Research Report
Rural Agri-business and Immigration

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Executive summary

In the 10 years leading up to 2014, Nova Scotia lost an average of 800 persons per year because of net outmigration.[1] This problem is even more pressing in rural regions, specially linked to depopulation and outmigration. In fact this was one of the most pressing issues mentioned in the Ivany report (2014). Rural resource based communities across Nova Scotia face complex economic problems. In addition, agri-businesses in rural Nova Scotia have been on a decline for decades and continue to face challenges associated with:

1. Agriculture land and infrastructure being abandoned.
2. Aging proprietors within the traditional farming communities and businesses.
3. Agriculture production and agri-food processing labour market shortages.

On the other hand, there has been highlighted that there is an increasing number of newcomers to Nova Scotia, including Canadians from other provinces, immigrants and refugees, settling in Nova Scotia that come from farming and agricultural production communities, and bringing existing skills and knowledge in agri-businesses. These new-commers have a strong background in agri-food production methodologies and processes and a desire to work in the food production. However, many of these newcomers are primarily settling in urban communities and do not have access to adequate resources that would allow them to start their own farms or agri-businesses.

In rural Nova Scotia, there are a number of institutions, organizations and government agencies that are engaged in rural development, agri-food industries, food security, immigration attraction and retention. The main objective of this project is to identify the primary stakeholders involved in agri-business and immigration, the roles they play. We also identify the interactions between these stakeholders, with the aim to identify a strategy of engaging the existing agri-food industry and creating strategic links with the newcomer population with an interest in food production and processing.

The project identifies:

1. The key stakeholders relevant for agri-business and settlement and identify the roles they play, and the interactions between them.
2. Examine the opportunities and barriers of engaging newcomers within the Nova Scotia agri-food production and processing industry.
3. Ways in which traditional agri-business can create new and innovative industries, and strategies in which to connect agriculture resources and opportunities to newcomers with knowledge in agri-food production.

This project seeks to contribute to bridge the gap between supply of newcomers with agri-food experience, and opportunities in the agri-food industry. In our analysis we draw from academic literature that focuses on the analysis of newcomer contributions and integration into new settings, and from primary sources of information that seek to identify the key stakeholders, their programs and initiatives that contribute to the growth of the agri-food industry and to the integration of new-commers with expertise in agri-business.

[1] Now or never - Ivany report (2012).

Our analysis shows that indeed, there is an important gap between newcomers with agri-business experience, and the options for integration in the agri-food industry in Nova Scotia. We observe high heterogeneity of newcomers, and also several barriers based on their specific characteristics. Even though there are several programs at place, or programs that have been tested as pilot, a more systemic intervention is required to address the specific needs and address the barriers, given the heterogeneity in the characteristics of newcomers.

The report is structured as follows, in the introductory section we highlight the specificities and challenges for newcomers specific to the agri-food industry. The background and context section focuses on the specific characteristics of the agri-food industry in Nova Scotia and some of the trends in terms of agri-food production. The method section highlights the specific methods for data collection and data analysis for this project. Followed by the results and conclusion sections which elaborate on the analysis of programs and actors involved and also elaborates on potential initiatives that focus on a systemic approach to address the gap between newcomers with agri-food skills and experience and the opportunities they have to engage and contribute to the sector that they are most familiar with.

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Introduction

The Report of the Nova Scotia Commission, "Now or Never: An Urgent Call to Action for Nova Scotians" (also called the "Now or Never report") signaled an urgent call for action and the need for collaboration across sectors. Some of the challenges identified in this report include depopulation of rural areas, unemployment and out-migration of young and skilled population. After the report was released in 2014, several strategies were implemented to address many of the challenges. However, the shrinking of rural areas is still prevalent in Nova Scotia.

