AN ASSESSMENT OF SUSTAINABLE FOREST AND FISHERIES CERTIFICATION AND ECO-LABELLING: COMPARING OUTCOMES IN SHELLFISH FISHERIES AND PULP AND PAPER MILLS IN ATLANTIC CANADA

by

© Dinah Anoah Okyere

A Research Thesis submitted to the

School of Graduate Studies

In partial fulfillment of the requirements for the degree of

Master of Arts in Environmental Policy

Division of Social Science/School of Graduate Studies/Environmental Policy Institute

Memorial University of Newfoundland – Grenfell Campus

January 2018

Corner Brook, Newfoundland

ABSTRACT

Private systems of governance have proliferated in various global locations, with the intent of promoting sustainability in the domains of natural resources and the environment and ameliorating negative impacts of production and consumption processes. These systems form part of a broader environmental network, emerging as alternatives to a 'failed' system of governmental regulation in these sectors. Third party, sustainable certification and ecolabelling is one type of private regulatory intervention, which essentially relies on markets (consumers' and buyers' within the supply chain) to demand compliance with sustainability standards from producers and organisations. Research and discussions on certification and ecolabelling schemes or programs have increased over the last two decades; however, there is still inadequate knowledge on the sustainability impacts or outcomes of these schemes. This study adopts a mixed-method, comparative approach that complements data from a survey, involving (shell fish) fisheries and two pulp and paper mills in Canada's Atlantic Region, with existing research findings on this area to identify certification outcomes in the fisheries and forestry sectors. The results for both sectors suggest that, while there may be some improvements or impacts from sustainability certification, these improvements vary and are difficult to define. In addition, ambiguity in the responses and comments given in the survey is evidence that distinguishing sustainability outcomes or impacts specific to certifications in these two sectors, based on this study, may be problematic.

Key words: sustainability certification, forestry, fisheries, outcomes.

ACKNOWLEDGEMENTS

My greatest thanks goes to God Almighty. Indeed, 'in Him I live, move and have my being'. To my supervisors, Dr. Paul Foley and Dr. Mike Van Zyll de Jong, I say a very big thank you. I truly appreciate your support, advice and guidance throughout my study and thesis writing period. To my parents, siblings and friends who have stayed true and supported me in manifold ways, I say thank you; I could not have made it this far without you and I love you so much! Thank you so much, Nadia Simmons, for being my momma and friend, and for pushing me all the way to the finish line – you rock! Finally, to all the beautiful people of the EPI (faculty, staff, students and alumni), my awesome roommates, the larger Memorial University (Grenfell Campus) and my church family, I appreciate the friendships, knowledge and time you shared with me.

TABLE OF CONTENTS

ABSTRACT ..... **ii**

ACKNOWLEDGEMENTS ..... **iii**

LIST OF ACRONYMS ..... **x**

CHAPTER ONE

INTRODUCTION

1.1 Private Interventions in Environmental Regulation and Governance……...1

1.2 Problem Statement 4

1.3 Research Questions 5

1.4 Research Objectives 6

1.5 Organization of Report 7

CHAPTER TWO

LITERATURE REVIEW – NATURAL RESOURCE MANAGEMENT AND SUSTAINABLITY CERTIFICATIONS IN GLOBAL AND CANADIAN CONTEXTS

2.1 Introduction 9

2.2 Global Sustainability Certifications and Ecolabelling 9

2.2.2 Apparel 11

2.2.3 Tourism 13

2.2.4 Forestry 15

2.2.5 Fisheries 18

2.3 Canada's Natural Resource Sector 24

2.4 Atlantic Canada Fisheries at a Glance 24

2.4.1 A Historical Look at Fisheries Management on Canada's Atlantic Coast 25

2.4.2 Sustainable Fisheries Certification on the Atlantic Coast 30

2.5 Atlantic Canada Forestry at a Glance 36

2.5.1 Forest Management in Canada 37

2.6 Sustainable Forest Certification in Canada 40

2.7 Analytical Framework 43

CHAPTER THREE

METHODOLOGY

3.1 Research Approach 46

3.2 Research Design 48
3.3 Types and Sources of Data 50
3.4 Selection of Participants 51
3.5 Recruitment and Data Collection Procedures 52
3.6 Data Analysis 53
3.7 Limitations of Survey Design 53

CHAPTER FOUR

RESULTS AND DISCUSSION – FISHERIES INDUSTRY

4.1 Participant Profile 55
4.2 Company Profile 56
4.3 Existing Certification Schemes and Period of Certification 58
4.4 Outcomes of Non Governmental, Third Party Fisheries Certification 60
4.4.1 Economic Outcomes 59
4.4.2 Ecological outcomes 62
4.4.3 Social Outcomes 64
4.4.4 Management Outcomes (Institutional Capacity) 66
4.4.5 Perceptions on the Value of Fisheries Certification 68
4.5 Discussion 69
4.5.1 Economic Outcomes of Fisheries Certification and Ecolabelling 71
4.5.2 Ecological Outcomes of Fisheries Certification and Ecolabelling 73
4.5.3 Social Outcomes of Fisheries Certification and Ecolabelling 75
4.5.4 Outcomes of Fisheries Certification and Eco-labelling on Management (Institutional Capacity) 77

CHAPTER FIVE

FOREST CERTIFICATION AND ECOLABELLING OUTCOMES – THE CASE OF TWO PULP AND PAPER INDUSTRIES IN NOVA SCOTIA AND NEWFOUNDLAND AND LABRADOR

5.1 Participant Profile 80
5.2 Company Profile 80
5.2.1 Age and Size of Cases 80
5.2.3 Primary Markets and Clients 80
5.3 Sustainable Third Party Certification 81

5.3.1 Objectives for Certifying 82
5.4 Outcomes of Certification 83
5.4.1 Economic Outcomes of Forest Certification and Ecolabelling 83
5.4.2 Ecological Outcomes of Forest Certification and Ecolabelling 85
5.4.3 Social Outcomes of Forest Certification and Ecolabelling 89
5.4.4 Management Outcomes of Forest Certification and Ecolabelling (Institutional Capacity) 91
5.4.5 Satisfaction with Forest Certification (Cost-Benefit) 94

CHAPTER SIX

SUMMARY AND CONCLUSION

6.1 Summary 96
6.1.1 What are the ecological, social, economic and management outcomes of third-party certification from the perspectives of forest and fisheries industries in the Atlantic Region? 98
6.1.2 Are these outcomes beneficial or detrimental to the performance of certified ..... operations? 104
6.2 Study Limitations 106
6.3 Conclusion and Lessons Learned 107
REFERENCES 111

List of Tables

Table 2.1 Certified Fisheries on Canada's Atlantic Coast (all MSC-certified) 31
Table 3.1 Criteria for Purposive Sampling.....47
Table 3.2 Data Types and Sources 50
Table 4.1 Position in Company/Organisation 54
Table 4.2 Work Experience.....55
Table 4.3: Has this ranking changed? (Post-certification) 60
Table 5.1 Certification Standards Identified 81
Table 5.2 Objectives of Certifying 82
Table 5.3 Economic Outcomes 83
Table 5.4 Ecological Outcomes.....86
Table 5.5 Social Outcomes.....89
Table 5.6 Management Outcomes.....92
Table 5.7 Satisfaction with Forest Certification.....94

List of Figures

Figure 2.1 Analytical Framework for Assessing the Outcomes of Sustainable Certification....45
Figure 4.1: Size of Company/Organization....55
Figure 4.2: Location of Company/Organization....56
Figure 4.3: Primary Clients....57
Figure 4.4: Primary Markets....56
Figure 4.5: Certification Standards....58
Figure 4.6: Period of Certification....57
Figure 4.7: Certification Objectives Ranked....59
Figure 4.8 Economic Outcomes....61
Figure 4.9 Ecological/Environmental Outcomes and Confidence Ratings....63
Figure 4.10 Social Outcomes and Confidence Ratings....65
Figure 4.11 Management Outcomes and Confidence Ratings....67
Figure 4.12 Value of Certification (Cost-Benefit)....68

List of Appendices

APPENDIX A: Framework Captions and Literature Used.....1364
APPENDIX B: Survey Instruments 137

LIST OF ACRONYMS

AFPR	Atlantic Fisheries Policy Review
CSA	Canadian Standards Association
CSR	Corporate Social Responsibility
DFO	Department of Fisheries and Oceans
ENGOs	Environmental Non-Governmental Organizations
ETVS	Endangered, Threatened, Vulnerable and Sensitive Species
NAFO	Northwest Atlantic Fisheries
NL	Newfoundland and Labrador
NRCan	Natural Resource Canada
NS	Nova Scotia
NSMD	Non-State Market Driven
FMU	Forest Management Unit
FPAC	Forest Products Association of Canada
FoS	Friend of the Sea
FSC	Forest Stewardship Council
HCVF	High Conservation Value Forests
ISO	International Organization for Standardization
MSC	Marine Stewardship Council
NGO	Non-Governmental Organisation
PEFC	Programme for Endorsement of Forest Certification
SFI	Sustainable Forestry Initiative
WRAP	Worldwide Responsible Apparel Production

CHAPTER ONE

INTRODUCTION

1.1 Private Interventions in Environmental Regulation and Governance

"The Earth is what we all have in common." (Wendell Berry)

The world faces a host of development issues, associated in many direct and indirect ways to the emergence and deepening of industrialization, globalization, trade liberalization, and the drive for economic development (Gale and Haward, 2011). The impacts from these development processes have been multifaceted and in many ways, detrimental to the environment and human society. In addressing these issues, researchers, policy makers, civil society and the public have engaged in various discussions and research. However, these issues continue to persist, creating a need for multi-disciplinary research and informed policy interventions and innovation (locally, nationally, regionally and globally) towards preventing, ameliorating or adapting to these issues (Gale and Haward, 2011). Governments and public institutions have been the main objects of criticisms and opposition, stemming from their apparent apathy of regulating social and environmental issues locally and internationally (Fraser, 2007). A classical example of public outcries over social and environmental issues include Rachel Carson's classic work on pollution from industrial and agricultural production in the 1960's. Other notable examples include campaigns against child labour and infringement of employee rights in apparel industries, loss of global diversity and global warming (Bartley, 2003; Gale and Haward, 2011). Civil and environmental movement campaigns against deforestation in the tropics and poor forest practices globally (Bartley, 2003; Gale and Haward, 2011) and the overfishing and poor

management of fish stocks and marine systems (Gale and Haward, 2011) have influenced scholarly research in this area. These campaigns often took the form of confrontations with governments or the offending company or companies (Bartley, 2003). In many cases, governments have been backlashed for being incapable of resolving such developmental or sustainability issues (Bartley, 2003; Vandergeest, 2007).

Consequently, other interventions outside state jurisdictions have originated and gained roots in environmental and natural resource governance (Bartley, 2003; Vogel, 2008; Shelton, 2009). These non-governmental approaches have increased in scope and number. They include industry self-regulation, community management, and voluntary market-driven certification systems (Vandergeest, 2007; Vogel, 2008; Gulbrandsen, 2009; Washington and Ababouch, 2011). In their book, 'Governing Through Markets', Cashore et al. (2004), provide a conception of non-state market driven (NSMD) governance with specific reference to forest certification schemes. They establish that NSMD's depend solely on the market in gaining authority to ensure compliance from clients. Secondly, private schemes gain legitimacy or credibility through one or a combination of the following: influencing and garnering the support of actors such as buyer groups or industry, consumers and/or civil and environmental groups (Suchman, 1995; Cashore et al., 2004; 2005). NSMD governance may occur at national, regional, transnational or global levels, and may differ along the lines of focus, institution, application and, stringency of rules or standards, among others (Gulbrandsen, 2005). An example of an 'NSMD scheme' is the Forest Stewardship Council's sustainability certification and eco-labelling program - a third-party, voluntary process by which a third party organization provides documented evidence that an operation, commodity or service meets the requirements of a specified

environmental standard (Kleine, 2010). This approach to environmental governance is designed to improve resource conservation, management and minimize negative production and consumption (Bartley, 2003), while providing market incentives for complying clients (Gale and Haward, 2011). Non-state, third party certification schemes may be process-based (which support management processes towards yielding incremental improvements) or performance-based (measure success by compliance to specific standard requirements) (Gulbrandsen, 2005; Kleine, 2010), or a combination of both. Certification schemes are now present in various sectors such as forestry, fisheries, agriculture, apparel, tourism, energy and mining, just to mention a few prominent sectors (Auld et al, 2008; Vogel, 2008; Gale and Haward, 2011; Foley, 2013).

There are different lines of inquiry and arguments about how environmental certification as a management tool works; whether it replicates, supplements or replaces governmental regulations (Shelton, 2009). Though certification programs may be limited in scope and/or application, there is provision for collaboration with public, industry and other informal regulatory networks towards generating more holistic interventions (Gulbrandsen, 2009; Shelton, 2009). Sustainability certification schemes usually acknowledge (existing) legal frameworks and public regulations. These schemes, in many cases, require their clients to respect and/or adhere to national and intergovernmental policies and legislations (Washington and Ababouch, 2011). This suggests that sustainability certifications are unlikely or very rarely conflict with legal or public regulations. However, research by Christian et al. (2013) have identified cases where (the MSC) sustainability certification have permitted or perpetuated the breaching of some legislations. Differences lie in the structures, specifications, institutions and method of

application of various certification programs (Masters et al., 2010). However, these standards all converge in a common and overarching objective of promoting responsible production and ameliorating adverse ecological, impacts from production and consumption activities (Azzone et al., 1997; Reinecke et al., 2012). In achieving these goals and objectives, certification organisations rely on markets (and other actors along the supply chain) to gain legitimacy and authority to regulate production and management systems and ensure compliance (Washington and Ababouch, 2011).

Despite extensive studies on non-state, third party sustainability certification and ecolabelling programs, there is a paucity of research on the actual impacts on natural resource management and sustenance, particularly at the point of production (Blackman and Rivera, 2011; Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012). However, this line of research is necessary in understanding the strengths and weaknesses of this model of governance, and determining how it fits within broader governance frameworks for natural resource and environmental governance.

1.2 Problem Statement

There is an appreciable volume of research and dialogs on sustainability certifications. Some authors have looked at government responses to certification schemes (Gale and Howard, 2011; Foley, 2013), potential outcomes of sustainability certifications (Geerts, 2014; Ponte, 2012; Washington and Ababouch, 2011; Gulbrandsen, 2005), and factors/policy networks that affect the uptake of certification (Bartley et al., 2015; Carlsen et al., 2012; Gale and Haward, 2011; Cashore et al., 2004). These studies have provided insight into the background and dynamics of third-party certification as a policy or

regulatory instrument and as a market-based approach to natural resource governance (Gale and Haward, 2011; Barry et al., 2012; Bartley et al., 2015). Others have studied how certifications have emerged in manufacturing and consumption sectors (Bartley et al., 2015), their anticipated outcomes on natural resource conservation (Gulbrandsen, 2004; 2009) and on labour and society welfare (Bartley et al., 2015). Concerns about the lack of transparency and accountability of industry and governmental processes is a major issue, which certification systems seek to improve (Auld, 2010). Despite the appreciable volume of research on non-state, third-party sustainability certifications, the resulting impacts of this intervention remain hypothetical due to the limited research on this topic (Barry et al., 2012). Gale and Haward (2011) indicate that non-state, third party certifications are likely to provide market and reputational incentives for industry that comply or meet their standard. However, there is insufficient empirical evidence to clarify these numerous claims associated with certification (Clancy et al., 2015; Delmas and Pekovic, 2013; Cashore et al., 2010; Blackman and Rivera, 2011; Barry et al., 2012; Mikkilä et al., 2009; Tikina and Innes, 2008; Gulbradsen et al., 2008; Gulbrandsen, 2004). This study, therefore, seeks to contribute to the body of literature uncovering the outcomes of non-state third party certifications at the point of production in Canada's Atlantic Provinces.

1.3 Research Questions

Industries within Canada have made, and are still making great strides towards influencing, supporting and adopting non-state, third-party, sustainability certifications, most notably in the forestry and fisheries sectors. These resource industries view this as a sign of world leadership in responsible resource use and management, maintain market access and

effectively compete in the market place (Forest Producers Association of Canada (FPAC), n.d.; NRCan, 2017[1]; Gale and Haward, 2011). The increasing uptake of these schemes in these sectors merits an evaluation or investigation into certification standards and outcomes in determining the effectiveness of these schemes based on their proposed objectives. This study contributes to this subject by answering the question: what are the sustainability outcomes of non-state, third party certification and ecolabelling systems? The following sub questions give more focus to the goal of this study:

a) What are the ecological, social, economic and management (institutional) outcomes of non-state, third party sustainability certification from the perspectives of forest and fisheries producers in Atlantic Canada? Are these outcomes beneficial, detrimental or neutral to certified forest and fisheries operations?
b) Are certified forest and fisheries producers/organizations in Canada's Atlantic Provinces satisfied with certification benefits?

1.4 Research Objectives

Sustainability certifications have been designed to reward compliant operations with market as well as reputational benefits for meeting minimum social and ecological requirements of a certification standard (Washington and Ababouch, 2011; Gale and Haward, 2011; Gulbrandsen, 2004; 2005). Certification organizations seek to create markets and additional value for their clients by providing buyers and consumers with information (via labelling and publishing of assessment and audit reports). For example, a study on the prospects of certifying crown lands in Newfoundland and Labrador (NL)

revealed that two of the three main reasons why forestry sector enterprises certify their operations are: to expand access to global markets and to rise above their competitors (Fox et al., 2016). This provides some evidence that there may be inherent benefits or positive expectations from the attainment of sustainability certifications.

The study seeks to achieve the following objectives:

1. to ascertain the actual outcomes of certification (ecological, social, management, economic) based on the perspectives of forest and fisheries producers in the Atlantic Region of Canada; and
2. to assess the general satisfaction of forest and fisheries producers in Atlantic Canada with forest and fisheries certification and ecolabelling.

1.5 Organization of Thesis

This thesis comprises six chapters. The first chapter gives a background of non-state, third party sustainability certifications as a form of natural resource governance, points out the problem of limited research on the outcomes of sustainability certifications. It also highlights this study's objective of identifying the outcomes of sustainability certifications in forest and fisheries sectors (at the point of production) of Atlantic Canada.

The second chapter reviews literature on the emergence and development of sustainability certification in some economic sectors, which emphasis on the potential outcomes of sustainability certifications. Also discussed in this chapter, is the history of Canadian forest and fisheries management and the emergence of third party sustainability certifications in Canadian contexts (with emphasis on the Atlantic Provinces). This section

also discusses the analytical framework originally designed for this study, based on existing literature.

The third chapter details the research approach and design, types and sources of data, recruitment processes, data collection and analysis for this thesis. This research adopted a mixed method, comparative approach, drawing from both primary (mainly a survey involving participants from Atlantic Canada forestry and fisheries sectors) and secondary sources.

The fourth and fifth chapters highlight the findings and results of this study, based on the results of surveys directed to the shellfish industry and to the pulp and paper industry and on existing literature, establishing similarities and differences in forest and fisheries sectors in Atlantic Canada. These chapters also identify the outcomes of sustainability certifications along the main themes of sustainable development: 'environmental/ecological', 'social' and 'economic' dimensions as well as an added theme 'management' (relating to institutional capacity).

The sixth and concluding chapter of this thesis summarizes the main findings and limitations of this study, which mostly identify diverse and ambiguous responses on the outcomes of forest and fisheries certifications. Based on the findings, lessons learned from this study and suggestions for further research are provided here.

CHAPTER TWO

LITERATURE REVIEW – NATURAL RESOURCE MANAGEMENT AND SUSTAINABLITY CERTIFICATION IN GLOBAL AND CANADIAN CONTEXTS

"Green is a trend, Sustainability is a mindset."(Lloyd Lee)

2.1 Introduction

This chapter includes a literature review, from a global scale, of sustainability certifications and ecolabelling systems and their emergence in selected economic sectors, notably, mining, apparel, tourism, forestry and fisheries. In addition, literature reviewed for this section provides a profile of the fisheries and forestry sectors in Canadian and Atlantic region context. The last component of this chapter details the analytical framework that explains the broad research area and carves out a direction and generic lines of inquiry (adapted for this study), based on theories and findings from existing certification research.

2.2 Global Sustainability Certifications and Ecolabelling

2.2.1 Mining

The environmental risks associated with mining and/or quarrying (e.g. minerals, metals, coal, peat or sand and gravel) (Sumi and Thomsen, 2001; Mining Association of Canada, 2017) is a major source of concern among states, civil/environmental groups and the public (Chiaro and Joklik, 1998; Hempstock, n.d.; Massachusetts Institute of Technology (MIT), 2016). The non-renewable nature of these resources coupled with the multiplicity of negative impacts from exploration activity (examples are deforestation, water and air pollution) heighten the need for sustainable management in this economic sector (MIT, 2016). The mining sector, however, makes significant contributions to the economy of local

communities and countries, where they operate (Hempstock, n.d.; MIT, 2016) providing employments and income, revenue, and development projects (CSR), among others (Petkova et al., 2009; Walser, 2000). The socio-economic benefits of this sector may cloud the resulting negativity and influence management policies or regulations (making them less stringent, with limited precautions) for mining enterprises. For this reason, mining activities in general may have deleterious consequences for both human and non-human environments (Paul and Campbell, 2011; MIT, 2016). For instance, in the late 1980's, three US states, Nevada, California and Arizona, were affected by a cyanide waste poisoning incident from a mine resulting in the death of 7,163 wild animals (MIT, 2016). A study on the trends and causes of deforestation uncovered that mineral mining by itself accounts for about 15 percent of global deforestation (Geist and Lambin, 2002; Rademaekers et al., 2010). Developing countries such as Indonesia, Nigeria, Kenya and Ghana, report high deforestation rates and loss of agricultural lands, biodiversity loss, depletion and pollution of water bodies/habitat, and greenhouse gas emissions, which are linked in many direct and indirect ways to mining activities (Aryee et al., 2003; Kitula, 2006; Rademaekers et al., 2010; Schueler et al., 2011). In addition, mining activities have led to the destruction of properties (such as farms, buildings, land) and displacement of communities (as identified in research by Aryee et al, 2003; Schueler et al., 2011). Artisanal gold mining accounts for about 35 percent of global mercury pollution, which has severe negative implications on human and nonhuman environments (United Nations Industrial Development Organization (UNIDO), 2017). Some countries have taken conscious efforts to regulate and ameliorate negative impacts from mining activities, while supporting the sustainable agenda. Examples of these government interventions include China's Rare Earth Industrial

Development Policy, 2010; the (generic) intergovernmental International Standardization Organization (ISO) 14000 Environmental Management Systems and the Mining Association of Canada's - Towards Sustainable Mining Framework (The Mining Association of Canada, 2004; Rodrigues da Silva Enríquez and Drummond, 2007; MIT, 2016). A study that assessed the impacts of government-based certification in the mining sector, the intergovernmental ISO 14000 Environmental Management System (EMS), criticized its acceptance of 'curative' rather than 'preventive' mining plans from certified operators (Rodrigues da Silva Enríquez and Drummond, 2007; Almeida, 2002; Lawrence, 1997). The implication here is that it lacked the stringency to prevent mining practices that are likely to generate negative impacts. Instead, efforts are directed at remedying impacts after exploration takes place (Rodrigues da Silva Enríquez and Drummond, 2007; Almeida, 2002). As with many natural resource sectors, the inadequacy of government regulations have opened the doors for private, sustainability certifications and ecolabelling, a few examples are FairTrade standard and No Dirty Gold Standard (Mori Junior et al., 2015; Hempstock, n.d.). Proponents suggest that these standards provides a medium for primary stakeholders and the public to monitor this sector. It also provides an avenue for industry to communicate its responsible practices (Mori Junior et al., 2015). A study by the Centre for Social Responsibility in Mining (CSRM) on sustainable, third party mining certification suggests that there is inadequate research and discussions on effectiveness of these certification schemes in the mining sector (Mori Junior et al., 2015).

2.2.2 Apparel

Increasing concerns and activism against child labour and infringement of employee rights in the apparel industry, in mostly Asian and Latin American countries, has resulted in both public and private regulatory attempts in addressing these issues. These initiatives have mostly originated in first world countries (Bartley, 2003). Certification systems (for addressing social issues) in the apparel industry were initiated in the early 1990's, as collaborations between governments and industry towards remedying mostly social issues from production (Bartley, 2003). Among the initial certification systems are the Fair Labor Association by the Apparel Industry Partnership and the Council on Economic Priorities Accreditation Agency, now Social Accountability International, formed by partnerships between public, private and industry actors) (Bartley, 2003). However, purely non-governmental schemes such as the FairTrade standard and the Worldwide Responsible Accredited Production (WRAP) have emerged over the years (FairTrade USA, n.d.; WRAP, 2017).

The objectives and focus of these schemes usually rest on labour welfare and improving social sustainability, which may be indicative of limited or non-pursuance of the remaining two elements of sustainable development – economic and environmental objectives (Jones and Williams, 2012). Thus, while MSC certification in fisheries has been criticised for focusing narrowly on ecological criteria and lacking social principles and criteria, the apparel industry has been criticized for the opposite. In a study that involved managers and employees in some apparel factories in Lao PDR-Asia, apparel certification schemes provided incentives for improving labour welfare

and work conditions. However, the study also found that certification processes did not solve all the social issues prevalent in these factories (World Bank, 2012). This suggests that these schemes likely have a narrow scope or approach which may have translated into the limited social impacts observed.

2.2.3 Tourism

The study of 'green tourism', otherwise understood as sustainable tourism or responsible tourism (in both hospitality and ecotourism divisions) is a relatively new area, compared to some economic sectors, for instance, forestry (Geerts 2014; Honey, 2007). Environmental awareness and initiation of sustainable development in the tourism industry dates back to the 1990's, following the United Nations Rio Earth Summit that resulted in the Mohonk Declaration as a guiding framework for tourism certifications (Black and Crabtree, 2007). Further efforts by ENGO's in this sector, most notably the Rainforest Alliance, led to the establishment of the international accrediting body, the Sustainable Tourism Stewardship Council, in the early 2000's. Subsequent to this development, multiple certification schemes have proliferated global and local tourism (Black and Crabtree, 2007). The relatively low research and policy attention given to sustainable tourism contrasts with the widespread nature of private rating standards, codes of conduct, award schemes and third-party certification programs in this sector, with over 80 standards identified for ecotourism sector alone in the year 2006 (Geerts, 2014; Black and Crabtree, 2007). As noted in the multi-authored study compiled by Black and Crabtree (2007), the process of setting, applying and legitimating sustainability standards in the tourism sector has proven to be a

complex and ‘herculean’ one. For instance, the differing nature of activities that make up the tourism industry – accommodation, food, destinations or natural sites, personnel, and the diversity and large number of stakeholders in this industry arguably calls for specific standards for different activities since one umbrella standard may not be feasible or appropriate for the entire industry (Black and Crabtree, 2007). Tourism certification standards aim to assess and incentivize improvement in management processes or operational activities of industry (pertaining to energy use, waste disposal, use of protected reserves, food safety, stakeholder inclusion, labour skills, among others) and make this information available to tourists to influence their decisions and choices (Geerts, 2014). Geerts also indicates that third-party certification and rating schemes in the hospitality sector improves sustainable practices and encourage tourists to make ethical choices via information provided, however, the overwhelming number of standards might cause confusion or doubts about the legitimacy and credibility of certification systems. Another study also revealed that an eco-certified lodge in Lapa Rios, Costa Rica received a state award not because of its ‘5- green leaves’ (highest) sustainability rating by the Certification for Sustainable Tourism Programme, but because of a ‘praise report’ of this facility given by a lodger (Black and Crabtree, 2007). Thus, while certification schemes abound in this sector, this does not necessarily guarantee that there is adequate knowledge about these schemes or that certified operations gain popularity if they are not promoted (Black and Crabtree, 2007).

As noted in studies by Buchsbaum (2004) and Black and Crabtree (2007), voluntary certifications may not entirely remedy sustainability issues in the tourism sector; however, this does not render them an illusion. They have the potential to promote sustainable

development in the tourism sector, if effectively strategized. More studies that are empirical or inquiry-based is required to improve our understanding of the objectives, similarities and differences as well as the outcomes of tourism certification programs (Geerts, 2014; Black and Crabtree, 2007). This is necessary in determining how certification works in the tourism sector and how this fits into broader environmental regulation and policy-making networks.

2.2.4 Forestry

Non-state third party sustainability certification and eco-labelling in the forestry sector dates back to the 1990's, following the introduction of organic food labelling (McDermott, 2003). This new approach to forest management by environmental groups, in a way, deflected the focus of policy-making from governments to the market and its supply chains. By this, a system of rewards and commendation for acceptable practices or good performance gradually became more prominent than conventional protests and boycotts activities by related groups or organizations. Prior to the emergence of forest certification and eco-labelling, intergovernmental efforts (such as the United Nations Conference of Environmental and Development (UNCED) and the Brundtland Commission), to define and institute sustainable resource development set the stage for further discussions and actions (McDermott, 2003). The Brundtland Commission, for instance, conceptualized the term 'sustainable development' as providing a three- lens approach – social, economic and environmental (McDermott, 2003). These themes have been adapted in most forest certification standards. The 1992-UNCED, also known as Rio Summit, furthered discussions on sustainable development resulting in a generic, non-binding agreement for

sustainable development published in the report 'Agenda 21'. This report identified fifteen forest principles for sustainable forest management (SFM) (McDermott, 2003). Following these 'soft' intergovernmental interventions, some countries consolidated into groups (for instance, the Montreal Process, Helsinki Process and Tarapoto Process), and developed criteria and indicators for evaluating SFM in their countries, guided by the 'Agenda 21' recommendations and forest principles. All these, in addition to strategies such as banning of tropical timber or timber from countries with poorly managed forests (without forest management plans) did not sufficiently address forestry issues at hand (Elliot, 1999; Rehbinder, 2003; McDermott, 2003; Gale and Haward, 2011). Thus, the idea of forest management certification and labelling appealed to some prominent ENGOs and industry as a more effective approach to forest management at the national and transnational levels. This greatly influenced the formation of the Forest Stewardship Council (FSC) scheme in 1993 (McDermott, 2003; Gale and Haward, 2011). Initial discussions around SFM and certification mostly targeted tropical forests and countries with poor forest management systems; this scope broadened to forests all over the globe, as forest management challenges in the global north (forest conflicts in the United States of America (USA), Canada and Australia) became more and more visible (Bartley, 2003; Gale and Haward, 2011). The creation of the membership-based FSC, spearheaded by the World Wildlife Fund (WWF), with support from industry (Woodworkers Alliance for Rainforest Protection and the Ecological Trading Company) and charitable groups (Gulbrandsen, 2005; Auld et al., 2008; Gale and Haward, 2011), initiated private sector (NGO's, industry, consumers) participation in forest governance. The emergence and development of the FSC scheme, however, did not occur without opposition from both stakeholders within and

outside the organization (Gale and Haward, 2011). Some actors within the FSC argued against the inclusion of industry actors (who are to comply with the standard) in the decision-making process while proponents argued for their inclusion to get industry representation and improve uptake levels. In addressing this issue and to gain legitimacy, the FSC restructured into a membership entity inviting individuals, associations and even governments, all over the world. In addition, membership groupings are segregated into an equally weighted 'tri-dimensional' system (informed by the elements of sustainability – economic, social and environmental), to address the potential of industry control or incredibility (Gale and Haward, 2011). Despite efforts to be inclusive and structurally sound, the FSC scheme appeared to be a potential obtrusion to national sovereignty and a threat to 'free' trade, especially for forest actors in the global south, (Bartley, 2003; Gale and Haward, 2011). For governments and industry in the global north, skepticism and uncertainty about the FSC standard spawned counter (mostly, industry led) forest certification standards. Examples are the American Forestry and Paper Association's (AFPA) standard – Sustainable Forestry Initiative (SFI), the Canadian Pulp and Paper Association's (CPPA) standard - Canadian Standards Association (CSA), and the Australian Forestry Standard (AFS) by the Australian government and native forest industry (Gale and Haward, 2011). The FSC and the Programme for Endorsement for Forest Certification (which endorses, and promotes mutual recognition of national certification standards that meet the PEFC principles and criteria, schemes such as SFI, AFS and CSA, among others, subscribe to the PEFC) remain the two global forest certification and labelling programs (Gale and Haward, 2011). The FSC recognizes approximately 200 million ha of forests worldwide (amounting to over 1500 forest

management certificates in 84 countries) as sustainably managed and has awarded about 33,000 chain-of-custody certifications in 121 countries (FSC, 2017). The PEFC (which endorses about 39 national certification systems) has about 300 million ha of forests managed in compliance with its management standard and has given out approximately 11,000 chain-of-custody certifications (PEFC Council, 2017).

