Taking Stock of Newfoundland and Labrador Research on Gender, Fisheries and Aquaculture Christine Knott, Barb Neis, Nicole Power and Katia Frangoudes

DRAFT Background Paper Prepared for the Ocean Frontier Institute Module I Taking Stock Dialogue September 17-19, 2018, St. John's NL.



September 7, 2018

Acknowledgements: Research funding was provided by the Ocean Frontier Institute, through an award from the Canada First Research Excellence Fund.

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INTRODUCTION

Marine fisheries and aquaculture comprise fisheries and marine ecology, harvesting, processing, distribution, marketing, sales and transportation as well as fisheries development, science and management and related policies and practices. Fisheries also include the social reproduction of households and communities involved in the sector. Much of the existing research on fisheries has focused on fish harvesting. Fish harvesting is largely male dominated although the extent to which this is the case varies across fisheries, contexts and historical periods. Since at least the 1980s feminist scholars and others in the North and increasingly in countries of the South have been carrying out research on the very active roles played by women in fisheries and fishing communities, as well as on masculinities and gender relations more broadly at various points from ocean to plate. This background paper critically reviews relevant reports, publications, and other documents on gender, fisheries and aquaculture in Newfoundland and Labrador (NL) since 1980, assesses existing NL research in relation to key parts of the international literature on this subject, outlines some of the strengths, weaknesses and gaps in our current understanding of gender and fisheries in NL and provides some reflections on how Module I researchers and others within OFI might begin to address these gaps in future work. Attention is paid to topics, approaches, as well as theoretical and methodological insights in existing work.

DEFINING GENDER AND GENDER ANALYSIS

Understanding gendered aspects of fisheries and fishing communities is imperative to understanding fishing industries/communities and how they are impacted by ecological, industrial, and social changes. This section discusses how gender is defined and explains why it is a crucial consideration for research pertaining to fisheries and fishing communities.

Gender and sex are often used interchangeably but there are significant differences between the two. Sex refers to the labelling of biological human reproductive anatomy as male or female (and sometimes intersex when there is no clear male or female anatomy present and instead a combination of both). Gender comprises the cultural social norms and expectations of masculinity and femininity that are assigned at birth based on the sexual reproductive anatomy of infant babies, and shape the expectations, experiences and opportunities of the child throughout their lifetime. Moving from sex to gender allows discussions of inequality to centre on social constructions and thus holds the possibility of change. Both gender and sex are to some degree unstable and fluid but have real consequences; they also intersect with each other. Gender social constructions often amplify the effects of sex differences. However, social constructions like gender are the product of social relations and processes that exist in varied contexts where there are, to varying degrees, possibilities for change.

Studies on fisheries that have employed a gender analysis have drawn on different theoretical frameworks and disciplines. Feminist political economic analyses are rooted in a neo-Marxist analysis of capitalist systems, and focus on gendered aspects of political economic systems. These studies highlight inequalities associated with gendered divisions of labour where women's work is often undervalued or more commonly, completely ignored (Porter 1987). Political ecologists highlight ways natural dynamics and political processes intersect to influence outcomes in fisheries and other resource-dependent sectors, informed by insights from ecofeminism and political economy, feminist political ecology highlights how gender and other socially constructed categories inform how resources are used, shared and profited from. Some feminist political ecologists use an intersectional approach which starts from the assumption that socially constructed inequalities are not limited to gender, but also include inequalities tied to other social constructions including 'race', ethnicity, class, religion, ability, age etc., and that these social categories intersect; are relational and dynamic, changing overtime and within different contexts. Feminist work on intersectionality was originally informed by black American women's struggle for civil rights in the United States, but entered into academic thought through feminist scholars such as Crenshaw (1989,1991) and Collins (2000), who argued for more nuanced understandings of social inequality in feminist writings on gender.

Masculinity studies arose out of critiques of feminist studies on gender that only focused on women's gendered experiences. Studies of masculinity that are situated within the feminist literature highlight male privilege but also argue that the construction of masculinity is similar in its essentialist categorization of male lived experience (Caicedo 2004; Power 2002).

