

**Canadian Regional
Development**
A Critical Review of Theory,
Practice, and Potentials



**Développement régional
canadien**
Un examen critique des théories,
des pratiques et des potentiels

Northern Peninsula Innovation Report

January 2014

Prepared by:
Kyle White and Kelly Vodden
Memorial University



Table of Contents

Acknowledgements.....	3
Contact Information.....	3
Abbreviations.....	4
Introduction.....	5
Study Region.....	5
Innovation Policy in Newfoundland and Labrador.....	7
Innovation, Business, and Rural Development.....	8
Atlantic Canada Opportunities Agency.....	9
Research and Development Corporation.....	13
National Research Council.....	13
Innovation Indicators.....	13
Data Collection.....	16
Methodology.....	16
New Programs, Products, or Services (Examples of Innovation).....	16
Support Programs/Agencies.....	17
Training/Learning.....	18
New Ideas.....	18
Open to Change.....	19
Reflection/Evaluation.....	20
Collaboration.....	20
Challenges to Innovation.....	21
Moving Forward.....	22
References.....	25

Acknowledgements

We would like to extend our thanks to the respondents that participated in the project, without their help this project would surely be lacking. We would like to thank the Rural Secretariat, the Harris Center, and the Social Sciences and Humanities Research Council for their financial support. We would also like to thank Ryan Gibson, Heather Hall, and Jacqui Walsh for their contributions to this report. Finally we want to thank the Canadian Regional Development research team for their contributions and continuous support.

Contact Information

Kyle White

B.A. (Honors) candidate, Department of Geography
Memorial University
230 Elizabeth Avenue
St. John's, NL
A1B 3X9
E-mail: ksw355@mun.ca

Kelly Vodden

Associate Professor (Research), Environmental Policy Institute
Memorial University, Grenfell Campus
1 University Drive
Corner Brook, NL
A2H 6P9
E-mail: kvodden@grenfell.mun.ca

Abbreviations

ACOA: Atlantic Canada Opportunities Agency
AES: Advanced Education and Skills
AINL: Advancing Innovation in Newfoundland and Labrador
CBDC: Community Business Development Corporation
CNA: College of the North Atlantic
DFA: Department of Fisheries and Aquaculture
DFO: Department of Fisheries and Oceans
DTAPP: Digital Technology Adoption Pilot Project
EI: Employment Insurance
IBRD: Innovation, Business, and Rural Development
MI: Marine Institute
MNL: Municipalities Newfoundland and Labrador
MUN: Memorial University of Newfoundland
NGO: Non-government organization
NLREDA: Newfoundland and Labrador Regional Economic Development Association
NPBN: Northern Peninsula Business Network
NRC: National Research Council
OECD: Organization for Economic Cooperation and Development
RDC: Research and Development Corporation
REDB: Regional Economic Development Board
SABRI: St. Anthony Basin Resource Ltd.
VTTA: Viking Trail Tourism Association

Introduction

“Canadian Regional Development: A Critical Review of Theory, Practice and Potentials” is a cross Canada, multi-disciplinary study of regional development theory, policy, and practice in Canadian regions. The project is based in four provinces across Canada: British Columbia, Newfoundland and Labrador, Ontario, and Quebec, and in five select study regions within these provinces. The project is focused on five key themes in regional development: multi-level collaborative governance, learning and innovation, rural-urban relationships, place-based development, and integrated development. Combined, these themes form the basis of “New Regionalism”, an emerging approach to regional development (see Markey, 2011 for more information).

This report provides an overview of our findings related to the theme of learning and innovation within the Northern Peninsula region of Newfoundland and Labrador (NL), which is described further below. There is no single, agreed upon definition of innovation, but the research team has drawn from two of these definitions. First, Dicken (2007) states that “*Innovation, put simply, is the creation or diffusion of new ways of doing things.*” Adding scale and regional perspectives to the concept, the Organization for Economic Co-operation and Development (OECD, 2005) describes innovation as:

The implementation of new or significantly improved product, process, marketing or organizational method.

Innovation in regional development, for example, may include new ways of organizing and/or sharing information within or across organizations, new strategies for addressing local challenges and opportunities, or new forms of investment. We are considering an innovation as something that is new to the region, rather than new to the world.

Recognizing these definitions, innovation does not rely necessarily on invention, but rather more broadly on new approaches that occur at different scales to address current and emerging needs and opportunities. Furthermore, innovation can be thought of in terms of a system, involving multiple actors connecting to foster learning and produce innovation. The capabilities of these regional innovation systems vary depending on proximity of actors, available resources, and institutional thickness (Amin and Thrift, 1995; Cooke, 2001). For more on how innovation and learning are conceptualized within this study see (Vodden et al. 2013). This report will discuss the context of innovation and learning within the Northern Peninsula, providing an overview of social, economic, political, and practical components.

Study Region

The Canadian Regional Development team has identified five study regions in four provinces across Canada that will be subject of analysis. Newfoundland and Labrador contains two of the study regions: Kittiwake (Gander New-Wes-Valley) and the Great Northern Peninsula (St.

Anthony-Port au Choix)¹ the latter being the study region for this report (pictured below). Aside from being a site of innovation, the Northern Peninsula offers multiple characteristics that are unique to Newfoundland and Labrador, the other study regions, and Canada.

Figure 1: The Great Northern Peninsula



Source: Created by Charles Conway

The 2006 population on the Northern Peninsula was 13,140, which represents a 12.6% decline from the 2001 census of 15,035. This demographic decline has been consistent since 1986 when the population was 19,260. This regional decline is more rapid than the provincial decline of 1.5% during the same period (512,930 down to 505,470). The province has been experiencing a decline since 1991 when the population was 568,475. The median age on the Northern Peninsula in 2006 was 43, which is similar to the provincial statistic of 42, indicating that both the region and the province have an aging population. Net migration on the Northern Peninsula was 0.68% (a loss of 85 individuals) contrary to the provincial net migration of 0.56% (2895 individuals from 2001-2006). Based on this data the Northern Peninsula is depopulating and aging at a faster rate than Newfoundland and Labrador (Community Accounts, 2013).

In 2009 the gross personal income per capita on the Northern Peninsula was \$23,700. This is lower than the provincial average, which is \$27,700. However, the region experienced a substantial increase since 1992 when the income per capita was \$11,500. This increasing trend

¹ The Northern Peninsula can also be divided based on economic development regions in which case the region is split into Zone 6: Nordic and Zone 7: RED Ochre. For this study, the Rural Secretariat region (St. Anthony-Port aux Choix) will constitute the study region's boundaries.

has been constant with the exception of 1999-2000 a slight decline occurred. The province also experienced this income per capita rise over the same period. (\$13,000 to \$27,700). A combination the region's demography and economics provides a self-reliance ratio of 66.8% meaning 33.2% of regional income is from government transfers, such as pensions, employment insurance, and income support assistance (Community Accounts, 2013).

