

Submission to

**House of Commons Standing Committee on
Industry, Science and Technology
Study of Canadian Manufacturing Sector**

Submitted by

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Lessons in Rural Manufacturing

Manufacturing represents a significant component of the rural economy in Canada, and offers significant potential for sustainable economic development in all areas of the country. Several studies in Atlantic Canada reflect findings in the U.S. and Europe in this regard. The OECD's "New Rural Paradigm" – outlining characteristics and best practices for sustainable development in the new economy – emphasizes that SMEs utilizing modern manufacturing technology, and focusing on niche production, can be a significant element of national economies that maximize the development potential of all regions.

Measured by GDP, manufacturing is the second largest sector in rural areas across Canada (with rural defined as areas outside metropolitan regions). It is the largest rural sector in two provinces: Quebec (20 percent of non-metro GDP), and Ontario (15 percent). It is the second largest in three provinces: Nova Scotia (13 percent); New Brunswick (12 percent); and Manitoba (11 percent) (Bollman, 2014).

For regions traditionally dominated by resource production, manufacturing firms in rural areas benefit from stable workforces, relatively low cost land and infrastructure, and supportive local and regional governments. David Freshwater has documented the move of manufacturers to rural areas of the U.S., especially in the shift of manufacturing from northern to southern states. The Obama administration has built on the network of land grant universities to establish manufacturing outreach supports from universities and colleges, and rural manufacturers are successfully exploiting niche production in the global supply chain of major manufacturers in multiple sectors.

In the 1990s, the Institute of Island Studies at UPEI led the North Atlantic Islands Project (NAIP) comparing the role of varying jurisdictional capacities and strategies in fostering sustainable economic development. A study of small-scale manufacturing in PEI, Newfoundland, Iceland and the Isle of Man reviewed global trends in manufacturing, jurisdictional supports for the sector and conducted case studies of 60 companies across the four jurisdictions. Of the 60 companies interviewed, 56 had less than 200 employees, with an average of 38 employees. Companies had to be involved in secondary manufacturing (as opposed to primary processing of resource products) and were not dependent on close proximity to natural resource inputs – meaning that they were not in a rural area for that reason. The study was incorporated in a small-scale manufacturing strategy adopted by the Government of Newfoundland and Labrador in 1999. The NL Division of the Canadian Manufacturers and Exporters Association (CME) partnered in the study recommendations, which informed policy and practice in the province. Key recommendations included the need for small-scale manufacturers to focus on their area of core competence and manage their place in global supply chains. Firms that did this sold more, exported more and grew more.

The jurisdictional analysis called for governments at all levels to develop policies and programs geared to the needs of the sector, which recognized regional variations in sector strengths, transportation and labour force needs and local development organization capacity. A coordinated and sustained commitment to sector development was identified, with jurisdictions succeeding where they maintained support for the sector for a sustained period and avoided swings in policy and programs with changes in government. Taking a strategic approach also meant identifying regional and sector-specific strengths and opportunities and working with local organizations and firms to build competitive advantage – capturing the essentials of cluster development even where rural areas lacked the large populations and large firms typical of urban clusters.

Unfortunately the Government of Newfoundland and Labrador did not maintain the sustained commitment called for when the government changed, and a focus on oil and gas and hydro development replaced a broad diversification approach, including small-scale manufacturing.

CME continues to do excellent work in NL, as it does across Canada, and a focus on lean manufacturing and regional supply networks builds on many of the findings of the Islands project.

There is a large of body of literature and best practices in rural manufacturing in Canada and internationally. The Standing Committee would do well to review this work in developing its recommendations.

Innovation and Rural Manufacturing

Recent work by the Leslie Harris Centre of Regional Policy and Development at Memorial University has focused on fostering innovation in rural areas, across a wide range of sectors, including manufacturing. This work built on the Major Collaborative Research Initiative led by Drs. David Wolfe and Meric Gertler at the Munk Centre at the University of Toronto, which studied the Social Foundations of Innovation in City Regions. The Harris Centre led the work on the St. John's city region for this project, which conducted case studies of firms, governments, community organizations and post-secondary institutions relating to innovation, talent attraction and retention, and governance in 17 city regions across the country. The Harris Centre extended this work to more rural areas in NL (the Clarenville and Corner Brook regions on the Island of Newfoundland and to Labrador West).

This work then informed a Harris Centre-led collaborative study, partnering with CME and other industry associations, the federal and provincial governments, and the College of the North Atlantic. The project built on the latest national and international research on innovation, including the Social Foundations of Innovation project, and presented these findings to local industry stakeholders in five workshops, including very rural and remote regions in the Labrador Straits and the Northern Peninsula. The research team conducted case studies of five rural firms, four of which were manufacturers. Finally, all the findings were presented to an interactive Provincial Innovation Summit, held in St. John's in October 2013.