This project contributes to provide an understanding of the different stakeholders that play an active role for the retention and settlement of newcomers, particularly of those newcomers with expertise in the agri-food industry, and the projects and initiatives that these stakeholder organizations have championed in order to link newcomers with agri-food expertise and opportunities in the agri-food sector in Nova Scotia. We identify also the links and collaboration between these key stakeholders that produce synergies, and identify existing challenges. We argue that the initiatives and contributions that link newcomers and the agri-food industry play a key role in innovation in the agri-food industry and place-making, and that they also contribute to community and economic development. The main aim of this project is to provide an understanding of how the initiatives implemented by the key stakeholders have the potential to reverse the ebb tide of young people and attract resources, transforming the capacity of local communities. We will address the following questions:

1. Who are the main stakeholders that contribute to link newcomers with expertise in agri-food and the agri-food opportunities in Nova Scotia?
2. What roles do they play and their interactions?
3. What are the existing opportunities and barriers to engage newcomers with agri-food expertise and the agri-food industry?
4. What new strategies can be elaborated to connect agriculture resources and opportunities to newcomers with knowledge in agri-food production?

We depart from the systems of innovation framework to analyze the different stakeholders present in Nova Scotia that play a key role to link new-commers and opportunities in the agri-food industry, the roles they play, and the interactions that are necessary for the creation and accumulation of knowledge and skills. Conceptually, we bridge the innovation studies literature (systemic context specificity and social innovation), with the economic geography literature (local identity, agglomeration, trust-building) to examine the role of local factors in this process. We conduct a case study methodology. We draw on data from in-depth, semi-structured, interviews of key stakeholders, and from archival data acquired from industry and government reports and news.

This research contributes to identify some of the initiatives to contribute to sustainable change and place-making in rural communities and the nature of interactions among stakeholders for the attraction and retention of talent and growth of Nova Scotia's rural areas. This study has important implications for stakeholders within the agri-food industry and their ability to empower social innovation and reverse the shrinking of rural areas by attracting investment and skilled newcomers that reshape rural areas into vibrant communities.

Some previous studies with focus on Nova Scotia (Kalantaridis, Bika, Millard, 2019) have emphasized the role of newcomers, either immigrants or returnees to bring external knowledge sources for idea generation and implementation. They emphasize that newcomer entrepreneurs use less rural and more relational knowledge resources and newcomers may positively influence the innovation system through the dissemination of knowledge, which is then transferred locally, via cooperation channels. In the course of this generation, we have seen critiques of traditional business models (Perez and Leach, 2018), and we have witnessed the rise of more collaborative and community based initiatives (Caslte, 1998; Cozzens and Sutz, 2014), which in the process contribute to the generation and accumulation of knowledge and skills, to livelihoods (Quiley, 2000, 2002), to place-making (Dunn et al. 1995; Slawinski et al., 2019), and to local identity building (Csurgó 2016). Through this study, we explore collaborative business models that are context specific and relevant in the agri-food industry (Aylward and Turpin, 2003), including cooperative models as potential strategies to link newcomers with agri-food experience and opportunities in the agri-food industry.

This research contributes to the identification of best practices and modes of interaction within stakeholders, including government, academia, non-for profit organizations, and communities, in order to link newcomers with opportunities in the agri-food industry, that can contribute to the attraction and retention of talent and also contribute to the much-needed revitalization of rural areas in Nova Scotia. This project will shed much needed light on how linking newcomers with expertise in agri-food and opportunities in this sector has the potential to reverse the attrition of young people from rural areas and attract resources, and on how the local culture and regional identity can be a source of social cohesion (Dax 2018) for positively transforming the capacity of local rural communities. For policy-making this means not only building on existing resources and recognizing the value of cultural identity, but also looking at opportunities for re-organization and renewal, and for identifying the constraints, opportunities, and dynamic trajectories of place-bound communities (Moore and Westley, 2011).

The reminder of this report is structured as follows, section 1 includes a discussion on the theoretical framework and bodies of literature that provide a framework of analysis to the need to link newcomers with expertise in agri-food, and opportunities in the agri-food industry. We depart from a systems of innovation perspective, and then elaborate on some potential new business models, with more focus on cooperative models. Section 2 describes the methods we employed for data collection and analysis. Section 3 provides an overview of the agri-food and immigration, and we elaborate on cases that have emphasized the contributions from newcomers with expertise on agri-food, on the revitalization of rural areas in Canada and with focus on Nova Scotia. Section 4 provides an overview of the key stakeholders, roles they play, and programs they have implemented to link newcomers with expertise in agri-food and opportunities in the agri-food sector. We also elaborate on existing challenges and unaddressed gaps. In section 5 we provide the concluding remarks, and emphasize on implication to policy-making.