The majority of occupations on the Northern Peninsula are in primary sectors (forestry, fish harvesting, etc.), the service sector, and construction related occupations. The fields with the greatest number of average weeks worked are health, management, and education. This reflects the seasonal nature of employment in the primary resource sectors and helps explain the higher dependence on government transfers in the region. For example, 57.8% of the labor force collected Employment Insurance in 2011; this statistic has been consistent since 1992 when the incidence was greater (Community Accounts, 2013). This has partially been a result of the reliance on the seasonal fishery; 25% of those working in the region are employed in the fishery (Tucker et al, 2011).

In 2006, 61.1% of the regional population between 18 and 64 had a high school diploma or higher, meaning 38.9% of the residents in the workforce have not completed high school. 10.7% of people aged between 18 and 64 have apprenticeships/trade certification, 15.6% have some form of non-university training, and 10% have a university degree, diploma, or certificate. The provincial statistics are consistently higher which may be reflective of the lack of post-secondary institutions on the Northern Peninsula. High education levels (20.6% with bachelor's degree or higher) are concentrated on the Avalon Peninsula (specifically St. Johns) where the majority of education facilities are located (Community Accounts, 2013a). Furthermore, many respondents state that young people leave the region once they acquire higher education in search of greater employment prospects (Community Accounts, 2013).

Innovation Policy in Newfoundland and Labrador

A range of financial support and expertise is available to innovators on the Northern Peninsula. Innovation requires the assistance of other firms, NGOs, and government departments. Furthermore, support agencies are mandated to support and fund the private sector to enhance the region/country's competitive edge in the global economy (Pike et al, 2008). This section will explore how government policy and programs can enable organizations to innovate or increase their innovative capacity. Innovation literature emphasizes the role of governments in facilitating innovation. The triple helix partnership of post-secondary institutions, the private sector, and government can bring research, financial resources, and entrepreneurial commercialization capacity together to create innovation (Etzkowitz, 2008). The triple helix has been expanded to a quadruple helix as in Foray et al (2012) to include NGOs and community support.

At both the provincial and federal levels of government, programs are available to organizations to assist them with innovative projects. The following tables highlight programs that are part of the provincial innovation strategy and federal innovation initiatives. The programs come from the provincial department of Innovation, Business, and Rural development (IBRD) and the federal Atlantic Canada Opportunities Agency (ACOA). Research and development initiatives of

the provincial Research and Development Corporation and federal National Research Council are also included.

Innovation, Business, and Rural Development

The provincial government of Newfoundland and Labrador seeks to foster innovation in the province by providing programs, funding, and advice via the department of Innovation, Business, and Rural Development (IBRD; formerly known and frequently referred to as Innovation, Trade, and Rural Development or INTRD). This is part of the provincial innovation strategy that commenced March 2006 with \$20 million in funding. The goals of this strategy are to increase collaboration, create an innovative culture, foster research and development, enhance education and skills in the province and increase the competitive economy of Newfoundland and Labrador. The following table provides a description and amount of funding associated with each program (INTRD, 2006).

Table 1: IBRD innovation funding programs

Program	Funding	Description
Commercialization program	Up to \$500,000	This fund is intended to assist in the bringing to market of new products or services. Funding ought to cover costs of labor, capital, developments, and testing. This fund allows innovative ideas to become commercialized and available to the public.
Technology utilization program	Up to \$100,000	This fund is intended to provide organizations the means to introduce new types of technology into their ordinary operations. This is intended to make organizations more environmentally friendly and efficient. Only Newfoundland and Labrador-based co-ops or business networks are eligible for this funding.
Innovate and demonstrate program	Up to \$50,000	This fund is intended to help reduce any costs associated with sharing innovative ideas with a public sector audience. This fosters the sharing of ideas on marketing, development, commercialization, and strategic planning.
Innovation enhancement program	Up to \$250,000	This fund is intended to assist organizations increase their innovative capacity by way of training, collaboration, introducing new items, improving strategies, and participating in skill enhancing activities.
Young entrepreneurs and innovators program	Various funds depending on quantity and quality of project as well as the endeavor	This program offers funding to provincial youth to cover the costs of marketing, development, start-up costs, training, mentoring, and research. The program is intended to encourage youth led business and subsequently retain more young people in the province.

Source: Department of INTRD, 2012; 2012a; 2012b; 2012c; 2012d; 2012e; 2012f

Since this initial research, IBRD consolidated their program offerings into two categories in March 2013: Business Development Programs and Non-Commercial Programs. Within these categories are several new programs available to firms and other organizations seeking to enhance innovation and regional development in the province. The Department still upholds the goals from the 2006 strategic plan but have modified their methods of achieving this goal. The following table outlines these programs:

Table 2: New IBRD programs

Program	Description
Business Investment	Three sub-programs
Business Investment	Term Loans and/or equity investments are available to small and medium sized firms hoping to expand/grow and build on region strengths.
Business Development	Grants are available to firms that wish to enhance aspects of their business. This includes new technologies, green technologies, market development/expansion, training, and technical assistance.
Investment Attraction	Loans or equity investment is available to firms that are intending to expand or invest in the province particular emphasis is placed on new sector developments.
Regional Development	Two sub-programs
Regional Development	Grants are available to projects that link non-commercial activities to business support or economic improvement. Focus must pertain to infrastructure, marketing, research, and Capacity enhancement.
Partnership and Capacity Building	Grants are available to projects that facilitate community development by uniting multi-level insight, planning, and the private sector.

Sources: IBRD, 2013a; 2013b

Atlantic Canada Opportunities Agency

The Atlantic Canada Opportunities Agency oversees the provision of funding and knowledge partnerships in Atlantic Canada for the federal government. The department has several overarching programs (*Atlantic Innovation Fund*, *Business Development Program*, *Young Entrepreneur Development Initiative*, and *Innovative Communities Fund*) that include multiple sub-programs which are available to the economic actors to support economic development.

The *Atlantic Innovation Fund* is intended to provide organizations with assistance in conducting research and development so that new knowledge, jobs, and opportunities can be introduced to the region. The program was initiated in 2001 and has maintained a central role in increasing the competitive role for Atlantic Canadians in the global economy. Since 2001, \$196 million has been invested in Newfoundland and Labrador from this program and this has resulted in 240 new partnerships, more than 300 new workers, and more than 120 new products reaching commercialization. There have been four leading recipients of this fund: Information and communications technology (20.2%), manufacturing and processing (19.8%), energy (19.8%), and oceans technology (19.2%). Funding is determined by the quality and magnitude of the project (Atlantic Canada Opportunities Agency, 2013e).

The *Business Development Program* is intended to aid business owners establish, improve, and increase the capacity of their individual firm. For firms to be eligible for this program they must: be economically viable, provide evidence of their need for financial assistance, and ensure economic benefits to the community or region. ACOA provides 50% assistance on constructing or purchasing a building, purchasing necessary equipment, investing in expansionary capital, improving existing facilities, leasing equipment, constructing necessary infrastructure, acquiring intangible assets (patents, licenses etc.), and start-up costs. ACOA also provides 75% assistance on marketing, training, productivity/quality improvement, innovation, consultant advice, contract bidding, business proposal development and business support. Examples of approved initiatives include hosting trade shows, constructing a cold storage facility, and developing promotional advertisements for tourism. The vast majority of programs granted to Newfoundland and Labrador organizations are under the Business Development Fund. Funding is determined by the quality and magnitude of the project (Atlantic Canada Opportunities Agency, 2013d).