2.2.5 Fisheries

Private standards for regulating marine capture appeared in the mid-1990's, in response to concerns about the persistent declining state of fish stocks, poor management of fisheries and marine ecosystems (FAO, 2005; Gulbrandsen, 2009; Washington and Ababouch, 2011). The intense exploitation of fishery resources from technological advancements in fishery to meet the ever-increasing demand for fish products, coupled with weak and poorly enforced public policies and treaties, among other factors, shaped and developed the fisheries certification agenda (Washington and Ababouch, 2011). The introduction of private standards such as dolphin-safe certification and labelling in tuna fisheries in the 1990's (Teisl et al., 2002; Jacquet and Pauly, 2007; Gulbrandsen, 2009) and turtle-safe standards in shrimp fisheries targeted or protected single-species, yielding limited impacts on marine ecosystems (Gulbrandsen, 2009). These interventions, along with other conservation measures by governments and industry, could not halt the collapse of many fisheries in the 20th century (Gulbrandsen, 2009; Gale and Haward, 2011). Notable examples include the Northern sea cod fishery off the east coast of Canada, the Californian sardine fishery, the Northern cod fishery and Peruvian anchovy fishery (Hauge et al., 2009). These inefficiencies in fisheries governance and the lack of an overarching global fisheries

convention possibly created a niche for, and encouraged active NGO involvement in fisheries management. While this study concentrates on sustainable certification and eco-labelling of fisheries, other private, market-oriented measures that do not directly engage in certification or provide labels, such as sustainable seafood rankings, buyer/consumer guides or wallets exist. These programs usually originate from non-governmental environmental organizations and aquariums, with the aim of providing consumers or buyers with information (or purchasing recommendations) on the status and management of 'popular' fish stocks, based on their scientific assessments and methodologies (Jaquet and Pauly, 2007). For instance, the SeaChoice ranking program classifies a list seafood, based on their scientific examinations, as 'green' or best choice, 'yellow' or having some concerns or 'red' or avoid, to promote and caution consumers about their seafood choices (Govender et al., 2016). It is worth noting, however, that despite the proliferation of private standards and revamping of public regulations in the fisheries sector over the last two decades, the rate of fish stocks that are overfished (fished at unsustainable levels or depleted) have increased by over 20% between 1989 and 2013 (FAO, 2016). This revelation does not only support the assertion that fish and fishery products are one of the world's most traded commodities (Washington and Ababouch, 2011), but also depicts the complexity and challenges of fisheries management and limitations of scientific processes in determining the health of fish stocks and marine ecosystems in general (Gale and Haward, 2011). It also poses a question: to what extent and under what conditions does fisheries certification and ecolabelling help to address this situation? The United Nations FAO warns that marine fisheries are in a fragile state stemming from the persisting trend of fish stocks decline (FAO, 2010, p.7-8; Gale and Haward, 2011) and, thus, there is a need

for multi-regulatory approaches towards conservation and regeneration of fish species. This could be a potential reason for the development and proliferation of market-based fisheries certification standards for assessing the performance of fisheries against ecological and management-based principles and criteria for differentiating and awarding sustainable fisheries. Globally recognized fisheries certification standards, notably the Marine Stewardship Council (MSC) and Friend of the Sea (FoS), build on existing legal frameworks (such as the United Nations (UN) Fish Stocks Agreements, UN Food and Agriculture (FAO) code of conduct for responsible fisheries, among other national and intergovernmental policies, in defining assessment criteria and indicators (Gulbrandsen, 2009; Washington and Ababouch, 2011). In recognizing existing legal frameworks, these schemes gain legitimacy and credibility, and may win the support of governments, as in the case of Netherlands and New Zealand (Washington and Ababouch, 2011). On the other hand, countries such as Iceland and France have developed their own national fisheries ecolabels (Foley, 2013), while governments such as Canada and the USA have stayed 'aloof' in fisheries certification processes (Washington and Ababouch, 2011). At the forefront of global wild capture fisheries certification and traceability is the Marine Stewardship Council (MSC) (Gulbrandsen, 2005; 2009), which is also the world's biggest sustainable fisheries certification organizations, in terms of annual revenue and expenditure (Christian et al., 2013). The Friend of the Sea (FoS) International standard is the MSC's main competition, based on uptake levels and presence on fish markets (Washington and Ababouch, 2011; Foley, 2013). The MSC scheme emerged from a partnership between the NGO-World Wildlife Fund (WWF) and Unilever, one of the world's largest seafood retailers, between the years 1996 and 1997 (Unilever, 2003; Gulbrandsen, 2009; Gale and

Haward, 2011; Christian et al., 2013). Its description as a prototype of the FSC standard (Murphy and Bendell, 1997; Gulbrandsen, 2009) is perhaps due in both cases to the leadership of the NGO-WWF. The MSC has certified over 280 fisheries in about 36 countries as sustainable, close to 100 fisheries are in the assessment process and over 3,300 chain of certificate holders in more than 80 countries (MSC, 2016). The competitor scheme - FoS is a product of the non-profit organization - Earth Island Institute, beginning a decade after the MSC (Washington and Ababouch, 2011), and has approved a good number of marine capture (about 90 fisheries in 45 countries) and aquaculture operations worldwide as sustainably managed (FoS, 2017). Though these schemes have seemingly common objectives of promoting sustainable fisheries management and healthy marine ecosystems using market-based instruments, differences lie in the political and institutional structure of these organisations and their modes of standard application (Gulbrandsen, 2009; Washington and Ababouch, 2011). For instance, the MSC's assessments cover fishery's impacts on target fish stocks as well as the ecosystem whereas the FoS standard focuses primarily on the fishery and the fish stocks but has indicators for social sustainability and a standard for aquaculture certification (Washington and Ababouch, 2011). In addition, there is no global certification scheme, like the PEFC for forestry that endorses fisheries certification schemes at the national level (Washington and Ababouch, 2011). Some criticisms that have been generally levelled against wild fisheries certification, especially the MSC, include non-involvement of small-scale, data-lacking fisheries largely in the developing world and the high costs of achieving and maintaining certification/labelling (Jaquet and Pauly, 2007; Gulbrandsen, 2009; Christian et al., 2013; Bellchambers et al., 2016). In addition, the potential of certification and ecolabelling instruments to override or

replicate existing legal frameworks (Shelton, 2009) and evidences of 'blue-washing' or persisting ecological issues in certified fisheries are also major lines of censures against fisheries standards (or the MSC) (Ward, 2008; Althus et al., 2009; Campana et al, 2009; Froese and Proelss, 2012; Christian et al., 2013). Research on formal complaints made against 19 MSC certified fisheries in North America and Europe disclose there are unresolved ecological issues relating to bycatch and marine habitat impact, unsafe fishing methods and gears, non-compliance with legislations and even overfishing (Christian et al., 2013). However, the increasing uptake levels of these schemes in recent times suggest a somewhat growing acceptance of certification and ecolabelling by fisheries industry and governments. Europe and North America record the largest number of certified fisheries and double up as primary markets for certified products; developing countries, on the other hand, produce about 50% of globally traded seafood (FAO, 2016) but record the lower percentage of certified fisheries compared to developed regions (Washington and Ababouch, 2011). Among the reasons for low uptakes of fisheries certification in the global south are the resource demands (time, money and pre-certification specifications), which are mostly unfavourable for small-scale fisheries (Jaquet and Pauly, 2007; Gulbrandsen, 2009; Washington and Ababouch, 2011). In addition, some seafood markets (e.g. Asia, which account for about 75 percent of global seafood imports) are not stringent on certification or eco-labelling of fish products they import (Jaquet and Pauly, 2007). An empirical study to investigate and compare non-certification rate of fisheries in developed and developing worlds and the underlying reasons would be useful in understanding the limitations and challenges associated with fisheries certification from both perspectives. To address the low uptake of fisheries certification, the MSC introduced three main

interventions - 'the Developing World Fisheries Programme' (Washington and Ababouch, 2011), 'Risk-based framework' (MSC, n.d.[a]) and a working guide or frame for Fisheries Improvement Projects (FIPs) - to help fisheries meet MSC assessments (MSC, n.d.[b]). These interventions are expected to improve the sustainability performance of small-scale and/or data deficient fisheries towards the achievement of the MSC standard and ultimately, improving MSC standard uptake (Washington and Ababouch, 2011; MSC[a], n.d.). Research on the application of these addendums to the MSC standard and resulting effects on uptake and changes to fisheries is necessary in fully deciphering the MSC's impact. Certification processes may engage various stakeholders directly or indirectly in standard setting, application and compliance verification. This provides some sort of legitimacy and traction for these standards, while potentially providing certified companies with reputational benefits and platforms for consensus decision-making (Leadbitter et al., 2006; Gulbrandsen, 2009). A study of the (first) eleven fisheries that the MSC recognized as sustainable showed that they had systems in place for controlling and enforcing good fishing practices and harvesting and promoted stakeholder participation in the management process, which contributed to their success (Kaiser and Edward-Jones, 2006; Gulbrandsen, 2009). This revelation posits fisheries certification, particularly by the MSC, to be suited for operations that are already or near responsible; this said, some studies have pointed out empirical cases where operations certified by the MSC still have negative impacts on target stocks and/or marine ecosystems (Christian et al., 2013). The voluntary nature of sustainability certifications and ecolabelling limits its sphere of governance or impact to participating fisheries (Gulbrandsen, 2009; Washington and Ababouch, 2011). Research carried out on the effectiveness of these schemes (by Gulbrandsen, 2009; Jacquet and

Pauly, 2007; Washington and Ababouch, 2011; Christian et al., 2013; Bellchambers et al., 2016) are engaged in the discussion component of this thesis.

2.3 Canada's Natural Resource Sector

Natural resources contribute enormously to the wealth and sustenance of the economy and to societal well-being. The resource sectors of energy, mining and forestry collectively employ about 1.8 million Canadian residents and have contributed over $27 billion annually in taxes and revenue by 2014, and this amounted to 17% of Canada's gross domestic product (GDP) in 2015 (NRCan, 2016). The extensive Boreal and Acadian forests and the vast Atlantic Ocean support fisheries and forest operations in Canada's Atlantic Provinces; both sectors are key, in terms of socio-economic and cultural benefits, to these provinces (NRCan, 2016; Chapman, 2007; Atlantic Canada Opportunities Agency (ACOA), 2006).

2.4 Atlantic Canada Fisheries at a Glance

Fisheries on the Atlantic Coast are allocated or shared among the five bordering provinces of New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island and Quebec (though Quebec does not fall within Atlantic Canada) (DFO, 2010). The Atlantic Provinces account for about 40,000 kilometres of the Atlantic Coastline (ACOA, 2006) and 34,744km of freshwater in Canada (Statistics Canada, 2011). In 2015, total landing volume and value of commercial wild caught and fresh water fisheries in Canada was 845,602 metric tonnes and $3,260,229, respectively (DFO, 2017). Shellfish fisheries are currently the dominant fisheries on the Atlantic Coast, and in Canada at large (Mather, 2013; Foley,

2012; 2013; Gale and Haward, 2011; ACOA, 2006). The collapse and subsequent moratoria on cod fishing and other ground fish fisheries in the early 1990's greatly influenced the current domination of shellfish fisheries in the Atlantic Provinces (Foley, 2013; Gale and Haward, Dietz et al., 2003). Current reports on the state of commercial marine fisheries in the Atlantic region shows that among the various species harvested in the region, the top three (with respect to landing volume and value) are crab, lobster and shrimp, which constitutes almost fifty percent of the total landings and seventy-nine percent of the total landing value. This trend is similar for the entire country, with wild capture shellfish fisheries estimated at 448,695 metric tonnes (55% of commercial landings) and valued at 2,648,010 Canadian dollars (approximately 83% of the total value of commercial landings) (DFO, 2017; Statistics Canada, 2017). These three shellfish species are the main fish and fishery products exports for Atlantic Canada as well as in Canada as a whole (DFO, 2017).

2.4.1 A Historical Look at Fisheries Management on Canada's Atlantic Coast

Atlantic Canada capture fisheries, as have many fisheries worldwide, have gone through phases of 'boom' and 'decline' (Mather, 2013). Recent changes stem from many factors including overfishing and unsustainable management, with the bulk of fishing activities targeting shellfish since the late 1980's (ACOA, 2006; Mather, 2013). Fishing on the Atlantic Coast began as a subsistence-based activity; fishing access or allocation was mostly informal and based on communal arrangements (Parsons and Lear, 1993; Canadian Council of Professional Fish Harvesters, n.d.). In early 1500's, the Europeans and other foreign fleets commenced fishing on the Atlantic Coast, predominantly for cod fish (Canadian Council of Professional Fish Harvesters, n.d.). This phase influenced the

introduction of formalized systems of fishing allocations and promoted economic objectives over conservation of fish stocks (Parsons and Lear, 1993; AFPR Working Group, 2001). The most prevalent issue that coastal fisheries faced at this time was conflicts over fishing allocation, and these conflicts were mostly settled via 'ad hoc' arrangements (as and when there was a conflict, a committee was set up to resolve it) (Dunfield, 1985; Parsons and Lear, 1993; AFPR Working Group, 2001). The surge of industrialization in the 1800's, and resulting increase in capacity and technology in the fisheries sector (for instance, introduction of canning) was not at par with the level of research and management, thus, fisheries were characterized by 'booms' and 'declines' (Gough, 1991). The federal government took charge of fisheries management in Canada after Confederation and the first federal fisheries legislation introduced was the Fisheries Act of 1868 (Parsons and Lear, 1993; West Coast Environmental Law (Parsons and Lear, 1993; WCEL, 2017). This legislation gave sovereignty and authority to the federal government to regulate fishing activities of the Canada's oceans and rivers (Parsons and Lear, 1993). As described by Gough (1991; 1993), the period leading to the time of the First World War marked the start of active government interventions and regulation of the fisheries sector. Amended in the 1970's, the Fisheries Act incorporated legislations for the protection of aquatic ecosystems or habitats, stemming from the realization that habitat protection is indispensable to the achievement of fisheries conservation and sustainability (Parsons and Leah, 1993; WCEL, 2017). Prior to the amendment of the Fisheries Act, concerns and outcries over the increasing foreign participation in Atlantic Coast fisheries, influenced Canada's claim over '12-mile territorial seas' (from an initial '3-mile territory') and fisheries that operated within 200 miles of this expanse, in late 1900 (DFO, 2008; Carasco, 2012; Mather, 2013).

The United Nations Convention of the Law of the Sea (UNCLOS) agreement resulting from negotiations among coastal countries augmented the jurisdictional measure (also known as the Exclusive Economic Zone) adopted by Canada for its coast by spelling out the rights, limits and management responsibilities of coastal communities (Carasco, 2012). Canada signed this convention in 1982 and formalized its implementation in the year 2003 (Carasco, 2012). Canada is a member-country of the Northwest Atlantic Fisheries Organization (NAFO) of 1979 (formally, International Commission of the Northwest Atlantic Fisheries). The NAFO is responsible for managing the Atlantic Ocean territories outside the Exclusive Economic Zones (EEZ's) of North West Atlantic Fisheries (in the USA, Canada, St. Pierre et Miquelon and Greenland) and the migratory and straddling stocks in the NAFO territory (NAFO, n.d.). The intergovernmental-NAFO, responsible for conducting scientific research, managing the NAFO regulatory area and developing policy recommendations based on scientific findings, possibly lacked either the capacity or willingness, or both, to enforce management regulations (Parsons, 1993; Parsons and Lear, 1993). The greatest modification to Atlantic fisheries management took place in the 1900's, with the introduction of allocation policies such as the individual/transferrable fishing quotas and enterprise allocations (Parsons and Lear, 1993; AFPR Working Group, 2001). These interventions, however, did not minimize the capacity or intensity of fish harvesting in the region (Gardiner, 1988; Rutherford, 2008). The Kirby Task Force, a committee set up by the federal government under the leadership of Dr. Michael Kirby in 1982, was tasked to brainstorm on remedies to the fisheries issues at the time, especially for the offshore, and develop strategies for improving the viability of fisheries (Emery, 1993; AFPR Working Group, 2001). In effect, the committee's entire work and policy recommendations centred

on strengthening the economic sustainability of Atlantic fisheries (Parsons and Lear, 1993; AFPR Working Group, 2001). In addition, attempts by the government to curtail the declining state of ground fish stocks that were in persistent decline through the development and promotion of under harvested fish stocks (Parsons and Lear, 1993) may not have been effective enough in achieving those objectives. According to Parsons and Lear, (1993, p. 20) the lack of stakeholder participation and co-management in the fisheries sector may have also resulted in other challenges that resulted in the depletion of some fisheries on the Atlantic Coast. Despite national and intergovernmental interventions introduced to manage fisheries on the Atlantic Coast and in Canada at large, the complexity of biological, socio-economic, ecological and political constraints continued to complicate fisheries management. In the late 1980's, no viable solution was available to deal with the continuous depletion of the northern cod and other groundfish stocks (Parsons and Leah, 1993; Mason, 2002; Mather, 2013). Subsequently, a moratorium was passed on commercial cod fishing and other groundfish fisheries in 1992, with negative impacts on the economy and people, especially the rural/coastal communities in Newfoundland and Labrador that relied greatly on fishing (AFPR Working Group, 2001; Mason, 2002, Rutherford, 2008; Gale and Haward, 2011; Mather, 2013). One response to this crisis was the government's support or intervention through the establishment of the $500 million Atlantic Fisheries Adjustment Programme to revamp Atlantic fisheries and provide 'non-fishing' employment alternatives (Mather, 2013). The focus of fishing on the Atlantic Coast has since diverted to shellfish harvest and aquaculture, where significant industrial growth has occurred.

Another policy step in addressing this crisis and the multiple negative impacts resulting was the decision by the Minister of Fisheries o revise the existing management system through the creation of a long-term policy framework for restructuring Atlantic fisheries (AFPR Working Group, 2001). The Atlantic Fisheries Policy Review Commission, launched in 1999, implemented this project (AFPR Working Group, 2001; DFO, 2008). This Commission employed multi-stakeholder consultations and analytical assessments over a two-year period and compiled their results and recommendations into a policy proposal. After further reviews and consultations, this proposal which had four main objectives for Atlantic fisheries management was finalized and approved for implementation in early 2000s (AFPR Working Group, 2001; Emery, 2004). These objectives (on fisheries management and governance) are (i) shared stewardship, (ii) conservation and sustainable use, (iii) self-reliance and (iv) stable, transparent access and allocation approach (AFPR Working Group, 2001; DFO, 2008). These themes map out measures for promoting co-management by actively involving fisheries stakeholders, instituting ecosystem-based approaches based on precautionary and conservation principles as well as fair and transparent processes of decision-making in Atlantic fisheries management (AFPR Working Group, 2001; DFO, 2008). This framework shaped the development of policy and management strategies in the Atlantic Region such as the Aboriginal Fisheries Strategy and beyond (2003), the Policy on licence and allocations (2011) and the New Access Framework (2012). In addition to federal, provincial and territorial policy interventions, (Atlantic) Canada falls within the jurisdiction of some international agreements signed by Canada. Examples are the United Nations Fish Agreement, the Convention on Future Multilateral Cooperation in the Northwest Atlantic

Fisheries, the International Commission for the Conservation of Atlantic Tuna, North Atlantic Salmon Conservation Organisation and the FAO Code of Conduct for Responsible Fisheries (AFPR Working Group, 2001). In addition to governmental and intergovernmental regulatory and socio-economic interventions to improve fisheries, non-state certification institutions, for a decade now, standards and interventions emanating outside governments have been initiated and are actively getting involved in fisheries management in Canada (Gale and Haward, 2011). These modes of governance gain authority from markets: they rely on market incentives to motivate harvesters and producers to meet appreciable levels of sustainability and stimulate consumer consciousness mainly via product labelling and publications (Washington and Ababouch, 2011).

2.4.2 Sustainable Fisheries Certification on the Atlantic Coast

As noted in the introduction, there are two main fisheries certifications that exist globally – the MSC standard and the FoS standard (Washington and Ababouch, 2011; Foley, 2013). The British Columbia (BC) salmon fishery initiated certification and ecolabelling processes in Canada. In 2001, it was the first fishery to apply for MSC certification in Canada, in its bid to withstand competition from the then-MSC certified, USA-Alaska salmon fishery, and secure markets or buyers in Europe (Unilever) and North America (Gale and Haward, 2001). However, the certification process for the BC salmon fishery compared to Alaskan salmon fishery, appeared to be more stringent, resource consuming and inconsistent, with the latter assessed based on 26 indicators while the former had 47 indicators (Gardner, 2004; Gale and Haward, 2011). Differences between the two fisheries for instance in the variety of salmon species harvested, fishing methods, and capacity, had some impacts on

the assessment processes and influenced the disparities observed in the assessment criteria (Gale and Haward, 2011). The BC salmon fishery attained MSC certification, but not before the Northern Prawn Trawl fishery and the Gulf of St. Lawrence Northern Shrimp fisheries in the Atlantic region achieved MSC certification in 2008 (Govender et al., 2016; Gale and Haward, 2011). Since 2008, many other fisheries in Canada have engaged MSC and to a lesser extent, FoS certification (DFO, 2008). There are currently thirty-nine fisheries in compliance with MSC certification and these account for over 65 percent of wild capture production in Canada (DFO, 2008; Govender et al., 2016). The BC Salmon Fishery (or Sockeye Salmon Fishery) in the Pacific region of Canada is the only client of the FoS standard (DFO, 2008; FoS, n.d.). Over 60% of the MSC-certified Canadian fisheries operate on the Atlantic Coast and a majority of these fisheries harvest shellfish species.

Table 2.1 lists all certified wild capture fisheries in Atlantic Canada.

Table 2.1 Certified Fisheries on Canada's Atlantic Coast (all MSC-certified)

Fishery	**Year of certification/ recertification**	**Conditions at the time of certification**	**Conditions remaining as at 2016**
1. Gulf of St. Lawrence Shrimp	2008 / 2014	3	3
2. Canada Northern Shrimp A 1	2011	10	2
3. Canada Northern Shrimp A 2 – 6	2011	8	0
4. Canada Northern Shrimp Area 7	2011	9	0
5. Scotian Shelf Northern Prawn	2008/2014	3	3
6. Newfoundland and Labrador snow crab	2013	5	4
7. Scotian Shelf snow crab	2012	2	0

8. Gulf of St. Lawrence snow crab	2012	2	0
9. Bay of Fundy-Scotian Shelf lobster trap	2015	5	5
10. S. Gulf of St. Lawrence lobster trap	2015	1	1
11. Eastern Canada offshore lobster	2010 / 2015	3	3
12. Gaspesie lobster trap	2015	3	0
13. Iles-de-la Madeleine lobster trap	2013	5	5
14. Prince Edward Island lobster trap	2014	5	0
15. Eastern Canada Offshore scallop	2010 / 2015	8	8
16. FBSA Canada Full Bay Scallop	2013	5	5
17. Canadian Scotia-Fundy Haddock	2010 / 2015	9	0
18. Atlantic Canada Halibut	2013	5	5
19. NAFO 4R Atlantic herring purse seine	2014	3	3
20. G. St. Lawrence fall herring gillnet	2015	1	1
21. Yellowtail flounder	2010/2015	4	2
22. North West Atlantic Canada harpoon swordfish	2010	11	6
23. Northwest Atlantic swordfish longline	2012	3	0

Source: Govender et al., 2016

The MSC certification process usually commences with a pre-assessment phase, which gives the applicant a fair idea of the requirements for a full assessment and significantly factors into the decision to go on with the full assessment or otherwise (Gale and Haward, 2011). During the actual assessment, the performance of a fishery is determined based on the MSC's three generic principles (sustainability of target fish stock, protection of ecosystem and competent management structure) and twenty-three criteria. Scores are provided for the sub criteria and performance indicators developed by the certifying body based on specific issues related to the fishery, which may be endorsed by the MSC or

justified by the assessment body in their report (MSC, 2002; Gale and Haward, 2011; Foley, 2013). Fisheries must attain a minimum of 60 for each indicator and an aggregated score of 80 for the indicators under each principle, to achieve the MSC's stamp of approval (MSC, 2001; Gale and Haward, 2011; Foley, 2013). A score of 100 stands for perfect performance; a score of 80 suggests that all minimum requirements for compliance are met (with or without conditions), and a score of 60 means 'conditional' certification, requiring some improvements. Improvements are required for companies who are given conditional certification towards achieving a score of 80 or above within a given period, usually a five year period (MSC, 2002; Gale and Haward, 2011). Certification conditions affects assessment scores but most importantly, they are aimed at addressing or encouraging improvements in areas of weak performance (Foley, 2013). 'Conditional certification' supports the idea or basis for annual surveillance audits (or monitoring) post certification (Foley, 2013).

Certified fisheries in Atlantic Canada (as listed in Table 2.1) have been assessed by MSC accredited certifying bodies as meeting the MSC's standard for well-managed fisheries, however, none of these fisheries were without issues. Out of the six fisheries recertified to the MSC, only one had no condition attached (Canadian Scotia-Fundy Haddock) (Govender et al., 2016). The remaining five were recertified but with conditions. Also, out of the seven fisheries that are close to the time for recertification (that is, fisheries certified in 2011 and 2012), none had fully met the conditions from initial certification. Two fisheries, out of the seven (the Yellowtail flounder and North West Atlantic Canada harpoon swordfish) had shown some improvement (meeting up to 50 percent of the certification conditions they were given).

Work by Christian et al. (2013) disclosed that based on the 12 percent of fisheries certified to the MSC as at 2013, nineteen formal complaints had been filed against some of these fisheries on grounds of adverse ecological impacts of the fishery, poor management of these fisheries, among other reasons. Out of these nineteen objections raised by differing stakeholders, the MSC took action on only one case: the Faroese Northeast Atlantic mackerel fishery, and did not award certification to this fishery. With respect to Atlantic Canada, the MSC received criticisms for certifying the North West Atlantic Swordfish (longline) fishery in Atlantic Canada as sustainable despite the high levels of bycatch of (endangered) shark and turtle species. It has been estimated that for every targeted catch of 20,000 swordfish per annum, about 100, 000 sharks (Campana et al., 2009) and 1,370 turtles (COSEWIC, 2001; 2010) are caught as bycatch and their rate of survival or mortality after they are released into the ocean is unknown (Christian et al., 2013). Though the MSC's conditional certification of fisheries is expected to promote incremental improvements among fisheries, this system gives rise to doubts about the efficacy and credibility of certification programs, particularly the MSC scheme (Christian et al., 2013).

Canada's northern shrimp fishery, the first fishery to be certified in Canada (Gale and Haward, 2011), is now facing the challenge of declining stocks. The resulting socio-cultural and economic impacts on northern shrimp-dependent fishing communities, the fishing industry and Canada at large have been generally adverse (DFA, 2015; Keenan and Carruthers, n.d.). The Aboriginal communities and rural communities adjacent to the coast have been identified as the most adversely affected from the implementation of the federal government's policy for reallocation of northern shrimp quotas: the Last In First Out reallocation policy intervention in 2010 (DFA, 2015; Ministerial Advisory Panel, 2016).

High rates of unemployment, closing of businesses, dwindling of government revenue (municipal, provincial and national) and local funds that support basic infrastructure and service provision (Keenan and Carruthers, n.d) are some of the adverse impacts identified. Following various consultative and deliberative processes with various stakeholders of the northern shrimp fishery, the LIFO policy was abolished in 2016 (Ministerial Advisory Panel, 2016). Despite these challenges, the MSC re-certified the northern shrimp fishery as sustainable in 2015 (Powles et al., 2016), without acknowledging or addressing the socio-economic issues of the fishery. This stems from the MSC's focus on advancing or rewarding ecological/environmental sustainability or stewardship and the neglect of social aspects of sustainability (Neis et al., 2014). The challenges of defining, incorporating and operationalizing aspects of social sustainability, and in fact the lack of a universal concept of sustainability (Bostrom, 2012; Dahl, 2012), are possible reasons for the differing lines of interpretation and practice of this concept. Bostrom (2012) in his work identifies some factors that debilitate the integration of social aspects in broader sustainability planning and practice. These include: (1) high aspirations of social sustainability (e.g. social justice, democratic rights) that often crumble under economic and environmental goals; (2) the subjectivity of social sustainability and inadequate measuring systems compared to the other two aspects; (3) the long standing prioritizing of environmental aspects over social aspects; and (4) the separation (instead of integration) of the dimensions of sustainability. Dahl (2012) theorizes a spectrum of factors spanning from individual/personal motivation to a global respect for the earth's capacity and limits as means of achieving sustainability. His theory debunks the mainstream practice of relying on scientific information only in sustainability assessments and the limited and/or short-term impacts that result (mainly in

gaps or problem identification), without making significant changes towards sustainability. He proposes a system that balances scientific information/indicators with societal/individual values and ethical principles, and is responsive to the dynamic nature of society and the environment as needed if sustainability is to be realized (Dahl, 2012).

