quality also plays a role in shaping consumer demands beyond food safety concerns (Mansfield, 2003; Goodman, 2003). 'Quality' as defined by the seafood traceability initiative was viewed being primarily freshness and taste on the part of restaurants and retailers, and in reference to harvesting methods and handing practices on the part of fish harvesters in Newfoundland. The natural system was also seen on having an impact on quality; many of the respondents commented that Newfoundland produced better tasting fish and seafood, as they perceived the waters as being more pure and clean.

Although quality is a significant factor for promoting the traceable seafood locally and abroad, the social reconnections may also incite consumers to purchase fish, knowing that they can find out more information about their product. Many of the principles embraced by the traceability initiative are in line with those defining alternative food networks, particularly in terms of mediating social reconnections between harvesters and consumers. The project is similar to the internet-mediated schemes discussed by Holloway (2002) and Kneasfey et al. (2008), where the processes of localization, in terms of building relationships of trust and engaging in ethical food choices, are carried out at a distance. While critics of these types of alternatives still maintain that direct contact with food producers is necessary in attaining the benefits of localization, the traceability initiative demonstrates that there are local benefits that can be achieved with internet-mediated schemes, quality can be an initial is a central principle, though consumers are also encouraged to seek food with social and cultural benefits (Holloway, 2002; Kneafsey et al., 2008). "Here, participation may take customers beyond the search for 'quality' or guarantee of provenance typical of many other specialty foods, and suggests the

emergence of interesting, alternative ethical relations between customers and food and farming," (Holloway, 2002, p.78).

In fisheries governance literature, principles relating to the governing system and the natural system-to-be-governed (i.e. marine ecosystems) are given precedence over those pertaining to the social system-to-be-governed, which include principles of social justice, equity and human welfare and values (Song et al., 2014). The principles relating to the social system are fundamental to 'strong' AFNs, as they aim to create a food system in which decision-making processes are localized and democratic. In terms of alternativeness, the traceability project embraces certain principles associated with stronger AFNs, though it does not seek to operate outside the conventional food system (table 3.1). The traceability initiative has sought to include social cohesion and human values (through the promotion of Newfoundland culture) by providing stakeholders and consumers with increased communication and information. Additionally, the decision-making processes are inclusive, with fish harvesters having a high degree of control over the administration of the project. Therefore, the traceability initiative has incorporated the context-specific needs of harvesters, having been significantly modified from the ThisFish project to fit the unique geography and culture of Newfoundland.

The governing principles of the FFAW seafood traceability initiative, as well as those of the MSC, are more akin to those of 'weaker' AFNs (table 3.1). 'Weak' AFNs express governing principles that emphasize the economic value of alternative food, such as with value-adding processes. The provincial policy prohibiting the direct sales of fish is a significant barrier to developing stronger alternatives in Newfoundland's fisheries. While illegal, information networks of direct fish sales are a stronger alternative to

conventional markets in the fisheries, though are often limited to rural coastal communities. Recreational fishing also provides direct access to fish, including groundfish, capelin and trout, for residents of Newfoundland, granted they have access to the necessary fishing equipment.

In comparison to the MSC, the FFAW's traceability initiative embraces principles of stronger alternatives, particularly as it aims to enhance the local food system in Newfoundland. The sustainable seafood movement operates within the confines of the conventional market, and has generally not tried to include principles of food systems localization. Additionally, the sustainable seafood movement, in particular MSC, is less inclusive, with prohibitive certification costs, and entails a loss of local control. An FFAW union executive commented that while certification is being sought for the lobster fishery in Newfoundland, there are concerns about a third party certification not accounting for cultural and social differences. They noted that the traceability initiative allows the union to create their own locally appropriate definitions of 'sustainable'. Olson et al. (2014) state that this is a notable weakness of the sustainable seafood movement, in that a fisheries is evaluated as an entity, in which local contexts and variances in the fishery itself are not recognized, as the certification criteria are meant to be applied at a global level for all fisheries. As one FFAW executive noted, the MSC doesn't recognize Newfoundland's culture and history, which has made the traceability project an alternative means to enhance sustainability while promoting the province's unique fishing heritage.