1. Background of literature

We use the systems of innovation theoretical framework (Freeman, 1995; Lundvall, 1992). Freeman (1995) defines systems of innovation as the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify, and diffuse technologies i.e. resources, knowledge and skills needed to generate innovations through interactive learning within the system (Lundvall, 1992). Therefore, a system of innovation comprises a set of actors that interactively deploy a set of market and extra-market activities (Larsen & von Tunzelmann, 2006) with the purpose of creating, producing, and selling new products and services. The actors that operate within a system share certain common characteristics (Muñoz and Encinar, 2014: 71) that are context specific and facilitate the transfer and accumulation of knowledge.

This framework emphasizes the importance of interactive learning, as well as the need for interaction between actors, both public and private, for the creation and accumulation of knowledge. It also highlights the relevance of institutions (Freeman, 1995), culture (Lundvall, 1992), their contextual characteristics, and their role in generating and circulating new knowledge leading to innovation (Asheim and Gertler, 2009). Therefore, the systems of innovation framework is a powerful tool for examining the role of actors that are relevant to link newcomers and the agri-food sector in Nova Scotia. Relevant to this research, the systems of innovation framework:

- provides the flexibility needed to identify the different stakeholders that have played key roles to link newcomers with expertise in agri-food and the agri-food industry in Nova Scotia.
- pays special attention to the role of knowledge and skills, as well as the deliberate processes that are required to produce and innovate in the industry, and the types and nature of interactions between the stakeholders in the system.
- has been applied in different systemic contexts, from national (Freeman, 1995), sectoral (Malerba, 2002), regional (Cooke et al. 1998), local (Martin and Simmie, 2008), and rural (Yin, Chen and Li, 2019).
- is readily applicable to the rural context with the aim of understanding the role of knowledge and skill formation and their impact on innovation dynamics in such rural communities.

This research builds upon and expands this theoretical framework, by using it to analyze the existing opportunities and needs to link newcomers and the agri-food industry in a rural setting; and by prioritizing the relevance of revitalizing rural communities via deliberate actions for the creation of knowledge and skills that are engrained in the contextual specific factors, and that are related to the communities' efforts to identify the problems that matter to them. The elements relevant to social innovation (Westley, 2009, 2014), and place-making in rural settings (Slawinski et al., 2019) have also been identified as relevant within the systemic perspective.

By employing the aforementioned theoretical framework, and bodies of literature, we will contextualize the key stakeholders that play a role in integrating newcomers to the agri-food sector, understand the drivers and examine the creation of knowledge and skills in the process, that also can play an important role in the revitalization of rural Nova Scotia.

An important concept for the analysis of this project is social innovation. Westley (2008:1) defines social innovation as "an initiative, product, process or program that profoundly changes the basic routines, resource and authority flows or beliefs of any social system". In rural Nova Scotia this not only means building on existing resources and recognizing the value of cultural identity (Dax 2018), but also looking at demographic implosion as an opportunity for re-organization and renewal. Nova Scotia is not new to social innovation. For instance, the Antigonish Movement in Atlantic Canada pioneered the local community capacity-building model (Lionais, 2015), and as such is an achievement that this region can and should capitalize on. Harnessing the power of local communities to deliver meaningful change remains as strong today as it was in the 1920s and '30s during the Antigonish Movement. Also, the set of stakeholders that played an active role to attract and integrate many newcomers, mainly from Netherlands during and after the WWII and integrate them in the agri-food production sector in Nova Scotia. Therefore, this research contributes to unpack the different drivers that contribute to community engagement (Van Ittersum et al. 2003), local identity (Csurgó, 2016), and place-making. These drivers led to the inception and evolution of the agri-food industry in Nova Scotia, thanks to many contributions from newcomers, and a wide set of stakeholders that played different roles in the process. We also use the term "communities of actors" as introduced by Muñoz and Encinar (2014) to identify groups of individuals and organizations that interact with purpose. These communities of actors engage in different forms of interactions, pushing the boundaries of the status quo and driving significant change and social innovation that have a positive impact in the regional context into which they are inserted (Cozzens and Sutz, 2014). To achieve the creation of value, both social and economic actors involved share a set of local factors, such as micro- and macroeconomic forces, culture and values (Peredo and Chrisman, 2006). Therefore, the strength of communities of actors comes from using the resources within their community --resources that include skills and knowledge (Chamlee-Wright, 2008). Due to the tacit nature of knowledge (Nonaka & von Krogh, 2009; Nonaka and Takeuchi, 1996) used in the agri-food industry, we assert that the development of skills, knowledge, and expertise in this industry requires a high level of interactions at the local level (Gatrell et al., 2018), and the type and nature of interactions between the communities of actors have been shaped by the local context-specific factors.