2.5 Atlantic Canada Forestry at a Glance

Canada's vast resource endowments includes its large forest area of approximately 347 million hectares, which is about 9% of the world's forests (Natural Resource Canada (NRCan, 2016). This places Canada as the third most forested country globally (Gale and Haward, 2011; Food and Agriculture Organisation of the United Nations (FAO), 2016; NRCan, 2016). There are eight forest regions in Canada based on the similarity of geographical features and tree species composition. The forests of Newfoundland and Labrador, like other regions in northern Canada are classified as boreal forests while the Maritime provinces of Nova Scotia, New Brunswick and Prince Edward Island) are classified as Acadian (Bourchier and Stanton, 2006; Canadian Council of Forest Ministers (CCFM), n.d.[1]). The Atlantic Canada forests are estimated to cover a land area of 21 million hectares (Statistics Canada, 2011), representing approximately 6 percent of Canada's total forest area. Nova Scotia and New Brunswick have forests covering about 80 percent of their land area, connoting the value of forest resources to these provinces (Gale and Haward, 2011). Out of the 717 thousand hectares of forests that are under production in Canada, the Atlantic Region accounts for 16% of the total productive forests (NRCan, 2016). Forest resources contribute in diverse ways to economic and societal welfare in the Atlantic region (de Leeuw et al., 2008) as well as Canada and the world at large (Bourdages,

1998; Gale and Haward, 2011; FAO, 2016; NRCan, 2016). Canada's forestry sector generated a total revenue of over 21 billion dollars in 2015; the Atlantic region's forestry sector contributed about 4 billion dollars to this sum (NRCan, 2016). The forestry sector of the four Atlantic Provinces of Canada directly employs over 20,000 people, and pays over $137 million in employee incomes (NRCan, 2016). The majority of Canada's forest land is publicly owned and managed by the provincial, territorial and federal governments. Together the federal, provincial and municipal forestlands make up about 94% of forestlands; woodlot holders, private forest industries and farming families own the remaining 6 percent (Canadian Association of Forest Owners, 2012; NRCan, 2016). The Maritime Region, however, has the highest rates of private ownership, with 50 percent or more of forests within these provinces owned by private industrial companies, families and woodlot owners, among others (Bourdages, 1998; National Forestry Database, 2011; CCFM, n.d.[2]).

2.5.1 Forest Management in Canada

The Constitution of Canada Act, also known as the British North America Act, stipulates government roles in forest management and policy-making. The Canadian Constitution Act establishes the ownership and governing jurisdiction of Canada's natural resources (Government of Canada, 2017). The two sectors for this study – fisheries (ocean, inland

and aquaculture)[1] and forestry[2] are managed by the federal government and provincial governments, respectively (Government of Canada, 2017). Nearly all forestland falls under provincial jurisdiction and thus, forest management and development policies mostly take shape at subnational levels (Gale and Haward, 2011). The late 1980's through to the 1990's were laden with forest conflicts and riots particularly in the provinces of British Columbia, Ontario and in the Maritimes) (Hodgins, 1992; Elliot, 1999; Cashore and Lawson, 2003; Gale and Haward, 2011). The most famous of these disputes occurred in British Columbia when First Nation groups partnered with environmental organizations to campaign against and halt the felling activities by the timber company-Macmillan Bloedel in Clayoquot Sound located on the Vancouver Island (Gale and Haward, 2011). Federal policy interventions in the forestry sector since mid-1980 have mainly aimed at managing federal lands and supporting provincial and territorial forest governance. These interventions include financial support to the forestry sector and collaborations with provincial

[1] Federal and provincial roles in marine, inland and aquaculture management are defined and/or published in constitutional acts and laws, Memoranda of Understanding (MOUs) and gazettes (e.g. are the Fisheries Act, Oceans Act, Fisheries Development Act, Freshwater Fish Marketing Act, National Code on Introductions and Transfers of Aquatic Organisms and Canadian Environmental Protection) (DFO, 2015[2]). Responsibilities of the federal government include licensing or allocating fishery, fostering sustainable resource use and conservation, ensuring aquatic health, conducting research and inspections, interprovincial and international fish trade (Parsons and Lear, 1993; Wappel, 2003). Provincial governments have constitutional authority to regulate activities of fish processing and trade within their province resources and to issue licenses for aquaculture, with the exception of PEI where federal government retains this power (Wappel, 2003; DFO, 2015[2])

[2] With respect to forestry, a vast majority (about 90%) of forestlands fall under the jurisdiction and lead management of the provinces and territories within Canada. Provinces and territories develop area-specific forest laws and regulations (based on common guidelines, i.e. sustainable management principles, stakeholder consultations and scientific research and analysis) and provide guidelines for forest management on private forestlands. There are national and international forest laws and treaties that support forest management throughout Canada. These national laws are the Species at Risk Act, the Fisheries Act, the Migratory Birds Convention Act, the Plant Protection Act and the Canadian Environmental Assessment; international laws that Canada is signatory to are the Convention on Biological Diversity and the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The federal government manages forestlands that are within federal lands, such as National Parks and First Nations Lands (CCFM, n.d.; NRCan, 2017[3]).

governments in research towards forest resource management (e.g. the federal-provincial Forest Resource Development Agreement) (The Forestry Chronicle, 1989; Gale and Haward, 2011). In addition, the federal government played a major role in the formation of the CCFM in 1989 (Gale and Haward, 2011). This is a centralized body that consists of elected forest ministers from the territorial, provincial and federal levels (fourteen in total), whose roles include intercommunicating on forest management and developing and storing scientifically gathered forest information, designing frameworks for solving specific and general forestry issues and signing international conventions (Gale and Haward, 2011). In line with interventions of the federal government, the Forestry Act of 1989 (Bill C-24) was the first national legislation to be passed for forest management, and it set the pace for the adoption of sustainable development in a Canadian context (Bourdages, 1998; Duinker, 2001). This Act created and constituted a national department of forestry under the department of Natural Resources Canada, the Canadian Forest Service previously known as Forestry Canada (Bourdages, 1998; Duinker, 2001). Both CCFM and Natural Resources Canada have encouraged multi-stakeholder involvement in the forestry sector via mechanisms that incorporate stakeholder needs and views in strategic plans prepared by the department, and reviewed on a five-year basis (Duinker, 2001). The first of these strategic plan was the 1992 National Forest Sector Strategy, officially documented and named as ‘Sustainable Forests: A Canadian Commitment’ (NRCan, 2016). Approval for these strategies is through a Forestry Accord process, involving multi-stakeholder signatories and commitments to implement these strategies (Bourdages, 1998; Duinker, 2001), another process that promotes stakeholder participation. These strategic plans provide guidelines for managing forest production activities (Gale and Haward, 2011). The

Canada Model Forest Network was introduced around this time for adopting forest research and advancing sustainable forest management strategies throughout Canada (International Model Forest Network, 2017). These events are some of the commended steps towards co-management and sustainable development in the forestry domain (Bourdages, 1998; Duinker, 2001; Gale and Haward, 2011).

In subsequent developments, the CCFM developed a national framework of six criteria and eighty-four indicators for defining and measuring the extent of sustainability practice in the forestry sector in the year 1993 (Bourdages, 1998; Duinker, 2001; Gale and Haward, 2011). These criteria covered socio-economic and environmental themes, including biodiversity conservation, forest productivity, soil and water conservation, enhancement of global ecological systems (carbon sequestration), use and benefits of forests and awareness of sustainable development in forest communities (Bourdages, 1998). In addition, the Department of Natural Resources has, for the past few decades, taken efforts to promote transparency in the sector through annual public presentations to the House of Commons and Canadians and public-accessible publications (one such example is the State of Canada's Forests Annual Series) (Bourdages, 1998; Duinker, 2001). Interestingly, Gale and Haward (2011, p.96) note that access to data on Canada's forests was more difficult to retrieve compared to the case of Australia.

Forest industries and private forest owners are actively involved in forest management in Canada. They are mandated to develop and implement forest management plans that are consistent with existing, legally-backed forest management strategies and principles for forest management units (FMUs) or woodlots, respectively (NRCan, 2016). The Forest Products Association of Canada (FPAC), formed in the year 2001 (Gale and

Haward, 2001) is the official mouthpiece of the forest industry nationally and internationally; it lobbies policies in favour of industry and promotes their products on local and global markets through branding and marketing initiatives (FPAC, 2017). The Canadian Federation of Woodlot Owners (an agglomeration of woodlot owners organizations at the provincial level) plays the role of national advocate for forest or woodlot owners throughout Canada and also ensures that sustainable forestry management goals are adhered to (Canadian Federation of Woodlot Owners, 2014).

2.6 Sustainable Forest Certification in Canada

Non-state, third party sustainable forest certification emerged in the 1990's, following the increasing incidences of forest conflicts and the resulting impacts on the economy as well as the mobilization of public and NGO concerns regarding forestry practices and management systems (Fraser, 2007; Gale and Haward, 2011). This alternative governing arrangement may have proliferated in Canadian forestry not only for its potential to promote sustainable harvesting and production, but also, its tendency to resolve conflicts and improve reputations among forestry stakeholders locally and internationally (Fraser, 2007; Gale and Haward, 2011).

The FSC standard was the first to be initiated, followed by the CSA and SFI schemes in Canadian setting (Gale and Haward, 2011). The FSC's ten principles (and seventy assessment criteria) cover the social, economic, environmental and management dimensions of sustainable forest development and management (FSC, 2015). Four of these principles, namely: (i) compliance with existing legal frameworks, (ii) improving management planning, (iii) assessing and monitoring management progress and (iv)

ensuring implementation of organization-specific management plan, fall under the theme of management (FSC, 2015). The remaining six principles fall under social, economic and ecological dimensions (FSC, 2005). The FSC certification process begins with an initial pre-assessment to identify possible irregularities or areas of non-conformance to the standard which may require improvement before the main assessment is conducted (FSC, n.d.)[a]. The full assessment is a more thorough evaluation of the forest unit and management processes against the principles, criteria and indicators of the FSC performance-based standard (FSC, n.d.)[a]; this systematic process was adapted by the MSC for certifying wild-caught fisheries (Gulbrandsen, 2009; Washington and Ababouch, 2011). At its onset, some provinces in the Maritimes and British Columbia opposed the FSC; however, it drew massive support from environmental groups and networks at the provincial and federal levels and notably by the provincial government of Ontario (McDermott, 2003; Gale and Haward, 2011). The main arguments raised by their opponents was that the FSC standard did not incorporate socio-economic interests of the forestry sector. A failed attempt by New Brunswick to attain FSC certification solidified these concerns, and influenced the creation of the CSA standard (Gale and Haward, 2011). Lacking the support of forest owners and some provinces in Canada (compared to CSA and SFI) coupled with funding constraints, the FSC recorded very low uptake from the 1990s through to the mid-2000. Over 10 years after its commencement, only 5 million ha out of 110 million ha of certified forests in Canada were FSC-certified (Gale and Haward, 2011). Despite these unfavourable events, the FSC-Canada has developed its political structure, standard development and application over the years. One such initiative is the establishment of regional certification standards specific to the unique biological, environmental and social conditions prevalent in the

different forest regions in Canada, but consistent with the FSC-International standard (Gale and Haward, 2011). Three of these regional standards are accredited by the FSC-International – National Boreal Standard in 2004; BC Standard, 2005 and Maritimes Standard, 2008, the Great Lakes St. Lawrence Standard, is yet to receive accreditation (Gale and Haward, 2011; FSC, n.d.[b]). The FSC gained popularity in Canada in the late 2000, becoming the 'gold standard' for forest certification, and the recommended standard in procurement specifications of buyers and clients of forestry products, especially in Europe (Fraser, 2007; Gale and Haward, 2011). Currently, the FSC has certified approximately 54.6 million hectares of Canada's forests as sustainably managed and awarded about 734 chain of custody certifications as of June 2017 (FSC Canada, n.d.)[c]. The PEFC, a global certification system (initiated in the year 1999) that endorses and promotes mutual recognition of national forest certification programs, such as the SFI and CSA (endorsed in 2005), has approved about 50 million hectares of Canada's forests as having met the PEFC standard (PEFC, n.d.; FPAC, 2011). Out of this PEFC-certified forest area, 7 million hectares, representing about 5 percent of third-party sustainably certified forests, are located in the Atlantic provinces of Canada (NRCan, 2016).

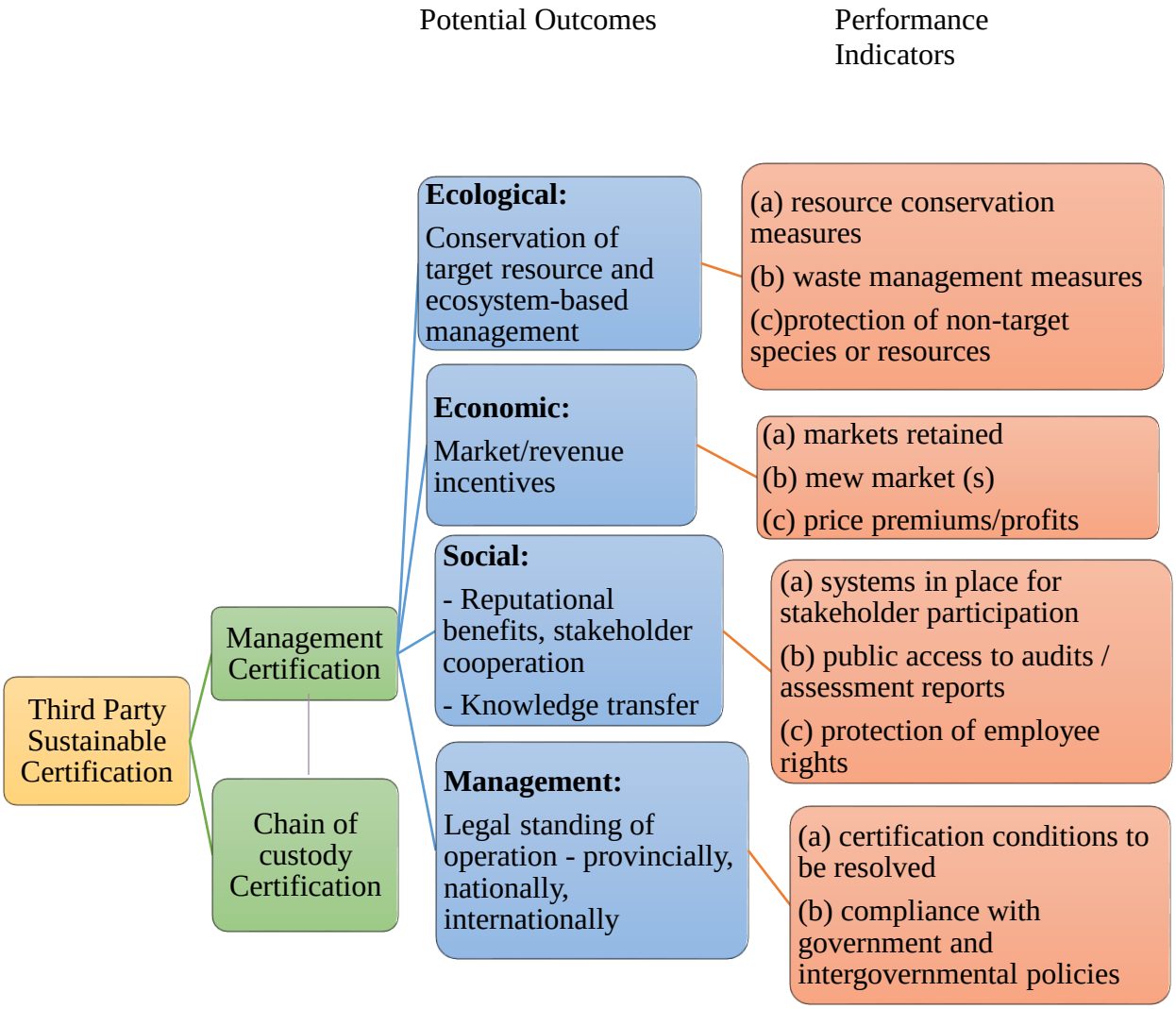
2.7 Analytical Framework

An analytical framework serves as a tool for potentially bridging the gap between a research problem (in this case, the dearth of information on outcomes of non-state, third party sustainable certification) and the goals or objectives of research - to identify producers' perspectives on the outcomes of non-state, third party sustainable certification) (Maxwell, 2005). The analytical framework for this study captures the theoretical underpinning(s) and

maps out the required data for meeting this study's objectives, as highlighted in the introductory chapter. Existing information on the origin of certification systems in some sectors, expected and prevailing impacts of sustainable certification, limitations or criticisms put forward, among others, were retrieved from the website of certification organizations including the FSC, PEFC, FairTrade, MSC, FoS, WRAP, and from various (printed and online sources) publications. Relevant literature were comprehensively reviewed from global to Canadian contexts and specifically to the case of the Atlantic Provinces, with emphasis on the forest and fisheries sectors, as presented in the sections above. Two forms of certification are reported in the literature, notably, management certification and chain-of-custody certification. Moreover, the literature identifies the certification goals of the different sustainable certification programs as a combination of ecological improvement, economic or market benefits, social sustainability and management improvements. The potential and prevailing impacts of sustainable certification programs from the literature were classified under the four-themed sustainability goals. The generic analytical framework for this study (Figure 2.1) gives an outline of cumulated theories on the outcomes of third party sustainable certification and indicators or performance measures for assessing these outcomes, which further informed the mixed methods approach adopted for the study. The process of designing and developing (semi-structured) questionnaires for collecting primary data (from the forestry and fisheries sector in Atlantic Canada) to supplement literature or secondary information was guided by the analytical framework. All literature consulted in the development of the study's generic analytical framework and the specific questionnaires for collecting primary

data on outcomes of sustainable certification in Atlantic Canada fisheries and forestry sectors are provided in Appendix I and II.

Figure 2.1 Analytical Framework for Assessing the Outcomes of Sustainable Certification



Source: Author's Construct, 2017

CHAPTER THREE

METHODOLOGY

"Research is formalized curiosity. It is poking and prying with a purpose." (Zora Neale Hurston)

3.1 Research Approach

This research takes a comparative study approach to assess the outcomes and effectiveness of non-state third-party sustainable certification in two sectors – forestry and fisheries in Canada's Atlantic Region, focusing on understanding the opinions of producers' and related organizations or associations. Data gathered and analysed for this study are from both primary and secondary sources. Secondary data and in some cases, first-hand information, was derived from grey literature (from websites and reports of government and private institutions), published peer-reviewed articles/journals, published books and other unpublished works accessed from internet sources and in print. This provided the baseline information and arguments on sustainable forest and fisheries management at the global, national (Canada) and regional/local (Atlantic Canada) as detailed in the first and second chapters of this thesis.

The semi-structured (questionnaires) surveys complemented the secondary literature employed in this study, and provided the primary data specific to the sectors and geographical case study for this research. The survey was structured into four sections: participant and company profile, certification status, objectives for certification and outcomes of certification. Each section aimed at gathering information that responded to the research questions and objectives (de Leeuw et al., 2008). With respect to the fisheries sector, participants were surveyed from the three main shellfish fisheries (in terms of landing volumes and values) in Atlantic Canada - shrimp, crab and lobster. Participants

from the pulp and paper industry was the focus for the forestry domain. The process of recruiting participants for both sectors, especially the fisheries sector, was predominantly internet-based and the email system was used in sending surveys and receiving notifications when surveys are completed. In addition to recruitment using internet sources, participants from the pulp and paper industry were also identified through informal consultations with resource persons in government and academia. Recognizing the uncertainties as well as limitations of this recruitment method, an email invitation, which provided information about the study and the direct link to the survey, was sent to a total of 247 identified companies/associations identified for both forestry and fisheries. Establishing a purposive sample before the survey or verifying whether potential participants, especially on the fisheries side were third party sustainably certified producers/organizations/associations was difficult to establish, and this affected the rate of response and completion of the survey. Reminder emails were sent out (once every two weeks throughout the survey period - March 5 to July 3, 2017) and a one-time phone call to participants was attempted to communicate reminders for the request to participate.

A total of thirteen survey responses - eleven survey responses on the fisheries side (nine companies and three associations/organizations) and two responses on the forestry side, were analysable for this study; the following sampling criteria (in Table 3.1) was used to segregate these responses:

Table 3.1 Criteria for Purposive Sampling

Criteria	Description
1 – Certification Status	Cases used were third party certified as sustainably managed or membership of organization/producer association recognized or certified as sustainable by a third party (an accredited certifying body)

2 – Survey Completion	In addition, responses used were about 70% complete for all sections (four sections in all), if not fully completed.
3 – Survey End Date	Surveys received before or by the survey end date - July 3, 2017.

Source: Author's Construct, 2017

The semi-structured orientation of the surveys administered for both sectors gave room for comments, explanations, and discussions by participants, where required or necessary. The surveys yielded both quantitative and qualitative data, with some details from comments made by the respondents. The study used a mixed methods approach, that is data from existing (primary and secondary) literature from Canadian and non-Canadian origins, as well as findings from the online surveys to generate and buttress evidence, and establish differences on the subject of outcomes of forest and fisheries certification in Atlantic Canada.

3.2 Research Design

This study applied a case study design, which enables an exploration and in-depth investigation into one or more cases (Yin, 1994; Tellis, 1997; Zainal, 2007). The mixed methods approach enabled theoretical and actual findings from available and relevant research be supplemented with primary information from surveyed industries and organizations directly involved in certification processes in forestry and fisheries in the Atlantic region. The survey design allows for the combination of different modes of data collection, ranging from physical interactions such as face-to-face surveys to non-physical mediums of interaction such as mail or web-based surveys, to learn about a phenomenon from a wide array of people based on their locations or expertise (de Leeuw et al., 2008). Literature pointed out two or three approaches for conducting an impact study on

sustainable certification (Barry et al., 2012; Blackman and Rivera, 2011). Two of these approaches, namely, the experimental approach and quasi-experimental approach require a time length of at least three years and an experimental analysis of certified and non-certified operations, which is not expedient for this study given the time and resource constraints. Thus, this study adopted a one-time, short-term assessment that used a mixed methods approach to collect primary and secondary data, in identifying and understanding the sustainability outcomes or impacts from fisheries and forest certification from producers' perspectives. Electronic mails were sent directly to participants from the researcher's institutional email address and through the survey monkey account. This mode of disseminating and receiving responses is convenient, for both the researcher and participant, given the resource implications including time, required for carrying out a multi-location study (de Leeuw et al., 2008; Zahs and Baker, 2007; Wright, 2005; Porter, 2004). This method provides participants with enough time and space to respond and amend their responses before submitting them. The shellfish fisheries (specifically, crab, shrimp and lobster) and pulp and paper companies for the fishery and forestry industry, respectively, were the focus since these industry sub-sectors dominate the two sectors (as noted in ACOA (2006) for Atlantic Canada fisheries; and Floyd and Chaini (2007) for Atlantic Canada forestry). The survey used different questionnaires for the two sectors involved and questions covered four themes - participant and company profile, certification status, reasons for achieving sustainable certification or recertification and outcomes or impacts of sustainable certification. This study is a novel attempt to explore the outcomes of sustainable certification on natural resource sectors of forestry and fisheries in the Atlantic region. The research represents is a step towards expanding knowledge and

discussions on sustainable certifications in the Atlantic region, and will help address the research gap of this topic at both national and global levels.

3.3 Types and Sources of Data

This study used both quantitative (mainly responses to survey questions) (Lazo, 2010), and qualitative data (literature from desk research, as well as comments and explanations indicated in the survey for open-ended questions) (Harwell, 2011). Table 3.2 gives a summary of the various data types and sources for this study.

Table 3.2 Data Types and Sources

	Information Collected	**Source(s) of Data**
Primary Data	Quantitative: (a) work experience of participants (b) company size/number of employees (c) client base (d) number of years certified as sustainable (e) confidence ratings/scale (f) Producer ranking of sustainable certification objectives (g) Producer scoring of sustainable certification outcomes	Online Surveys
	Qualitative: (a) comment on the objectives of sustainable forest and fisheries certification (b) comment on the outcomes of sustainable forest or fisheries certification (c) comment on level of satisfaction with sustainable forest or fisheries certification (d) Past and existing legal frameworks for fisheries governance (e.g. National Fisheries Act, Atlantic Canada Policy Frameworks (e) Forest management policies and interventions	Online Surveys Government websites/reports (examples: Library of Parliament, NRCan and CCFM websites)

Secondary Data (Qualitative Data)	(a) Global sustainable certification systems in tourism, apparel, mining, fisheries and forestry (b) Profile of Canadian/Atlantic region forestry and fisheries (c) History of forest and fisheries management (d) Emergence and development of non-state, third party sustainable forest and fisheries certification in Canada and the Atlantic provinces (e) Potential and empirically identified impacts of sustainable certification	Peer-reviewed articles/journals Books on forest and fisheries management (physical copies and online versions from the Ferriss Hodgett Library) Government websites/reports (Library of Parliament, NRCan and CCFM websites

Source: Author's Construct, 2017

3.4 Selection of Participants

Fish and timber harvesting or processing companies are the main adopters or implementers of fisheries and forestry management policies, respectively, including private certification systems (Foley and McCay, 2014; Washington and Ababouch, 2011; Blackman and Rivera, 2011). Although actors within these sectors are diverse and go beyond harvesters and producers, this cohort was selected because they are the main adopters of certification standards and are likely to be the primary, if not only, affected group by the outcomes of certification (Blackman and Rivera, 2011). In addition, producers are directly involved in the adoption and implementation of on-the-ground management practices and are, thus, more likely to identify any changes or impacts from different management interventions.

3.5 Recruitment and Data Collection Procedures

The internet platform served as the main medium for identifying and retrieving email addresses for participants, especially for the fisheries sector. The sample was further limited to the three predominant fisheries on the Atlantic Coast, that is, lobster, snowcrab and shrimp fisheries (ACOA, 2006; DFO Economic Analysis and Statistics, 2016). This is because these three fish species altogether make up about 61% of certified fisheries in the region and contribute significantly to the commercial landing and export volumes and values of Atlantic Canada fisheries (DFO Economic Analysis and Statistics, 2016; Govender et al., 2016). In addition, the very first third-party sustainability certification (by the MSC) to be awarded in Atlantic Canada and in Canada at large was to the Northern Shrimp Fishery based in Atlantic Canada (Gale and Haward, 2011). On the forestry side, the sample was limited to the pulp and paper industry, as already mentioned. In the initial stages of recruitment, two resource persons in academia and government involved who are involved in forest certification research in the province of NL were instrumental in identifying prospective participants and making recommendations. The survey questions were initially in a word document format; inputs from relevant literature and the analytical framework shaped the content and wording of the questionnaire. The questions were predominantly multi-choice questions, the last two sections on the objectives and outcomes of certification took the form of likert-scale, ranking and rating questions. Most of the questions gave room for participant comments or discussion, encouraging participants to provide detailed responses where necessary. The Survey Monkey Company's software provided a medium for designing, displaying and disseminating surveys for the different surveys. The web links to the surveys provided in the email invitations to participants,

directed participants to the consent form and survey questions. Prior to sending out these surveys, the project received ethical clearance from the Grenfell Campus - Research Ethics Board (GC-REB). Surveys were disseminated via email between February and March 2017 and were open for responses until July 1, 2017. Three reminder emails and a one-time telephone call were done in order forward reminders to participate was necessary to boost response rates.

3.6 Data Analysis

Data retrieved from the responses received from the survey participants was organised and displayed in tables and graphical presentations (pie charts, column and clustered bar graphs) accessed on both the SurveyMonkey platform and Microsoft Excel. This approach of data analysis enabled a descriptive analysis of data collected from the selected sample of respondents (Jarman, 2013) using indexes generated from measures of central tendencies (in this case, mode and arithmetic mean), weighted averages and percentages. For the forestry sector, the presentation of data took a narrative form and comparisons were made between the sampled two cases located in Newfoundland and Labrador and Nova Scotia. The discussion component of this study draws from a juxtaposition of the results of the surveys with literature to iterate previous findings or draw lines of convergence, divergence or uncertainty.

3.7 Limitations of Survey Design

The online mode of recruiting participants, disseminating surveys and collecting responses for this study was not without challenges and shortcomings. Participant recruitment for the

survey was predominantly internet-based (searching certification organization websites, government documents online, and other online sources). Even though this search generated a database of fisheries and forestry companies, there was limited information to effectively distinguish the eligible from non-eligible participants or determine the total number of eligible populace. To safeguard against potential sampling errors, the survey adopted a non-probability sample approach – sending surveys out to entire population as long as there was an email address or addresses. However, the nature of this research design allowed the researcher very limited control over the data collection process and measures to improve completion and response rate, compared to physical or face-to-face meetings (de Leeuw et al., 2008). In addition, technicalities with the email mode of transmission, as well as self-reporting in the surveys are challenges that are significant to this research design. In order to improve the response rate, a telephone call (at least once to all prospective participants on the original email list, whose contact numbers were available on the internet) was necessary to ensure that that the emails had been received. The telephone calls also served as means of reminding those who had received the survey to complete them and giving prospective participants the option of taking a telephone interview if preferred.

CHAPTER FOUR

RESULTS AND DISCUSSION – FISHERIES INDUSTRY

"Sustainable development is the peace policy of the future." (Dr. Klaus Topfer)

4.1 Participant Profile

Table 4.1 and Table 4.2 record the job positions and work experience (or years of employment), respectively, of the eleven selected participants for the Atlantic fisheries sector. Inferring from these findings, all the respondents are involved in management, supervision, advisory or technical roles in their companies, association or organisation, and perhaps, are actively involved in policy decisions and implementation. Seventy percent of these respondents had about ten or more years of working experience, which may be gauged as a positive indication of expertise and knowledge of prevailing management interventions or systems in the company or organization.

Table 4.1 Position in Company/Organisation

Employment Descriptor	**Number of Respondents**
Director	3
Quality Control Manager	2
Scientist	1
Sales Manager	1
Operations Manager	1
Head of Industry Trade Association	1
Manager, Technical Services	1
Counsellor for fishermen	1

Table 4.2 Work Experience

How long have you been working in this capacity?	Number of Respondents
20+ years	3
15 – 19 years	3
10 – 14 years	2
4 years and below	3

Source: Online Surveys, 2017

4.2 Company Profile

Figure 4.1: Size of Company/Organization

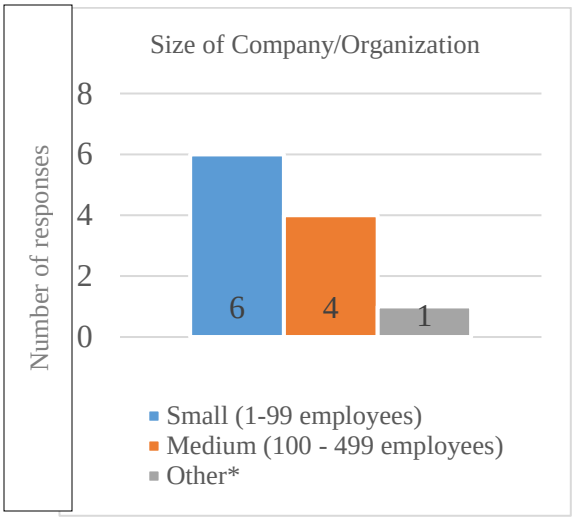
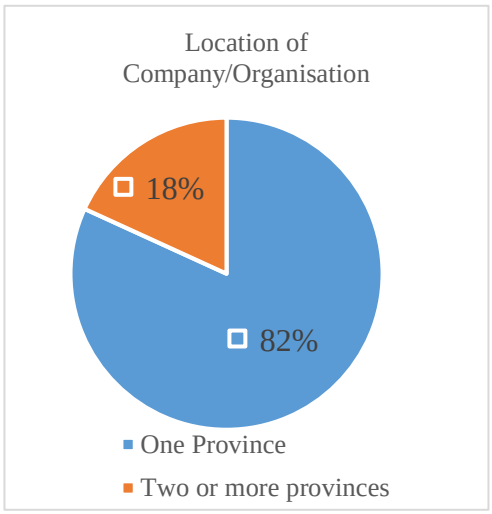


Figure 4.2: Location of Company /Organization



*Other – Fish Harvesters Union with 50 employees, and representing over 1,000 fish harvesters

Source: Online Surveys, 2017

With respect to the size classification based on employee size of corporations or organizations for this study, reference was made to the classification scheme provided in Leung et al. (2012). The survey found that six of the participating companies or organizations (representing 60 percent) have fewer than 100 employees and fall within the small-size category, as shown in Figure 4.1. This finding reflects that the majority (over 90%) of commercial enterprises in Canada, and similarly within the Atlantic Region, are small or micro size (Industry Canada Small Business Branch, 2012). While 82 percent of the companies/organizations operate in only one province (i.e. Newfoundland and Labrador or New Brunswick), 18 percent operate in all four provinces (Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island).