The *Young Entrepreneur Development Initiative* is a funding program that assists organizations to improve the business potential of entrepreneurs in Atlantic Canada who are under 35 years of age. ACOA assists with the provision of skill building projects for youth such as entrepreneurship courses and workshops, events that encourage business planning, and youth business camps. ACOA is also willing to assist projects that support young entrepreneurs that are already established including mentorship programs, workshops, conferences that foster entrepreneurial learning, roundtable discussions, local support networks, and to develop strategies that address youth out-migration. Funding is determined by the quality and magnitude of the project (Atlantic Canada Opportunities Agency, 2013b).

The *Innovative Communities Fund* is intended to build on the strengths of a community by ensuring the partnership of local stakeholders that benefit from sustainable growth. The objectives of the program include developing key industrial sectors that will benefit the community, improve community infrastructure, and enhance communities' ability to overcome challenges associated with economic development by building on their strengths and assets. Organizations that are eligible for program assistance will have a set project plan, work towards sustainable and viable economic activity, benefit the community, be consistent with contemporary challenges and opportunities in the community, and demonstrate ties to the community. Funding is determined on the quality and magnitude of the project (Atlantic Canada Opportunities Agency, 2013c).

The following table depicts several sub-programs that relate to innovation in Newfoundland and Labrador. The value ranges and program descriptions are derived from funding that has been issued to organizations in Newfoundland and Labrador for specific projects since 2000 (Atlantic Canada Opportunities Agency 2013a; e).

Table 3: ACOA innovation funding programs

Program	Funding Range	Program Description
Productivity and Business Skills	\$3,280-\$50,000	ACOA will contribute to the costs of increasing a firms potential to produce. This may include bettering the workforce, incorporating new production strategies, or formulate a new

		business plan. Examples include hiring new staff, training staff, and re-evaluating business plans.
Aspiring Entrepreneurs	\$3,000- \$447,683	ACOA will contribute to the costs of an initiative that fosters the enhancement of entrepreneurial skills among youth, increases young entrepreneurial activity, and engages youth in the business community. Examples include the Junior Achievement rural expansion, youth career fairs, and student leadership conferences.
Trade, Education, and Skills Development	\$3,795- \$986,060	ACOA will contribute to the cost of an initiative that fosters training, learning in the workplace, enhancement of skills, or exportation of products. Examples include mentor programs, reverse trade shows, trade missions, and improving business curriculums.
Proactive investments	\$20,502-\$4,452,000	ACOA will contribute to the cost of an initiative that will better a community as a whole encompassing multiple industries and organizations. Examples include carrying out exploratory drilling, establishing a Titanic commemoration, and renovate existing marinas.
Innovation partnering service	\$1,524-\$17,440	ACOA will contribute to the cost of forming a partnership between two organizations that will likely lead to innovation on part of the participants. Examples of participants include Futureworks Inc., Genesis Group, and Long Island Resource Ltd.
Commercialization	\$24,000-\$320,000	ACOA will contribute to the cost of bringing a new idea to commercialization or to the availability of the public. Examples include designing the distance learning strategy, develop pilot projects, and attending a world education conference.
New product research and development	\$3,220-\$525,000	ACOA will contribute to the costs of conducting research and developing new products or services that are intended to improve an existing entity or commercialize a novel product. Examples include development of a Newfoundland ornamental plant, commercialize the wireless web extension plans, and provide consulting services for the helideck simulator.
Research infrastructure fund	\$14,000-\$454,200	ACOA will contribute to the cost of enhancing existing infrastructure for conducting research in formalized and practical settings. Examples include replace a liquid nitrogen facility, purchasing equipment to conduct genetic research, and establish fishery by-products

		research center.
Technology solutions	\$14,000-\$156,000	ACOA will contribute to the cost of researching and incorporating new technologies into practices to solve an ongoing problem. Examples include researching value-added forestry production, study waste diversion strategies for the province, and investigate by-product utilization.
Applied research and development	\$64,000-\$1.2 million	ACOA will contribute to the costs of a research endeavor that is expected to produce tangible results which can be applied to better actual practices. Examples include fishery research.
Technology internship	\$17,325-\$22,500	ACOA will contribute to the hiring of a new intern in a firm who will contribute to the technological awareness of a firm while providing experience to the individual. Examples include seismic Geophysicists, wireless software developer, and technical assistants.
Productivity and product enhancement	\$4,704-\$170,360	ACOA will contribute to the cost of a project that will improve an existing product or a firm's ability to produce. This includes improving technology and the capabilities of the workforce. Examples are conducting a cod grading pilot project, develop breaded and stuffed squid products, and host cod quality workshop.
Emerging fisheries development	\$3,200-\$525,277	ACOA will contribute to the cost of a development initiative related to the Newfoundland and Labrador fishery that will produce better results in processing, extraction, and sale. Examples include recovering crab liver from offal process, conduct sea urchin biomass study, and design a mechanical seaweed dryer.
Ocean technology contract fund	\$144,000-\$240,000	ACOA will contribute to the cost of developing a technological advancement related to oceans and marine industries. Examples include developing a selective harvesting system, developing mobile gear positioning system, and developing a high resolution hand held sonar.
Market intelligence and trade development	\$3,568-\$240,000	ACOA will contribute to the cost of determining the market acceptance and development of a new or improved program or service. Examples include exploring opportunities for exporting seal skins, develop a website for fisheries diversification, and hiring a coordinator for administrative support.
Export Opportunity Identification	\$11,130-\$115,500	ACOA will contribute to the cost of an initiative that ought to benefit an organization's potential

		to export commodities. Examples include attending trade shows, trade missions, and exhibit local work in foreign countries.
--	--	---

Source: Atlantic Canada Opportunities Agency, 2013a

Research and Development Corporation

The Research and Development Corporation (RDC) was formed under the close supervision of the provincial government to enhance research and development capacity in the province. This is done by administering funding to businesses and academics to enhance the provincial innovative capacity and enable researchers to carry out applied projects. RDC offers a variety of business led and academic led programs that focus on industrial, infrastructure, and commercial research. The target recipients for these programs are typically in high-technology fields such as oil and gas, ocean technology, and high-tech service provision. Programs are also offered to arctic regions to promote development in Northern Labrador. For academics, RDC provides incentives for young researchers to become involved in the private sector and advanced researchers in the areas of oil and gas, marine technology, arctic development, geo-sciences, and commercial R&D (RDC, 2013).

National Research Council

At the federal level, the National Research Council (NRC) provides valuable funding opportunities to firms but also conducts and works with researchers. The organization will provide firm level research that will facilitate the commercialization of new or improved products or services or link firms with advanced researchers at recognizable institutions. Furthermore, NRC also provides tax credits to firms that conduct their own research in an attempt to promote research and innovation. A notable funding program NRC provides is the Digital Technology Adoption Pilot Program (DTAPP). Through this program firms acquire the funding to purchase technologically advanced capital that will allow their firm to excel (National Research Council, 2013).