Though the Newfoundland fisheries rely on export to preserve economic viability, the traceability initiative has looked to create local markets for traceable fish. In regions

where policy prioritizes export-oriented markets, strong alternatives are difficult to establish as producers are incentivized by government to engage in alternative practices, while supply both local and foreign markets (Andrée et al., 2010). This leads to the creation of 'hybrid' alternatives, which are described as a 'middle-path' between 'strong' and 'weak' (Andrée et al., 2010). As the traceability initiative progresses, it may take the form of a 'hybrid' AFN, due to the size constraints of the local market making export economically necessary. Andrée et al. (2010) warn, however, that producers in these types of AFNs will often seek to meet the demands of foreign markets over local ones in terms of quality and sustainability.

3.8 Conclusion

The FFAW's traceability initiative presents a unique opportunity to enhance the access to locally harvested fish in Newfoundland, and to create a 'brand' for Newfoundland fish and seafood products abroad. The initiative represents a way forward to include fish in the local food system, and embrace more sustainable fishing practices. While the sustainable seafood movement has created a market for sustainably harvested fish and a greater consumer awareness of marine issues, it does not challenge the wider food systems issues that have been a result of industrialized fisheries (Olson et al., 2014).

Whereas alternatives to global and industrialized practices are emerging in Newfoundland's fisheries, there are notable barriers to developing actual AFNs. The FFAW traceability project can be qualified as a weak AFN since it attempts to create an alternative method to harvest, market and retail fish and seafood, whilst developing access to and availability of traceable fish and seafood within the province. The project

cannot be qualified as a strong alternative in that it operates within conventional markets; the realities of the market and policy make it so that export is necessary for fish harvesters and processors to earn a living. Fish and seafood are highly globalized export commodities, and the demand for seafood has increased putting pressure on already strained resources (Ponte, 2012; Campling, 2012). As well, the MSC has created a growing demand for sustainable seafood, which has resulted in market pressures being placed on fisheries pushing them to pursue certification to remain competitive (Ponte, 2012). Commercial fish harvesters, similarly to agricultural producers, are limited and challenged by the constraints of global markets and regulations that favour large-scale and industrial operations, which creates a significant barrier when attempting to localize food systems and develop alternate markets (Loring et al., 2013).

The top-down governance structure of the MSC has allowed it to react efficiently and effectively in addressing supply and demand concerns, which has restricted the success of competing fisheries eco-labels (Ponte, 2012). In order to meet market demands, the provincial government in Newfoundland has actively pursued certification for a number of fisheries, including lobster and Atlantic cod. While the FFAW supports sustainability certification, there are concerns about the adaptability of MSC criteria to Newfoundland's unique historical and geographical context. As such, the FFAW hopes that their traceability initiative may provide a viable alternative, or complement, to MSC certification that allows for local control to be retained. Significant doubts have been cast on the efficacy of sustainability standards that are intended to be applied at a global scale, and are based almost exclusively on technical expert knowledge with stakeholders

consulted 'as needed' (Ponte, 2012; Olson et al., 2014). The traceability initiative makes use of a more inclusive governance process, as fish harvesters, processors and retailers are able to shape the project to meet their needs.

Looking to governing principles can help to understand the goals on which fisheries policies are founded, and create opportunities for direct sales of fish and seafood in Newfoundland (Song and Chuenpagdee, 2015). Current policy in Newfoundland emphasizes economic viability over socio-cultural principles, threatening small-scale, inshore fisheries which contribute greatly to coastal community livelihoods, food security and fisheries heritage (Song and Chuenpagdee, 2015). This study found that the operating principles of the traceability initiative are market and socially-oriented, as the FFAW traceability initiative aims to benefit fish harvesters' economically, strengthen relationships with consumers, and promote Newfoundland's unique fishing culture. Small-scale, inshore operations remain a vital part of Newfoundland's fisheries and contribute to the viability of coastal communities (Neis and Ommer, 2014).