Figure 4.3: Primary Clients

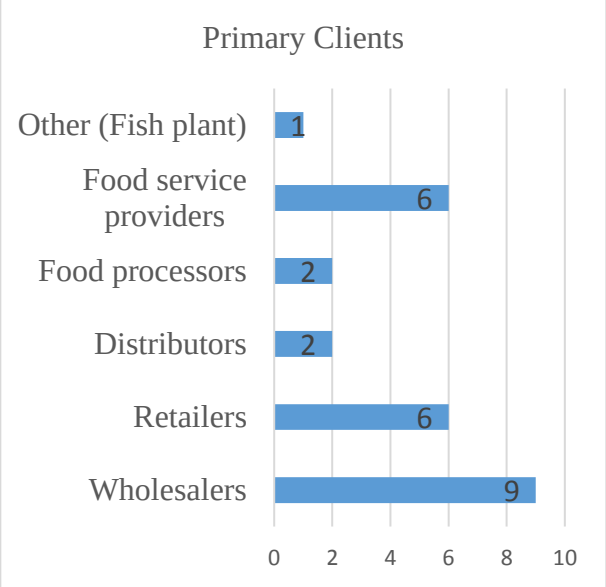
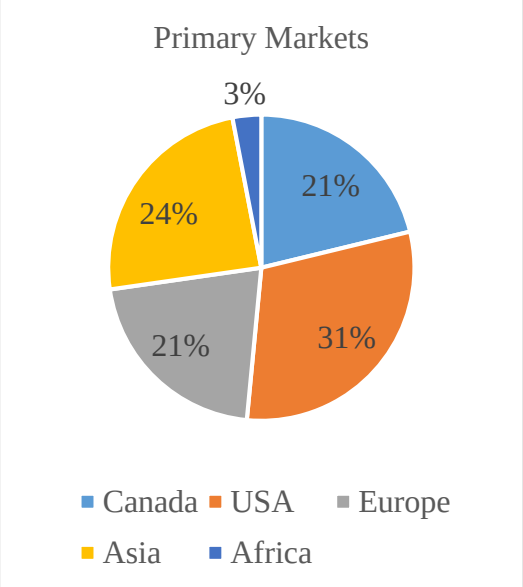


Figure 4.4: Primary Markets



Source: Online Surveys, 2017

The predominant market for the study's selected fish species (shrimp, crab and lobster) from Atlantic Canada (as reported by 31% of respondents) is the United States of America (see Figure 4.4). This finding aligns with existing research by the ACOA (2006). Inferring from Figure 4.3, participants are more likely to sell their products to multiple categories of clients rather than just a single client. Seventy percent of respondents disclosed that their clients or customers are located both within and outside Canada.

4.3 Existing Certification Schemes and Period of Certification

Figure 4.5: Certification Standards

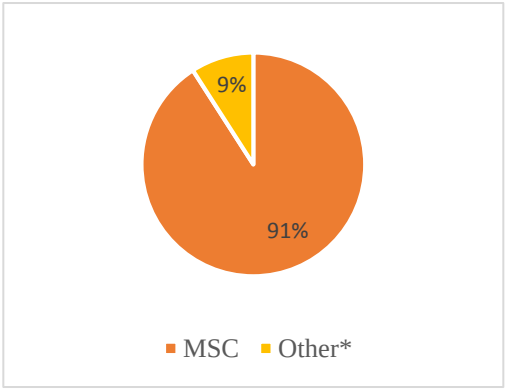
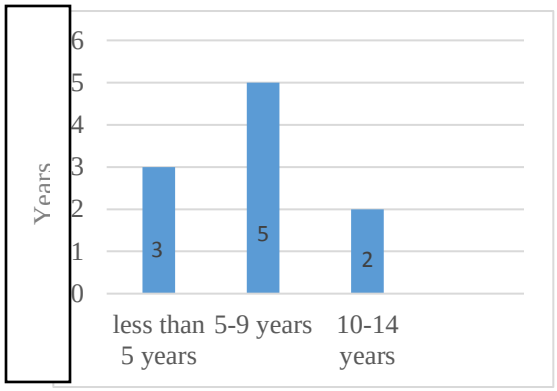


Figure 4.6: Period of Certification (in years)



Source: Online Surveys, 2017

The MSC standard is the wild fisheries sustainability certification standard identified by majority of the producers/organizations surveyed. From figure 4.5, 91 percent of respondents indicated that they were compliant to the MSC standard. Nine percent of the responses indicated having other sustainability certifications, including Global Trust, ISO 9001 Quality Management Standard or the Global Food Safety Initiative Standard. The Global Trust Company however, is not a certification organization in itself, but provides assessment services that may lead to the award of an ISO (9001; 22000, 22005 and 14000) or MSC certificate or both (Global Trust, n.d.). This suggests there is a broader context of certifications outside sustainability that companies engage to communicate safe in production or food handling, etc. The majority of respondents had sustainability certification for five years and over, suggesting that they were either nearing or already in a second term of certification (a certification term is usually for five years).

Auld et al. (2008) highlighted the need to identify the objectives that influence certification uptake in determining the effectiveness of certification programs. According to these authors, investigating the reasons behind the adoption of sustainable certification provides an idea about the expected or potential consequences from certification as well as the potential factors that influence inclusion or otherwise in certification assessments. Figure 4.7 gives the summary of the hierarchical ranking of the fundamental objectives of certification of participating producers for engaging certification (from 0-least important to 3-most important). The following are the weighted averages computed for the four objectives or themes of sustainable certification based on the responses from the survey: (i) Economic = 2.7 (ii) Ecological = 1.8 (iii) Social = 1.8 (iv) Management = 2.8. This finding reflects that management followed by economic objectives were central or very significant reasons in some of the companies' decisions to certify. It is also worth noting, based on subsequent questions in the survey, that the highest responses for 'least important objective for certifying' was recorded for management objectives (see figure 4.7). The inconsistencies in these responses leave room for further investigation into the management objectives or benefits of certification, and the relevance thereof for broader corporate goals. All recertified companies or associations maintained that this ranking did not change in subsequent decisions to renew their certification and 'not applicable' responses corresponded to companies that are in their first term of certification (5 years and below category).

Figure 4.7: Certification Objectives Ranked (Pre-certification)

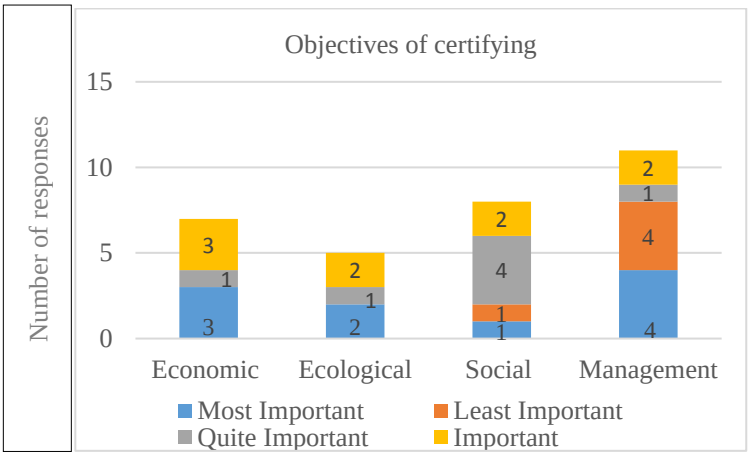


Table 4.3: Has this ranking changed? (Post-certification)

Yes	64%
Not Applicable	27%
Other*	9%

*Other = labour union

Source: Online Surveys, 2017

4.4 Outcomes of Non Governmental, Third Party Sustainable Fisheries Certification

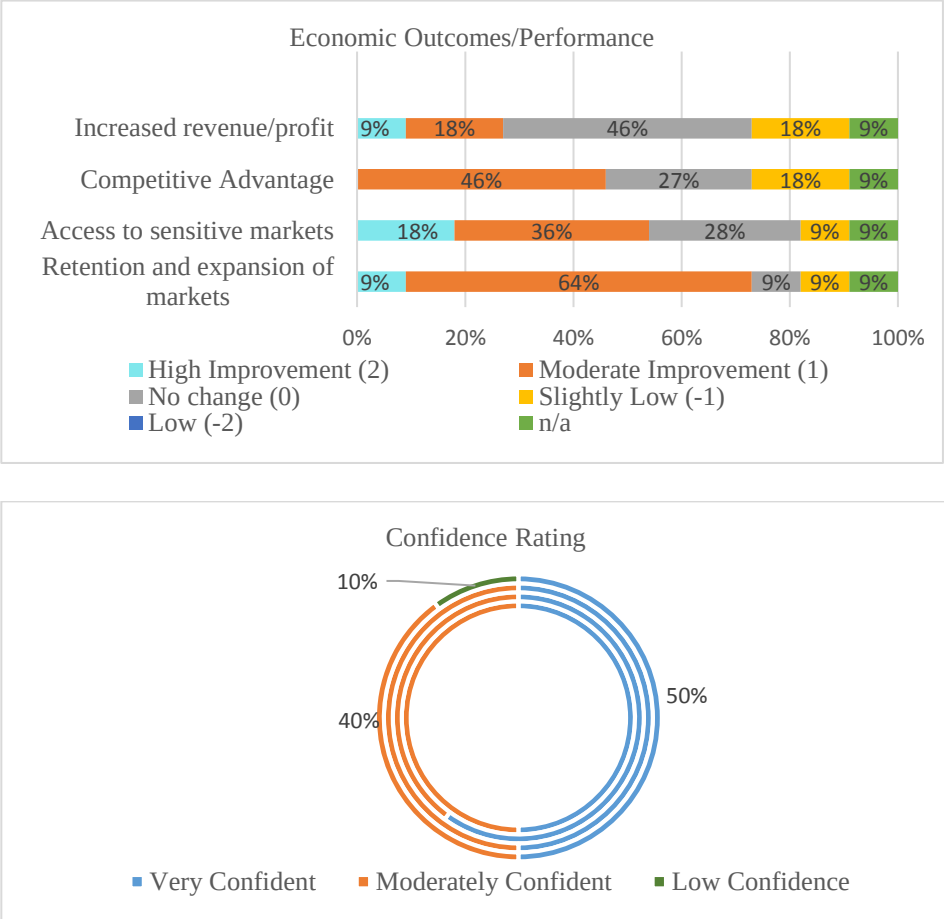
This section examines the experiences and observed changes that have directly or indirectly, resulted from compliance to certification standard(s), based on the accounts of certified companies and organisations in the Atlantic fisheries sector involved in the survey. Using pre-determined performance measures as outlined in the conceptual framework, respondents assessed and provided likert scale responses (using a scale of -2 or significant decrease to 2 or high increase). The responses provided confirm the outcomes of certification, categorized under the economic, ecological/environmental and social themes of sustainable development, and management or institutional capacity.

4.4.1 Economic Outcomes

Figure 4.8 below highlights respondents' assessments of the economic/market effects of certification based on four indictors; retention and expansion of markets; access to sensitive

markets (market niches); competitive advantage in the form of price premiums; and revenue or price changes.

Figure 4.8 Economic Outcomes



Source: Online Surveys, 2017

The majority of respondents reported high and moderate improvements (73 percent) in their company/association's retention and expansion of existing markets and access to market niches (54 percent) following certification. Forty-six percent of respondents indicated moderate improvements in their company's competitive edge on local and global markets and only 27% reported high and moderate improvement in revenue or profits for certified products. On the other hand, 27 percent of respondents each reported a decrease (low or

slightly low) in the economic indicators of revenue or profits and competitive advantage, while 18 percent of participants reported the same for the indicators of access to sensitive markets and retention and expansion of markets. Forty-six percent of participants reported no changes in their revenue and profits, after certification, followed by 28 and 27 percent of no change responses received for access to sensitive markets and competitive advantage, respectively. The least percentage (9 percent) of 'no change response' was recorded for the indicator of retention and expansion. In all, 90 percent of respondents were moderately or very confident in the responses they provided.

4.4.2 Ecological outcomes

Figure 4.9 provides respondents' assessment of the ecological/environmental outcomes of certification for the following performance indicators:

(a) Improvement in fishing methods/activities/gears to protect marine life and ecosystems;

(b) Maintenance of stocks above target reference point (TRP) and avoidance of overfishing;

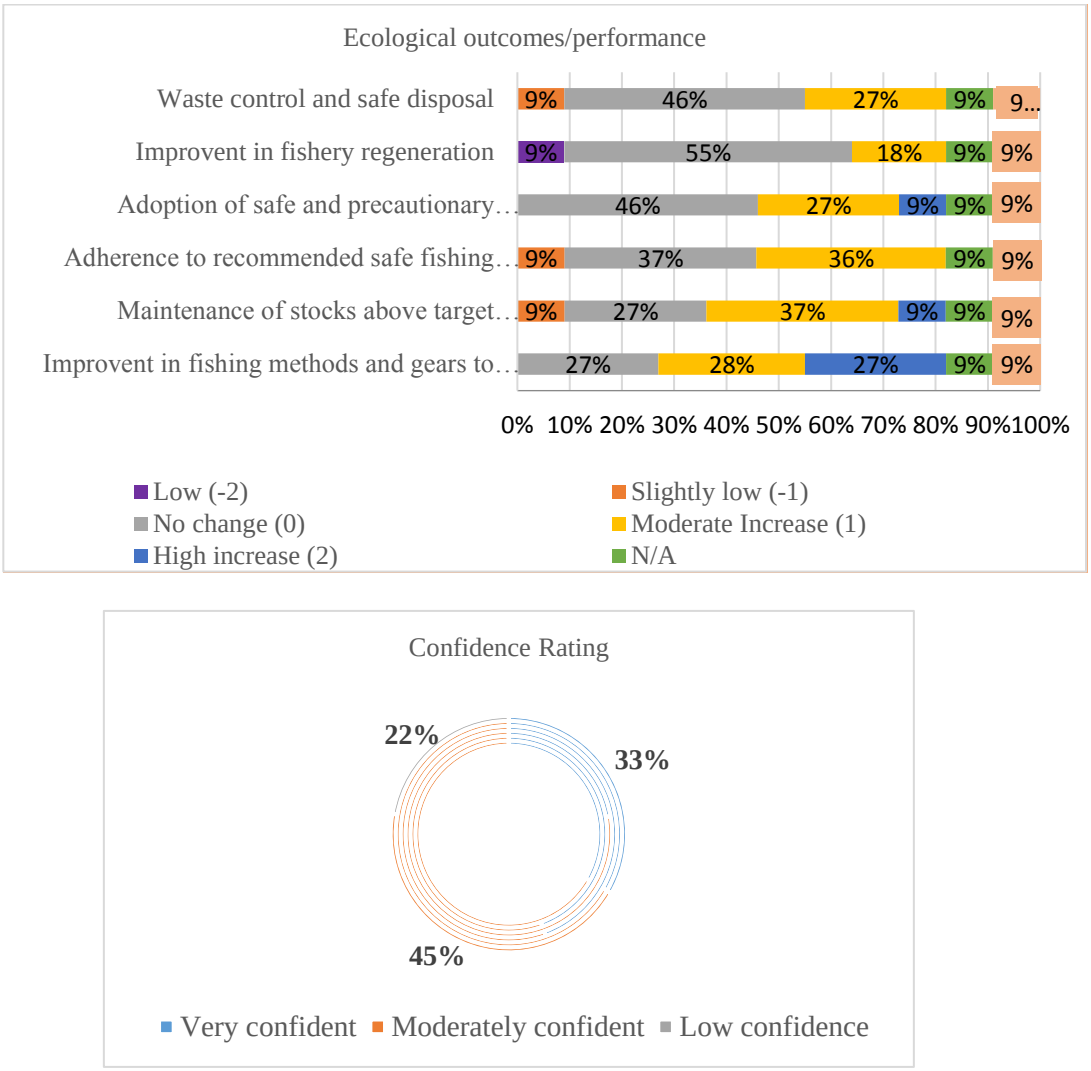
(c) Adherence to recommended safe fishing methods, that reduce mortality of unwanted catch or bycatches;

(d) Adoption of safe and precautionary approaches that protect endangered, threatened, vulnerable and sensitive (ETVS) species;

(e) Waste control and safe disposal; and

(f) Improvement in fishery regeneration.

Figure 4.9 Ecological/Environmental Outcomes and Confidence Ratings



Source: Online Survey, 2017

In relation to ecological outcomes, the highest percentage of responses (55 percent) for high and moderate improvements was observed for the indicator improvement in fishing methods and gears to protect marine life and habitats, followed by (46 percent) for maintenance of stock above TRPs. The indicator fishery regeneration received the highest responses of no change (55 percent). The adoption of safe and precautionary measures that

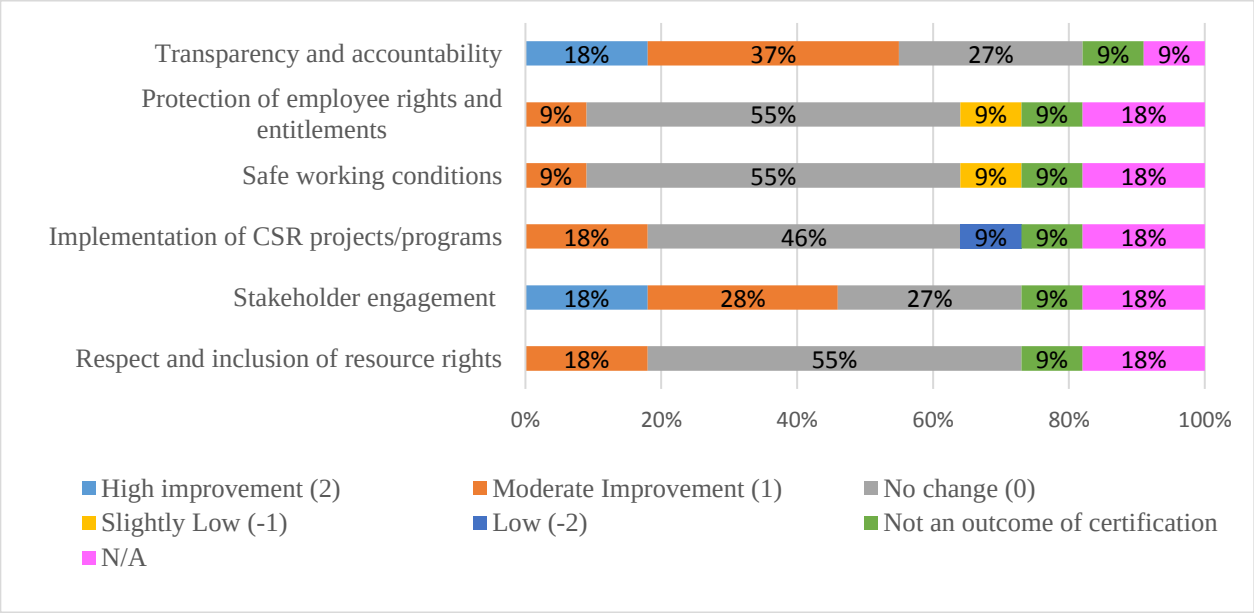
protect ETVS species and waste control and safe disposal both had 46 percent of respondents indicating that there have been no changes in these measures. For the indicator of adherence to recommended fishing methods that reduce bycatches, 37 responses were assessed as no change or same as before. Eighteen percent of the participants indicated low or slightly low performance for regeneration of fishery, nine percent responded similarly for indicators of waste control and disposal, adherence to recommended fishing methods that reduce bycatches and maintenance of stock above TRPs, after certifying. Overall, 78% of the respondents responded with moderate or high confidence.

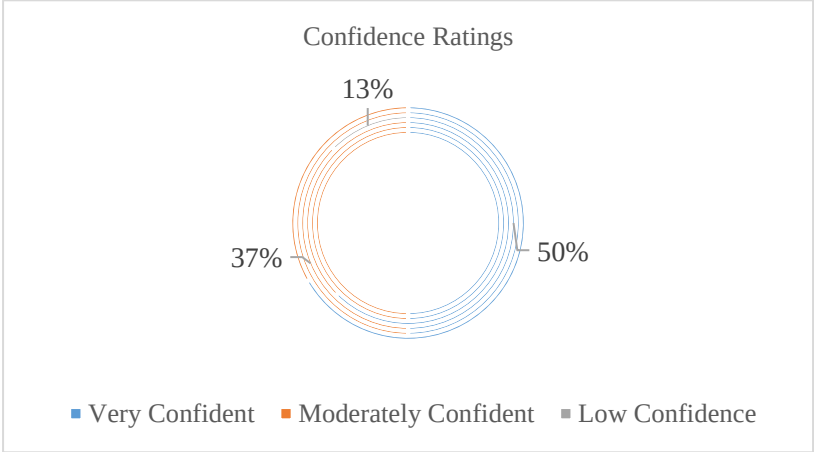
4.4.3 Social Outcomes

Figure 4.10 displays indicators for assessing social sustainability of fisheries and the extent to which these indicators have materialized based on participants' responses. The social sustainability measures investigated are:

i. Respect and inclusion of resource rights;
ii. Stakeholder engagement;
iii. Implementation of Corporate Social Responsibility (CSR) projects and programs;
iv. Safe working conditions for employees;
v. Protection of employee rights and entitlements; and
vi. Transparency and Accountability.

Figure 4.10 Social Outcomes and Confidence Ratings





Source: Online Survey, 2017

Based on the six indicators developed for assessing social outcomes of certification, respondents' assessments pointed to some improvements (moderate or high) in all the indicators assessed. The indicators that received the highest responses showing improvements (moderate and high) include transparency and accountability, and stakeholder engagement. Similarly, some responses suggest that there have been no

changes or conditions have stayed same. The highest percentage (55 percent) of response was for indicators of protection of employee rights and entitlements and safe working conditions, followed by 46 percent for implementation of CSR projects. Nine percent of respondents indicated low or slightly low performance for three indicators (protection of employee rights and responsibilities, safe working conditions and respect and inclusion of resource rights) post certification. For all the indicators, 9 percent of the respondents stated that outcomes are not as a result of fisheries certification, while 18 percent indicated for all but one of the outcomes (which had 9 percent) that they were not applicable to fisheries certification. Over 80 percent of the respondents were (very or moderately) confident about their responses.

4.4.4 Management Outcomes (Institutional Capacity)

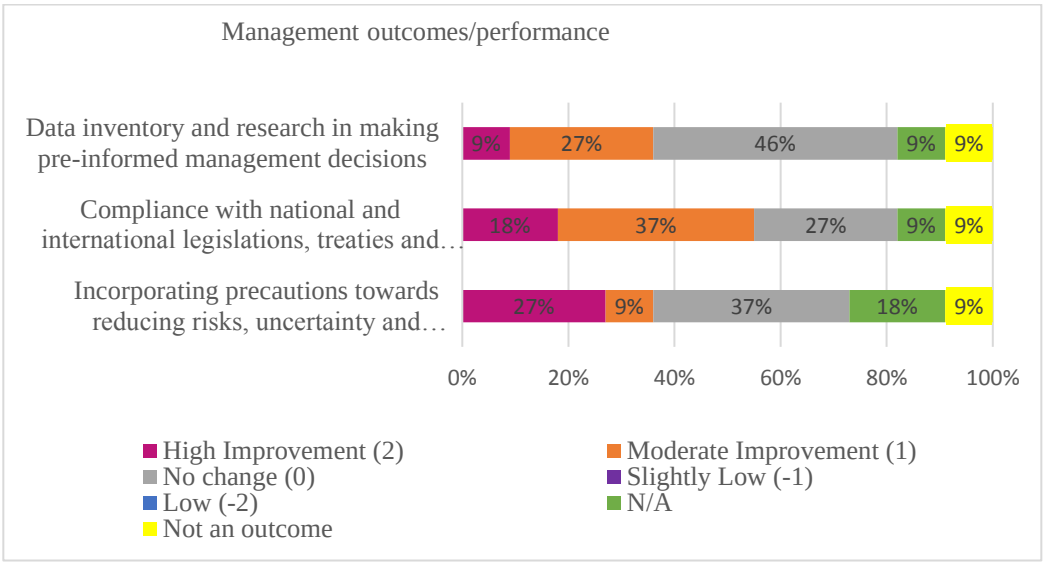
Data presented in Figure 4.11 shows respondents assessment of the management outcomes of certification based on the following indicators:

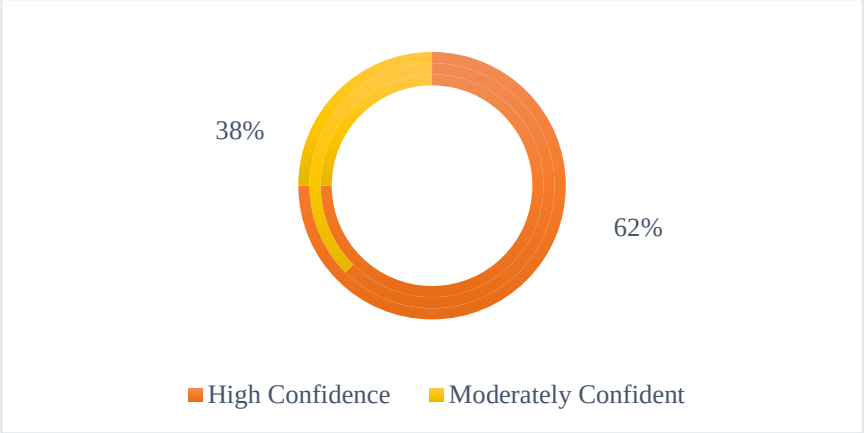
(a) Incorporating precautions towards reducing risks, uncertainty and adverse impacts;

(b) Compliance with national and international legislations, treaties and agreements; and

(c) Data inventory and research in making pre-informed management decisions.

Figure 4.11 Management Outcomes and Confidence Ratings





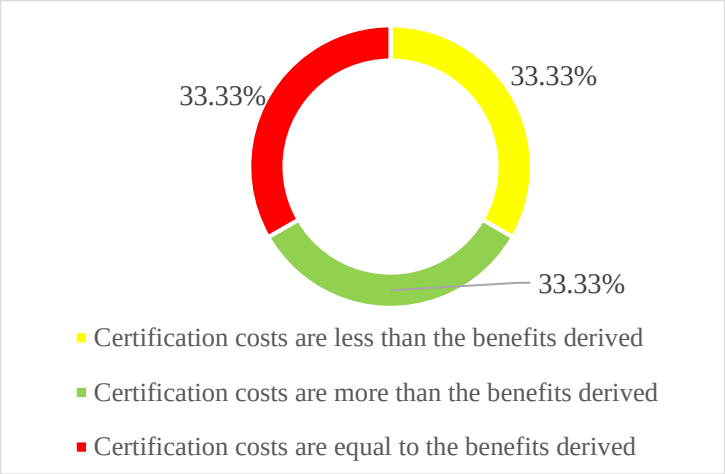
Source: Online Survey, 2017

According to the responses presented in Figure 4.11, moderate or high improvements were reported by producers/organisations, following certification, for all three indicators. The highest percentage of responses (55 percent) was linked to compliance with national and international legislations. Some respondents indicated that there have been no changes to the management indicators assessed, following certification. The highest percentage of responses were reported for data inventory and research (46 percent) and incorporating

precautions towards reducing risks, uncertainty and adverse impacts (37 percent). Nine percent of respondents assessed the indicators either as not applicable or not an outcome of certification, except for the indicators of 'incorporating precautions towards reducing risks, uncertainty and adverse impacts', which had 18 percent of respondents reporting the changes were not as a result of fisheries certification. All respondents were either moderately (38 percent) or highly (62 percent) confident in the responses they provided.

4.4.5 Perceptions on the Value of Sustainable Fisheries Certification

Figure 4.12 Value of Certification (Cost-Benefit)



Source: Online Survey, 2017

In an attempt to deduce participants' satisfaction with fisheries certification from a cost-benefit lens, the survey gathered experiences based on the captions: certification costs are less than benefits derived; certification costs outweigh benefits derived; and certification costs are equal to benefits derived. Each category received the same percentage of

responses (33.33 percent). Interestingly, these responses are not correlated to the (differences in) economic profile of participating companies.

4.5 Discussion

Policy measures originating from governmental and intergovernmental institutions are usually dominant in the domain of fisheries governance in global contexts and in some national jurisdictions (Oosterveer, 2015), such as Canada. Over the years, alternative approaches or systems outside governments have evolved in the hopes of resolving some pertinent issues in this sector, such as the persistent declines of fish stocks, poor or unsustainable use and management of fisheries and other related issues. One such intervention is the non-state, third party sustainable fisheries certification and eco-labelling, which has proliferated in global wild capture and inland water fisheries. These schemes identify and recognize responsible fisheries (by awarding a certificate and/or label and providing market incentives) for adopting eco-system based management and meeting defined ecological principles and criteria of any given fisheries standard (Oosterveer, 2015). The government of Canada, more specifically the Department of Fisheries and Oceans (DFO), is responsible for developing, enforcing and monitoring policies and legislations and all other management aspects of Canadian fisheries (AFPR Working Group, 2001). Even though the DFO asserts Canada's position as a forerunner in responsible fisheries internationally (DFO, 2015)[1], historical events including the collapse of ground fish stocks on the Atlantic Coast and recent issues of fisheries management taints this assertion. The adverse impacts of the collapse of the cod fishery on the reputation of fisheries, especially in Atlantic Canada, and the need to stay viable and competitive on the

market, are possible factors influencing the uptake of third party sustainability certification in Canada as a means of communicating good practices and enjoying market incentives. Another reason for the adoption of sustainability certifications, as for the case of the northern shrimp fishery on the Atlantic Coast, is that procurement specifications of clients and other related market demands are net through the adoption of sustainability schemes (Foley, 2013). As previously noted, two fisheries certification and labelling schemes are predominant internationally – the Marine Stewardship Council (MSC) and the Friend of the Sea (FoS) (Washington and Ababouch, 2011). However, the MSC standard is the most dominant among the two in global and Canadian spheres (Bouffard, 2008). This coincides with the vast existing literature which identifies the MSC scheme as the main wild fisheries certification and ecolabelling standard (Wakamatsu and Wakamatsu, 2017; Kalfagianni and Pattberg, 2013; Foley, 2013; Ponte, 2012; Gale and Haward, 2011; Gulbrandsen, 2009; Roheim, 2003). Govender et al. (2006) identify thirty-nine (39) Canadian fisheries as having achieved certification to the MSC scheme, which altogether make up sixty-six (66) percent of wild caught fisheries production. More than half of these certified fisheries operate on Canada's Atlantic coast. Thus, it is within reason to state, based on this study's findings that 90 percent of respondents from the fisheries survey indicated having MSC sustainability certification. The following sections discuss results based on the core research question and objectives, which seek to uncover the sustainability outcomes of fisheries certification and ecolabelling. Reference is made to existing literature related to these captions.