Clearly there are opportunities for organizations and firms to avail of government funding for their initiatives. However, availability of government funding by itself is not a recipe for greater regional innovation. As the following section on indicators illustrates, applications to government for funding are not always approved and even when funding is received there are many factors that can impact on firm level success including the quality of the labor force, capacity of local knowledge infrastructure and availability of support institutions among others. While such programs may not always translate into innovation, their presence increases innovation capacity for the province. Since 2006 the Northern Peninsula has received \$16,054,249 from ACOA and \$171,318 from IBRD for innovative community and business activity. The ACOA funding includes all program funding, while the IBRD are specifically focused on innovation.

Innovation Indicators

In addition to the data empirically collected within the region (presented in the next section), the research team obtained secondary data that provides measures of innovation in the region. These indicators of innovation are divided into two types: measures of innovative capacity and

innovation indicators. The second represents traditional ideals of innovation, measuring invention, technology use, and innovation financing. The following table provides an overview of the indicator, its reason for selection, and context on the Northern Peninsula.

Table 4: Innovation Indicators for the Northern Peninsula

Indicator(s)	Justification/Source	Regional Status
Innovation Capacity Indicators		
Availability of post-secondary institutions	Ability to access learning institutions and research is an asset to regional innovation (Slaper et al., 2011; Rose et al., 2009; The Center for Innovation Studies, 2005).	College of the North Atlantic St. Anthony campus, Harris Center, Research Team engagement, proximity to Grenfell campus.
Levels of post-secondary education	Measuring the levels of local education statistics provides a comparative analysis of research capabilities, learning experience, and formalized approaches to new ways of thinking (Slaper et al., 2011; Rose et al., 2009; The Center for Innovation Studies, 2005).	61.1% of citizens completed high school (9 th out of 9 Rural Secretariat regions) and 7.8% completed a bachelor's degree or higher (8 th out of 9 Rural Secretariat regions).
Training	Encouraging or providing staff with the opportunities to train allows improvement of skills which ultimately fosters the production of new ideas and innovation (OECD, 2005; Rose et al., 2009; The Center of Innovation Studies, 2005).	Most organizations in the region encourage or provide some form of training for their staff. This may simply consist of professional development seminars, formalized institutional training, or on-site training as with many firms.
Access to information technology and communications infrastructure	Allowing the flow of ideas via communication infrastructure is essential for knowledge flows and innovation (Martinus, 2012).	Many of the respondents stated that technology infrastructure in the region was inadequate compared to urban areas. Features such as broadband and sufficient cellphone coverage required improvement.
Networking	Interacting with other groups and sharing/seeking information allows knowledge to move in and out of a region. This may lead to innovation as groups capitalize on new ways of doing things (OCED, 2010; Tucker et al., 2011).	Conducting interviews and surveys that explicitly address networking will provide data on networks in the area (see Tucker et al, 2011 for an example). The quantity and quality of networks could be indicative of innovation in the region.
Access to financing for innovation initiatives	Presence of funding organizations allows for groups to better access financial capital and ensures some connection between lender and funder (OECD, 2010; 2005; Rose et al., 2009; Davies, 2010; The Center of Innovation Studies, 2005).	Presence of ACOA, IBRD, and CBDCs in the region.
Urban proximity	As urban areas contain the majority of people, firms, and ideas they are hubs for innovation therefore	866-1049km to St. John's or 535-718km to Gander.

	proximity to cities increase the likelihood for knowledge flows and innovation (Slaper et al., 2011).	
Innovation Indicators		
Applications for innovation support	The quantity and quality of regional applications for innovation funding ought to demonstrate the innovative abilities of regional actors (The Advisory Committee on Measuring Innovation in the 21 st Century, 2008).	15 applications received for zones 6 and 7 in IBRD. A total of 6 applications were approved receiving \$171,318 in innovation funding. 175 applications approved by ACOA for \$22,686,797 in innovation funding.
Technology use	Technology is often an enabler of innovation as it increases productivity. Technology also allows ideas to be applied to real world settings and therefore its presence in the region allows some indication of innovative potential (Slaper et al., 2011; OECD, 2010; OECD, 2005; Davies, 2010).	Some organizations used new technologies such as Skype. Other firms utilize industry specific such as new chocolate machines or wood processing equipment.
Productivity; Regional personal income per capita	The amount of work conducted in a given period of time reflects regional productivity. This can also be reflected by one's personal income (Advisory Committee on Measuring Innovation in the 21 st Century, 2008; Andrew et al., 2009; Rose et al., 2009; the Center of Innovation Studies, 2005).	The productivity for Newfoundland and Labrador is 44.6 (regional statistics are unavailable) compared to the Canadian statistic of 42 is above average; Personal income per capita in the region is \$23,700 (7 th out of 9 Rural Secretariat regions).
Patents	This indicator complies more with traditional perceptions of innovation as it depicts the introduction of new products or services into the region.	There were no patents observed in the region between 1998 and 2010 (OECD, 2012). ²

Sources: OECD, 2012; Atlantic Canada Opportunities Agency, 2013a; Community Accounts, 2013.

These indicators favor urban areas that possess characteristics associated with innovation (e.g. sites of post-secondary institutions, hubs for knowledge infrastructure, central offices for government departments, and home of agglomeration economies and related positive externalities). This notion is also emphasized in the literature as cities are said to be the focal points of creativity, wealth, and talent attraction (see Florida, 2002 and Wolfe, 2009 for example). Therefore, based on the literature and typical indicators, rural regions face disadvantages to greater innovation. However, there is a growing body of literature on rural innovation (see Davies, 2010 for example) that cite the need for alternative measures of innovation in rural areas. The Data Collection section will illustrate resilient organizations that

² OECD patent data reflects the quantity of patents that are registered with the EPO and PCT from the region affiliated with the inventor.

provide the context for rural innovation. These organizations must contend with rural realities but also reflect key strategies for sustainability.

Data Collection

In order to complement the review of innovation literature and the data employed in innovation indicators, this section and the following subsections will provide practical insight into innovation within the study region. In total 22 interviews were conducted in the region to acquire empirical data. The information presented below will address the specific issues identified by economic actors on the Northern Peninsula. These actors include entrepreneurs and managers of firms, government officials, and support organizations involved with regional economic development.

Methodology

In order to identify innovative businesses and organizations that foster innovation, the research team conducted an initial survey of networks, innovation, and collaboration (see Tucker et al, 2011). This survey asked individuals to identify people they believed would be interesting to interview and would benefit the team's research. Based on the results of the survey the innovative individuals/organizations were interviewed. The team organized two separate sets of questions; one for businesses and one for government and development organizations. These questions formed the basis for semi-structured interviews with representatives from business, government, and development organizations. The interviews led to more specific inquiries relevant to the individuals being interviewed.

Following completion of the data collection for the "Canadian Regional Development" project, members of the research team participated in another project: Advancing Innovation in Newfoundland and Labrador (AINL). This project consisted of conducting interviews with the private sector and hosting workshops in five locations across the province: Corner Brook, Labrador Straits, Centerville, St. John's, and Plum Point. The results of these workshops and case study reports will be used to formulate the Moving Forward section as they sought positive methods of enhancing innovation in their region.