The FFAW traceability initiative can help strengthen small-scale fisheries by creating opportunities for fish harvesters to increase their incomes through value-added products. Small-scale fishery certification can also provide an opportunity to go beyond the sustainable seafood movement and traceability. Harvester-led initiatives like the FFAW traceability initiative provide a means for small-scale fisheries to shape how their product is marketed in order to support their interests and needs. For instance, the civil society organization Low Impact Fisheries of Europe (LIFE) has aimed to increase the economic viability of small-scale fisheries in Europe, while encouraging social and environmentally sustainable practices (European Commission, 2014).

A second European initiative has adapted the ThisFish system, similarly to the FFAW in Newfoundland, to create a certification system and label for small-scale fisheries. The label is entitled Artysanal and the certification criteria are based on the United Nation Food and Agriculture Organization's (FAO) Code of Conduct for Responsible Fishing, and look to principles of inclusivity, environmental, social and economic sustainability, and information transparency (Artysanal, 2015). The project seeks to recognize the benefits of small-scale fisheries, which are lower impact and provide more employment than industrial operations (ThisFish, 2014). Currently, a small-scale Atlantic cod fishery in Iceland has been certified (ThisFish, 2014). Such a label could be possible in Newfoundland as well, particularly as only small-boat operation participate in the traceability initiative.

Despite notable policy barriers restricting the inclusion of fish in the local food system, the traceability initiative has brought significant opportunities to enhance the access and availability of locally harvested fish in Newfoundland. However, the direct sales of fish could lead to more strategies being possible in the province, such as the inclusion of fish in farmer's markets and the establishment of community supported fisheries (CSF).

The FFAW traceability project is a notable first step in Newfoundland to develop markets for locally harvested fish, and create more public awareness of fish work. The initiative remains relatively new, and managers are keen to include more harvesters and more species. The current barriers to developing the project in a way that benefits the local food system are the emphasis of provincial legislation on export, and the FFAW's desire to principally market the traceability project in foreign markets. Though harvesters

depend on export to make a living, there needs to be access and availability of Newfoundland fish and seafood locally, as well as abroad.

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CHAPTER 4: SUMMARY AND CONCLUSION

4.1 Thesis Summary

The aims of this thesis are twofold: to examine the ways in which alternative practices currently taking place in Newfoundland's fisheries can create opportunities for AFNs, and to frame fish and seafood in the broader discussion of food systems, from which they are notably absent. The environmental and socio-economic challenges Newfoundland's fisheries have faced are substantial and the devastation brought by the collapse of the Atlantic cod fishery has been exemplified globally to encourage responsible and more sustainable fishing practices (Mather, 2013). The interconnections between the fisheries, coastal livelihoods, culture and food security in Newfoundland are central to developing alternative and more sustainable ways of harvesting, marketing, retailing and consuming fish and seafood. This study found that these interconnections could be further strengthened through the concept of reconnection, by building relationships between fish harvesters and consumers, consumers with their food, and people with the natural environment.

Looking at governance by way of AFNs allows for an examination of the actors implicated in developing alternatives, and their motivations in seeking reconnections and building more localized, just and sustainable food systems. These motivations and reconnections can be better understood by means of the interactive governance perspective, in particular the meta-level of governance. Looking at the meta-level of governance provides a means to understand potential opportunities and barriers in terms

of accords or mismatches between stakeholders' values and principles (Song et al., 2013). This study looked at the values that motivate reconnections taking place in the fisheries, finding that culture and fishing traditions can provide a foundation on which to build AFNs in Newfoundland. Reconnections in the alternative initiatives examined in St. John's and Petty Harbour are founded on values of social cohesion, conservation (natural and cultural), and food systems localization. Above all, the study revealed that stakeholders seek reconnections in order to build a more sustainable and localized food system, as well as ensure the preservation of Newfoundland fishing heritage and food traditions.