Feminist gender and fisheries researchers in NL and globally have drawn, to varying degrees, on insights from research informed by these different conceptual approaches to make visible women's active contributions for fisheries and aquaculture locally and globally. They have explored gender-related inequalities within these sectors including the role of patriarchy, capitalist divisions of labour and policy in constructing, sustaining and, in some cases, challenging these inequalities and their consequences. There is a solid body of work in this area but it still generally sits to alongside mainstream fisheries research and policy-development rather than being taken and integrated into these areas. This has real consequences for the quality of existing research and policy and its implications for gender relations. There is a small body of literature that draws on intersectionality insights and on theories of masculinity but more is needed. The gaps are particularly profound in aquaculture (which is generally under-researched) and in offshore, larger scale fisheries.

METHODS

Knott carried out a focused literature search and environmental scan on gender and fisheries including: a) an exhaustive literature search on the Newfoundland gender and fisheries research using the terms: Newfoundland AND Labrador AND gender AND fish*; Newfoundland AND Labrador AND masculinity AND fish*. b) she supplemented results by scanning the bibliographies of key works and by using scholarly searches using the names of researchers who are known to have published on some aspect of this topic. c) In a linked project, she secured ethics clearance to access anonymized secondary data from the Professional Fish Harvesters Certification Board (PFHCB) certification level apprentice, level I and II of fish harvesters in NL broken down by year, gender and age. 4) Knott then conducted a more general environmental scan related to international and Atlantic Canadian research using the search terms: gender AND fish*; women AND Fish*; masculinity AND fish* and scanned resulting materials for relevance to the NL context including similar work and work exploring questions and using approaches and methods not found in the NL literature.

OVERVIEW OF LITERATURE ON GENDER AND FISHERIES

This section first provides an overview of the literature on gender and fisheries from 1980 to 2018. Next it provides an overview of the international literature that builds on or adds to the Newfoundland and Labrador literature. The section also identifies gaps in the NL literature on gender and fisheries and discusses areas that can be built on, specifically methodological and theoretical frameworks that could be applied in future research in this area.

NEWFOUNDLAND AND LABRADOR

The bulk of the research on gendered aspects of the NL fisheries was published between 1985 and the early 2000s with 5 publications in the 1980s (1–5), 16 in the 1990s (6–21) and 18 between 2000 and 2010 (22–39). Nine have been published since 2010 (40–48). Using a feminist political economic lens, early work highlighted the important (and often unpaid) work that women did in the fishery and in fishing households and communities(1,3,4), as well as gender divisions of labour in NL fisheries with a focus on men fishing at sea and women working on shore. This research explored the association between gendered divisions of labour and incomes, power dynamics and government policies (2,12,15,21).

During the late 1990s and early 2000s research focused more on the gendered effects of the ground fish moratoria including understanding how policies and restructuring and education/retraining were all gendered and both impacted men and women involved in the fishery differently, including how they fared economically(12,15,17,27,30,31,49). Gendered aspects of privatization and ITQs were also studied at this time (35), as well as women's ecological knowledge (20,39). Gendered aspects of occupational health and safety (26,33) and masculinity (24,26,29,31) were also taken up.

The dominant theoretical frameworks informing the NL literature in the earlier decades were feminist political economy and/or feminist political ecology. Bavington et al. (2004), for example, use a feminist political economy approach. They discuss the materiality of nature, which they define as, "the biophysical realities of natural systems and the way these have constrained but not determined by the development of natural resource-based industries, property relations, gender relations, regulation, the dynamic of colonialism, and other political economic processes...[encouraging] us to explore different forms of data as social-ecological constructs and to document the power relations revealed in discourses associated with different social groups, eco-social relationships and knowledge systems" (164-165).

Publications since 2010 have focused on occupational health and safety (OHS) (40,45) and migration (41) and draw on different theoretical frameworks to theorize gendered aspects of fisheries (42–44,47,48). For example, Power et al. (2010) merge gender, bodily capital and habitus with OHS to show the social aspects of bodies and power relations; Neis et al. (2013) apply a social ecology lens to gendered youth in rural fishing communities; Power (2015) argues for a feminist care approach to gender and fisheries research and Song and Chuenpagdee (2015) apply a governance perspective to inequality in small scale fisheries in NL.