1.1. Business models in agriculture

Liu (year) emphasizes that the agricultural industrialization process aims to achieve agricultural efficiency, increase farmers' income, and increase profits. It builds an industrial chain around the leading enterprises, and integrates operations through rational division of labor. Farms, agri-business, cooperatives and other business entities can maximize their operational advantages, which has the potential to reduce the agricultural production costs and default risks of various business entities, enhance competitiveness, and help farmers increase their income and satisfy consumers' quality of agricultural products. However, it is not clear what business models can tackle new challenges. Stiles and Cameron (2009) explore the situation of changing patterns in rural Atlantic Canada, and explore models of cooperative and civic communities. They focus on the issues that farmers, non-profits, business and policy makers bring, in this sense, Stiles and Cameron (2009) bring a systemic perspective that integrate several stakeholders. They contribute to analyze if the Agricultural Policy Framework considers the changes in the agriculture and rural communities, and provide an analysis of the economic impact of general and financial cooperatives in Nova Scotia. In their paper, Stiles and Cameron (2009) identified a number of

challenges in rural communities within the agriculture sector, which include: i) insufficient linkages between products and consumers; ii) regular roadblocks; and iii) cost of production issues. These challenges are complex in nature and the implementation of actions from different types of stakeholders is necessary.

At the policy level, policy developments are required to address some areas of concern, for example: succession policies, linkages between producers and consumers, access to finance, import-export, modernization, access to resources, re-energizing rural economics in agriculture, forestry, tourism, infrastructure. All these areas also require to consider the implication of community based approaches, recognizing the contextual factors that play a crucial role in place-making. Access to finance has been identified as one of the main challenges in agroindustry, this is consistent specially for young farmers (aged 18-40) for farm start-ups or purchases. While on the other hand, commercial and government farm lenders report offering flexible credit at historically low interest rates (Rural Research Centre). Stiles and Cameron (2009) elaborate on two models to address the challenges mentioned above, the Cooperate model, and the Civic Model by Lyson; while Liu (year) focuses on agricultural industrialization. Other models included here is the agriculture social enterprise, and the co-operative model.

Cooperate Model

The focus of this model is mainly on the production for export rather than the production for local markets. In this model, firms and cooperation are integrated vertically or horizontally and regulated by the government. This model focuses on the integration with the world economy (national level reforms, regional trade blocks, or multilateral agreements), and the assumption is that the free market will regulate demand, but a governing and governance structure is required. However, as Stiles and Cameron (2009) mention this model might not be the most suitable for Atlantic Canada, since agriculture in Atlantic Canada can be more vulnerable to global changes and challenges. In addition, this model can be a disconnect between the dynamics of family farms and disturbances in the supply management infrastructure that affects smaller operations in Atlantic Canada. Most important, the cooperate model misses the focus on sustainable national food security.

Civic Model by Lyson

This framework addresses current challenges in the agriculture sector in Nova Scotia. It can be used to explain the dynamics of changes in the Atlantic provinces (Newfoundland and Labrador, New Brunswick, Nova Scotia, and Prince Edward Island). Some of the initiatives that have been identified as potential options to engage newcomers with expertise in the agroindustry include co-operatives (Stiles and Cameron, 2009). This model puts more focus on the development of local economics, social equity and environmental sustainability, and has historical applications in agriculture in smaller scale local markets. This model addresses the limitations of local climate and land. The key agents in this model include locally controlled enterprises, craft production, small business, producer and service cooperatives, community-based land trusts, family owned farms. Therefore, this model can be more on synchrony with the realities faced by Nova Scotia.