Reconnection is equally a key guiding principle for the FFAW traceability initiative, which aims to build relationships between fish harvesters, retailers and consumers. While a number of principles governing the traceability initiative in Newfoundland center on creating export market opportunities, the project also provides an opportunity to strengthen the local food system by looking to build sustainable fisheries in a context appropriate manner. Preserving and promoting Newfoundland fisheries culture is a guiding theme for the alternative food initiatives taking place in St. John's and Petty Harbour, and a fundamental component of the traceability project. While other sustainable seafood labels, such as MSC, dominate the market, the traceability project provides a means for the FFAW and individual fish harvesters to retain local control over how sustainability is defined and governed in Newfoundland's fisheries.

The interactive governance perspective provided a framework by which to understand the ethical reasoning and power relations that underpin the varied and oft-conflicting interests of stakeholders, by examining the meta-level of governance. In particular, these conflicting values have created complexities in terms of the direct sales of fish and seafood. As such, this thesis found that fish and the fisheries hold many different and frequently incompatible values, which creates complexities in governing fish as a resource and fish as food. The reports drafted by Dunne (2010) highlights the need for policy change in light of the existence of informal markets, and underlines a barrier in the conflicting interests within the fishing industry that have pushed against allowing direct sales. Conflicting stakeholder values, images and principles impede governance processes, and create significant barriers when attempting to understand and resolve complex problems (Song et al., 2013; Jentoft and Chuenpagdee, 2009).

4.2 What do AFNs in Newfoundland's fisheries look like?

AFNs in the fisheries naturally look different than those taking place in agriculture, due to differences in biophysical, socio-cultural, economic and governing systems. Feasible alternatives need to be holistic, including a broad range of stakeholder concerns, and look to incorporate co- and adaptive governance perspectives (Olson et al., 2012). The alternatives emerging in Newfoundland have been developed to meet the particular needs of local fish harvesters and consumers in their emphasis on the cultural traditions that continue to define and shape the fisheries. Cod in particular has defined the identities of coastal communities in Newfoundland, with the collapse of the fishery having a resounding and enduring impact on fishing livelihoods (Davis, 2014). While fisheries

alternatives must recognize the cultural importance of Atlantic cod, they need not be limited by it. The lack of diversity in locally harvested fish and seafood species consumed and sold in Newfoundland, and the manner in which fish is typically prepared, was a concern expressed by many respondents during the study. For an AFN that includes fish and seafood to be sustainable, it cannot rely on a few locally available species, which would inevitably put pressure on the natural resource. Promoting awareness of what is locally available and teaching the food skills required for preparing fish and seafood in a healthy manner is therefore an essential part of creating a viable alternative.

Government policy has significantly impacted the types of alternatives that can take place in Newfoundland, through the emphasis on export and the limits placed on direct sales of fish. The FFAW traceability initiative is one of the few ways consumers can interact with their fish harvester, as provincial regulation prohibits the direct sale of fish and seafood. The goals of the project have been equally shaped by the prominence of export-oriented markets, as it works to promote Newfoundland fish abroad through improved quality and handling practices linked with traceability. The project is nevertheless in development, with the FFAW working to improve accessibility of the traceable products within the province, and it remains to be seen what types of relationships can be formed between harvesters and consumers. As an AFN, the study found the FFAW traceability initiative to be a weak alternative, as it functions within the boundaries of the conventional fisheries, and does not seek to challenge these processes.

4.3 Ways forward: opportunities and limitations for fisheries AFNs

In addition to the recommendations Dunne (2010) provided regarding local access to fish and seafood, a more recent report drafted by Neis and Ommer (2014) stresses the need for strengthened and resilient rural communities in Newfoundland that are founded in the fisheries. This report highlights the role of small-scale, inshore fisheries in supporting livelihoods, as well as ensuring food security, and advises a removal of policy barriers prohibiting direct sales of fish (Neis and Ommer, 2014). One strategy stated in the report to enhance access and availability to locally harvested fish is the development of community-supported fisheries in Newfoundland (Neis and Ommer, 2014).