CANADIAN LITERATURE

Canadian gender and fisheries research done outside of Newfoundland and Labrador includes regionally specific literature from Nova Scotia (50–55), Prince Edward Island (56,57), New Brunswick ((58–63), as well as work that focuses more broadly on the Atlantic Canadian region (64–69). There is also a small body of literature on shoreworkers from British Columbia (70–75). Early works from 1980 to 2000 were similar to the Newfoundland and Labrador literature in that they largely focused on making visible the work that women do in fishery communities and how gendered divisions of labour impacted the low status of work done by women. The literature from BC was novel in its analysis of both gender and race in fish workers' experiences. Dolan et al. 2005 is one of the few articles that attempted to compare the east and west coast fisheries, and while it acknowledges gendered aspects of fisheries, that is not its main focus. Gendered aspects

of aquaculture have also been taken up in the New Brunswick literature, but is largely absent from the literature done in the rest of Canada (58,76).

INTERNATIONAL LITERATURE - GLOBAL CONTEXT

Until recently the body of gender-focused fisheries research in other parts of the world was relatively small, with the exception of research focused on Norway, Newfoundland and Labrador, other parts of Canada and France (77). Due to the normative association of men with the fishing industry, international research on gendered aspects of fisheries in the 1980s and 1990s, like that in NL, was largely tasked with bringing to the forefront the significant, yet often invisible, role that women play in fisheries (77,78).

Much of the more current (within the last ten years), internationally focused gender and fisheries research asserts the significance of women's role in the fisheries and the ways in which changes to fisheries have gendered consequences. Biswass (2017) explains that the social construction of gender is imbued with different levels of power and authority that frequently provide more power and authority to men than women in fishing villages and communities. While women generally have less power than men in fishing communities worldwide, nuance exists in the levels and manifestations of this power inequality based on region and fishery and conditions. The way gender intersects with other power-infused social categories such as race, ethnicity, class, religion, age, ability etc. also differs across fisheries and regions. Therefore, while gender is an important indication of social inequality, it is not the only one. In addition, social constructions of often multiple aspects of ones' identity mediate power and prestige in multiple ways that often change over ones' lifetime. One way to account for this nuanced analysis of power and social position is through use of an intersectional framework. Intersectional frameworks are relatively rare in the gender and fisheries literature, as shown below.

International research on gendered aspects of fisheries also includes gendered analyses of: masculinities (79,80), as well as waterscapes and community and ocean use and management that include, but also go beyond fishing and fishing communities (81-83)(see Gissi, 2018 for a review). This research notes the increased participation and acceptance of women in fisheries as well as ocean governance and conservation but also the need to ensure that women's contributions are not ignored. Some of the recent international work also provides unique feminist theoretical viewpoints (84-86), and methods such as the use of photovoice (87) and critiques gender as a practical or applicable concept in some fishery communities (88). Topics that have been taken up include how women involved in the fishery are more severely impacted by climate change than men (89), gendered aspects of aquaculture, including gendered and racialized migrant workers, gendered outcomes of commodity chains, the continued invisibility of women's work, the importance of gender specific interests of women in the aquaculture processing sector, and aquaculture's real contribution to family food security (90,91,100,92–99). Some studies have investigated racial or indigenous aspects of gender and fisheries (101), as well as of women who work specifically in shellfish (102–104), female divers (105), sex work (106,107), mobility/migration ((108,109) and seaweed (110). There is some discussion of the need for intersectionality as an approach to understanding women's and men's inequality in fishing communities (58,111), and how small scale fisheries and aquaculture play a role in food security (90,93,112,113). For the most part, the focus of the international literature on gender and fisheries is on small-scale fisheries.

Interactive governance has developed as a strong form of analysis and focuses on small scale fisheries (114) but did not engage with the gender and fisheries literature nor incorporate a gendered analysis until more recently (43,115). The significance of including a gendered analysis into small scale fisheries governance has arisen out of international efforts of the FAO and contributing scholars which developed guidelines for securing sustainable small scale fisheries largely informed by a governance perspective (116), of which a large portion focused on gender equity and equality (117). A FAO handbook was later published in 2017 that focused specifically on addressing gender issues in small scale fisheries (118). While these crucial efforts by the FAO are fairly recent, they build on a long history of scholars and representative fishing organizations, that have argued for years the significance of women and gender in fisheries.