The potential respondents were provided with a consent form that described the research and inquired as to whether they would agree to being interviewed on tape. The research proposal was reviewed by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) and was found to be in compliance with Memorial University's ethics policy. This information was conveyed to respondents in advance of the interviews. One respondent did not agree to be recorded and that individual interview was done using hand-written interview notes.

New Programs, Products, or Services (Examples of Innovation)

NGO respondents typically introduced new products or services that were not designed for commercial benefits (with the exception of SABRI who started a mussel operation and a cold storage facility) but for business/regional support. One example is the creation of a website for the Northern Peninsula that was led by Nordic Regional Economic Development Board; this includes a section on all 69 communities on the Peninsula, extending beyond that REDB's jurisdiction. *"Nordic embraces technology and re-did our website and a new Facebook page*

where we have new ways of engaging and consulting with the public.” A second example is the union of the region’s heritage groups that formed a network of heritage NGO’s working in the tourism industry. This initiative, led by Red Ochre Regional Economic Development Board, increased collaboration among members and attracted new sources of funding for the group. A third example is a local community forest project led by the St. Barb Development Association. Other new products and services include the introduction of new technologies such as Skype, new strategies like Opportunity Management, and increased flexibility of financial services.

Government respondents typically referred to a diversification of their programs or services for this question. This was especially apparent when discussing IBRD policies. The department has changed their program delivery to avoid urban-biased funding and allow greater rural accessibility: “*Innovation programs brought in 5 years ago now being revamped to make them more accessible to rural areas.*” Since the interviews were conducted, IBRD consolidated their programs (see the Innovation Policy section). The College is attempting to offer new programs such as the hunter guide program, but also ideas that can be used in all five campuses in rural Newfoundland. The town of St. Anthony discussed a notable innovation in the construction of their arena which is attached to the school. Energy used to maintain the ice is captured and re-used to heat the rest of the facility and the school. This promotes social and recreational activities while maintaining energy efficiency.

The research team also asked all respondents who they would consider to be innovators and examples of innovative initiatives in the region. The following table outlines to most commonly referred to innovators and innovative projects:

Table 5: Examples of Innovation/Innovators

Innovative Organizations	Innovative Projects or Initiatives
Holson Forest Products Ltd.	Heritage Cluster
St. Anthony Cold Storage	Community Forest
Dark Tickle Company	Northern Peninsula Business Network
SABRI	Partners meetings
Canada Ice	CNA Rural Campuses
Tuckamore Lodge	AES Immigration Website
Norpen	Development of Whelk Fishery
Northern Lights Seafoods	Mussel Industry
Nordic	Co-op models
IBRD	Pellet Plant

Source: Adapted from Carter, 2013.

Support Programs/Agencies

For financial support, many firms stated that government support agencies were an asset. Notable organizations include IBRD, ACOA, DFA, DFO, and the Department of Natural Resources depending on which sector the firms operated in. Organizations that had field staff, like IBRD, were noted as being exceptionally helpful as they have knowledge of local needs and circumstances. Other important agencies were the Nortip CBDC and the REDBs. These organizations gave valuable business advice, planning, and assistance when applying for additional business development funding. Some respondents stated that there was a lack of

support from post-secondary institutions such as MUN, MI, and CNA. It was suggested that these institutions can provide valuable training and research assistance; one respondent said “*Big role for universities in R&D.*” One respondent stated that RDC has been “*disappointing*” due to their lack of rural engagement.

Government respondents were asked what is critical to innovation and what contributes to innovation in the region. IBRD and ACOA were the most commonly discussed organizations but AES, CBDC, REDBs, and SABRI were also highlighted as being regional assets. These respondents also stated that the private sector is the key site for innovation and must work with others to achieve success. Some respondents suggested that post-secondary institutions could do more to promote partnerships with other organizations and help foster research and innovation. Municipalities were also cited as having more potential to foster innovation by working together and implementing more economic development strategies.

NGOs were asked what/who is critical to innovation and what contributes to innovation in the region. The most common response relating to NGOs was Nordic and Red Ochre, the REDBs in the region. They were seen as often taking the lead on planning initiatives and economic development projects. Most respondents stated that Memorial University and the College of the North Atlantic could have a much greater impact on innovation if they were more engaged. Furthermore, an increase in general government support would be beneficial as it would attract new entrepreneurs and assist the existing business base. The role of networks was also discussed as a benefit to innovation as it facilitates collaboration, business support, and exchanges of ideas. The Viking Trail Tourism Association and the Northern Peninsula Business Network were cited as examples of such networks that have made significant impact and require additional support.

Training/Learning

Government and NGOs were asked if their organization participated in any training or learning activities. The most common response was that individuals were allowed to request funding to attend training sessions that would benefit the organization: “*we have a proactive approach to training, the board has been very supportive of staff doing training, time off, money you name it.*” This includes attending professional development seminars, classes at the College, academic courses, and attending learning seminars or conferences. Most organizations allocate an amount of their budgets to fund training initiatives for their staff. One municipal leader stated that some training services by Municipalities Newfoundland and Labrador conflict with the schedules of municipal councilors who fish in the spring. Better planning and more structured training provisions would benefit the region by ensuring maximum participation and impact.

New Ideas

Business respondents identified four different sources for new ideas that their firm has drawn from. The first source of new ideas came from within the organization. Employers often turn to their staff for new ideas, providing them the opportunity to contribute to the firm’s direction. A second source of new ideas is in industry literature: both formal (e.g. academic journals or studies) and informal (e.g. industry magazines). Understanding how the industry works in other parts of the region, country, or world is seen as an excellent learning strategy by the private sector. A third source for new ideas is business colleagues and entrepreneurs, whether working together in formal or informal networks. Sharing industry information, resources, and new ideas

benefit network members and enhance the competitiveness of the competitive firms. A final source for new ideas cited by business respondents comes from travelling and/or working in other places. Business owners who have worked abroad and moved back to/into the region bring unique experiences and understandings of external markets: this is especially beneficial when exporting goods or working in the tourism industry where customers are all from outside the region.

Government respondents largely gathered new ideas from internal conversations with other staff members in their department. Other respondents stated that they conduct research via the internet and other academic sources to bring new ideas into the region. One interviewee cited trade shows as an excellent source of new ideas. Success stories gained from these events could be shared and possibly implemented on the Northern Peninsula. One respondent discussed the Harris Center's Yaffle program as an emerging source of new ideas as it links organizations with a university researcher. This provides research to organizations that may lack the capacity or time to conduct their own research and uncover new ideas.