Agricultural industrialization

Liu (year) suggest a set of elements that are necessary for agricultural industrialization, and include: i) establishing a talent platform; ii) establish a financing platform, a long-term financing

cooperation mechanism between financial institutions and the consortium, and explore the establishment of a government-supported agricultural catastrophe risk compensation fund; iii) establish a training platform, fully tap all kinds of training resources, and carry out skills training related to production, management, and agricultural technology, and prioritize new professional farmers into training. Formulate a medium- and long-term new professional farmers training plan, explore the establishment of a new type of professional farmers qualifications, and the agricultural industry access system; and iv) establish a publicity platform, vigorously promote policies that support the development of the consortium, and create a social atmosphere for the continued healthy development of the consortium.

As indicated by Liu (year), the agricultural industrialization model is very important for improving agricultural productivity. It is an important starting point for solving some rural issues.

Agricultural social enterprise

The focus of the agricultural social enterprise identifies four common themes (The Four Lenses):

Depth of impact—the drive to develop and implement solutions that address the root causes of social problems in order to achieve deeper, more lasting social impact.

Blended value—the drive to develop and implement blended value creation models that make economic wealth creation and social value creation interdependent, so that eventually one cannot exist without the other.

Efficiency—the drive to develop and implement processes and technologies to achieve increased efficiency, so that more can always be done with a set level of resources.

Adaptability—the drive to develop and implement solutions that are more flexible and adaptable, so that lasting social impact can be realized in ever-changing and unstable environments.

The agricultural social enterprise framework offers a set of activities that can be grouped in four strategic areas (The Four lenses):

1. *Stakeholder Engagement*—activities related to involving all who have a role to play in addressing the social problem toward more sustainable social impact.
2. *Resource Mobilization*—activities related to assembling and putting into action the necessary means toward more sustainable social impact.
3. *Knowledge Development*—activities related to improving the quality, relevance and appropriateness of information and processes toward more sustainable social impact.
4. *Culture Management*—activities related to guiding behaviors and mindsets toward more sustainable social impact.

Co-operative model

Co-operative enterprises use economic means to pursue social goals and therefore operate as businesses with a social purpose (Karaphillis, 2015). The background of agricultural cooperatives can be traced to family-based organization in agriculture (Schmitt 1993; Pollak 1985). Karaphillis (2015) argues that in rural settings, co-operatives allow people in small communities to have control over their own local economies and make choices based on the community rather than individual well-being. Co-operatives can also contribute to job creation (Statistics Canada, Census 2011). Some examples of rural co-operatives in Atlantic Canada include Scotsburn Dairy Group,

created in 1900 by dairy farmers in Pictou County, and Farmers Dairy, which was taken over by Agropur.

Amer (2004) elaborates on existing co-operative models and mentions that they vary in terms of ownership. Those co-operatives that are restricted to members include: the traditional cooperative, investment cooperative, and new generation cooperative (NGC). See table 1.

Table 1. Main Types of Cooperatives in Agriculture

Cooperative Model		
General Cooperative Characteristics. Three broad categories (Market Cooperatives, farm supply cooperatives, service cooperatives) (Ortmann & King, 2007)	*Ownership*	Cooperatives are owned and democratically controlled by their members. One-vote principle, regardless of each member's investment in the cooperative.
	Investment	Cooperatives return surplus income (revenue over expenses and investment) to members in proportion to their use or patronage of the cooperative, and not proportionate to their investment or ownership share.
	Benefits and Control	Cooperatives exist solely to serve their members. Motivated not by profit, but by providing a service to satisfy members' requirements for affordable and quality goods or services. Cooperatives pay taxes on income retained for investment and reserves. Surplus revenues are returned, according to patronage, to individual members who pay taxes on that income.
	Actors and roles	Members (i.e., those that use the cooperative's services or buy its goods). Members elect their board of directors from their ranks. Major policy decisions are based on the one-member.
Traditional Cooperatives (Amer, 2004)	*Ownerships*	User owned, ownership rights are restricted to member patrons; non-transferable, non-appreciable and redeemable residential return rights.
	Investment and Examples	Vertical Investment: develop vertical investment structures by investing in limited liability companies, joint ventures, or other forms of strategic alliances. Examples: local multipurpose cooperatives, traditional marketing cooperatives.
	Benefits and Control	User controlled; user benefited
	Actors and Roles	Members: user benefits distributed to members in proportion to patronage.
Collaborative Model(an NGC structure) (Amer, 2004)	*Ownership*	Traditional proportion of member investment cooperative owns an equity in the NGC or the NGC owns an equity interest in another cooperative.
	Investment and Examples:	Rights of ownership are not restricted to member patrons. Examples: cooperatives with capital seeking companies, investor share cooperatives, cooperatives converted to investor driven ownership structure.
	Benefits and Control	Importance of permeant capital contribution. Cooperatives issue more than one class of shares to different owners groups.
	Actors and |Roles	Investors in the investor shared group cooperatives, receive ownership rights in addition to the traditional cooperatives ownership rights help by members of patrons. Members: In the proportional investment model: ownership rights are restricted to members, non-transferable, nonappreciable, and redeemable, but members are expected to invest in the cooperation in proportional to patronage.