STRENGTHS, WEAKNESSES AND GAPS: PRELIMINARY THOUGHTS

Why is a gendered analysis so important in fisheries research? Fisheries work is often understood to predominantly done by men, especially in countries such as Canada, The United States and the UK. Harper et al. 2013 point out that statistically, women make up about 50 percent of fishery workers globally (112). Despite the high number of women involved in direct or indirect fishery work in fishing communities, Kleiber et al. (2015: 548) note there is a "quantitative data gap" in understanding women, and thus human roles, in fishing communities. This overview of the literature in NL highlights the areas of research that has been done to address gender in NL fisheries and also points out what research needs to be done. We conclude with returning to the question of why a gendered analysis is so important for researchers who are engaged in work related to fishery work and fishing communities.

Findings from this environmental scan of gender and fisheries research suggest that the research output from NL, especially in the 1990s and early 2000s was extensive and contributed significantly to the larger international body of literature. Power (2015) notes that the feminist literature on gender and fisheries in Newfoundland and Labrador shifted from a focus on making visible women's roles in paid and unpaid aspects of the fishery that were often ignored or undervalued, such as household labour, seafood processing, and onshore work, to understanding how changes to the social ecological aspects of the fishery were impacting women *and* men (see Power 2015 for an overview of this literature). The significance of this early work is to show that women are involved in many aspects of the fishery that have real impacts for families and communities – and that when women's contribution to the fishery is ignored it has real economic and social ramifications – such as the many policies and programs that were implemented after the ground fish moratorium that were meant to help fishing families and communities, but often created more difficult situations for women, families and often communities (17,28).

The international literature on gender and fisheries has grown significantly but much of it continues to focus on highlighting the significance of women's participation and the significance of increasing this participation, in fisheries and aquaculture. Some new areas of focus and theoretical imaginings with the potential to broaden and deepen our understanding of gender and fisheries from ocean to plate are evident in both local and international research. That said there are important gaps and it appears to still be the case that policies and programs are not designed using a gender lens in Canada or in many other parts of the world. Gender research on women, science, technology and fisheries management is still very limited here and elsewhere; there is little research on gender and aquaculture and little on gender and OHS in fisheries and aquaculture (91). The ease with which a gender lens can still be left out of research on fisheries is exemplified by a report on occupational pluralism among fish harvesters in Canada which is,

for the most part, gender blind in its analysis (119). Other gaps in the NL literature include gender and fisheries in Labrador, including in indigenous fisheries in both Labrador and Newfoundland, as well as gender, fisheries and disability, food security, and climate change. The myriad ways gendered analysis, especially one that incorporates an intersectional approach, can and should be taken up will provide more accurate knowledge and social and economic accounting of fishing families and communities that provides a much more robust ability to create policy and programs that are not just more equitable, but also accurate.

The next section contributes to the current international literature that calls for a deeper, more complex and inclusive understanding of fishing families and communities that probes deeper than just gender=women, but provides a new way forward for studies on gender and fisheries in Newfoundland and Labrador, and possibly elsewhere. It draws on the internationally identified problems and gaps in the gender and fisheries literature including: that there are methodological difficulties of "doing a gendered analysis" as there is no one clear and concise methodology to follow; that despite the difficulties, gendered analysis must both include and go beyond "women"; that there exists a need for an intersectional approach to understand the shifting lived realities of fish workers; and that fish workers are part of larger communities and that are also as relevant and diverse as those who work in fishing jobs.

NL FISHERY OVERVIEW

WHO FISHES: PFHCB Data/changes overtime

Based on the Professional fish harvester certification board data, there were 9334 fish harvesters (including Level 1, level II and Apprentices) in 2017, of which 7192 identified as male and 2142 identified as female. More men than women had Level II (5166 men and 433 women) and Level I certifications (351 men and 140 women), while the number of male and female apprentices was roughly similar (1675 men and 1569 women). Demographics also show an aging population.