“very few new ideas come from anybody here all the ideas come from either something that you read or someone that you meet but the people that you meet who are very business oriented and who travel a lot in the world or are well educated”

NGO respondents largely cited internet resources (especially Google) as their primary source for new ideas. Another common response was that new ideas were obtained while talking to people and learning their experiences/success stories. This is facilitated at networking events like conferences and trade shows but also occurs in the workplace and departmental meetings. Emphasis was also placed on people who had traveled or moved to the region after working abroad as they have a unique set of experiences and lessons to share: *“we used to say the best thing for Newfoundland is put everybody aboard a boat or plane for a couple of years and bring them all back and see what happens.”* One respondent also emphasized using similar strategies/solutions when working on municipal problems: *“I find that working with municipalities, why re-invent the wheel if one town has a particular issue with a water treatment or something and they've found a solution to it, and the town several kilometers down the road is having the same situation then the same solution can be applied;”* learning what works in one community demonstrates its viability in other communities.

Open to Change

Government and non-government organizations were asked if their organization was open to change and new ways of doing things. While all of the respondents stated that they were open to new ideas, some said their department or organization lacked the freedom to be as open as they'd like. For instance, government departments/agencies must uphold standards of accountability as their funding comes from the public. As such, individuals are not granted liberties without the authorization of executive and/or politicians. While this process may limit departmental regional openness and creativity, it is designed to limit risk and maximize transparency and accountability for the department.

One municipal leader stated that their openness to new ideas is evident in their interactions with the public. If there was a problem in the community, they would welcome complaints but also

solutions; the council does not have all the answers but *“we’re really good listeners and collectively if someone comes forward with a good idea we’ll run with it if at all possible.”* Other respondents stated that younger people were more open to new ideas but encountered some problems dealing with the broader department. Most of the respondents shared the sentiment that openness to change or new ideas was important to moving forward: *“we totally see that as a necessity to survive, not only to survive, to thrive.”* The responses may have been influenced by the negative connotation associated with not being open to change or new ideas.

Reflection/Evaluation

Government and non-government organizations were asked if their organization conducts formal or informal reflection/evaluation of their programs, progress, or processes. These reflections may take several different forms including formal retreats, round table discussions, or simple discussions. One NGO discussed their commitment to reflection and evaluation as follows:

“we’re constantly evaluating what we do, we have regular staff meetings where we discuss the initiatives that we’re working on and how it’s proceeding and any issues that’s come up with it. quarterly meetings to review all of our initiatives with our partners, and those types of meetings basically go through the same processes as our board meetings, we go through the initiatives, see how we should be moving along and what should be done”

Most respondents stated that their reflection was much more informal. Typically, reflection occurred when staff discussed the positive and negative aspects of past initiatives in an attempt to improve future service delivery. However, many departments do conduct regular meetings when staff are given the opportunity to report on their progress and their past initiatives. Formal evaluation is more likely to occur within government as they seek methods of being efficient, and have the resources and staff to undertake such initiatives. For the College, students are regularly asked about their program’s quality, potential improvements, and general post-secondary education experience. This data can then be effectively used to shape the College’s future services and directions.

Following this reflection process, some organizations share their experiences, especially success stories, with other departments or agencies. This was particularly evident with IBRD staff in the region that regularly discuss ongoing projects and past initiatives. This sharing of information is critical to knowledge flows and informal learning: *“every meeting we go to we share ideas and pass on knowledge and stuff like that.”* Organizations that do not share their past information or seek new information from other organizations lack understanding of alternative processes and opportunities.

Collaboration

When asked who they collaborate with, business responses typically referenced some form of network. For example, the VTTA was a critical industry association that brought many tourism operators together to undertake training, joint marketing initiatives for the region and other activities. Unfortunately, this group has been weakened by funding cutbacks and the focus on policy and funding focus on the broader regional Destination Management Organizations but still operates in the region and collects an accommodation levy to fund joint marketing initiatives.

Another important network is the Northern Peninsula Business Network. This brought together a number of business owners that do not compete in similar industries and worked with the CBDC, IBRD and others. The network participated in several effective marketing and funding initiatives such as an export development initiative in Iceland, conference participation and joint training initiatives including lean manufacturing, Forum for International Trade Training and much more. Other formal and informal networks exist with fish processors, food manufacturers, outfitters, forestry operatives, and the network of Atlantic Econmussee.

Government respondents offered mixed views on collaboration. Some stated that collaboration in the region resulted in better service provision from their organization, while others stated that it was difficult enticing groups to work together. One issue that was suggested is that there is not enough municipal collaboration and that communities need to be better enabled to work together. An instrumental actor that fosters and promotes collaboration among regional actors is the Rural Secretariat through their regional planning staff. One respondent stated: “*the facilitators are collaborating, but not the doers,*” indicating sufficient collaboration among support agencies and a lack of collaboration between them and the private sector innovators.

Non-government organizations also provided mixed responses on collaboration. Some stated that collaboration would not occur in the region unless the actors were forced and there were issues bringing certain organizations into meetings. The REDBs were as key actors that facilitate collaboration in the region: “*Nordic takes a very big leadership role in fostering collaboration, that’s our role and its part of our mandate.*” This notion was somewhat contested by other regional actors indicating that differences exist among the support organizations. Furthermore, the recent cuts to the REDBs may result in a lack of collaboration as key organizers are now gone (Gibson, 2013; Vodden et al, 2013). In general, respondents viewed collaboration as a positive practice that facilitates innovation. One suggestion for improving collaboration is contacting the right people; if the issue is forestry, then forestry operatives and the Department of Natural Resources must be present at meetings.

The research team also sought examples of partnerships formed between government, the private sector, post-secondary institutions, and NGOs. This was intended to identify the triple and quadruple helix partnership theories in practice (Etzkowitz, 2008; Foray et al, 2012). There were many examples of these multi-organizational partnerships on the Northern Peninsula that involved an array of actors. For example, MUN led a social network analysis project that involved multiple stakeholders and organizations and identified multiple networks in the region (see Tucker et al, 2011). Other examples include more specific endeavors such as the NPBN training with CNA and MUN and research initiatives that involved SABRI and regional fishers.

Challenges to Innovation

Business respondents discussed several challenges they faced that impeded ability to innovate. The first relates to the geographical location of the Northern Peninsula and its distance from markets and suppliers: “*There are some disadvantages, like the distance from everything.*” Shipping products from the region to major markets, whether within the province across Canada or around the world requires significant transportation costs. Furthermore, in the event machinery breaks down or requires regular maintenance, the service provider usually takes longer to respond to the issue and at higher cost than if the business was closer. A second

challenge results from existing policies, especially regarding the Newfoundland fishery. Fish processors are restricted from expanding their production when their applications for processing licenses for new species are rejected. Furthermore, there is a perception that industry and policy have shaped the Newfoundland fishery to produce mass production for low value, damaging smaller operations and leading one processor to say: *“it’s the most poorly managed fishery on the planet, and that’s a big place.”* A third challenge is accessing capital. Due to centralized decision making and a lack of bank financing, some organizations claim that certain forms of financial capital are difficult to obtain (e.g. operating capital and lines of credit). While there is evidence of some investment in the region it is limited. Other challenges included lack of infrastructure, declining populations and young people, inadequate technology, a complacent labor force, and low levels of tourism.