4.5.1 Economic Outcomes of Fisheries Certification and Ecolabelling

Certification and ecolabelling programs appeal to industry actors mainly because of the assured economic benefits, that is, market retention, access to environmentally sensitive markets and competitive edge over rival companies (Oosterveer, 2015). Two main objectives drive businesses: maximization of profits to offset production costs and remain in business, and the need to meet a societal need (Business Case Studies, n.d.). Business goals and governance arrangements are determined by the prevailing political, socio-economic and environmental factors, with commitments increasingly being made towards sustainable development and management of resources, over the past decades (Mission Alignment Working Group, 2014; Cherunilam, 2010). The majority of respondents (over 80 percent) indicated that the dominant reason for certifying (and in their decisions to recertify) is to maintain or improve market access and economic incentives associated with fisheries certification. Thus, adopters of certification standards may expect or anticipate some incentives (Ward and Phillips, 2009; 2010), which may or may not actually materialize.

There is the need, therefore, to ascertain the economic outcomes of sustainable certifications as a measure of the effectiveness of certification. This finding agrees with results by Goyert et al. (2010), who identified market incentives as the main factor of consideration for fisheries in Maine in their decision to certify.

Based on this study's survey, the economic indicators of retention and expansion of markets, access to sensitive markets and competitive advantage had more respondents stating positive outcomes following certification, compared to the indicator of increased revenue or profits. Comparing all four indicators, the indicator of increased revenue and

profits recorded ‘no changes or same as before certification’ responses from the majority of respondents whereas retention and expansion of markets had the least. There is evidence of retention and expansion of old markets, however, it would be misleading to suggest here that certification and ecolabelling enabled fisheries to access entirely new markets.

These finding agree with studies on fisheries certification that focused on the cases of Baja California Lobster Fishery in Mexico and Western Australian Rock Lobster (Ward and Phillips, 2009; Bellchambers et al., 2015). The study found that the attainment of certification did not necessarily ensure a price increase for products (price premiums). The MSC-certified Baja California case is linked to the fact that the fishery had measures already in place to secure and stabilize good prices for their lobster products prior to their attainment of certification (Philip and Ward 2009; Bellchambers et al., 2015). One participant stated that ‘*certification does not actually guarantee new markets or clients for us, we do our own marketing, but certification helps us get a good price.*’ This implies that there may be varied impacts or producer experiences associated with fisheries certification, even in this case where various corporate groups and associations are compliant to the same (MSC) certification standard.

The survey also had responses that showed declines or low performances, and some responses assessed the indicators as not applicable to fisheries certification. While this revelation does not represent the majority of this study sample, it points out inconsistencies in the economic or market outcomes of sustainable certification and labelling for certified fisheries.

4.5.2 Ecological Outcomes of Fisheries Certification and Ecolabelling

Discussions here focus on participants' assessment of the ecological performance measures in the survey and related literatures.

The ecological indicators used for the survey were adapted from assessment principles and criteria by global, third party fisheries certification schemes such as the FoS, FairTrade and the MSC. Based on the survey, the majority of respondents answered 'no change/same as before' for ecological indicators of waste control and disposal, fishery regeneration as well as compliance to safe and precautionary methods that protect ETVS species. This suggests that certification standards may in some cases replicate existing regulations or certify fisheries that are already in good standing, and these may be some of the underlying reasons for the responses. The majority of respondents also indicated some (moderate or high) improvements for the indicators of fishing methods that reduce unwanted or by catches, maintenance of stock above target reference points (prevention of overfishing) and improvement of methods and gears to protect marine life/ecosystems (ecosystem based fishery management), post MSC-certification. One respondent commented on the nature of this improvement, explaining that '*the reference points is used to define management decisions*'. These reference points, based on the MSC standard, manifest in two ways: the first is the target reference point (TRP), which is the state at which a fishery or stock is ecologically accepted (healthy) and management makes efforts to achieve (MSC, 2015). The second is limit reference point (LRP), which suggests a point at which a fishery or stock is deemed undesirable and has to be avoided (MSC, 2015). These reference points are determined and revised based on scientific assessments and analysis (Agnew et al., 2014). A study by Agnew et al. (2014) examined the impacts or

experiences of MSC-certified fisheries and identified/confirmed ecological outcomes such as maintenance of target stocks, reduction of bycatches and minimal impacts on the marine ecosystem, which are consistent with some of the findings of this study. While certification requirements and assessments are usually defined, ecological outcomes that are solely attributable to these standards is quite cumbersome to deduce (Agnew et al., 2014), as reflected in this study. A plausible reason for the difficulty in linking specific outcomes to fisheries certification is that, there exists regulatory networks (comprising industry, government (national and intergovernmental), environmental/social groups etc.) that certification systems directly or indirectly rely or draw from (Kalfagianni and Pattberg, 2013; Agnew et al., 2014). The roles played by these different actors in ensuring that fisheries are managed sustainably may blur the lines of distinction in tracing sustainability outcomes. Furthermore, since certification approves fisheries that are already well-managed, it may not necessarily lead to or influence further changes to a compliant fishery. Below are comments (grouped under the ecological indicators assessed) from the survey that are congruous with this postulation.

Improvement in fishing methods/activities/gears to protect marine life and ecosystems

'Self-imposed restrictions by the fishers to ensure escapement and carapace sizes of lobster …'

'Improvements in fishing practices are often the result of motivated harvesters, anticipated issues, incentives and lead from either fish harvesters or management authorities (e.g., DFO in Canada)'

Maintenance of stocks above target reference point (TRP) and avoidance of overfishing

'Certification does not ensure this - this is the result of the assessments and management structure (and favourable environmental conditions)…'

Adherence to recommended safe fishing methods that reduce unwanted catch or bycatches

'..initiative to improve safe handling and discarding are results of the initiatives of individual fish harvesters, particular research projects …'

Adoption of safe and precautionary approaches that protect ETVS species

'Best Practices in NL fisheries for the safe handling and release of listed species were a result of DFO response to COSEWIC assessment.'

Waste control and safe disposal

'We have systems in place for recycling and producing by products'

From these findings and comments it can be concluded that outcomes or improvements from sustainability certifications on ecological sustainability are quite complicated and may be laden with complexities based on findings from the survey.

4.5.3 Social Outcomes of Fisheries Certification and Ecolabelling

Studies have indicated that the various activities involved in seeking and maintain fisheries certification and ecolabelling provides a platform for active involvement of relevant stakeholders. Also, it enhances mechanisms for feedback and information flow among stakeholders to ensure successful execution of management plans and certification conditions (Perez-Ramirez et al., 2012; Agnew et al., 2014). Some fisheries certification and labelling standards such as the FairTrade standard and the FoS standard have social dimensions and indicators for measuring them as part of the assessment (FairTrade, n.d.;

FoS, n.d.; Washington and Ababouch, 2011). These standards, along with relevant literature, shaped the indicators for assessing the social sustainability of fisheries certification and ecolabelling for this thesis study. The more popular MSC mainly focuses on ecological or environmental sustainability. However, a number of studies have pointed out social implications or benefits from certification procedures (Perez-Ramirez et al., 2012; Agnew et al., 2014). These studies are discussed, along with findings from the survey.

The majority of sampled producers observed some improvements (moderate and high) in the level of transparency and accountability and in stakeholder engagement, following certification.

For the remaining performance indicators, notably, employee welfare and protection of rights and respect for resource rights and implementation of CSR projects, the majority of responses indicated there have been no change, or that performance has remained same as before certification. The following comments from participants for this section emphasize the MSC's direct exclusion of social sustainability in its standard development, assessment and audit processes.

> '*inclusion of resource right use happens independent of certification schemes'*
>
> *'…this is part of our mandate and the mandate of other stakeholders in the assessment'.*

In the specific case of the Baja California Lobster fishery, certification by the MSC has improved stakeholder participation, vested authority in the fishery association and provided a lobbying chip for obtaining concessions, attracting government investments and infrastructure development in fishing communities (Ward and Phillips, 2009). These

outcomes, however, were neither anticipated by the fishery (their main goal for certifying was to be able to assess sensitive markets) nor purported by the MSC (Ward and Phillips, 2009; Perez-Ramirez et al., 2012).

For this study, the main social improvements resulting from certification were improved stakeholder engagement, transparency and accountability (providing public access to certification documentations, inviting complaints). This finding agrees with existing literatures (e.g. by Perez-Ramirez et al., 2012 and Ward and Phillips, 2009). Perez-Ramirez et al. (2012) caution, however, that participation during assessments may be limited to management and high-ranking officials and information passed on to actors' downstream (passive involvement through information dissemination and knowledge sharing).

Based on results of the survey, it is likely that most or all the observed social improvements or outcomes are not directly targeted goals of certification, but occur as part of the procedure of certification. This is because the MSC does not directly focus or engage social dimensions (Neis et al., 2014). Alternatively, these outcomes are usually 'spin-offs' from the implementation or achievement of ecological and management specifications.

4.5.4 Outcomes of Fisheries Certification and Eco-labelling on Management (Institutional Capacity)

The DFO leads fisheries management in Canada (Shelton and Sinclair, 2008; Gale and Haward, 2011) but adopts a multi-stakeholder approach in decision-making and implementation (DFO, 2016). Canada has been involved in the formulation and adoption of many international fishing agreements (such as the International Agreement on the

Prevention of Unregulated Fishing in the High Seas and the United Nations Convention on the Law of the Sea) and regional programs for managing highly migratory and straddling fish stocks (DFO, 2016). Certification and ecolabelling as an alternative management tool to traditional state governance, was popularised in the fisheries sector in 2002 when the BC salmon fishery initiated assessments to be certified. It was not until 2008 however, that the MSC certified a Canadian fishery - the Canadian Northern Prawn Trawl (Gale and Haward, 2011; Foley, 2013). Fisheries certification and labelling as a tool for promoting sustainable fisheries, is gaining roots in Canadian fisheries, and in the Atlantic provinces. Evidence for this is the growing number of fisheries that have attained or currently under assessment for certification (particularly to the MSC) (Foley, 2013; Neis et al., 2014; Govender et al., 2016).

This study assessed selected producers' experiences and perspectives pertaining to management outcomes of wild capture fisheries certification. This revealed (by a majority of respondents) that the most impact made by certification is its promotion of industry compliance with national and international fisheries management legislations and agreements. For the remaining performance measures of data inventory and research to pre-inform management decisions and precautionary measures to reduce risk and uncertainties, a good representation of respondents reported 'no change/same as before'. There were survey responses that also assessed the outcomes or performance indicators as inapplicable or not an outcome of fisheries certification.

A study on certification systems identified that the approach of management certification and ecolabelling could potentially step in where state or intergovernmental regulations and enforcement mechanisms are weak or non-existent in the natural resource

sector (Gulbrandsen, 2004). Contrary to this assertion, empirical studies point out that effective management is usually still dependent on government institutions (Gale and Haward, 2011; Foley, 2013), and that good government management is pre-requisite for achieving sustainable certification (Washington and Ababouch, 2011). As Gale and Haward (2011) and Foley (2013: 7) noted, the assessment or audit of fisheries towards attaining MSC's approval (particularly relating to principle 3) involves an assessment of existing regulations, management bodies, scientific data about the fishery, among other related information. In Canada's case, these roles and information are performed or provided by the government (Gale and Haward, 2011; Foley, 2013). An empirical example that supports this finding is the certification process of the Canadian Northern Prawn Trawl fishery by the MSC. Foley (2013) highlighted that this would not have been possible without the DFO's active involvement in research and data provision. From this exposé, it is inferred that the perception that government spearheads and provides enabling conditions for certification and meeting conditions ensuing from audits is worth believing. These successes may go a long way to credit governments with a good reputation (Foley, 2013). An empirical inquiry into the role of government in fisheries certification assessment and audits and observed certification outcomes may be worthwhile in providing more insight and a bit more clarity on this topic.

CHAPTER FIVE

FOREST CERTIFICATION AND ECOLABELLING OUTCOMES – THE CASE OF PULP AND PAPER INDUSTRY IN NOVA SCOTIA AND NEWFOUNDLAND AND LABRADOR

"Plans to protect the air and water, wilderness and wildlife are in fact plans to protect man" (Stewart Udall)

5.1 Participant Profile

The participants selected for this study hold positions as Forest Sustainability Specialist (for over ten years) and Operations Manager (for about four years or less) for the two cases, Newfoundland and Labrador (NL) and Nova Scotia, respectively. These positions suggest the direct involvement or role in the management or decision-making process of the company. Thus, there is a high likelihood that respondents are actively involved or informed about certification developments and related matters taking place in their respective industries.

5.2 Company Profile

5.2.1 Age and Size of Surveyed Companies

For the forestry component of this study, the target participants were pulp and paper mills or companies located in Atlantic Canada. The companies that were surveyed indicated that they produced both pulp and paper products. Similarly, they both have existed for twenty (20) years or over. However, these companies differ in size (or the number of employees working in these companies), with the pulp and paper mill in Nova Scotia having a large employment base (over 500 workers) and that of Newfoundland and Labrador having a medium-sized employment base (between 100 – 499 workers).

5.2.3 Primary Markets and Clients

Both respondents indicated they harvest and process timber. Canada and the United States of America (USA) are the primary markets for the two cases investigated. The pulp and paper mill in Newfoundland and Labrador has a more diversified market base, with markets located in Europe and Asia as well. In terms of the nature of trade clients, the NS mill indicated both wholesalers and retailers, whereas the mill based in NL pointed to wholesalers only.

5.3 Third Party Forest Certifications and Ecolabelling

The respondents in the two cases studied here indicated that they are compliant to various third party, forest certification standards (as shown in Table 5.1). Both participants have sustainable management certifications spanning over fifteen years, and (one or more) recertification assessments.

Table 5.1 Certification Standards Identified

	Third Party Forest Certification Standards	NL Respondent	NS Respondent
1.	Canadian Standards Association (CSA)	x	x
2.	Forest Stewardship Council (FSC)	x	x
3.	Programme for the Endorsement of Forest Certification (PEFC)	x	x
4.	Sustainable Forestry Initiative (SFI)	-	x
5.	International Organization for Standardization (ISO 14001) Environmental Management Systems	x	x

x – Certified

Source: Online Survey, 2017

5.3.1 Objectives for Certifying

The survey asked participants to rank the objectives of forest certification (economic, ecological, social and management) based on the priorities, reasons and expectations that influenced their company's decision to attain certification. A scale of 0 (least important) – 3 (most important) was used in assessing these objectives. The most important objective for both cases (NL and NS) is that of economic – maintaining market access, meeting buyer requirements, product differentiation and gaining market incentives. Forest certification is perceived, particularly by the pulp and paper industry, as a potential solution to the economic/market related issues plaguing this industry, including dwindling markets and unstable prices (NRCan, 2016). Both companies indicated that this ranking influenced their decisions to recertify.

Table 5.2 Objectives of Certifying

Objectives	**NL**	**NS**
Ecological: Promote ecosystem-based management and ecological productivity in Forest Management Units (FMU's) to improve forest as well as overall ecosystem functions.	No response provided	Important (2)
Economic: Maintaining market access and meeting buyer requirements for certification, gaining recognition and reward for sustainability through product differentiation, traceability and market incentives.	Most important (1)	Most important (3)
Social: Ensure safe working conditions that meet human rights standards, improved wages/benefits for employees, and comply with health and safety laws. Promote active stakeholder engagement	No response given	Quite important (1)
Management: Promote management systems that are legally acceptable at local, national, and international levels, and are efficient.	Important (2)	Least important (0)

Rating scale: 3 = most important, 2 = important, 1 = quite important, 4 = least important

Source: Online Survey, 2017

5.4 Outcomes of Certification

This section required that respondents identify their perceptions of the extent of outcomes (based on their assessment of various performance indicators) of sustainable forest certification. This component of the survey generated likert scale responses based on a scale of -2 which is interpreted as low or significant decrease to +2 which means high or significant increase. Participants' assessed the ecological, economic, social and management (or institutional capacity) indicators of sustainable forest certification using this scale.

5.4.1 Economic Outcomes of Forest Certification

Table 5.3 shows the assessment of economic outcomes of forest certification by the two cases (NL and NS). The following indicators or measures were assessed, in determining the economic outcomes of forest certification:

(1) Retention and expansion of old markets;

(2) Access to environmentally sensitive markets (market niches);

(3) Competitive advantage; and

(4) Profit or revenue increases.

Table 5.3 Economic Outcomes

	Performance Measures/Indicators	**NL**	**NS**
1	Retention and expansion of old markets	Moderate (small improvement)	High (significant improvement)
2	Access to environmentally sensitive markets (market niches)	No change (same as before)	No change (same as before)
3	Competitive advantage	No change (same as before)	Moderate (small improvement)

4	Profit or revenue increases	No change (same as before)	No change (same as before)

Source: Online Survey, 2017

Table 5.3 shows the assessment of the extent the economic outcomes resulting from forest certification and ecolabelling for the sampled respondents from the pulp and paper mills in NL and NS. For the indicator of retention/expansion of old markets, both respondents observed some improvements (moderate and high improvements for NL and NS, respectively). The NS case also indicated that there have been moderate improvements in the company's competitive edge, following certification. Both participants report that there have been no changes, or conditions have remained same with respect to the indicators of access to environmentally sensitive markets and revenue or profits made. Respondents were highly or moderately confident about the responses they provided here.

It is worth stating that information provided by the two cases for forestry (particularly, on the indicators of retention and expansion of markets, revenue or profit and access to environmentally sensitive markets) tie in with the majority of responses documented in the fisheries study. As well, some of the findings from this aspect agree with existing studies on sustainable forest certification. For instance, research on the impacts of forest certification in some Nordic countries found that the market or economic incentives from forest certification are mainly limited to the retention and expansion of existing markets (Gulbrandsen, 2005). Similarly, a study of FSC-certificate holders in the USA found that forest certification did not perform satisfactorily as a market-based instrument, especially in the areas of price premiums, access to new markets and products differentiation (Rickenbach and Overdevest, 2006). However, there may be exceptional

cases where buyers or clients are willing to or have actually paid a price premium for sustainably certified products (Nebel et al., 2005; Baffoe, 2009). This literature also points out that there are associated uncertainties and limitations to this outcome. From these findings, an argument could be made that forest certifications may not necessarily guarantee a price premium or increment in revenue and/or access to market niches, even though markets exist for certified forest products, mostly in North America and Europe. The two cases sampled here, in NL and NS, both indicated that buyers of their forest products are primarily in the USA. NL's markets are more diversified (includes Europe and Asia). Retaining these markets, particularly in Europe and the USA, may be one of the paramount reasons as well as incentive for certification by both cases. Thus, there is some connection between the anticipated market outcomes and the uptake of certification, as identified in Section 5.3.1 of this study. It may also be that specific preferences or procurement specifications by different buyers or clients' is a possible explanation for the adoption of multiple sustainable forest certifications, as observed for the two cases (NL and NS) studied. An additional reason could be the quest to prove their responsible activities to forest ENGO's (or gain their approval) by adopting ENGO-endorsed scheme(s). A study of the underlying factors or reasons for the uptake of multiple certification schemes in the forestry sector will be worthwhile.

5.4.2 Ecological Outcomes of Forest Certification

The pre-defined performance measures assessed by respondents (see Table 5.4) for the ecological outcomes of sustainable forest certification are:

(1) Increased rate of regeneration of forests (via natural regeneration or planting);

(2) Avoidance of practices that disrupt ecological functions and services within Forest Management Units (FMU's);

(3) Protection of endangered plant and animal species and sensitive habitats in FMU's and protection of High Value Conservation Forests (HVCF's) and old forests;

(4) Reduced pollution of soil, water and air; and

(5) Reduction of waste from harvesting and processing activities, and safe disposal of waste.

Table 5.4 Ecological Outcomes

	Performance Measures/Indicators	**NL**	**NS**
1	Increased rate of regeneration of forests (via natural regeneration or planting)	No change (same as before)	High (significant improvement)
2	Avoidance of practices that disrupt ecological functions and services within Forest Management Units	Moderate (small improvement)	High (significant improvement)
3	Protection of endangered plant and animal species and sensitive habitats in FMU's and protection of High Value Conservation Forests (HVCF's) and old forests	High (significant improvement)	High (significant improvement)
4	Reduced pollution of soil, water and air	Moderate (small improvement)	Moderate (small improvement)
5	Reduction of waste from harvesting and processing activities, and safe disposal of waste	Moderate (small improvement)	Moderate (small improvement)

Source: Online Survey, 2017

According to the findings presented in table 5.4, forest certification may have influenced some ecological stewardship the two pulp and paper cases. While responses provided above (in Table 5.4) point out some ecological improvements following certification, some remarks and comments (quoted below) by participants also recognize that government and

industry institutions and regulations play active roles (outside certification processes) in ensuring ecological sustainability.

'Reduction of waste has always been a company philosophy, so certification has had a moderate impact.'

'Many of these were in place or have become requirements through legislation...'

'Managing for naturally occurring species allows for successful natural regeneration. The company has not used herbicides since 1997 (not because of certification)…'

These comments indicate that it is challenging to identify specific outcomes associated with forest certification. This may particularly be the case where governments and/or industry are actively involved in forest management and regulation, and have instituted responsible forestry practices, prior to certification. This also suggests that certification systems and activities are contingent on the existence of good forest governance.

Both respondents indicated high improvements for the indicator of protection of endangered forest species and habitats, following certification. One respondent commented that '*FSC certification has particularly helped towards protection of endangered plants and animals through the HCVF process and other ecological management requirements.'*

The principle of High Conservation Value (HCV) (which is the ninth of the FSC's principle), institutes forest management that protects areas with diverse species and habitats, essential ecosystem and cultural services and/or identified resources that support the health and livelihood of forest communities (FSC, 2015). This finding agrees with existing research, which identified that FSC certification specifically improved the protection of vulnerable and extinct flora and fauna species within certified forests and enhanced species diversity in selected European countries (Rametsteiner, 1999).

For the remaining indicators of forest regeneration and safe practices that maintain ecological functions and services of forests, participants gave varying responses including a 'no change/same as before' response provided by the NL case for the indicator of forest regeneration. In explaining how certification has improved their performance on the maintenance of ecological functions and services of forests, one respondent commented:

'…Certification has several monitoring requirements, which helps to improve techniques to achieve better results.'

Some studies have identified that forests certified, particularly by the FSC, may show some tangible ecological improvements. These impacts include reduction in stream pollution and the use of chemicals in forestry, protection of habitats and species (riparian or buffer zones) and forest ecosystems (Rametsteiner, 1999; Dias et al, 2015; WWF, 2005). In addition, the FSC standard also promotes conservation and protection of plant and animal diversity (Rametsteiner, 1999; WWF, 2005; Hagan et al., 2005; Moore et al., 2012), as indicated earlier from the survey findings. Cubbage et al. (2003) also indicate that certification processes (assessment and corrective action requests) usually influence or affect planning and implementation of forest management, which may improve ecological conditions, as observed in an empirical study (of the Duke Forest of North Carolina) that involved the FSC and SFI standards.

The results of the survey and findings from existing literature here converge to provide some evidence that third-party, sustainability forest certification may generate, promote or maintain ecological improvements in certified forests. However, factors such as climatic and biological conditions, government and industry interventions, and outside certification, may influence these outcomes. Therefore, this makes the distinction of

ecological outcomes solely from forest management certification quite complex and ambiguous.

5.4.3 Social Outcomes of Forest Certification

In determining the social outcomes of certification (as shown in Table 5.5), respondents assessed the extent of improvements for the following (abridged) indicators.

(1) Respect and inclusion of resource use rights of forest stakeholders;

(2) Improved stakeholder engagement between forest/indigenous communities, industries, Environmental NGO's, government;

(3) Promotion of Corporate Social Responsibility (CSR), e.g. community developmental projects, employment opportunities for communities;

(4) Safe and comfortable working conditions for employees; and

(5) Protection of employee rights and entitlements.

Table 5.5 Social Outcomes

	Performance Measures/Indicators	**NL**	**NS**
1	Respect and inclusion of resource use rights of forest stakeholders	No change (same as before)	High (significant improvement)
2	Improved stakeholder engagement between forest/indigenous communities, industries, Environmental NGO's, government	High (significant improvement)	High (significant improvement)
3	Promotion of Corporate Social Responsibility (CSR), e.g. community developmental projects, employment opportunities for communities	Moderate (small improvement)	Not Applicable

4	Safe and comfortable working conditions for employees	No change (same as before)	Moderate (small improvement)
5	Protection of employee rights and entitlements	No change (same as before)	Moderate (small improvement)

Source: Online Survey, 2017

Table 5.5 indicates that respondents from the NL and NS pulp and paper mills gave varied assessments for the social indicators of forest certification outcomes, except for the indicator of improved stakeholder engagement (both respondents indicated high improvements). One respondent commented that, *'CSA certification led to the company to forming a Forest Advisory Committee which has been in place for approximately 15 years…'*

The survey respondent from the NL pulp and paper mill observed 'no change' in three performance indicators - respect and inclusion of resource use rights of forest stakeholders, safe and comfortable working conditions for employees, protection of employee rights and entitlements. For the indicator of promotion of corporate social responsibility, the respondent from the NL pulp and paper mill indicated moderate improvement while the case of NS assessed this as not applicable.

A study by Moore et al (2012: 83) on the impact of the FSC and SFI standards in North America, found that forest certification did not yield much impact on the social indicators of 'community grants and support', 'ensuring labour rights and practices', 'establishing tenure rights'. On the other hand, certification, particularly by the FSC, may improve 'stakeholder and community consultations', 'public reporting and 'public release of management plans' (Moore et al. 2012, p. 83). A study by Rickenbach and Overdevest

(2006) also indicated that forest certification might improve the reputation of producers or adopters, communication and relations and organizational learning. The findings from the survey show that certification outcomes (or levels of outcomes) are varied; the underlying reason for the variance was not identified in this study. Similar to evidence above, and in some aspects of the fishery case of this study, respondents note that industry and government interventions may already have measures in place to promote social sustainability, a comment by a respondent (stated below) supports this argument:

'The company has always had a strong health and safety focus, so certification has had only a moderate impact.'

From this comment, it could be inferred that forest certification provides an enabling environment for communication and consultation among (internal and external) forest stakeholders.

'…there is a broader acceptance from local communities regarding forest management especially when FSC certified us…'

This could potentially improve issues of transparency and accountability, improve the image of industry and minimize forest conflicts.

5.4.4 Management Outcomes of Forest Certification (Institutional Capacity)

Below are the (abridged) indicators provided for respondents to assess the influence of sustainable certification on management conditions:

(1) Application of precautionary and adaptive approaches that minimize uncertainty and irreversible impacts from harvesting and processing;

(2) Improved forest management plan;

(3) Strict adherence to all legal requirements for forest management, i.e. national, international and indigenous peoples' forest laws as well as certification standards;

(4) Regular data collection/inventory of affected species for assessments and plans; and

(5) Clarity of ownership/ tenure rights and effective systems for dispute resolution among forest stakeholders.

Table 5.6 Management Outcomes

	Performance Measures/Indicators	**NL**	**NS**
1	Application of precautionary and adaptive approaches that minimize uncertainty and irreversible impacts from harvesting and processing	Moderate (small improvement)	High (significant improvement)
2	Improved Forest Management Plans	Moderate (small improvement)	High (significant improvement)
3	Strict adherence to all legal requirements for forest management, i.e. national, international and indigenous peoples' forest laws as well as certification standards	No change (same as before)	High (significant improvement)
4	Regular data collection/ inventory of affected species for assessments and plans	No change (same as before)	Not Applicable
5	Clarity of ownership/ tenure rights and effective systems for dispute resolution among forest stakeholders	No change (same as before)	High (significant improvement)

Source: Online Survey, 2017

Based on the response related to the NL pulp and paper mill, management performance following certification has not changed for the indicators of compliance to national, international and indigenous forest legislations, data collection and inventory, and clarity of land tenure. Improvements (moderate) observed by this respondent were for the indicators of improvement in forest management plan and in the application of precautionary and adaptive processes in forest activities. The respondent from the pulp and paper mill in NS assessed all the indicators, but one (the indicator of regular data collection and inventory) as having improved highly because of certification. Respondents rated their confidence in most responses as high, and for the remaining responses, as moderately confident.

The distinction between forest management and ecological sustainability can prove to be ambiguous (Moore et al., 2012; Nebel, 2005). According to Nebel (2005), forest certification acts as a management instrument by promoting management systems that conform to existing local (and indigenous), national and/or international legislations. Some existing research indicated that forest certification enhanced pre-emption of environmental impacts from forest production, forest management planning and implementation, monitoring and evaluation, data collection and research and general compliance to forest laws (Moore et al., 2015, p.83; Nebel, 2005, p. 179-180). Based on this study, the extent of management impacts from certification differs significantly between the two cases. A likely reason for these varied responses is the differences in the forest types (Boreal forests for NL and Acadian forests for NS) and forest management interventions (particularly by the FSC: the National Boreal Standard and Maritime Standard for NL and NS,

respectively). There is the need for further research to elucidate how differences in forest types and certification standards impact certification outcomes.

5.4.5 Satisfaction with Forest Certification (Cost-Benefit)

In deducing the general satisfaction with or perception of certification systems, a question on cost-benefit of forest certification was posed. Respondents were to assess if certification costs are more than the benefits derived, equal to the benefits derived or less than the benefits derived. The two cases reported differently on this: the respondent from the NL pulp and paper mill indicated that certification costs are equal to the benefits whereas the case of the respondent from the NS mill indicated that certification costs are more than the benefits derived. A comment made by the NS respondent to explain the stance taken is provided in table 5.7.

Table 5.7 Satisfaction with Forest Certification

Response	Please comment on your response.
Certification costs outweigh the benefits derived	'…*Costs (money, resources, time) are high, but often the benefits are not easily seen. Paper customers are not willing to pay more for certified paper, but still want to buy certified paper. Approximately 80% of our paper customers do not request certification at all. And even though certification is a valuable tool to show the public how responsible forests are being managed, the general public can still often have a negative view about forest management and particular activities taking place*.'

Source: Online Survey, 2017

The processes involved in adopting or maintaining a forest certification scheme may prove to be cumbersome, and resource consuming (time, money and expertise required). This comment, however, provides some evidence that the attainment of certification may not

necessarily guarantee all the anticipated impacts or benefits (such as access to new markets and price premiums, improved regeneration, social recognition) or improvements in a fishery or forest unit. This may be especially true for companies that already have effective management systems and sustainable measures in place before certifying. In this case, certification would only serve as an evidence of sustainability or a 'thumbs-up', or a means of meeting buyers' or retailer' specifications, rather than a regulatory instrument.

CHAPTER SIX

SUMMARY AND CONCLUSION

6.1 Summary

Certification and ecolabelling is an unconventional, voluntary, third-party policy instrument that draws authority primarily from markets and support from environmental NGOs to improve or strengthen natural resource use and management towards achieving sustainability goals. Regulation and standard setting outside governmental domain is a new phenomenon. However, market-based instruments towards improving natural resource management commenced in the forestry sector, with the development of forest certification, and the emergence of the FSC standard in the early 1990's (Gulbrandsen, 2005). Since then, certification and ecolabelling schemes along with other sustainability ranking schemes are found in different parts of the world, and are found in various production and economic sectors, with the most predominant being the forest and fisheries sectors (Gulbrandsen, 2005). With respect to wild capture fisheries, the MSC and FoS schemes had endorsed about 17 percent of the world's fisheries as sustainably managed by 2011 (Washington and Ababouch, 2011). In Canada, 66 percent of marine and inland water capture fisheries production are MSC-certified (Govender et al., 2016). The FSC and PEFC are the two main dominant global forest certification schemes. On the fisheries side, the MSC and FoS schemes dominate globally. Approximately 10 to 11 percent of the world's forests (representing about a quarter of industrial production in the forestry sector) (FAO, 2016; Dias et al., 2005; Blackman and Rivera, 2011; Auld et al., 2008) are certified by these two global certification schemes. Out of these global trends, Canada has 116 million

hectares of forests or 43% of the world's third party certified forests (FPAC, n.d.; NRCan, 2016).