	Level II		Level I		Apprentices		
	Male	Female	Male	Female	Male	Female	Total
Birthdate							
born prior to 1942	93	0	3	0	14	4	114
01/01/1943 - 12/31/1947	257	16	8	3	21	10	315
01/01/1948 - 12/31/1952	574	49	7	9	77	71	787
01/01/1953 - 12/31/1957	956	82	20	27	146	179	1410

Age/Gender/Level for Registered Fish Harvesters for 2017

01/01/1958 - 12/31/1962	1038	107	29	32	157	266	1629
01/01/1963 - 12/31/1967	935	71	49	30	131	269	1485
01/01/1968 - 12/31/1972	640	57	61	23	162	222	1165
01/01/1973 - 12/31/1977	346	30	55	5	172	139	747
01/01/1978 - 12/31/1982	199	15	36	7	172	157	586
01/01/1983 - 12/31/1987	79	5	35	2	172	101	394
01/01/1988 - 12/31/1992	38	1	24	1	165	74	303
01/01/1993 - 12/31/1997	11	0	19	1	184	58	273
born 1998 or later	0	0	5	0	102	19	126
Total	5166	433	351	140	1675	1569	9334

The PFHCB data also shows us that the overall number of harvesters has been declining but since 2012 the number of women harvesters has remained somewhat constant at approximately 2000. Yet, these data as well as more detailed longitudinal data on seafood processing workers and aquaculture in NL are not easily available and lack consistency and detail. For example, while the most recent publicly available on employment in the seafood industry includes an overview of number of people employed in both seafood processing and the wild/capture fishery from 1987-2017, it does not provide a breakdown by men/women (or age, race/ethnicity, income etc.) or include aquaculture, or other types of employment (office

workers/managers/shoreworkers etc) in its figures. Similarly, the Seafood Industry year in Review for 2017, has a small section on employment for the capture industry, seafood processing and aquaculture, but does not provide a breakdown of employees by men/women, age, income etc. The significance of these gaps is exemplified in a paper on the economic history of women in Newfoundland (120), in which a breakdown of not just how many men and women work in seafood processing, but also a comparison of their incomes over time, including full-time wages makes visible the drastically lower salary for women seafood processing workers versus men, as well as how this gender gap has increased rather than decreasing over time. Of importance is the fact that the paper points out that the last time the full-time, year-round salary of women in seafood processing was made public was in 1995. The seriousness of these kinds of data gaps haa been highlighted in the international literature, which notes only few countries collect detailed sex segregated data, such as Chile, Brazil, Japan (121,122).

NEWFOUNDLAND AND LABRADOR LEGISLATION/POLICIES ON GENDER ANALYSIS

The government of Newfoundland and Labrador established the Women's Policy Office in 1985 to specifically address the need for a gendered analysis in government policies and programs. The WPO was initially formed to specifically look at women in relation to policies and programs and still maintains this focus. For example, the Greig NL's Placentia Bay Atlantic Salmon Aquaculture Project Women's Employment Plan (2016)(123), was part of the aquaculture company's exemption from an environmental assessment, later overturned. The multilayered strategies to encourage women's involvement in aquaculture outlined in the report are well thought out and pay lip service to education, as well as social and culture barriers in the industry that keep women out. Yet, not only is the focus limited to women (rather than focusing on gender relations), there is also a fundamental flaw in dissociating environmental assessments from women's work, as well as from employment and communities more generally.

The WPO in NL is not unique in Canada. Since 1995 the Federal Government has had a similar commitment to include a gendered analysis in the development of its policies and programs across all departments, as gender equity is a charter right. Ongoing challenges in this area are reflected in the recent implementation of the Action Plan on Gender-based Analysis (2016-2020) by the federal government designed to renew its commitment to gender parity (124).

NEW FRAMEWORK: FEMINIST INFORMED SOCIAL-ECOLOGICAL SYSTEMS

Research on fisheries that takes up a gendered analysis has moved towards understanding the larger community, governance, and management aspects of fishery communities – human health and occupational health have been mostly neglected. Dolan et al. 2005 offered an integrated social-ecological model for understanding rural coastal communities resource health and human health – but did not delve in any depth into gendered and other social categories that contribute to inequalities, but the case study from Newfoundland did acknowledge gendered aspects of fisheries. More recently an in-depth social ecological framework for fisheries was published (see Stephenson et al. 2018). While this framework addresses the need to more fully develop social understandings of fisheries, it does not include social inequalities such as gender and race in an overt way, and did not discuss intersections at all despite their significance in shaping fishing work and communities. A merging of this perspective with feminist analysis (see de la Torre-Castro et al. 2017 for an example) that exists in the gender and fisheries literature might bring new insight into not just understanding how inequalities are interactive within resource and human health in fishing communities but how narrow understandings, and definitions of workers and work, lead to narrow findings, policies, programs and science.

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