Community-supported fisheries (CSF) have been modeled after supported agriculture (community-supported agriculture, CSA) in which consumers are able to engage in a local and direct buying scheme with fish harvesters. In Canada, two CSFs have been established; the first, Skipper Otto's, started in 2008 out of Vancouver, B.C., and the second, Off the Hook, is based in Halifax, N.S. and in operation since 2010 (Slow Fish, 2014). Skipper Otto's CSF was the first to be established in Canada and has grown rapidly, currently supplying fish to members in Alberta and Saskatchewan as well as in B.C. (Skipper Otto's CFS, 2014). While Off the Hook met with initial success, it has recently struggled, particularly as participating harvesters face financial difficulties (Wells, 2014). Hence, there is a need to understand how CSFs and other local fish initiatives may impact (and be impacted by) fisheries policies and institutions, and a need to compare the experiences of these models across different regions (Campbell et al, 2014).

The policy limits on direct sales have created an important informal, and illegal, food network in Newfoundland's fisheries, particularly in rural communities. The existence of such networks challenges the idea that formalized AFNs, such as CSFs, are necessary, as people have found other means outside the conventional market to access locally harvested fish and seafood. However, these networks are dependent on established relationships with those working in the fisheries, and a geographic proximity to where fishing activities take place. Similarly, the recreational food fisheries in Newfoundland are open to all residents, granted they have the required equipment, time and skills to participate.

The values of fish also vary from urban to rural communities in Newfoundland; certain interview respondents also noted that people are not as willing to pay premiums for locally harvested, traceable fish in rural coastal communities, as fish has historically been a cheap and accessible food. As such, examining the differed attitudes and values held towards fish and seafood is important to understanding the appropriateness of alternative strategies in rural and in urban communities. For example, a CSF may not be successful in certain rural fishing communities depending on what informal networks are already established.

AFNs are constrained in considering the informal networks that take place in the food system, as they are positioned as responses to conventional practices. Conversely, informal networks, such as those taking place in Newfoundland's fisheries are long established practices that can be qualified as AFNs since they operate outside of traditional markets. Informal practices, such as fishing, gardening and hunting, are

culturally embedded in many rural communities, and contribute to social cohesion and food security (Teitelbaum and Beckley, 2006). As well, the accessibility of many formal AFNs strategies, such as CSFs, CSAs and farmer's markets, is questioned, especially since the cost to participate is often prohibitive (Guthman, 2008a). In order for AFNs to contribute to food system sustainability and food security, principles of food justice must be better expressed in order to allow lower income consumers to access good food (Guthman, 2008a; Guthman, 2008b).

In order to develop context appropriate AFNs in Newfoundland, either formal or informal, there must be changes made to provincial policy to allow for legal direct sales to take place. Harvesters, FFAW union representatives, retailers, chefs, and civil society actors all called for provincial policy to allow for direct sales. This seems to be a logical first step to enhancing the access and availability of locally harvested fish in Newfoundland and Labrador. While the current strategies provide significant opportunities for creating awareness and access to locally harvested fish, there must be more emphasis put on food security and social justice. Currently, locally harvested fish remains a price-premium, luxury item, particularly in St. John's where the restaurants implicated in promoting locally harvested, diversified fish and seafood are higher end. In moving forward, locally harvested fish should allow harvesters to access higher prices for their catch, yet be accessible to people at all income levels. Strategies such as Good Food Boxes, which provide subscribers with healthy, local foods cheaply, and community food sharing are options that can enhance access to local fish and food security. The FSN implemented a community food sharing project in Hopedale, Labrador, where people are able to share excess wild country foods, such as moose, seal and fish, with community

members unable to gather these foods themselves (Food security Network of Newfoundland and Labrador (FSN), 2013). AFNs in Newfoundland's fisheries can take many forms, building on the unique culture and geography of the province. In order to create a strong AFNs, principles of food justice and food security must be emphasized, as they are necessary to creating a sustainable food system, in which locally harvested fish is accessible to all.