The Atlantic Region of Canada has about 7 million of forests (NRCan, 2016) and more than 23 fisheries (Govender et al., 2016) certified to various third party sustainability schemes, especially on the forestry side. This shows that producers in these sectors are taking steps towards committing and demonstrating responsible resource management at the global and national levels.

Natural resource management via certification systems did not originate or develop without any contention (Elliot, 1999). There have been claims of 'greenwashing' or 'bluewashing', suggesting certification as a tool for industry to 'cover-up' and perpetuate production activities that are harmful to the environment (Jacquet et al., 2010; Ponte, 2008). Other studies have argued that the prospects of certification are largely beneficial to the management of resources and in generating market and social benefits for responsible producers (Auld et al., 2008). The majority of certification works have been largely theoretical and/or literature-based, which leaves gaps for empirical studies to enable a better understanding of the phenomenon. Thus, this study adopted a blend of qualitative approaches (desk study and literature reviews) and a fisheries and forestry producers/organization survey to respond to the research questions below:

1- What are the ecological, social, economic and management outcomes of third party certification from the perspectives of selected forest industries and fisheries in the Atlantic Region?

2- Are these outcomes beneficial or detrimental to the performance of certified operations?

The forestry component highlights two specific cases - in Newfoundland and Nova Scotia. A few case studies were engaged in the discussion of results to draw lines of similarities and differences. The sections below give a summary of the results of the study based on the research questions above.

6.1.1 What are the ecological, social, economic and management outcomes of third-party certification from the perspectives of forest and fisheries industries in the Atlantic Region?

Fisheries

Economic Outcomes

In assessing the economic outcomes of sustainable fisheries management from certified producers and organizations in the Atlantic Region of Canada, the majority of respondents indicated that certification had improved three performance indicators - retention and expansion of markets, access to sensitive markets (niches) and competitive advantage. Conversely, a majority of respondents reported that achieving certification has not yielded price premiums or increased revenue, similar to the findings of most research. Existing research points out that fisheries certification may be a requirement for producers to maintain their markets (with environmentally sensitive buyers or clients). This does not guarantee access to new markets or a price premium. Some respondents also assessed that some of the performance indicators had not changed even after certifying. Based on this result, it can be suggested there is variation in the perceptions or experiences of producers regarding the economic or market implications of sustainable certification and labelling in the fisheries sector. However, there is sufficient evidence to support the finding that the

need to meet buyers' expectations or specifications for sustainability and secure market access is a major factor for certification and a significant area for potential benefit post certification.

Ecological Outcomes

With respect to the indicators of ecological impacts associated with certification, the majority of respondents answered 'no change/same as before' for ecological indicators of waste control and disposal, fishery regeneration as well as compliance to safe and precautionary methods that protect ETVS species. This finding suggests that wild capture fisheries certification may be limited as a regulatory instrument but serve as a reward or evidence of sustainability for certified fisheries. For the indicators of fishing methods that reduce unwanted or by catches, maintenance of stock above target reference points (prevention of overfishing) and improvement of methods and gears to protect marine life/ecosystems (ecosystem based fishery management), the majority of respondents indicated some (moderate or high) improvements after attaining MSC certification. Various responses were received on this issue, and a major limitation (for this section and subsequent sections), appears to be if and how government and industry policy interventions influence outcomes on sustainability. As such, the distinction of certification outcomes is complicated.

Social Outcomes

For the indicators of social sustainability, respondents observed some improvements (moderate or high) in the transparency and accountability for production activities and in the engagement of stakeholders, following certification. The remaining social indicators of employee welfare and corporate social responsibility in fishing communities/regions,

showed the majority of responses indicating that there were no changes or that performance was same as before certification. There were responses that pointed out that certification did not lead to the indicators or that the indicators were not applicable to certification, possibly linked to the fact that fisheries certification and ecolabelling by the MSC does not incorporate social dimensions or goals of sustainable development. The main social improvements observed in this study – transparency and accountability of production activities and stakeholder engagement resonates with the findings from a number of studies as well as with findings from the forestry side of this study. However, the limitation with stakeholder management is that certification processes may involve management personnel and may not necessarily engage stakeholders downstream, such as fish harvesters and/or coastal communities.

Management Outcomes

Producers' experiences (by the majority of respondents) suggested that the most significant impact, from certification, on management performance pertains to the indicator of industry compliance with national and international fisheries legislations and agreements. For the other performance measures of data inventory and research and precautionary measures to reduce risk and uncertainties, a majority of respondents reported 'no change/same as before'. The achievement of fisheries certification (particularly by the MSC) requires an effective management system and adequate scientific data or inventory of the fishery involved, which in various cases and in Canada's case, is the responsibility of the government. This could be interpreted that certification is somewhat integrated into a broader system of fisheries management (mainly by government and industry) and thus, usually fall on the existence and effectiveness of these structures to operate. For instance,

the DFO was actively involved in providing the necessary data and reacting to some of the certification conditions to enable the successful certification of the northern shrimp fishery (in Atlantic Canada) to the MSC standard. This reason, along with other factors, may be an underlying reason or explanation for the complexities identified from the survey in distinguishing certification impacts on management (or improvement in institutional capacity) from the impacts from other management actors. This section, similar to the ones above, received diverse responses from participants, thus, leaving room for ambiguity in the outcomes of fisheries certification.

Forestry (The Case of Two Pulp and Paper Mills in Newfoundland and Nova Scotia)

The two pulp and paper cases for the forestry sector pointed out that certification resulted in differing (levels of) impacts on the sustainable development of their operations.

Ecological Outcomes

On the theme of ecological sustainability, the respondents mostly observed moderate or high improvements for the indicators of avoidance of practices that disrupt ecological functions, protection of endangered plant and animal species and sensitive habitats in FMU's and protection of HVCF's, and reduction of waste and safe disposal of waste. The only diverging response was on the indicator of increased rate of regeneration of forests (via natural regeneration or planting), which the respondent from the NL pulp and paper mill suggested as not having changed after certification. Remarks from the survey show that forest certification serve as one of the means through which producers monitor and achieve their ecological commitments as well as socio-economic goals. However, the separation of outcomes solely from forest certification was challenging. This is because

other institutions are actively involved in managing forest resources and biological factors such as climate, soil condition, may influence these ecological outcomes or impacts.

Economic Outcomes

On the economic outcomes of forest certification, respondents suggested that there have been some improvement in the retention and expansion of old markets. The case of NS suggests that attaining certification led to an improvement in the company's competitive edge. Similar to findings from the literature (see chapter on discussion) and from the fisheries sector, both respondents suggested that there was no price premium or revenue increase post certification, even though some buyers may demand it. It is within reason to say that forest certification and ecolabelling may have implications for market security or retention. However, it is rather unclear (or unlikely) if it has any impact on other market indicators such as price and access to new markets. The study also found that the two pulp and paper companies were certified to more than one scheme – which is an indication that producers may adopt different schemes in order to meet specific preferences of buyers or to win support from ENGO's.

Social Outcomes

The study assessed social outcomes of sustainable forest certification based on the responses of the two respondents from the pulp and paper mills in Nova Scotia and Newfoundland. These indicators are: respect and inclusion of resource use rights of forest stakeholders, stakeholder engagement between forest/indigenous communities, industries, Environmental NGO's, government, CSR's, e.g. community developmental projects, employment opportunities for communities, safe and comfortable working conditions for employees and protection of employee rights and entitlements.

Both participants agreed that forest certification had brought improvements in stakeholder engagement in forest management and planning. This finding suggests that forest certification assessments and audit processes may promote stakeholder values and participation, which have positive implications for planning and management of forest plans. The remaining indicators or questions resulted in varied responses by the two cases. The respondent working in the pulp and paper mill in NL reported that certification has not improved the remaining indicators apart from the indicator of corporate social responsibility. On the other hand, the respondent from NS suggested some improvements (high and moderate) in all but one of the performance indicators (corporate social responsibility) post certification. The remarks made by participants on the indicators of employee rights and entitlements protection suggests that industry and government actors are largely involved in ensuring these outcomes, making it difficult to draw the lines between impacts from certification and non-certification interventions. With the exception of the indicator of stakeholder engagement, which the survey (as well as existing literature and the fisheries survey) suggests has been improved, it is challenging to conclude based on this study that forest certification has impacted the remaining indicators of social sustainability performance.

Management Outcomes

In measuring the management outcomes of certification, there was some agreement across the two producer respondents. Both respondents answered that certification had resulted in some improvements in the indicators of precautionary and adaptive approaches that minimize uncertainty and irreversible impacts from harvesting and processing and forest management planning. The remaining indicators, strict adherence to national and

international laws and treaties, regular data collection and inventory and clarity of forest ownership or tenure received varying responses. Possible reasons for the disparity include the differences in management specifications of forest certification standards applied in these two locations. For instance, the FSC-Canada implements the Acadian standard for Maritimes region (which includes NS) whereas the FSC Boreal standard is applied to the case of NL. These certification standards incorporate the unique environmental/ecological and social factors that affect forests in these zones. In addition, an industry's capacity to respond to corrective requests actions or conditions from assessments may determine the extent of impact from sustainability certifications on forest management.

6.1.2 Are these outcomes beneficial or detrimental to the performance of certified operations?

For both sectors, respondents gave their perceptions of the cost-benefit implications of sustainable management certification on their company/organization.

Fisheries

There was an equal split (33.33 percent each) of responses for the three categories of assessment – certification costs outweigh the benefits derived, certification costs are equal to benefits derived and certification costs are less than the benefits derived. Producers anticipate that incentives from fisheries sustainability certifications would be adequate to compensate for the direct costs (of certification pre-assessments, full assessments, annual audits and re-assessments) and indirect costs that are accrued (Goyert, 2009; Goyert et al., 2010). This may be true in some cases, as suggested by 33.33 percent of responses that were each recorded for the captions of 'certification costs are less than the benefits derived'

and ‘certification costs are equal to the benefits derived’ from the survey. It could be inferred that majority (66.66 percent) of the respondents are generally satisfied with the benefits from sustainability fisheries certification. A point worth noting based on the responses is that the cost-benefit impacts or experiences post certification is likely to be different from company to company, evidenced by the varied responses for this section.

Forestry (The Case of Pulp and Paper Mills in Newfoundland and Nova Scotia)

The pulp and paper mills surveyed both produce pulp and paper products and have their primary markets in Canada and the USA, however, the mill in NL indicated a more diversified market base with clients in Europe and Asia as well. The pulp and paper mill in NS has a large employment base (with 500 or more employees) while that of the NL case is medium-sized (employing between 100 – 499 employees). These two cases reported differently on the cost-benefit implications of forest certification, with one respondent stating that certification benefits equate the costs accrued, and the other indicating that certification amounted to more production costs than benefits. Here, there was a correlation between the responses and the economic profile (the size of the company and the diversity of market) of the two companies involved. The NL pulp and paper mill, which is the larger of the two cases, and has a more diversified market, reported that ‘certification costs are equal to the benefits derived’. The NS case, which reported higher costs compared to the benefits derived, is certified to five schemes. The NL case on the other hand, is recognized by four forest certification schemes. The direct and indirect costs of complying with multiple certification standards (and in the case of NS, one more than that of the NL case),

potentially factors into the costs incurred and the benefits reaped and thus may not be financially adequate to offset these costs.

6.2 Study Limitations

This study design and approach posed a number of constraints to the collection and analysis of data. First, the reliance on internet sources for identifying prospective companies to survey did not provide a mechanism for verifying companies to ensure that they qualified for the study, or the accuracy of retrieved contact information. Following up with calls using telephone numbers sourced in the same way raised similar concerns – some phone numbers were incorrect or not in use and others were unwilling or unavailable to take calls. All these constraints impacted the process of sending surveys (which was done via emails) and receiving responses. A measure put in place to ensure credibility and promote participation in this study, as proposed in a study by Wright (2005) was providing participants with an invitation letter and consent form to participants before the survey (approved by the Grenfell Campus-Research Ethics Board). These documents provided information on the study, the researcher, the supervisors, the University and the University's Ethics Board. The surveys were pre-tested by people versed in certification issues (working in academia and government), which also helped to reduce possible errors or biases such as incorrect wording and ambiguous or confused language. Despite these interventions for improving responses and completion rates, the number of responses was generally low, with more than 60 percent being either incomplete or unusable as per the three conditions applied in selecting sampled respondents for both sectors, discussed in the methods section. Wright (2005) points out that high response rates in an email survey, in

most cases, depends on whether participants are interested in the research issue or if there is some sort of incentive, or both. In this case, respondents were assured a copy of the study's findings, which may have been inadequate. For these reasons, to the extent that the thesis was relying on the survey, the study analysis was limited in terms of coherent extrapolation or generalizability to a larger group. However, the exploratory and relatively under researched nature of this topic, along with the use of secondary literature and a comparative approach, enhanced the generation and comparison of new and similar themes, respectively, and sets the stage for further research. Although this study is a first-hand account of sustainability certification impacts in the forestry and fisheries sectors of the Atlantic Region, the issues of small sample population and low response rate raises some concerns. The problem of inadequate representation of the target population - certified forestry and fisheries companies in Atlantic Canada (especially on the forestry side) - advises against the transferability or generalizability of the study's findings. Subsequent research on outcomes of sustainability certifications could consider a qualitative, interview approach that builds trust between the researcher and participant(s) and gives the researcher the opportunity to probe further for details and be practically observant.

6.3 Conclusion and Lessons Learned

This study enhances knowledge on third-party sustainable certification systems and their sustainability impacts or outcomes on natural resource sectors, particularly, in the fisheries and forestry sector. Using a comparative approach, and retrieving information from secondary (literature reviews) and primary sources (surveys involving fisheries and forestry producers/organisations in the Atlantic Region of Canada), the survey shows that the

impacts of third party, sustainability certifications are not clear-cut. Based on participants' assessment of certification outcomes under social, ecological, economic and management (institutional capacity) themes, it appears that the forestry and fisheries producers do accrue some benefits or improvements post certification. These improvements, as reported by majority of or all the responses on the fisheries and forestry side, respectively, pertained to the indicators of retention and expansion of markets, stakeholder engagement and transparency and accountability. Some existing studies postulate or have empirically identified these outcomes as benefitting producers after achieving forest and/or fisheries certification (noted in earlier discussions). It is also worth noting that most of the indicators, especially on the fisheries side of this study, received diverse responses. Some suggested that certification did not influence the indicators or that the indicators were not applicable to certification. This was particularly the case with the fisheries survey. This implies that though certification may result in some changes or bring about some sustainability impacts, however, this may not necessarily hold in all cases or differences in impacts may be observed from location to location (or company to company). The study identified that the differences in certification outcomes may be due to factors that are unrelated to certification. These include various interventions by institutions responsible for managing the resource (government and/or industry), prevailing biological and environmental conditions and specifications of various certification schemes adopted (particularly for the forestry side). It is possible that the attainment of certification and resulting outcomes largely depend on the effectiveness of existing management and favourable ecological conditions in the forest or fishing area to be certified.

Based on the majority of responses for both the fisheries and two pulp and paper mills surveyed in Atlantic Canada, the study found that there were limited economic or market incentives resulting from certification (mainly, market access and security). This finding is not new to the research on the forest and fisheries certification. With respect to price premiums and access to new markets, the impact of certification on these indicators were quite unclear. Most of the participants' responses signalled that there were 'no changes' or performance was same as before for both the forestry and fisheries side of this study. The majority of respondents from both the fisheries and forestry survey, respectively, indicated that their decision to certify (and recertify, in some cases) was mainly connected to the economic or market incentives that certification programs assured. The diversity in the perspectives of surveyed producers/organizations on the cost-benefit assessment of certification, with the majority of responses pointing to certification costs being equal to or more than the benefits derived. This suggests that even though there are additional costs to operation from certifying (and recertifying), the financial implications are quite unclear or there is no guarantee that the financial or market benefits would increase profits made or even offset costs incurred. This finding brings to bare research gaps on the actual causal or motivational factors for the uptake of sustainability certifications by forest and fisheries producers, and particularly for the case of Atlantic Canada. An empirical investigation that involves both certification providers and adopters, would be necessary to disclose the challenges before, during and/or after certification, and measures in place or yet to be introduced through certification.

Relevant to this research and similar certification studies, the two quotations below (in Goyert's study, 2009 on fisheries certification) encapsulates the motivations for the

uptake of sustainability certifications and accurately captures producers' expectations thereof.

"It's to our benefit to bring a good product to the market.

It's to our benefit to do what we can to make it good."

"I think we're doing good things so far.

If we don't get certified then we'll lose a lot [of the market]."

REFERENCES

ACOA. (2006). Seafood Industry in Atlantic Canada, ACOA, Moncton, NB, http://publications.gc.ca/collections/collection_2015/apeca-acoa/Iu89-4-3-14-2006-eng.pdf (accessed on July 15, 2017).

AFPR Working Group. (2001). Fisheries Management Policies on Canada's Atlantic Coast. A Summary of Policies, Acts and Agreements in effect on September 30, 2001 that pertains to the management of the fisheries on Canada's Atlantic Coast, APR, Ottawa, ON, http://waves-vagues.dfo-mpo.gc.ca/Library/263264.pdf (accessed on July 15, 2017).

Agnew, D. J., Guiterrez, N.L., Stern-Pirlot, A., & Hoggarth, D.D. (2014). The MSC experience: developing an operational certification standard and a market incentive to improve fishery sustainability – ICES Journal of Marine Science, 71: 216-225

Almeida, L.T., (2002) As interações entre comércio e meio ambiente as cited in Rodrigues da Silva Enríquez, M. A., & Drummond, J. (2007). Social-environmental certification: Sustainable development and competitiveness in the mineral industry of the Brazilian Amazon. In *Natural Resources Forum* (Vol. 31, No. 1, pp. 71-86). Blackwell Publishing Ltd.

Althaus, F., Williams, A., Schlacher, T. A., Kloser, R. J., Green, M. A., Barker, B. A., Bax, N.J., Brodie, P., & Schlacher-Hoenlinger, M. A. (2009). Impacts of bottom trawling on deep-coral ecosystems of seamounts are long-lasting. *Marine Ecology Progress Series*, *397*, 279-294.

Angelina R.W. Jones, Gloria Williams, (2012) "Perceptions of fair trade labelling and certification: three case studies", Journal of Fashion Marketing and Management: An International Journal, Vol. 16 Issue: 2, pp.246-265

Aryee, B. N., Ntibery, B. K., & Atorkui, E. (2003). Trends in the small-scale mining of precious minerals in Ghana: a perspective on its environmental impact. *Journal of Cleaner production*, *11*(2), 131-140.

Atkinson, R., & Flint, J. (2001). Accessing hidden and hard-to-reach populations: Snowball research strategies. *Social research update*, *33*(1), 1-4.

Auld, G. (2010). Assessing certification as governance: effects and broader consequences for coffee. *The Journal of Environment & Development*, *19*(2), 215-241.

Auld, G., Gulbrandsen, L. H., & McDermott, C. L. (2008). Certification schemes and the impacts on forests and forestry. *Annual review of environment and resources*, *33*.

Azzone, G., Bianchi, R., & Noci, G. (1997). Implementing environmental certification in Italy: managerial and competitive implications for firms. *Corporate Social Responsibility and Environmental Management*, *4*(3), 98-108.

Baffoe, A. (2009). Certification: implications for sustainable forest management and timber export trade in Ghana.

Baggio, R., Czakon, W., & Mariani, M. M. (Eds.). (2016). *Managing tourism in a changing world: issues and cases*. Routledge.

Barry, M., Cashore, B., Clay, J., Fernandez, M., Lebel, L., Lyon, T., Mallet, P., Matus, K., Melchett, P., Vandenbergh, M., & Vis, J. K. (2012). Toward sustainability: the roles and limitations of certification, Final Report. *Prepared by the Steering Committe of*

the State-of-Knowledge Assessments of Standards and Certification, Washington, DC.

Bartley, T. (2003). Certifying forests and factories: States, social movements, and the rise of private regulation in the apparel and forest products fields. *Politics & Society*, *31*(3), 433-464.

Bartley, T., Koos, S., Samel, H., Setrini, G., & Summers, N. (2015). *Looking behind the label: Global industries and the conscientious consumer*. Indiana University Press.

Bellchambers, L. M., Phillips, B. F., & Pérez-Ramírez, M. (2016). From certification to recertification the benefits and challenges of the Marine Stewardship Council (MSC): A case study using lobsters. *Fisheries Research*, *182*, 88-97.

Black, R., & Crabtree, A. (Eds.). (2007). Quality assurance and certification in ecotourism (Vol. 5). CABI.

Blackman, A., & Rivera, J. (2011). Producer-level benefits of sustainability certification. *Conservation Biology*, *25*(6), 1176-1185.

Bouffard, N. (2008). Eco-certification of Fisheries in Canada. Fisheries and Oceans Canada, Government of Canada, Ottawa, ON, http://www.ccfi.ca/pdf/snowcrab/presentations/DFO.Bouffard.pdf (accessed on August 15, 2017)

Bourchier, R.J., and Stanton, C.R., (2006), 'Forest Regions'. *The Canadian Encyclopedia*, Toronto, ON, Canada, http://www.thecanadianencyclopedia.ca/en/article/forest-regions/ (accessed on June 15, 2017).

Bourdages, J., (1998). Forest Management in Canada, Parliamentary Research Branch, Library of Parliament, Ottawa, ON. http://publications.gc.ca/collections/Collection-R/LoPBdP/CIR-e/871-e.pdf (accessed on August 1, 2017).

Buchsbaum, B. D. (2004). Ecotourism and sustainable development in Costa Rica, Virginia Polytechnic Institute and State University, http://theses.lib.vt.edu/theses/available/etd-05052004-171907/unrestricted/EcotourismCostRica.pdf (accessed on July 10, 2017)

Business Case Studies LLP (n.d.). 'Strategy Theory. *Aims and Objectives',* http://businesscasestudies.co.uk/business-theory/strategy/aims-and-objectives.html (accessed on July 7, 2017)

Cambridge, T., Martin, S., Nimmo, F., Grieve, C., Walmsley, S., Huntington, T., Cappell, R., & Agnew, D. J., (2011). Researching the environmental impacts of the MSC certification programme. *Report submitted to the MSC by MRAG, Poseiden, Meridian Prime, London*, *2*.

Campana, S. E., Joyce, W., & Manning, M. J. (2009). Bycatch and discard mortality in commercially caught blue sharks Prionace glauca assessed using archival satellite pop-up tags. *Marine Ecology Progress Series*, *387*, 241-253.

Canadian Council of Professional Fish Harvesters, (n.d.). History of Fishing in Canada. Early Years of Fishing in Canada. Ottawa, ON, http://www.fishharvesterspecheurs.ca/fishing-industry/history (accessed on August 18, 2017)

Canadian Federation of Woodlot Owners. (2014). 'About Us', https://www.cfwo-fcpb.org/about (assessed from on September 8, 2017)

Carasco, E.F., (2012). Law of the Sea. Historica Canada, http://www.thecanadianencyclopedia.ca/en/article/law-of-the-sea/ (accessed on August 29, 2017).

Carlsen, K., Hansen, C. P., & Lund, J. F. (2012). Factors affecting certification uptake—Perspectives from the timber industry in Ghana. *Forest Policy and Economics*, *25*, 83-92.

Cashore, B. W., Auld, G., & Newsom, D. (2004). *Governing through markets: Forest certification and the emergence of non-state authority*. Yale University Press.

Cashore, B., & Lawson, J. (2003). Private policy networks and sustainable forestry policy: comparing forest certification experiences in the US Northeast and the Canadian Maritimes. *Canadian American Public Policy*, *53*.

Cashore, B., Galloway, G., Cubbage, F., Humphreys, D., Katila, P., Levin, K., Maryudi A., McDermott C. & McGinley, K. (2010). Ability of institutions to address new challenges.

CCFM (n.d.).[1] 'Overview - Canada's Forests'. Canadian Council of Forest Ministers, Ottawa, ON, http://www.sfmcanada.org/en/canada-s-forests (accessed on August 1, 2017)

CCFM. (n.d.).[2] 'Canada's Legal Forest Products', Canadian Council of Forest Ministers, Ottawa, ON, http://www.sfmcanada.org/en/forest-products/legal-forest-products#Prov (accessed on July 30, 2017).

Chapman, J. D., (2007). *Natural Resources*, Toronto, ON,

http://www.thecanadianencyclopedia.ca/en/article/resources/ (accessed on June 29, 2017).

Cherunilam, F. (2010). *Elements of business environment*. Himalaya Publishing House.

Chiaro, P. S., & Joklik, G. F. (1998). The extractive industries. *The Ecology of Industry*.

Childs, J. (2014). From 'criminals of the earth' to 'stewards of the environment': The social and environmental justice of Fair Trade gold. *Geoforum, 57*, 129-137.

Christian, C., Ainley, D., Bailey, M., Dayton, P., Hocevar, J., LeVine, M., Nikoloyuk, J., Nouvian, C., Velarde, E., Werner, R., & Jacquet, J. (2013). A review of formal objections to Marine Stewardship Council fisheries certifications. *Biological Conservation, 161*, 10-17.

Clancy, G., Fröling, M., & Peters, G. (2015). Ecolabels as drivers of clothing design. *Journal of Cleaner Production, 99*, 345-353.

Committee on the Status of Endangered Wildlife in Canada (2001). COSEWIC assessment and update status report on the Leatherback Turtle *Dermochelys coriacea* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.

Committee on the Status of Endangered Wildlife in Canada (2010). COSEWIC assessment and status report on the Loggerhead Sea Turtle *Caretta caretta* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.

Cubbage, F., Moore, S., Cox, J., Jervis, L., Edeburn, J., Richter, D., Boyette, W., Thompson, M., & Chesnutt, M. (2003). Forest certification of state and university lands in North Carolina: A comparison. *Journal of Forestry, 101*(8), 26-31.

Dahl, A. L. (2012). Achievements and gaps in indicators for sustainability. *Ecological Indicators, 17*, 14-19.

de Leeuw, E. D., Hox, J. J., Dillman, D. A. (Eds.). (2008). *International handbook of survey methodology*. Taylor & Francis.

Delmas, M. A., & Pekovic, S. (2013). Environmental standards and labor productivity: Understanding the mechanisms that sustain sustainability. *Journal of Organizational Behavior*, *34*(2), 230-252.

DFA (2015). Socio-Economic Impacts of Shrimp Quota Reductions in Newfoundland and Labrador. Final Report. Department of Fisheries and Aquaculture, Newfoundland and Labrador.

DFO (2008). 'Atlantic Fisheries Policy Review – A Policy Framework for the management of fisheries on Canada's Atlantic Coast', Department of Fisheries and Oceans, Ottawa, ON, http://www.dfo-mpo.gc.ca/reports-rapports/regs/afpr-rppa/framework-cadre-eng.htm (accessed on June 29, 2017).

DFO (2010). 'Atlantic Sharing Arrangements'. Department of Fisheries and Oceans, Ottawa, ON, http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/comm/sharing-partage/sasa-2010-epsa-eng.htm (accessed on September 22, 2017).

DFO (2015)[1]. 'Fisheries Sustainability'. Department of Fisheries and Oceans, Ottawa, ON, http://www.dfo-mpo.gc.ca/fm-gp/sustainable-durable/fisheries-peches/index-eng.htm (accessed on June 8, 2017)

DFO (2015)[2]. 'Acts and Regulations.' Department of Fisheries and Oceans, Ottawa, ON, http://www.dfo-mpo.gc.ca/acts-lois/index-eng.htm (accessed on January 1, 2018).

DFO (2016). Overview, DFO, Ottawa, ON, http://www.dfo-mpo.gc.ca/international/issue-enjeu-eng.htm (accessed on June 29, 2017)

DFO (2017). 'Canada's Fisheries Fast Facts 2016', DFO, Ottawa, ON, http://www.dfo-mpo.gc.ca/stats/facts-Info-16-eng.htm (accessed on September 15, 2017)

Dietz, T., Ostrom, E., & Stern, P. C. (2003). The struggle to govern the commons. *Science*, *302*(5652), 1907-1912.

Duinker, P. N. (2001). Criteria and indicators of sustainable forest management in Canada: progress and problems in integrating science and politics at the local level. *Criteria and Indicators for Sustainable Forest Management at the Forest Management Unit Level, Proceedings of the European Forest Institute*, (38), 7-27.

Dunfield, R.W. (1985). The Atlantic Salmon in the History of North America. Canadian Special Publication of Fisheries and Aquatic Sciences, 80, 181 pp.

Elliott, C. (1999). Forest certification: analysis from a policy network perspective.

Emery, C. (1993). Quota Licensing in Canada's Fishing Industry. *Political and Social Affairs Division, Library of Parliament,* Ottawa, ON, Canada.

Emery, C. (2004). The Atlantic Fisheries Policy Review and New Policy Framework. *Parliamentary Information and Research Service, Library of Parliament*, Ottawa, ON, Canada. https://lop.parl.ca/Content/LOP/ResearchPublications/tips/tip129-e.htm (accessed on September 1, 2017)

FairTrade USA (n.d.). 'Capture Fisheries Program'. FairTrade USA, California, USA, https://fairtradeusa.org/sites/default/files/wysiwyg/filemanager/fish/Fair-Trade-USA-Capture-Fisheries-Standard-Infographic.pdf (accessed from: on January 10, 2017).

FairTrade USA. (2017). Apparel and Home Goods. Fair Trade USA, https://fairtradeusa.org/products-partners/apparel (accessed on August 15, 2017).

FAO (2005). The FAO Guidelines for the ecolabelling of fish and fisheries products from marine capture fisheries. *FAO; 2005*. Rome.

FAO. (2010). The State of World Fisheries And Aquaculture 2010. *FAO Fisheries and Aquaculture Department.* Rome.

FAO. (2016). State of World Fisheries and Aquaculture 2016. Contributing to food security and nutrition for all. Rome. pp. 200.

Floyd, D. W., & Chaini, R., (2007). Atlantic Canada's Forestry Industry, Current Status, Future Opportunities. Part 1, http://publications.gc.ca/collections/collection_2010/apeca-acoa/Iu89-4-43-1-2007-eng.pdf (accessed on October 1, 2017).

Foley, P. (2012). The political economy of Marine Stewardship Council certification: Processors and access in Newfoundland and Labrador's inshore shrimp industry. *Journal of Agrarian Change*, *12*(2-3), 436-457.

Foley, P. (2013). National government responses to Marine Stewardship Council (MSC) fisheries certification: insights from Atlantic Canada. *New Political Economy*, *18*(2), 284-307.

Foley, P., & McCay, B. (2014). Certifying the commons: eco-certification, privatization, and collective action. *Ecology and Society*, *19*(2).

Font, X., & Buckley, R. (Eds.). (2001). *Tourism ecolabelling: certification and promotion of sustainable management*. CaBI.

FoS. (2008). 'Canadian Salmon Fishery is Friend of the Sea'. Friend of the Sea, Italy. (assessed from: http://www.friendofthesea.org/news-doc.asp?ID=146&CAT_ID=1 on August 30, 2017).