When asked, what challenges to innovation exist on the Northern Peninsula, Government respondents typically referred to issues in the private sector. This includes the aging population in the region, declining levels of young people, and few entrepreneurs. Furthermore, the older generation was classified as less open to change and content with their current business situation (i.e. not intending to innovate or expand). Other challenges included lack of education facilities, lack of trust, poor infrastructure, and issues with transportation. Interestingly, government respondents that are not directly employed by a provincial or federal department recognized some other challenges. It was noted that there is a *“Lack of government commitment to rural development.”* In other words, there is a perception that government maintains an urban-biased approach to development funding or a retreat from rural areas of the province. Combined with limited access to bank financing, accessing financial capital in the region becomes a serious challenge.

When asked what challenges to innovation exist in their region NGOs listed several. However, the largest was accessing financial capital from both private sources for entrepreneurs (investment) and public sources for NGOs and other organizations. Moving initiatives forward is tremendously difficult without appropriate financing. *“We need money, we need investment money, we need easier access to it, we need people to work with us on our ideas from start to finish and if something is different try not to can it, try to support different ideas.”* A second challenge is the lack of (new) entrepreneurs in the region. This is also reflective of the declining levels of young people in the region. Continuous decline in the region’s business base may result in a critical loss of services in the region. Other challenges include inadequate infrastructure, education levels, distance from major services, and the EI trap.³

Moving Forward

“...it’s about time we stop bitching and moaning and groaning about what government isn’t doing for us and what they can do for us, it’s time we start looking inside ourselves and starting looking for what we can do, as individuals as groups. If we want to make change and if you’re not part of the change you’re part of the problem, so I guess that’s the best way to put it.”

³ The EI trap refers to a complacency among the workforce where employees only wish to work the minimum amount of time to obtain Employment Insurance benefits; this promotes seasonal employment commonly found in the fishery, forestry, and construction.

Through the AINL project sessions, the research team polled workshop participants on what the major challenges, opportunities, and strategies to foster innovation and regional development were on the Northern Peninsula. The workshop consisted of participants from three levels of government, NGOs, and the private sector; many of those contacted to participate in the workshop were unable to attend resulting in relatively low participation (n=11) (Hall and White, 2013).

The participants and the research team identified the top ten challenges in the region and voted (using turning point software) on which issues were the most pressing. Each participant was given two votes to select their top two challenges.⁴ The values indicate the percentage of votes each challenge received:

- Lack of entrepreneurs/interest in expanding business (27%)
- Lack of champions (21%)
- Access to capital (21%)
- Too comfortable (16%)
- Lack of young people (11%)
- Weak local/regional governance (6%)
- Broadband and cell coverage (5%)
- Training and skills development (0%)
- Dying Communities (0%)
- Distance to markets (0%)

The participants and research team identified the top ten opportunities in the region. These are regional assets or benefits that are important or can be built upon to enhance innovation and regional development on the Northern Peninsula. Participants were instructed to select the top two opportunities in the region:

- Resource assets (fish, culture, forests, berries, etc.) (40%)
- Right size for niche markets (14%)
- Megaprojects (13%)
- Global connections (12%)
- Packaging existing products and services (7%)
- Commitment to place (7%)
- Quality of life/natural amenities (6%)
- Support agencies rated highly by firms (6%)
- People of the region (0%)
- Transportation linkages (0%)

The participants and research team identified the top ten strategies in the region. These strategies were potential projects or initiatives that could lead to increased innovation and regional

⁴ Some error may have occurred if the polling device was not working properly or the individual failed to select two challenges.

development. Participants were asked to select the two strategies they believed would be the best for the region:

- Stronger business collaboration and networking (23%)
- Value added development (22%)
- Regional Innovation Strategy (17%)
- Promote entrepreneurship in high schools/youth networks (16%)
- Access to capital (16%)
- Youth retention and attraction (6%)
- New regional governance structures (5%)
- Inventory of regional assets (0%)
- Stronger municipal government (0%)
- Better alignment of research and programs (0%)

Some of the strategies may appear vague due to a lack of context (see Hall and White, 2013 for a detailed discussion). However, the top strategies have clear roles for the actors in the region. Business collaboration and networking must be facilitated by a strong support organization or multiple organizations such as IBRD, CBDC, or St. Barb Development Association. This may have been a suitable task for the REDBs but their termination eliminates that regional planning actor (Gibson, 2013; Vodden et al., 2013). Firms must also be willing to participate in these networks and contribute to the overall development of the region.

Value added development is a strategy for firms that conduct processing beyond minimum requirements. This includes customized wood products, consumption ready fish products, or Dark Tickle jams. This industry could be promoted by ACOA and IBRD through funding programs that support the acquisition and operation of required technology. The CBDC could also work with new firms in this area to provide business support and, if there are enough entering the sector, form a business support network.

The third strategy, a Regional Innovation Strategy, could be a beneficial direction for the region's actors. This document could outline clear methods for achieving each of the above strategies and building upon the above opportunities. This document would likely require the commitment of a researcher or research team in conjunction with critical actors in the region. Furthermore, such a strategy would require the participation of many actors and increased capacity for local and regional governance. A commitment to progress and collaboration could yield the result that would prevent further regional decline and address existing challenges. *"You get out of it what you put into it. If you got time and energy to invest in it you generally get good results."*

References

- Atlantic Canada Opportunities Agency. (2013a). Project Information. Retrieved from: <http://www.acoa-apeca.gc.ca/eng/Accountability/ProjectInformation/Pages/Home.aspx>
- Atlantic Canada Opportunities Agency. (2013b). Young Entrepreneur Development Initiative. Retrieved from: [http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx? ProgramID=7](http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx?ProgramID=7)
- Atlantic Canada Opportunities Agency. (2013c). Innovative Communities Fund. Retrieved from: [http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx? ProgramID=6](http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx?ProgramID=6)
- Atlantic Canada Opportunities Agency. (2013d). Business Development Program. Retrieved from: [http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx? ProgramID=2](http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/Pages/ProgramDetails.aspx?ProgramID=2)
- Atlantic Canada Opportunities Agency. (2013e). Atlantic Innovation Fund-Newfoundland and Labrador. Retrieved from: <http://www.acoa-apeca.gc.ca/eng/ImLookingFor/ProgramInformation/AtlanticInnovationFund/Pages/AIF2011FactSheetNewfoundlandandLabrador.aspx>
- Advisory Committee on Measuring Innovation in the 21st Century Economy. (2008). Innovation Measurement: Tracking the State of Innovation in the American Economy. Report submitted to the Secretary of Commerce.
- Andrew, J., Haanaes, K., Michael, D.C., Sirkin, H.L., Taylor, A. (2009). Measuring Innovation 2009: The Need for Action. Report submitted to the Boston Consulting Group Senior Management Survey.
- Carter, K. (2013). Innovation and Regional Development in the Northern Peninsula. Presented for the Advancing Innovation in Newfoundland and Labrador Project in Plum Point, NL.
- Community Accounts. (2013). St. Anthony-Port au Choix Rural Secretariat Region Profiles. Retrieved From: http://nl.communityaccounts.ca/profiles.asp?_=vb7En4WVgbWy0nI_
- Community Accounts. (2013a). Avalon Peninsula Rural Secretariat Region Profiles. Retrieved from: http://nl.communityaccounts.ca/indicators.asp?_=vb7En4WVgbWy0nk_
- Davies, S. (2010). Innovative Sectors in Peripheral Rural Areas, *Workshop on Innovation in Remote and Peripheral Areas, European Policies Research Centre*: 1-13.