The final report from all this work called for a campaign to raise awareness of innovation, highlighting that it relates to all sizes of firm, in all sectors, and to all aspects of firm operations. Many firms and government organizations cling to an outdated view of innovation as a linear process starting with researchers in universities or private sector labs who make major breakthroughs in science or technology, which then proceed through prototyping, testing, seed investment and so on through to commercialization. The Social Foundations of Innovation project and a whole body of research highlight innovation as the product of an eco-system where firms interact constantly in the supply chain and through other local and sectoral networks, and researchers in post-secondary institutions and private sector labs respond to industry and market demands, government regulations and research collaborations. Moreover, innovations relate to human resource practices, marketing techniques and

the full range of activities that create value, not just technology. And, finally, the “quadruple helix” has become the dominant conceptual tool to highlight that innovative regions are based on the interaction of the private sector, governments, communities and post-secondary institutions.

The Harris Centre report, “Challenges, Opportunities and Strategies for Advancing Innovation in Newfoundland and Labrador,” released in February 2014, provides a range of recommendations, linking these global trends with the on-the-ground realities of firms in rural areas. The report references the European Union’s recognition of the approach termed Research and Innovation Strategies for Smart Specialization or RIS3, which starts with an analysis of regional context.

The Harris Centre has also led work utilizing geo-spatial analysis to understand the development capacity of functional economic regions (FERs). The Atlantic Canada Opportunities Agency (ACOA) has supported this work through the Atlantic Policy Research Initiative, and initial work was supported through the Canada-Newfoundland and Labrador Labour Market Development Agreement (LMDA). Led by Drs. Alvin Simms and David Freshwater, through the Harris Centre’s Regional Analytics Lab (RANLab), functional economic regions are based on labour market areas and include data on the labour market, demographics, the economy (including sectors and supply chains) and governance (role of municipalities, local funding, etc.). RANLab now has data for all Atlantic Canada and is being consulted by the Provincial Government as it explores regional cluster development in the province.

Whatever approaches the Standing Committee recommends, it must recognize that manufacturing success, rooted in innovation, must be adapted to realities – strengths and weaknesses - of different sub-provincial regions.

The Role of Bridging Institutions in Fostering Post-secondary – Industry Collaboration

In addition to work on the specifics of rural manufacturing and innovation, the Harris Centre has been recognized nationally and internationally as a leader in linking post-secondary institutions with industry, communities and governments. The Standing Committee’s manufacturing study highlights the need to harness industry-academic collaboration, innovation centres and business incubators and accelerators. The Jenkins Panel pointed to the need for bridging institutions to link universities with industry if Canada was to realize its innovation potential.

The work of the Harris Centre in manufacturing and innovation has been published and presented to highlight best practices in knowledge mobilization and public engagement. The Harris Centre spans all faculties and units at Memorial University, with the Executive Director reporting to the President. It is, by design, not an academic centre. Its role is to facilitate and coordinate the university’s activities in regional policy and development. It brokers funding for applied research for faculty and students to address issues and opportunities of importance to the province. It organizes four regional workshops per year – one in each of Labrador, Western, Central, and Eastern NL – bringing faculty, staff and students to regions of the province to discuss existing projects and activities and to identify new opportunities for collaboration. The Harris Centre has developed the on-line tool, “Yaffle,” to enable

businesses, communities, governments and the public at large, to learn about expertise and projects at the university and to submit ideas for collaborative projects. Yaffle has recently been re-launched on a new technology platform, which enables partners outside the university to enter their expertise and projects, essentially providing a virtual platform for realizing the interactions necessary for the innovation eco-system envisioned in the “quadruple helix.” Yaffle has now been extended to the College of the North Atlantic and with the University of New Brunswick, to the New Brunswick Social Policy Network. Other universities in Atlantic Canada are keen to adopt Yaffle and Research Impact, the national knowledge mobilization network, is exploring how to extend Yaffle nationally.

The Harris Centre has benefitted from program support from the Atlantic Canada Opportunities Agency, and Memorial University provides core operating support. Numerous funding sources have been accessed over the thirteen years of the Harris Centre’s existence, but bridging institutions such as the Harris Centre are constantly struggling to access long-term support from the federal and provincial governments. As the only university in NL, Memorial takes its special obligation to the people of the province very seriously, and has established numerous bridging institutions in various subject areas: the Genesis Centre incubator, the Newfoundland and Labrador Centre of Applied Health Research, the Canadian Centre of Fisheries Innovation, the Labrador Institute and more. Drs. David Wolfe and Peter Warrian recently completed a study of C-CORE at Memorial, which leverages all its funding through industry partnerships, and they are now conducting a study of the Marine Institute. There are lessons for all sectors in the experience of Memorial University in connecting research, teaching and learning and public engagement through these bridging institutions. ***If the Standing Committee wishes to maximize opportunities for manufacturing innovation, targeted supports for bridging institutions are required.***

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