FoS. (2017). *Friend of the Sea Annual Report 2016*. Assessed from: http://www.friendofthesea.org/public/page/fos-foe_annual_report_2016_web.pdf on August 14, 2017.

Fox, C., van Zyll de Jong, M., Hearn, B., Moores, L., Foley, P., & Harris, D. (2016). Perspectives on implementing certification on Crown forest: The case of Newfoundland and Labrador. *The Forestry Chronicle, 92*(4), 503-511.

FPAC (2016). '2016 Year-end Certification Status.' (accessed from: http://certificationcanada.org/en/statistics/canadian-statistics/ on August 15, 2017)

FPAC (2017). 'Sustainable Forest Management.' (accessed from: http://www.fpac.ca/sustainable-forestry/initiative/ on May 15, 2017)

FPAC Canada (n.d.). International Comparison of Forest Management Legal Frameworks + Certification Standards. FPAC Report.

Franklin, S., and Walker, C. (Eds.) (2010). Survey Methods and Practices. *Statistics Canada*

Fraser, S. J. (2007). Filling a public policy gap in Canada: forest certification. *The Forestry Chronicle, 83*(5), 666-671.

Friend of the Sea (2008). 'Canadian BC Salmon is Friend of the Sea.' (accessed from: http://www.friendofthesea.org/news-doc.asp?ID=146&CAT_ID=1 on June 30, 2017)

FSC (2015). FSC International Standard. FSC Principles and Criteria for Forest Stewardship. FSC International Secretariat, Bonn, Germany, file:///C:/Users/Dinah/Downloads/FSC-STD-01-001%20V5-2%20EN.pdf (accessed on September 11, 2017).

FSC (2017). *FSC Facts & Figures.* Forest Stewardship Council International and Global Development, Bonn, Germany, file://curly/users$/dao487/Downloads/Facts_and_Figures_2017-08-04.pdf (accessed on August 14, 2017).

FSC Canada (n.d.)[b]. Forest Management Standards and Policies. FSC. (accessed from: https://ca.fsc.org/en-ca/standards/forest-management-standards on September 11, 2017)

FSC Canada (n.d.)[c]. 'Facts and Figures.' *June 2017.* Forest Stewardship Council, Canada. https://ca.fsc.org/en-ca/about-us/facts-figures (accessed on August 1, 2017).

FSC Worldwide (n.d.) [a]. 'Forest Management Certification'. FSC International, Bonn, Germany, https://ic.fsc.org/en/what-is-fsc-certification/forest-management-certification (accessed from: on September 11, 2017).

FSC Worldwide (n.d.). 'FSC Certification.' FSC International, Bonn, Germany, https://ic.fsc.org/en/what-is-fsc-certification (accessed on July 17, 2017).

Gale, F., & Haward, M. (2011). *Global commodity governance: state responses to sustainable forest and fisheries certification*. Springer.

Gardner, M. (1988). Enterprise allocation system in the offshore groundfish sector in Atlantic Canada. *Marine Resource Economics*, *5*(4), 389-414.

Gardner, P. (2004). Seafood Ecolabelling; Trends, Challenges and Opportunities. *Gardner Pinfold Consulting Economists Limited, Report Prepared for Fisheries and Oceans*, Ottawa, ON, Canada

Geerts, W. (2014). Environmental certification schemes: Hotel managers' views and perceptions. *International Journal of Hospitality Management*, *39*, 87-96.

Geist, H. J., & Lambin, E. F. (2002). Proximate causes and underlying driving forces of tropical deforestation: Tropical forests are disappearing as the result of many pressures, both local and regional, acting in various combinations in different geographical locations. *BioScience*, *52*(2), 143-150.

GFSI, (n.d.). 'What is GFSI'. The Consumer Foods Forum, GFSI, http://www.mygfsi.com/about-us/about-gfsi/what-is-gfsi.html (accessed on September 10, 2017).

Global Trust (n.d.) 'Marine Certification Centre'. http://www.gtcert.com/seafood_trust/ (accessed on June 15, 2017).

Gough, J. (1993). A historical sketch of fisheries management in Canada. *Perspective on Canadian Marine Fisheries Management*, 5-53.

Gough, J., (1991). Fisheries management in Canada 1880-1910 In: Canadian Manuscript Report of Fisheries and Aquatic Sciences (Canada), no. 2105, Department of Fisheries and Oceans, Halifax, Nova Scotia (Canada), 1991, p. 96.

Govender, R., Hayne, K., Fuller, S.D, Wallace, S. 2016. Taking Stock: Sustainable Seafood in Canadian Markets. SeaChoice, Vancouver / Halifax. 30 p.

Government of Canada. (2017). *'Constitution Act, 1867'* Justice Laws Website. Government of Canada. (assessed from: http://laws-lois.justice.gc.ca/eng/Const/page-4.html#docCont on September 7, 2017)

Goyert, W., Sagarin, R., & Annala, J. (2010). The promise and pitfalls of Marine Stewardship Council certification: maine lobster as a case study. *Marine Policy*, *34*(5), 1103-1109.

Gulbrandsen, L. H. (2004). Overlapping public and private governance: Can forest certification fill the gaps in the global forest regime?. *Global Environmental Politics*, *4*(2), 75-99.

Gulbrandsen, L. H. (2005). The effectiveness of non-state governance schemes: a comparative study of forest certification in Norway and Sweden. *International Environmental Agreements: Politics, Law and Economics*, *5*(2), 125-149.

Gulbrandsen, L. H. (2008). Accountability arrangements in non-state standards organizations: instrumental design and imitation. *Organization*, *15*(4), 563-583.

Gulbrandsen, L. H. (2009). The emergence and effectiveness of the Marine Stewardship Council. *Marine Policy*, *33*(4), 654-660

Gulbrandsen, Lars H. (2005) "Mark of sustainability? Challenges for fishery and forestry eco-labeling." *Environment: Science and Policy for Sustainable Development* 47.5: 8-23.

Hagan, J.M., L.C. Irland, and A.A. Whitman. (2005). Changing timberland ownership in the Northern Forest and implications for biodiversity. Manomet Center for Conservation Sciences, Report # MCCS-FCP- 2005-1, Brunswick, Maine, 25 pp.

Harwell, M. R. (2011). Research Design in Qualitative/Quantitative. *The Sage handbook for research in education: Pursuing ideas as the keystone of exemplary inquiry*, 147.

Hauge, K. H., Cleeland, B., & Wilson, D. C. (2009). Fisheries depletion and collapse. *IRGC report "Risk Governance Deficits: An analysis and illustration of the most common deficits in risk governance". International Risk Governance Council Chemin de Balexert*, *9*(1219), 21.

Hodgins, B. W. (1992). The Temagami dispute: a northern Ontario struggle toward co-management. In *Proceedings of the White Pine Symposium: History, Ecology, Policy and Management. Duluth, MN. Univ. Minnesota, St. Paul, MN* (pp. 110-119).

Honey, M. *Foreword* in Buckley, R., & Crabtree, A. (2007). Black, R., & Crabtree, A. (Eds.). (2007). *Quality assurance and certification in ecotourism* (Vol. 5). CABI.

Industry Canada Small Business Branch (2012). Key Small Business Statistics, Ottawa, ON, https://www.ic.gc.ca/eic/site/061.nsf/vwapj/KSBS-PSRPE_July-Juillet2012_eng.pdf/$FILE/KSBS-PSRPE_July-Juillet2012_eng.pdf (accessed on September 30, 2017)

International Model Forest Network. (2017). 'Canadian Model Forest Network'. Ottawa, Ontario-Canada, http://www.imfn.net/canadian-model-forest-network (accessed on September 8, 2017).

ISO (2015). Quality Management Principles. ISO Central Secretariat, Geneva-Switzerland, https://www.iso.org/files/live/sites/isoorg/files/archive/pdf/en/pub100080.pdf (accessed on September 10, 2017).

Jacquet, J. L., & Pauly, D. (2007). The rise of seafood awareness campaigns in an era of collapsing fisheries. *Marine Policy*, *31*(3), 308-313.

Jarman, K. H. (2013). *The art of data analysis: how to answer almost any question using basic statistics*. John Wiley & Sons.

Jones, A. R., & Williams, G. (2012). Perceptions of fair trade labelling and certification: three case studies. *Journal of Fashion Marketing and Management: An International Journal*, *16*(2), 246-265.

Kaiser, M. & Edward-Jones, G. 2006. The Role of Ecolabelling in Fisheries Management and Conservation. Conservation Biology. 20(2): 392–398

Kalfagianni, A., & Pattberg, P. (2013). Global fisheries governance beyond the State: unraveling the effectiveness of the Marine Stewardship Council. *Journal of Environmental Studies and Sciences*, *3*(2), 184-193.

Keenan, R., and Carruthers, E.H., (n.d). The Northern Shrimp Fishery: The Socio-Economic Importance of Maintaining Adjacency in Allocation Decisions, FFAW Unifor, Corner Brook, NL

http://ffaw.nf.ca/sites/ffaw.nf.ca/files/Northern%20Shrimp%20Allocations%20and%20Impacts.pdf (accessed on August 28, 2017).

Kitula, A. G. N. (2006). The environmental and socio-economic impacts of mining on local livelihoods in Tanzania: A case study of Geita District. *Journal of cleaner production*, *14*(3), 405-414.

Kleine, D. (2010). Environmental Certification. In *Encyclopedia of Geography*. (Vol. 2, pp. 914-916). Sage publications.

Lawrence, L. (1997). Lead Auditor Course-ISO 14000. *Environmental Management Systems*.

Lazo, J. (2010). An Overview of Qualitative and Quantitative Methods.

Leadbitter, D., Gomez, G., & McGilvray, F. (2006). Sustainable fisheries and the East Asian seas: Can the private sector play a role? *Ocean & coastal management*, *49*(9), 662-675.

Leung, D., Rispoli, L., & Chan, R. (2012). *Small, medium-sized, and large businesses in the Canadian economy: Measuring their contribution to gross domestic product from 2001 to 2008*. Statistics Canada, Economic Analysis Division.

Marx A. (2008) Limits to Non-state Market Regulation: A Qualitative Comparative Analysis of the International Sport Footwear Industry and the Fair Labor Association. *Regulation & Governance* 2, 253–273.

Marx, A., & Cuypers, D. (2010). Forest certification as a global environmental governance tool: What is the macro-effectiveness of the Forest Stewardship Council? *Regulation & Governance*, *4*(4), 408-434.

Mason, F. (2002). The Newfoundland cod stock collapse: a review and analysis of social factors. *Electronic Green Journal*, *1*(17).

MIT (2016). The Future of Strategic Natural Resources. Environmentally Sensitive 'Green' Mining, http://web.mit.edu/12.000/www/m2016/finalwebsite/solutions/greenmining.html (accessed on September 12, 2017)

Masters, M., Tikina, A., & Larson, B. (2010). Forest certification audit results as potential changes in forest management in Canada. *The Forestry Chronicle*, *86*(4), 455-460.

Mather, C. (2013). From cod to shellfish and back again? The new resource geography and Newfoundland's fish economy. *Applied Geography*, *45*, 402-409.

Maxwell, J. A. (2005). Conceptual framework: What do you think is going on? *Qualitative research design: An interactive approach*, *41*, 33-63.

McDermott, C. L. (2003). *Personal trust and trust in abstract systems: a study of forest stewardship council-accredited certification in British Columbia* (Doctoral dissertation, University of British Columbia).

Mikkilä, M., Heinimö, J., Panapanaan, V., Linnanen, L., & Faaij, A. (2009). Evaluation of sustainability schemes for international bioenergy flows. *International Journal of Energy Sector Management*, *3*(4), 359-382.

Mining Association of Canada (2017). 'TSM Guiding Principles.' The Mining Association of Canada, Ottawa, ON, http://mining.ca/towards-sustainable-mining/tsm-guiding-principles (accessed on August 30, 2017).

Ministerial Advisory Panel (2016). Report of the Ministerial Advisory Panel. External review of the Department of Fisheries and Oceans' Last-In, First-Out policy (LIFO) for the Northern Shrimp Fishery, DFA, Ottawa, ON, http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/comm/shrimp-crevette/pdf/lifo-report-rapport-deps-eng.pdf (assessed on October 18, 2017).

Mission Alignment Working Group (2014). Profit-With-Purpose Businesses. *A subject paper of the Mission Alignment Working Group.* Assessed on July 7, 2017 from: http://www.socialimpactinvestment.org/reports/Mission%20Alignment%20WG%20paper%20FINAL.pdf.

Moffat, S. O., Cubbage, F. W., Holmes, T. P., & O'Sullivan, E. (2003). *(4)* Utilizing Issue Network Analyses to Assess Potential Policy Implications of Sustainable Forest Management in the United States.

Moore, S. E., Cubbage, F., & Eicheldinger, C. (2012). Impacts of forest stewardship council (FSC) and sustainable forestry initiative (SFI) forest certification in north America. *Journal of Forestry*, *110*(2), 79-88.

Mori Junior, R., Franks, D. M., & Ali, S. H. (2015). Designing Sustainability Certification for Impact: Analysis of the design characteristics of 15 sustainability standards in the mining industry. *Centre for Social Responsibility in Mining, University of Queensland. Brisbane*.

MSC (2016). From Sustainable Fishers to Seafood Lovers. *Annual Report 2015-16.* file://curly/users$/dao487/Downloads/MSC%20Annual%20Report%202015-16%20English.pdf (accessed on August 10, 2017).

MSC (2017). 'Marine Stewardship Council. Track a Fishery', MSC. https://fisheries.msc.org/en/fisheries/canada-northern-and-striped-shrimp (accessed on September 29, 2017)

MSC (n.d.). About the Developing World Program. *Marine Stewardship Council*. https://www.msc.org/about-us/credibility/working-with-developing-countries/about-the-developing-world-programme (accessed on August 1, 2017).

MSC (n.d.)[a]. 'The MSC Standards'. *Marine Stewardship Council.* https://www.msc.org/about-us/standards (accessed on January 20, 2017)

MSC (n.d.)[b]. 'Fishery Improvement Projects (FIPs)'. *Marine Stewardship Council.* https://www.msc.org/documents/developing-world/msc-accessibility-tools/definition-of-a-credible-fip (accessed on December 31, 2017).

Murphy, D. F., & Bendell, J. (1997). In the company of partners: Business, environmental groups and sustainable development post-Rio. Policy Press.

NAFO, (n.d.). 'About Us. *General Info.',* NAFO, Dartmouth, Nova Scotia, https://www.nafo.int/About-us (accessed on August 20, 2017).

National Forestry Database (2011). *As cited in* Canadian Council of Forest Ministers (2017). *Canada's Legal Forest Products.* Assessed from: http://www.sfmcanada.org/en/forest-products/legal-forest-products#Prov on June 12, 2017.

Nebel, G., Quevedo, L., Jacobsen, J. B., & Helles, F. (2005). Development and economic significance of forest certification: the case of FSC in Bolivia. *Forest Policy and Economics, 7*(2), 175-186.

Neis, B., Ommer, R. E., & Hall, P. (2014). Moving forward: building economically, socially and ecologically resilient fisheries and coastal communities. *A Policy Paper April, 16*.

Neis, B., Ommer, R., House, D., Fiander, W., Foley, P., Fleming, I. Lavers, C., McCay, B., Sinclair, P. & Sullivan, K. (2014). Building Economically, Socially and Ecologically Resilient Fisheries and Coastal Communities: A Policy Paper. http://www.curra.ca/documents/Revised_CURRA%20Policy%20Paper%20April%2016%202014%20to%20the%20printer%20(1).pdf (accessed on September 19, 2017)

Newbold, J. (2003). Social consequences of mining and present day solutions—region II in Chile highlighted. *Sustainable Development, 11*(2), 84-90.

NRCan (2016). '10 Key Facts on Canada's Natural Resources.' Natural Resources, Canada, Ottawa, ON. http://www.nrcan.gc.ca/publications/key-facts/16013 (accessed from: on June 28, 2017.

NRCan. (2016). 'Sustainable Forest Management in Canada'. Natural Resources, Canada, Ottawa, ON, http://www.nrcan.gc.ca/forests/canada/sustainable-forest-management/13183 (assessed on September 8, 2017)

NRCan (2017).[1] 'Forest Certification in Canada.' Natural Resources Canada, Ottawa, ON, http://www.nrcan.gc.ca/forests/canada/certification/17474 (accessed September 15, 2017).

NRCan (2017).[2] 'About Us'. Natural Resources Canada, Ottawa, ON, https://www.nrcan.gc.ca/department (accessed on July 30, 2017).

NRCan (2017).[3] 'Canada's Forest Laws'. Natural Resources Canada, Ottawa, ON, http://www.nrcan.gc.ca/forests/canada/laws/17497 (accessed on January 2, 2018).

Oosterveer, P. (2015). Sustainable Food Governance by Governments and Markets: The Case of Sustainable Seafood Provision. *European Journal of Risk Regulation*, *6*(4), 525-531.

Parsons, L. S. (1993). *Management of marine fisheries in Canada* (Vol. 225). NRC Research Press, Canada.

Parsons, L. S., & Lear, W. H. (Eds.). (1993). *Perspectives on Canadian Marine Fisheries Management Canadian Bulletin of Fisheries and Aquatic Sciences No. 226*. NRC Research Press, Canada.

Paul, J., & Campbell, G. (2011). Investigating rare earth element mine development in EPA region 8 and potential environmental impacts. *A National Service Center for Environmental Publications*.

PEFC Canada (n.d.). *PEFC Certification is available in Canada!* PEFC, Canada. http://www.pefccanada.org/default.htm (assessed on August 1, 2017).

PEFC Council, (2017). PEFC Global Statistics: SFM & CoC Certification, https://www.pefc.org/images/documents/PEFC_Global_Certificates_-_June_2017.pdf (accessed on August 10, 2017.

Pegg, S. (2006). Mining and poverty reduction: Transforming rhetoric into reality. *Journal of Cleaner Production*, *14*(3), 376-387.

Pérez-Ramírez, M., Ponce-Díaz, G., & Lluch-Cota, S. (2012). The role of MSC certification in the empowerment of fishing cooperatives in Mexico: The case of red rock lobster co-managed fishery. *Ocean & coastal management*, *63*, 24-29.

Petkova, V., Lockie, S., Rolfe, J., & Ivanova, G. (2009). Mining developments and social impacts on communities: Bowen Basin case studies. *Rural Society*, *19*(3), 211-228.

Ponte, S. (2008). Greener than thou: The political economy of fish ecolabeling and its local manifestations in South Africa. *World Development*, *36*(1), 159-175.

Ponte, S. (2012). The Marine Stewardship Council (MSC) and the making of a market for 'sustainable fish'. *Journal of Agrarian Change*, *12*(2-3), 300-315.

Porter, S. R. (2004). Pros and cons of paper and electronic surveys. *New Directions for Institutional Research*, *2004*(121), 91-97.

Powles, H., Angel, J. & Blyth-Skyrme, R. (2016). MSC Sustainable Fisheries Certification. *Canada Northern and Striped Shrimp Fishery, Public Certification Report*. Prepared for the Canadian Association of Prawn Producers by Accoura Marine Ltd., Edinburgh, London, UK.

Rademaekers, K., Eichler, L., Berg, J., Obersteiner, M., & Havlik, P. (2010). Study on the evolution of some deforestation drivers and their potential impacts on the costs of

an avoiding deforestation scheme. *Prepared for the European Commission by ECORYS and IIASA. Rotterdam, Netherlands*.

Rehbinder, E. (2003). Forest certification and environmental law. *Social and Political Dimensions of Forest Certification*, 331-354.

Reinecke, J., Manning, S., & Von Hagen, O. (2012). The emergence of a standards market: Multiplicity of sustainability standards in the global coffee industry. *Organization Studies*, *33*(5-6), 791-814.

Rodrigues da Silva Enríquez, M. A., & Drummond, J. (2007). Social-environmental certification: Sustainable development and competitiveness in the mineral industry of the Brazilian Amazon. In *Natural Resources Forum* (Vol. 31, No. 1, pp. 71-86). Blackwell Publishing Ltd.

Roheim, C. (2003). The seafood consumer; trade and the environment. *The international seafood trade*.

Rutherford, J. (2008). Too many boats chasing too few fish: The collapse of the Atlantic groundfish fishery and the avoidance of future collapses through free market environmentalism. *Studies by Undergraduate Researchers at Guelph*, *2*(1), 11-17.

Schüler, D., Buchert, M., Liu, R., Dittrich, S., & Merz, C. (2011). Study on rare earths and their recycling. *Öko-Institut eV Darmstadt*.

Sharma, S., & Henriques, I. (2005). Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic management journal*, *26*(2), 159-180.

Shelton, P. A. (2009). Eco-certification of sustainably managed fisheries—Redundancy or synergy? *Fisheries Research*, *100*(3), 185-190.

Statistics Canada (2011). Forest Land by Province and Territory, http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/envi34a-eng.htm (accessed on June 15, 2017).

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of management review*, *20*(3), 571-610.

SFI. (n.d.) 'SFI Standard 2015 – 2019', SFI, Washington, DC, http://www.sfiprogram.org/sfi-standard/ (accessed on July 17, 2017)

Swartz, W., Schiller, L., Sumaila, U. R., & Ota, Y. (2017). Searching for market-based sustainability pathways: Challenges and opportunities for seafood certification programs in Japan. *Marine Policy*, *76*, 185-191.

Teisl, M. F., Peavey, S., Newman, F., Buono, J., & Hermann, M. (2002). Consumer reactions to environmental labels for forest products: A preliminary look. *Forest Products Journal*, *52*(1), 44.

Tellis, W. M. (1997). Results of a case study on information technology at a university. *The qualitative report*, *3*(4), 1-25.

The Forestry Chronicle. (1989). 'Federal/Provincial Forest Resource Development Agreements.' Copies of the two attached letters by CIF, http://pubs.cif-ifc.org/doi/pdfplus/10.5558/tfc65290-4 (accessed on September 9, 2017).

Tikina, A. V., & Innes, J. L. (2008). A framework for assessing the effectiveness of forest certification. *Canadian Journal of Forest Research*, *38*(6), 1357-1365.

UNIDO, (2017). Annual Report 2016: Together for a Sustainable Future, Publishing and Library Section, United Nations Office, Vienna,

http://www.unido.org/fileadmin/user_media_upgrade/Resources/Publications/Annual_Report/Annual_Report_2016_-_EN.pdfn (accessed on September 14, 2017).

Unilever (2003). Fishing for the future II. *Unilever Fish Sustainability Initiative (FSI).* Unilever, London, United Kingdom, https://www.unilever.com/Images/2003-fishing-for-the-future-ii-unilever-s-fish-sustainability-initiative_tcm244-409706_1_en.pdf (accessed on January 7, 2018).

Vandergeest, P. (2007). Certification and communities: alternatives for regulating the environmental and social impacts of shrimp farming. *World Development*, *35*(7), 1152-1171.

Vogel, D. (2008). Private global business regulation. *Annual Review of Political Science*, *11*, 261-282.

Wakamatsu, M., & Wakamatsu, H. (2017). The certification of small-scale fisheries. *Marine Policy*, *77*, 97-103.

Walser, G. (2000). Economic impact of world mining. *The Uranium Production Cycle and the Environment*, *2*, 86.

Wappel T. (2003). The Federal Role in Aquaculture in Canada. *Report of the Standing Committee on Fisheries and Oceans.* Communication Canada – Publishing, Ottawa, Canada.

Ward, T. J. (2008). Barriers to biodiversity conservation in marine fishery certification. *Fish and Fisheries*, *9*(2), 169-177.

Ward, T., & Phillips, B. (2010). Seafood ecolabeling. *Handbook of marine fisheries conservation and management*, 608-617.

Ward, T., & Phillips, B. (Eds.). (2009). *Seafood ecolabelling: principles and practice*. John Wiley & Sons.

Washington, S., & Ababouch, L. (2011). *Private standards and certification in fisheries and aquaculture*. FAO.

WCEL, (2017). 'Fisheries Act' West Coast Environmental Law, Vancouver, BC, https://www.wcel.org/program/canadas-environmental-reviews/fisheries-act (accessed on September 20, 2017)

World Bank (2012). Lao PDR Labour Standards and productivity in the garments export sector. A survey of manager and workers. *Poverty Reduction and Economic Management Sector Department East Asia and Pacific Region. July 2012.* World Bank. Report No. 70809-LA.

WRAP. (2017). History. Worldwide Responsible Accredited Production, Virginia, USA, http://www.wrapcompliance.org/en/history (accessed on August 15, 2017).

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, *10* (3), 00-00.

Yin, R. (1994). Case study research: Design and methods. Beverly Hills.

Zahs, D., & Baker, R. (2007). Telephone and mail surveys: Advantages and disadvantages of each. *Market Strategies, Inc., Livonia, MI, 48152*.

Zainal, Z. (2017). Case study as a research method. *Jurnal Kemanusiaan*, *5*(1).

APPENDIX A: Framework Captions and Literature Used

Types of Certification: (a) Management Standard (b) Chain of Custody (traceability) Standard	Mori Junior, et al., 2015; Fox et al., 2016; Gale and Haward, 2011; Marx and Cuypers, 2010; Auld et al., 2008; Tikina and Innes, 2008; Fraser, 2007; Font and Buckley, 2001; MSC[b] (n.d); FSC International (n.d.); SFI (n.d.)
Potential Outcomes of Third Party Sustainable Certification	Economic/Market – Kalfagianni and Pattberg, 2013; Marx and Cuypers, 2010; Baffoe, 2009; Ward and Phillips, 2009; Shelton, 2009; ITTO, 2008; Gulbrandsen, 2005 Social – Kalfagianni and Pattberg, 2013; Perez-Ramirez et al., 2012; Marx and Cuypers, 2010; Ward and Phillips, 2009; Marx, 2008; Gulbrandsen, 2005; FairTrade (n.d.) Management – Marx and Cuypers, 2010; Gulbrandsen, 2005; FairTrade (n.d.) Ecological – Swartz et al., 2017; Agnew et al., 2014; Auld et al., 2008; Ponte, 2012; Kalfagianni and Pattberg, 2013
Performance Measures/Indicators	Economic/Market – Kalfagianni and Pattberg, 2013; Marx and Cuypers, 2010; Baffoe, 2009; Ward and Phillips, 2009; Shelton, 2009; ITTO, 2008 Social – Kalfagianni and Pattberg, 2013; Perez-Ramirez et al., 2012; Marx and Cuypers, 2010; Ward and Phillips, 2009; Marx, 2008; Gulbrandsen, 2005; FairTrade (n.d.) Management – Marx and Cuypers, 2010; Gulbrandsen, 2005; FairTrade (n.d.) Ecological - Swartz et al., 2017; Agnew et al., 2014; Kalfagianni and Pattberg, 2013; Ponte, 2012; Auld et al., 2008; FairTrade (n.d.)

APPENDIX B: Survey Instruments

(Invitation Letter, Consent Form and Questionnaires)

Dear Sir/Madam,

INVITATION TO PARTICIPATE IN AN ONLINE SURVEY ON THE OUTCOMES OF ENVIRONMENTAL CERTIFICATION

I am Dinah Anoah Okyere, a master's student of the Environmental Policy Program, School of Science and Environment at Grenfell Campus, Memorial University of Newfoundland. I am conducting a research project called 'An assessment of environmental certification and outcomes on sustainability; perspectives of forestry and fishery producers in the Atlantic Region of Canada, Quebec and Maine' as a pre-requisite for my master's degree under the co-supervision of Dr. Paul Foley and Dr. Mike van Zyll de Jong.

This letter invites you to participate in an online survey and potentially, if willing, a telephone interview, which will require your response to questions on: the background of your company of employment, your work experience, reason(s) for adopting certification and recertifying (if applicable), the sustainability outcomes observed or perceived from achieving certification and your satisfaction with environmental certification outcomes. Please note that participation is not compulsory and you are free to withdraw at any point without any implications. Both the survey and interview (if interested) will each require not more than 40 minutes of your time.

Participants for this study are expected to be *knowledgeable about harvesting and production activities, certification processes, management practices in place (and those associated with certification), the performance of the company/organization in relation to sustainability objectives of certification. Participants may include but are not limited to harvesters, supervisors, inventory personnel/managers, management heads, association heads, etc*.

If you are willing to participate, please click on the link provided or copy and paste the link in any web browser to access and complete *this online survey.* Please indicate if you will be willing to take part in the telephone interview proposed. Findings from this study will be made available to survey participants, upon request.

Be sure to contact the principal researcher using the contact details below if you have any questions about this project, e-mail at *dao487@grenfell.mun.ca*, or phone *709 660 5246*.

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of fisheries and forestry producers in the Atlantic Region of Canada.

Consent Statement for Participation

This section briefly introduces the principal researcher, gives the purpose of the study, as well as all the necessary information you may require before consenting to participate. Please read this section carefully, and respond to questions where required.

Research Project: An assessment of environmental certification and outcomes on sustainability; perspectives of forestry and fishery producers in the Atlantic Region of Canada.

Principal Researcher: Dinah Anoah Okyere (Environmental Policy Institute (EPI), Memorial University, Grenfell Campus)

Supervisors: Michael Van Zyll de Jong (Dr.) (EPI, Memorial University) and Paul Foley (Dr.) (EPI, Memorial University)

This is to invite you to participate in a study titled "An assessment of environmental certification and the outcomes on sustainability; perspectives of forestry and fishery producers in the Atlantic Region of Canada."

This form is submitted to gain your consent for your participation in this study. This form gives you a summary of what the study is about, participation for the study, and how information received from participants would be used and disseminated during and after the study. Further details about this study would be duly responded to, should you ask the principal researcher (contact details provided herein).

About the Researcher: My name is Dinah Anoah Okyere, a Master of Arts Environmental Policy (MAEP) student at Memorial University. This study, which also forms my thesis, is a pre-requisite for the successful completion of the MAEP program.

Research Purpose: Over the past two decades, there have been increasing discussions and studies about private, market-driven governance (that is, a mode of regulation emanating from and sustained by multiple interactions and networking, that usually goes beyond traditional state governance), particularly on environmental certification and eco-labelling. Research and discussions have looked at the increasing nature of private governance in natural resources management, the potential ways in which private standards complement or undermine state governance, among others. However, the impacts or outcomes of this system of governance, especially from producer perspective, remain under researched. This study, thus, aims at determining 'on-the-ground' outcomes of environmental certification on the sustainability performance of fisheries and forestry industries in Canada's Atlantic Region. The researcher seeks to identify the direct and indirect outcomes from certification, whether these outcomes are positive or negative and the ways in which these outcomes manifest – be it price premiums, government incentives, market access/niche, etc., and whether businesses are benefitting or losing, on the overall.

Your role in this study: Participants will be required to complete an online survey and/or a telephone interview pertaining to outcomes of third-party certification on the overall performance (i.e. economic, social, ecological and managerial) of selected industries in fisheries and forestry sectors.
Questions will include, but are not limited to: the background of survey participants and companies/organizations, reasons for achieving certification and remaining certified, positive and negative outcomes of third-party certification you have identified/perceive and your level of satisfaction with certification in your sector. Please note that participation is not compulsory. You can skip or not respond to questions based on your discretion, and you can interact freely with the researcher during the (tentative) telephone interview.

Time Factor: The online survey will take not more than 30 minutes to complete, and interviews are scheduled to span for about 30 minutes. The interviewer will respect your decision to end the interview before the scheduled time if you so desire.