- Dicken, P. (2007). *Global Shift: Mapping the Changing Contours of the World Economy*. The Guilford Press.
- Department of Innovation, Business, and Rural Development. (2013a). Business Investment. Retrieved from: <http://www.ibrd.gov.nl.ca/programs/BIF.html>
- Department of Innovation, Business, and Rural Development. (2013b). Regional Development. Retrieved from: <http://www.ibrd.gov.nl.ca/programs/RDF.html>
- Department of Innovation, Business, and Rural Development. (2012). Programs and Services A-Z. Retrieved from: <http://www.ibrd.gov.nl.ca/programs/index.html>
- Department of Innovation, Trade and Rural Development. (2012a). Commercialization program. Retrieved from: <http://www.intrd.gov.nl.ca/intrd/innovation/cp.html>
- Department of Innovation, Trade, and Rural Development. (2012b). Technology Utilization Program. Retrieved from: <http://www.intrd.gov.nl.ca/intrd/innovation/tup.html>
- Department of Innovation, Trade and Rural Development. (2012c). Innovate and Demonstrate. Retrieved from: <http://www.intrd.gov.nl.ca/intrd/innovation/iadp.html>
- Department of Innovation, Trade and Rural Development. (2012d). Innovation Enhancement Program. Retrieved from: <http://www.intrd.gov.nl.ca/intrd/innovation/iep.html>
- Department of Innovation, Trade and Rural Development. (2012e). The Strategic Partnership. Retrieved from: <http://www.intrd.gov.nl.ca/intrd/regionaldev/strategicpartnership.html>
- Department of Innovation, Trade and Rural Development. (2012f). Young Entrepreneurs and Innovators Program. Retrieved from: http://www.intrd.gov.nl.ca/intrd/regionaldev/YEIP_Factsheet.pdf
- Department of Innovation, Trade and Rural Development. (2006). Innovation Newfoundland and Labrador: A Blueprint for Prosperity.
- Etzkowitz, H. (2008). *The Triple Helix: University-Industry-Government Innovation in Action*, Routledge: New York.
- Florida, R. (2002). *The Rise of the Creative Class: And How it's Transforming Work, Leisure, Community and Everyday Life*, Basic Books.
- Foray, D., Goddard, J., Beldarrain, X.G., Landabaso, M., McCann, P., Morgan, K., Nauwelaers, C., Ortega-Argiles, R. (2012). Guide to Research and Innovation Strategies for Smart Specialisation (RIS 3). European Union Commission on Regional Policy.

- Gibson, R. (2013). Life beyond the zone boards: Understanding the new reality of regional development in Newfoundland and Labrador. *Newfoundland Quarterly: A Cultural Journal of Newfoundland and Labrador*, 105(4): 39-42.
- Hall, H. and White, K. (2013). Northern Peninsula Innovation Workshop Report. Prepared for the Advancing Innovation In Newfoundland and Labrador Product. The Leslie Harris Center, Memorial University: St. John's, NL.
- Markey, S. (2011). A Primer on New Regionalism. Prepared for the Canadian Regional Development: A Critical Review of Theory, Practice, and Potentials project. Retrieved from: <http://cdnregdev.ruralresilience.ca/wp-content/uploads/2013/03/primernewregionalism-markey.pdf>
- Martinus, K. (2012). City infrastructure supporting innovation. *International Journal of Knowledge-Based Development* 3(2): 126-156.
- OECD. (2005). Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data. OECD Publishing.
- OECD. (2010). Measuring Innovation: A New Perspective. PowerPoint Presentation.
- OECD. (2012). Patents by regions. Retrieved from: http://stats.oecd.org/Index.aspx?DatasetCode=PATS_REGION#
- Pike, A., Rodriguez-Pose, A., Tomaney, J. (2008). *Local and regional development*. London: Routledge.
- RDC. (2013). R&D Project Funding. Retrieved from: <http://www.rdc.org/funding/index.htm>
- Rose, S., Shipp, S., Lal, B., Stone, A. (2009). Frameworks for Measuring Innovation: Initial Approaches. Athena Alliance, Science and Technology Policy Institute.
- Slaper, T., Hart, N.R., Hall T.J., Thompson. M.F. (2011). The Index of Innovation: A New Tool for Regional Analysis. *Economic Development Quarterly* 25(36).
- The Center for Innovation Studies. (2005). Alberta Innovation Scorecard.
- Tucker, A., Gibson, R., Vodden, K., Holley, J. (2011). Network Weaving for Regional Development in the Tip of the Northern Peninsula. Report submitted to the Northern Peninsula Regional Collaboration Pilot.
- Vodden, K., Carter, K., White, K. (2013). A Primer on Innovation, Learning, and Knowledge Flows. Prepared for the Canadian Regional Development: A critical Review of Theory, Practice, and Potentials Project. St. John's: Department of Geography, Memorial University. Available at: <http://cdnregdev.ruralresilience.ca/wp-content/uploads/2013/08/Primer-on-innovation-Aug12.pdf>

Vodden, K., Hall, H., Freshwater, D. (2013). *Understanding Regional Governance in Newfoundland and Labrador: A survey of Regional Development Organizations*. Harris Center, Memorial University: St. John's, Newfoundland and Labrador.

Wolfe, D. A. (2009). *21st Century Cities in Canada: The Geography of Innovation*. The Conference Board of Canada. Ottawa, Ontario.

**Canadian Regional
Development**
A Critical Review of Theory,
Practice, and Potentials



**Développement régional
canadien**
Un examen critique des théories,
des pratiques et des potentiels

The *Canadian Regional Development: A Critical Review of Theory, Practice and Potentials* project is a multi-year research initiative funded by the Social Sciences and Humanities Research Council of Canada. The project is investigating how Canadian regional development has evolved over the past two decades and the degree to which Canadian regional development systems have incorporated New Regionalism into their policy and practice.

The project is conducting an empirical assessment of Canadian regional development using a multi-level network, mixed methods case study approach in four provinces: British Columbia, Newfoundland and Labrador, Ontario, and Québec. The assessment of regional development across the case studies is based on the five key themes of New Regionalism: i) collaborative, multi-level governance; ii) integrated versus sectoral and single objective approaches; iii) fostering knowledge flow, learning and innovation; iv) place-based development; and v) rural-urban interaction and interdependence.

The project is lead by Kelly Vodden of the Department of Geography at Memorial University. The research team includes David Douglas (School of Environment Design and Rural Development, University of Guelph), Sean Markey (Geography, Simon Fraser University), and Bill Reimer (Sociology and Anthropology, Concordia University). In addition, graduate students at all four universities are engaged on the project.

Further information on the project can be obtained either at <http://cdnregdev.wordpress.com>. The project has been financially supported in part by the Social Sciences and Humanities Research Council of Canada and the Leslie Harris Centre for Regional Policy and Development.



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada