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APPENDIX I

Fish as Food: Examining a Place for Fish in Newfoundland's Alternative Food Networks - *Interview Guide*

Date:_____
Location:_____
Participant:_____

Interview Questions (adapted from Lowitt, 2013)

Fish Harvesters and Processors (owners)

- Can you tell me about your business? (Where do you fish? What species do you fish and what gear types do you use for each?)
- Where and how do you distribute most of your fish? Do you keep any for yourself? Do you know where most of your fish goes? (Local market, Canada, global)
- What is the average price per pound that you can expect for your lobster/halibut/cod?
- Are there any species you feel that are underutilized? If so, why do you think this is?
- Can you tell me about the state of the fishery? Has there been an increase or decrease in catches? What factors do you think are affecting fish stocks?
- In your opinion, what are the benefits of local caught fish? Sustainably caught fish?
- Can you tell me about the access to local fish in your community? Can you tell me about the availability?
- Is there a demand and interest for locally sourced seafood in the community?
- Are there any barriers to accessing local fish in your community?
- What strategies do you think might increase the availability of local fish in your community?
- How long have you been participating in the initiative (ThisFish or Petty Harbor co-op)? What motivated you to join? In your opinion, what are the benefits of being a part of this initiative?
- In your opinion, do you think this initiative has helped foster a relationship with consumers? Do you feel that it would be of benefit to you to sell directly to consumers?
- Do you feel that your relationship with consumers has changed as a result of being a part of the initiative (ThisFish or Petty Harbor co-op)? How?

- Has your relationship with any other people working in the fishery (processors, buyers, managers) changed as a result of being a part of the initiative (ThisFish or Petty Harbor co-op)?How would you like to see this initiative developed in the future?
- How would you like to see this initiative developed in the future?
- Are there any barriers to attaining these goals?

Retailers

- Can you tell me about your business? What kind of fish do you sell? What portion of your menu is seafood? Does this change seasonally? What is your clientele?
- How much on average do you pay, per pound, for your Newfoundland lobster/halibut/cod?
- Do you know where *most* of your fish is from? (Local market, Canada, global)
- Are there any species you feel that are underutilized? If so, why do you think this is?
- In your opinion, what are the benefits of local caught fish? Sustainably caught fish?
- Can you tell me about the state of the fisheries in Newfoundland? Has there been an increase or decrease in catches of certain species? What factors do you think are affecting fish stocks?
- Can you tell me about the access to local fish in your community? Can you tell me about the availability?
- Is there a demand and interest for locally sourced seafood in the community?
- Are there any barriers to accessing local fish in your community?
- What strategies do you think might increase the availability of local fish in your community?
- Do you aim to sell mostly local and sustainable fish and seafood? If so, what are your motivations? Does your business benefit from providing local and sustainable seafood? Do you notice a difference in the quality of local and/or sustainably caught fish?
- Are your customers interested in knowing where their fish comes from and how it was caught?
- Do you feel that by buying local and sustainable products your relationship with people involved in the fishery (harvesters, processors, buyers, managers and consumers) has changed?
- How important is it for you to have a relationship with those working in the fishing industry? What about with consumers?
- How would you like to see this initiative developed in the future?
- Are there any barriers to attaining these goals?

Government managers (DFO) and Initiative managers

- Can you tell me about the state of the lobster/cod/halibut fishery in Port aux Basques/Petty Harbour?

- Can you tell me about how fish is managed in this community (Port aux Basques or Petty Harbor)? Are the local harvesters involved? Are there any other groups involved?
- (If participatory governance) In what ways are local stakeholders involved?
- Has the alternative food initiative (ThisFish or Petty Harbor Co-op) played a role in management?
- Do you feel that it is important to foster a local market for Newfoundland fish? In what ways do you think this could be achieved? Are there barriers? In what ways do you believe that they can be overcome?

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