Withdrawal from the study: You may withdraw from the study prior to the time period scheduled for the survey or interview. Please contact the researcher, Dinah Anoah Okyere, should you feel the need to withdraw your participation at any point. There are no consequences associated when you withdraw from this study.

Possible benefits: The study may not provide participants for this study with tangible benefits. However, participants may derive personal satisfaction from participating in a study that is likely influence industry, and government policies regarding environmental certification. Results from this study will be very useful in informing and guiding policy makers within government, industry, civil society organizations, certifying organizations etc. about the effectiveness of certification, and providing policy recommendations or inputs towards promoting sustainable natural resource management.

Possible risks: There are no foreseen physical risks, however, the study may lead to the disclosure of sensitive information such as unsustainable production practices (from harvesters or inventory personnel, etc.) as well as company's financial performance (revenue, profit and losses information from management) which may have social, economic and psychological risks. In order to mitigate these risks, responses from participants will be generalized or aggregated, and anonymity of participants will be ensured, if participants so wish. Also, participants may choose either to respond to any question(s) or not to, based on their discretion.

Confidentiality/Anonymity: This study will be published in a thesis report; however, information retrieved from participants will be reported in an aggregate form in order to protect participants from potential/unforeseen risks. Consent forms will be stored separately from data collected to avoid associating a participant name with specific set of responses. You are not expected to provide your name on the materials used.

Data collected from you as part of your participation in this project will be hosted and/or stored electronically by SurveyMonkey, and is subject to their privacy policy, and to any relevant laws of the country in which their servers are located. Therefore, anonymity and confidentiality of data may not be guaranteed in the rare instance, for example, that government agencies obtain a court order compelling the provider to grant access to specific data stored on their servers. If you have questions or concerns about how your data will be collected or stored, please contact the researcher and/or visit the provider's website for more information before participating. The privacy and security policy of the third-party hosting data collection and/or storing data can be found, respectively, at: https://www.surveymonkey.com/mp/policy/privacy- policy/ and https://www.surveymonkey.com/mp/policy/security/

Features that identify participants or selected companies, such as name, physical appearance, company name, etc. will not be disclosed in any report (i.e. thesis report) or publications.

Recording of data: Telephone interviews will be audio-recorded by the researcher, however, with the permission of the interviewee. Please indicate whether you consent to or not to being audio-recorded by checking the appropriate box, provided below. You may ask to have the digital recorder turned off at any point during the telephone interview; in this case, the researcher will only take notes.

Storage of data: All data obtained from the surveys and telephone interviews will be securely stored on the researcher's password-protected laptop and a password-protected USB drive. Only the researcher will have access to these files. All data obtained will be stored for a minimum of five years, as required by Memorial University policy on Integrity in Scholarly Research, after which it will be destroyed.

Reporting of Results: The information obtained from the surveys and telephone interviews will be published in a Master's thesis and most likely, a journal article. Responses from survey and interview participants will be aggregated, unless participants are willing to disclose their identities.

Sharing of results with participants: After the completion of the study, participants will be provided with the results of the study, which will take the form of a draft thesis, if requested.

Questions:

You are welcome to ask questions at any time during your participation in this research. If you would like more information about this study, please contact:

Dinah Anoah Okyere - the principal researcher on: e-mail: dao487@grenfell.mun.ca or phone: 709-660-5246

or:
Research Supervisors

- Dr. Michael van Zyll de Jong: e-mail: michaelv@grenfell.mun.ca or phone: 709-639-2702; and
- Dr. Paul Foley : e-mail: pfoley@grenfell.mun.ca or phone: 709-639-2771

This research has been reviewed by the Grenfell Campus-Research Ethics Board (GC-REB) and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the GC-REB at gcethics@grenfell.mun.ca or by telephone at 709-639-7596.

Consent

Your consent means that:

- You understand the information about the research contained in this document
- You understand what the study is about and what you will be doing
- You are able to ask questions about this study
- You understand that you are free to withdraw from the study at any point, without having to give a reason, and that doing so will not affect you now or in the future

By giving your consent, you do not give up your legal rights, and the researcher(s) is not relieved off their professional responsibilities.

* 1. I have understood the terms provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project, understanding that I may withdraw my consent at any time. I have access to a copy of this consent form for my records.

◯ Yes, I give my consent

◯ No, I do not give my consent

2. Would you be willing to give a follow-up interview to provide further clarifications or details?

◯ Yes

◯ No

3. Do you agree to be audio-recorded, if willing to take part in the interview?

◯ Yes

◯ No

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of fisheries and forestry producers in the Atlantic Region of Canada.

Participant and Company Profile

This section seeks information about the participant's position and experience, as well as the structure and activities of the company/organization in question.

1. What is your position in this company/organization?

- [ ] Director
- [ ] Sales manager
- [ ] Operations manager
- [ ] Financial manager
- [ ] Harvester
- [ ] Other (please specify)

2. How long have you been working in this capacity?

- ◯ 4 years or less
- ◯ 5-9 years
- ◯ 10-14 years
- ◯ 15-19 years
- ◯ 20 years and over

3. What is the size of this company/organization?

- ◯ Small (1 - 99 employees)
- ◯ Medium (100 - 499 employees)
- ◯ Large (500+ employees)
- ◯ Other (please specify)

4. How long has this company/organization been in existence?

- ◯ 1 – 4 years
- ◯ 5-9 years
- ◯ 10-14 years
- ◯ 15-19 years
- ◯ 20 years and over

5. What is/are this company/organization's location(s)? Please select all options that apply.

- ☐ Newfoundland and Labrador
- ☐ New Brunswick
- ☐ Nova Scotia
- ☐ Prince Edward Island
- ☐ Quebec
- ☐ Maine
- ☐ Other (please specify)

6. Which of the following species do you harvest? Please select all options that apply.

- ☐ Snow Crab
- ☐ Lobster
- ☐ shrimp
- ☐ all three species

7. Under which of the under listed categories does this company/organization fall under? Please select all options that apply.

- ☐ Harvesting
- ☐ Processing/Value-addition
- ☐ Wholesale
- ☐ All the above
- ☐ Other (please specify)

8. What is the ownership or institutional arrangement in place?

- [ ] community-based
- [ ] privately owned
- [ ] public owned
- [ ] co-operative
- [ ] Other (please specify)

9. Where are your primary markets? Please select all options that apply.

- [ ] Canada
- [ ] United States of America
- [ ] Asia
- [ ] Europe
- [ ] Other (please specify)

10. Which of the following categories constitute your primary customers? Please select all options that apply.

- [ ] wholesalers
- [ ] retailers
- [ ] food processors
- [ ] food service providers
- [ ] Other (please specify)

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of fisheries and forestry producers in the Atlantic Region of Canada.

Certification Status

This section includes questions about the state of third-party certification in your company/organization.

1. Is this company/organization third party certified?

- ○ Yes
- ○ No

2. Which of the following third-party standards have been achieved by your operation? Please select all options that apply.

- ☐ Marine Stewardship Council (MSC) standard
- ☐ Friend of the Sea
- ☐ Other (please specify)

3. For how long has this company/organization been certified?

- ○ less than 5 years
- ○ 5-9 years
- ○ 10-14 years
- ○ 15-19 years
- ○ Other (please specify)

4. If re-certified, please indicate how many times.

- ◯ Not applicable
- ◯ Once
- ◯ Twice
- ◯ Thrice or more

5. Has this operation's certificate ever been revoked or terminated?

- ◯ Yes
- ◯ No

If yes, please explain or comment here.

6. The following have been identified, from certification programs and various studies, as fundamental objectives of sustainability which certification standards seek to improve in the fisheries sector.
Please rate the objectives using a scale of 0 - 3 (i.e. 0-least important to 3-most important) to indicate the significance/influence of these objectives in this company/organization's decision to certify.

	Least important	Quite important	Important	Most important
Ecological objectives: Promote the health of the world's oceans, aquatic life and overall ecosystem services through sustainable fishing.	○	○	○	○
Economic/market objectives: Maintaining market access and meeting buyer requirements for certification. Recognizing and rewarding sustainably managed fisheries through product differentiation and traceability of certified products, and	○	○	○	○
Social objectives: Ensure safe working conditions that meet human rights standards, improve wages and benefits of employees, and comply with health and safety laws. Promote active stakeholder engagement	○	○	○	○
Management objectives: Promoting management systems that are legally acceptable at local, national, and international levels, and are efficient.	○	○	○	○

\

7. Would you say that the significance of these objectives (per your ranking in question 6) remained the same in your decision to recertify?

- ◯ Yes
- ◯ No
- ◯ Not applicable

Please briefly explain if your answer is no.

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of fisheries and forestry producers in the Atlantic Region of Canada.

Outcomes of Fisheries Certification

This section aims to identify the sustainability outcomes (merits and/or demerits) observed or perceived by producers/organizations after achieving certification.

1. Find below possible economic outcomes of environmental certification in the fisheries sector. Please indicate the extent to which these outcomes have occurred or been observed in your company/organization upon certifying, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(1 a) Retention and expansion of old markets.	○	○	○	○	○	○
(1 b) Access to environmentally-sensitive markets (market niches)	○	○	○	○	○	○
(1 c) Competitive advantage, e.g. price premiums	○	○	○	○	○	○
(1 d) Increased revenue/profit	○	○	○	○	○	○

Please provide a value or percentage to indicate this change, if possible.

Please provide a value or percentage to indicate this change, if possible.

Please provide a value or percentage to indicate this change, if possible.

Please provide a value or percentage to indicate this change, if possible.

2. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices to question 19 above.

	Low confidence in score	Moderately confident in score	Very confident in score
(1 a)			
(1 b)			
(1 c)			
(1 d)			

3. Find below possible ecological outcomes of environmental certification in the fisheries sector. Please indicate the extent to which these outcomes have occurred or are observed in your company/ organization, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(3 a) Improvement in Fishing methods/ activities/ gears to maintain the structure and function of marine ecosystems and ensure less impact on marine ecosystems, and effective annual monitoring (i.e. ecosystem monitoring strategy).						

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(3 b) Maintenance of stocks above target reference point (TRP) to avoid overfishing, and is monitored through stock assessments.						

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(3 c) Adherence to recommended safe fishing methods, that reduce mortality of unwanted catch i.e. prevent or minimize bycatches.						

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

(3 d) Adoption of safe and precautionary approaches that protect endangered, threatened, vulnerable and sensitive aquatic species.

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

(3 e) Improved species regeneration through:
- implementation of habitat management strategy that is conducive for spawning; and
- implementation of stock rebuilding strategy for over fished and endangered species.

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

(3 f)Waste control and safe disposal of waste generated during harvesting and processing.

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

4. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices for question 21 above.

	Low confidence in score	Moderate confidence in score	High confidence in score
(3 a)	○	○	○
(3 b)	○	○	○
(3 c)	○	○	○
(3 d)	○	○	○
(3 e)	○	○	○
(3 f)	○	○	○

5. Find below possible social outcomes of environmental certification in the fisheries sector.
Please indicate the extent to which these certifications outcomes have occurred or are observed in your company/organization, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A
(5 a) Respect and inclusion of resource use rights of local communities, indigenous populations and licensed recreational fishers in management plans.	○	○	○	○	○	○
(5 b) Improved stakeholder engagement between fishing communities, fisheries industries, NGO's, governments (promote co-management).	○	○	○	○	○	○

Please provide examples of these changes, or your comments.

Please provide examples of these changes, or your comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A
(5 c) Implementation of a consistent Corporate Social Responsibility (CSR) plan that includes community developmental projects, employment opportunities for fishing communities, etc.	○	○	○	○	○	○

Please provide examples of these changes, or your comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A
(5 d) Safe and comfortable working conditions for employees – company compliance with all health and safety laws, non-discrimination, freedom of association, etc.	○	○	○	○	○	○

Please provide examples of these changes, or your comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A
(5 e) Protection of employee rights and entitlements	○	○	○	○	○	○

Please provide examples of these changes, or your comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A
(5 f) Enhanced transparency and accountability through public documentation of operational plans, management plans, audit reports, etc.	○	○	○	○	○	○

Please provide examples of these changes, or your comments.

6. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices for question 23 above.

	Low confidence in score	Moderate confidence in score	High confidence in score
(5 a)	○	○	○
(5 b)	○	○	○
(5 c)	○	○	○
(5 d)	○	○	○
(5 e)	○	○	○
(5 f)	○	○	○

7. Find below possible management outcomes of environmental certification in the fisheries sector. Please indicate the extent to which these certifications outcomes have occurred or are observed in your company/organization, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(7 a) Incorporation of precautionary measures and approaches into management plan towards ameliorating uncertainty and adverse impacts of fishing and processing activities.	○	○	○	○	○	○
(7 b) Compliance with national and international regulations on allowable catch, safe fishing methods and protection of endangered/threatened/sensitive fish populations, etc.	○	○	○	○	○	○
(7 c) Improved and more regular data collection/inventory of fish species for assessments and simulation models, towards making pre-informed decisions and reducing uncertainties.	○	○	○	○	○	○

Please provide examples of changes, if any, or comment.

Please provide examples of changes, if any, or comment.

Please provide examples of changes, if any, or comment.

8. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices for question 25 above.

	Low confidence in score	Moderate confidence in score	High confidence in score
(7 a)	○	○	○
(7 b)	○	○	○
(7 c)	○	○	○

9. Are there other outcomes from certification that have not been mentioned here?

- ◯ Yes
- ◯ No

If yes, please list or describe briefly.

10. Which of the following best describes the value of certification to your company/organization?

- ◯ Certification costs are more than the benefits derived
- ◯ Certification costs are less than the benefits derived
- ◯ Certification costs are equal to the benefits derived

Please comment on your response

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of forestry and fisheries producers in the Atlantic Region of Canada.

1. Introduction and Consent Statement

This section briefly introduces the researcher, gives the purpose of the study, as well as all the necessary information required to able to provide your consent. Please read carefully and respond to questions where required, and indicate whether you consent to participating in this study.

Research Project: An assessment of environmental certification and outcomes on sustainability; perspectives of forestry and fishery producers in the Atlantic Region of Canada, Quebec and Maine.

Principal Researcher: Dinah Anoah Okyere (Environmental Policy Institute (EPI), Memorial University, Grenfell Campus)

Supervisors: Michael Van Zyll de Jong (Dr.) and Foley Paul (Dr.) (EPI, Memorial University)

This is to invite you to participate in a study titled "An assessment of environmental certification and the outcomes on sustainability; perspectives of forestry and fishery producers in the Atlantic Region of Canada, Quebec and Maine." This form is submitted to gain your consent for participating in this study. The following are discussed: what this study is about, participants for this study, how information received would be used and disseminated during and after the study, among others. Further details about this study would be duly responded to, should you ask the principal researcher (contact detaills provided herein). Please read this document thoroughly and provide responses where required.

About the Researcher: My name is Dinah Anoah Okyere, a Master of Arts Environmental Policy (MAEP) student at Memorial University. This study, which also forms my thesis, is a pre-requisite for the successful completion of the MAEP program.

Research Purpose: Over the past decade, there have been increasing discussions and studies about private, market-driven governance (that is, a mode of regulation emanating from and sustained by multiple interactions and networking, that usually goes beyond traditional state governance), particularly on environmental certification and eco-labelling. Research and discussions have looked at the increasing nature of private governance in natural resources management, the potential ways in which private standards complement or undermine state governance, among others. However, the impacts or outcomes of this system of governance, especially from producer perspective, remain under researched. This study, thus, aims at determining 'on-the-ground' outcomes of environmental certification in sustaining the forestry and fisheries industries within Canada's Atlantic Region, Quebec and Maine. The researcher seeks to identify the (direct and indirect) outcomes from certification, whether these outcomes are positive or negative and the ways in which these outcomes manifest – be it price premiums, government incentives, market access/niche, etc, and whether businesses are benefitting or losing, on the overall.

Your role in this study: Participants will be required to complete an online survey and/or a telephone interview pertaining to outcomes of third-party certification (or non-certification) on the sustainability performance (i.e. economic, social, ecological and managerial) of selected fisheries and forestry producers and organizations. Questions will include, but are not limited to: the background of participating companies, profile of survey participants, reasons for achieving certification or remaining non-certified, positive and negative outcomes of third-party certification you have identified and your level of satisfaction with certification in the industry or sector. Please note that, participation is not compulsory. You can skip or not respond to questions if need be, and you can interact with the researcher freely in the course of the interview.

Time Factor: The online survey will take not more than 30 minutes to complete, and the interview is scheduled to span for about 30minutes. The interviewer will respect your decision to end the interview before the scheduled time if you so desire.

Withdrawal from the study: You may withdraw from the study prior to the time scheduled for the survey or interview. Please contact the researcher, Dinah Anoah Okyere, should you feel the need to withdraw your participation at any point. There are no consequences associated when you withdraw from this study.

Possible benefits: The study may not provide participants for this study with tangible benefits. However, participants may derive personal satisfaction from participating in a study that is likely influence industry, and government policies regarding environmental certification. Results from this study will be very useful in informing and guiding policy makers within government, industry, civil society organizations, certifying organizations etc. about the effectiveness of certification, and providing policy recommendations or inputs towards promoting sustainable natural resource management.

Possible risks: There are no foreseen physical risks, however, the study may lead to the disclosure of sensitive information such as unsustainable production practices (from harvesters or inventory personnel, etc.) as well as company's financial performance (revenue, profit and losses information from management) which may have social, economic and psychological risks. In order to mitigate these risks, responses from participants will be generalized or aggregated, and anonymity of participants will be ensured, if participants so wish. Also, participants either may choose to respond to any question or not to, based on their discretion.

Confidentiality/Anonymity: This study will be published in a thesis report, however, information retrieved from participants will be reported in an aggregate form in order to protect participants from potential/unforeseen risks. Consent forms will be stored separately from data collected to avoid associating a participant name with specific set of responses. Please you are not expected to provide your name on the materials used, unless you wish to be identified.

Data collected from you as part of your participation in this project will be hosted and/or stored electronically by SurveyMonkey, and is subject to their privacy policy, and to any relevant laws of the country in which their servers are located. Therefore, anonymity and confidentiality of data may not be guaranteed in the rare instance, for example, that government agencies obtain a court order compelling the provider to grant access to specific data stored on their servers. If you have questions or concerns about how your data will be collected or stored, please contact the researcher and/or visit the provider's website for more information before participating. The privacy and security policy of the third-party hosting data collection and/or storing data can be found, respectively, at: https://www.surveymonkey.com/mp/policy/privacy- policy/ and https://www.surveymonkey.com/mp/policy/security/
Features that identify participants or selected companies, such as name, physical appearance, company name, etc. will not be disclosed in any report (i.e. thesis report) or publications.

Recording of data: Telephone interviews will be audio-recorded by the researcher, however, with the permission of the interviewee. Please indicate whether you consent to or not to being audio-recorded by checking the appropriate box, provided below. You may ask to have the digital recorder turned off at any point during the telephone interview; in this case, the researcher will only take notes.

Storage of data: All data obtained from the surveys and telephone interviews will be securely stored on the researcher's password-protected laptop and a password-protected USB drive. Only the researcher will have access to these files. All data obtained will be stored for a minimum of five years, as required by Memorial University policy on Integrity in Scholarly Research, after which it will be destroyed.

Reporting of Results: The information obtained from the surveys and telephone interviews will be published in a Master's thesis and most likely, in a journal. Responses from survey and interview participants will be aggregated, unless participants are willing to disclose their identities.

Sharing of results with participants: After the completion of the study, participants will be provided with the results of the study, which will take the form of a draft thesis, if requested.

Questions:

You are welcome to ask questions at any time during your participation in this research. If you would like more information about this study, please contact:

Dinah Anoah Okyere (principal researcher), e-mail: dao487@grenfell.mun.ca or phone: 709-660-5246
or
Research Supervisors:

- Dr. Michael van Zyll de Jong, e-mail: michaelv@grenfell.mun.ca or phone: 709-639-2702
- Dr. Paul Foley, e-mail: pfoley@grenfell.mun.ca or phone: 709-639-2771

The proposal for this research has been reviewed by the Grenfell Campus-Research Ethics Board (GC-REB) and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the GC-REB at gcethics@grenfell.mun.ca or by telephone at 709-639-7596.

Consent

Your consent means that:

- You understand the information about the research contained in this document
- You are able to ask questions about this study
- You are satisfied with the answers to all of your questions
- You understand what the study is about and what you will be doing
- You understand that you are free to withdraw from the study within six months of your interview date, without having to give a reason, and that doing so will not affect you now or in the future

If you give consent, you do not give up your legal rights, the researcher(s) is not relieved from their professional responsibilities.

* 1. I have understood the terms and expectations; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research, understanding that I may withdraw my consent at any time. I have access to this consent form for my records.

◯ Yes, I give my consent

◯ No, I do not give my consent

2. Would you be willing to potentially give a follow-up interview for further clarifications or details?

◯ Yes

◯ No

3. Do you agree to be audio-recorded during the interview, if willing to be interviewed?

◯ Yes, I agree

◯ No, I do not agree

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of forestry and fisheries producers in the Atlantic Region of Canada.

2. Participant and Company/Organisation Profile

This section asks questions about participant's position and work experience, company/organization's structure, and operations.

1. What is your position in this company/organization?

- [ ] Director
- [ ] Sales manager
- [ ] Operations manager
- [ ] Financial manager
- [ ] Harvester
- [ ] Other (please specify)

2. How long have you been working in this capacity?

- ◯ 4 years or less
- ◯ 5-9 years
- ◯ 10-14 years
- ◯ 15-19 years
- ◯ 20 years and over

3. What is the size of this company/organization?

- ◯ Small (1 - 99 employees)
- ◯ Medium (100 - 499 employees)
- ◯ Large (500+ employees)
- ◯ Other (please specify)

4. How long has this company/organization been in existence?

- ◯ 1 – 4 years
- ◯ 5-9 years
- ◯ 10-14 years
- ◯ 15-19 years
- ◯ 20 years and over

5. What is/are this company/organization's location(s)? Please select all options that apply.

- ☐ Newfoundland and Labrador
- ☐ New Brunswick
- ☐ Nova Scotia
- ☐ Prince Edward Island
- ☐ Quebec
- ☐ Maine
- ☐ Other (please specify)

Under which of the under listed categories does this company/organization fall under? Please select all options that apply.

- ☐ Harvesting
- ☐ Processing/Value-addition
- ☐ Wholesale
- ☐ All the above
- ☐ Other (please specify)

7. What is the ownership or institutional arrangement in place?

- [ ] community-based
- [ ] privately owned
- [ ] public owned
- [ ] co-operative
- [ ] Other (please specify)

8. Where are your primary markets? Please select all options that apply.

- [ ] Canada
- [ ] United States of America
- [ ] Asia
- [ ] Europe
- [ ] Other (please specify)

9. Which of the following categories constitute your primary customers? Please select all options that apply.

- [ ] wholesalers
- [ ] retailers
- [ ] packaging companies
- [ ] Other, please specify

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of forestry and fisheries producers in the Atlantic Region of Canada.

3. Certification Status

This section includes questions about the state of third-party certification in your company/organization.

1. Is this company/organization third party certified?

- ◯ Yes
- ◯ No

• Which of the following third-party standards have been achieved by this company/organization? Please select all options that apply.

- ☐ Canadian Standards Association (CSA)
- ☐ Forest Stewardship Council (FSC)
- ☐ Programme for the Endorsement of Forest Certification (PEFC)
- ☐ Sustainable Forestry Initiative (SFI)
- ☐ Other (please specify)

3. For how long has this company/organization been certified?

- ◯ less than 5 years
- ◯ 5-9 years
- ◯ 10-14 years
- ◯ 15-19 years
- ◯ Other (please specify)

4. If re-certified, please indicate how many times.

- ◯ Not applicable
- ◯ Once
- ◯ Twice
- ◯ Thrice or more

5. Has this operation's certificate ever been revoked or terminated?

- ◯ Yes
- ◯ No

If yes, please explain or comment here.

The following have been identified, from the goals of certifying organizations and research in this field, as fundamental objectives of sustainable management, which certification standards seek to improve in the forestry sector.
Please rank the objectives using a scale of 0 - 3 (i.e. 0-least important to 3-most important) to indicate the significance/influence of the following objectives in this company/organization's decision to certify.

	Least important	Quite important	Important	Most important
Ecological objectives: Promote ecosystem-based management and ecological productivity in Forest Management Units (FMU's) to improve forest environments as well as overall ecosystem functions.	○	○	○	○
Economic/market objectives: Maintaining market access and meeting buyer requirements for certification. Recognizing and rewarding sustainably managed forest operations through product differentiation, traceability systems, and market incentives.	○	○	○	○
Social objectives: Ensure safe working conditions that meet human rights standards, improve wages and benefits of employees, and comply with health and safety laws. Promote active stakeholder engagement	○	○	○	○
Management objectives: Promote management systems that are legally acceptable at local, national, and international levels, and are efficient.	○	○	○	○

7. Is the main reason for deciding to certify (per your ranking in question 6) still same for recertifying?

- ◯ Yes
- ◯ No
- ◯ Not applicable

Please briefly explain if your answer is no.

GRENFELL CAMPUS | MEMORIAL UNIVERSITY

Assessing the outcomes of environmental certification on sustainability; perspectives of forestry and fisheries producers in the Atlantic Region of Canada.

4. Outcomes of Forest Certification

This section aims to identify the sustainability outcomes (merits and/or demerits) observed or perceived by forest producers/organizations after achieving certification.

Find below possible economic outcomes of environmental certification in the forestry sector. Please indicate the extent to which these outcomes have occurred or been observed in your company/organization upon certifying, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(1 a) Retention and expansion of old markets.	◯	◯	◯	◯	◯	◯
(1 b) Access to environmentally-sensitive markets (market niches)	◯	◯	◯	◯	◯	◯

Please provide/estimate a value or percentage of change, if applicable.

Please provide/estimate a value or percentage of change, if applicable.

(1 c) Competitive advantage, e.g. price premiums, increase in product price, etc.

Please provide/estimate a value or percentage of change, if applicable.

(1 d) Increased revenue/profit

Please provide/estimate a value or percentage of change, if applicable.

11. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices to question 18 above.

	Low confidence in score	Moderately confident in score	Very confident in score
(1 a)			
(1 b)			
(1 c)			
(1 d)			

3. Find below possible ecological outcomes of environmental certification in the forestry sector. Please indicate the extent to which these outcomes have occurred or are observed in your company/ organization, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
Increased/improved rate of regeneration of forests (via natural regeneration						

or planting processes)
Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(3 b) Avoidance of practices that disrupt ecological functions and services within Forest Management Units (FMU's), and periodic monitoring processes within FMU's (ecological resources assessments) to enhance adaptive management.	○	○	○	○	○	○

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(3 c) Protection of endangered plant and animal species and sensitive habitats in FMU's through best practices such as demarcation and protection of High Value Conservation Forests(HVCF's)	○	○	○	○	○	○

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(3 d) Reduced pollution of soil, water and air on FMU's by avoiding chemical products and equipment that pollute						

the air or degrade the land (via rutting, erosion), creating riparian buffer zones and stream protection to protect water sources.	○	○	○	○	○	○

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

(3 e) Reduction of waste from harvesting and processing activities, and safe disposal of waste generated.	○	○	○	○	○	○

Please provide examples of best practices introduced as a result of certifying, if any, or give comments.

7. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices for question 20 above.

	Low confidence in score	Moderate confidence in score	High confidence in score
(3 a)	○	○	○
(3 b)	○	○	○
(3 c)	○	○	○
(3 d)	○	○	○
(3 e)	○	○	○

5. Find below possible social outcomes of environmental certification in the forestry sector.
Please indicate the extent to which these certification outcomes have occurred or are observed in your company/organization, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A
(5 a) Respect and inclusion of resource use rights of forest communities / indigenous populations and	○	○	○	○	○	○

indigenous populations and recreational/licensed users

Please provide examples of changes/modified practices as a result of certifying, or provide comments if applicable.

(5 b) Improved stakeholder engagement between forest/indigenous communities, industries, Environmental NGO's, governments (e.g. formation of a Public Advisory Committee for representing different stakeholders and contributing to decision-making).

Please provide examples of changes/modified practices as a result of certifying, or provide comments if applicable.

(5 c) Promotion of Corporate Social Responsibility (CSR) plan,

Please provide examples of changes/modified practices as a result of certifying, or provide comments if applicable.

Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (Significant increase/improvement)	N/A

(5 d) Safe and comfortable working conditions for employees – company compliance with all health and safety laws, non-discrimination, freedom of association, etc.

Please provide examples of changes/modified practices as a result of certifying, or provide comments if applicable.

(5 e) Protection of employee rights and entitlements

Please provide examples of changes/modified practices as a result of certifying, or provide comments if applicable.

(5 f) Enhanced transparency and accountability of operations and management initiatives through periodic publishing of operational plans, management plans, audit reports, etc.

Please provide examples of changes/modified practices resulting from certification, or provide comments if applicable.

8. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices for question 22 above.

	Low confidence in score	Moderate confidence in score	High confidence in score
(5 a)			
(5 b)			
(5 c)			
(5 d)			
(5 e)			
(5 f)			

2. Find below possible management outcomes of environmental certification in the forest industry. Please indicate the extent to which these certification outcomes have occurred or are observed in your company/organization, by choosing from a scale of -2 (low/significant decrease) to 2 (high/significant increase).

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
Application of precautionary and adaptive Approaches that minimizes uncertainty and Irreversible negative impacts	○	○	○	○	○	○

Please provide examples of management changes/provisions due to certification, if any, or comment.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(7 b) Improved forest management plan that protects ecological value of forest resources, outlines management approaches and their underlying rationales, highlights annual allowable harvest, etc.,	○	○	○	○	○	○

Please provide examples of management changes/provisions due to certification, if any, or comment.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(7 c) Strict adherence to all legal requirements for forest management, i.e. national, international and indigenous peoples' forest laws/agreements as well as certification standards.	○	○	○	○	○	○

Please provide examples of management changes/provisions due to certification, if any, or comment.

	Low (significant decrease)	Slightly low (small decrease)	No change (same as before)	Moderate (small increase/improvement)	High (significant increase/improvement)	N/A
(7 d) Improved and regular data collection/inventory of forest resources for assessments and simulation models in making pre-informed management decisions and in monitoring and evaluating plans/initiatives.	○	○	○	○	○	○

Please provide examples of management changes/provisions due to certification, if any, or comment.

(7 e) Clarity of ownership/ tenure rights, local and recreational use rights, and creation of effective systems for dispute resolution among forest owners/users/stakeholders.	○	○	○	○	○	○

Please provide examples of management changes/provisions due to certification, if any, or comment.

3. On a scale of 1 (low confidence) to 3 (high confidence), please rate your level of confidence in your choices for question 24 above.

	Low confidence in score	Moderate confidence in score	High confidence in score
(7 a)	○	○	○
(7 b)	○	○	○
(7 c)	○	○	○
(7 d)	○	○	○
(7 e)	○	○	○

Are there other outcomes from forest certification that are not been mentioned here?

- ◯ Yes
- ◯ No

If yes, please list or describe briefly.

4. Which of the following statements best describes the value of certification to your company/organization?

- ◯ Certification costs outweigh the benefits derived
- ◯ Certification costs are less than the benefits derived
- ◯ Certification costs are equal to the benefits derived

Please comment on your response.