Marker Linkage Model Cooperative Model-Social Enterprise	*Ownership/Clients*	Social enterprise's clients: farmers, other cooperatives, trade unions, producer groups, small agricultural firms and food processors.
	Investment and Examples:	The market linkage model of social enterprise facilitates trade relationships between the target population: "clients," small producers, local firms and cooperatives, and the external market. The cooperative uses the income generated by its social enterprise to subsidize member services concerning crop improvement, sustainable farming, animal husbandry and agricultural loans. The market linkage model can be either embedded or integrated.
	Benefits and Control	The social enterprise functions as a broker connecting buyers to producers and vice versa and charging fees for this service. Also selling market information and research services.
	Actors and Roles	Cooperative members: have access to comprehensive information market. Producers and Buyers: could benefit from this information
Farm Supply cooperatives (Cropp, 2002; Ortmann & King, 2007; Cropp & Ingalsbe, 1989; USDA, 2004)	*Ownership/Clients*	These cooperatives usually vary greatly with regard to functions performed, and can also vary greatly in size. Most of the agricultural cooperatives are relatively small businesses.
	Investment and Examples:	
	Benefits and Control	Provide services such as trucking, storage, ginning, grinding, drying, artificial insemination, irrigation, credit, utilities, and insurance). Vary greatly with regard to functions performed, and can also vary greatly in size.
	Actors and Roles	
Cooperative Model-Servicer Subsidization Model	*Ownership/Clients*	The service subsidization model is usually integrated: business activities and social programs overlap, sharing costs, assets, operations, income and often program attributes
	Investment and Examples:	The service subsidization model of social enterprise sells products or services to an external market and uses the income it generates to fund its social programs. Example: Equal Exchange (EE) is a US-based fair trade coffee company
	Benefits and Control	Although the service subsidization model is employed primarily as a financing mechanism --the business mandate is separate from its social mission-- the business activities may enlarge or enhance the organization's mission. This model is integrated with the non-profit organization; the business activities and social programs overlap.
	Actors and |Roles	Members: have an amount of shares from sales External Markets: buys products Cooperative: sells products to external markets Non-profit: benefits of the sales of products
New Generation Cooperatives (NGC) (Amer, 2004; *Stefanson & Fulton, 1996)*	*Ownership/Clients*	NGCs attempt to correct the property rights problems associated with conventional cooperatives (by linking tradable delivery rights to members' equity contributions) while preserving the cooperative character (e.g., the principle of one-member, one-vote on important policy issues, regardless of the number of shares purchased by a member; and cooperative earnings belong to the members and are distributed according to patronage).

	Investment and Examples	NGC focuses on value-added processing activities and links producer capital contributions to product delivery rights. An attractive feature of NGCs is that they are financed in proportion to use.
	Benefits and Control	Equity shares and the associated delivery rights are tradable (subject to approval of the board of directors), and share prices can appreciate, reflecting members expected returns over time.
	Actors and Roles	Members: Get shares as described, vote, make decisions. Board of Directors: elected by members.

Source: based on Amer (2004); Ortmann & King (2007); Cropp, 2002; *Stefanson & Fulton, 1996;* Social Enterprise Typology, Operational Models, http://www.4lenses.org/setypology/psp

Tortia, Valentinov, and Iliopoulos (2013) suggest that the economic nature of agricultural cooperatives is explained by means of a logical continuation of the organizational economics rationale for family farms. Therefore it is important to consider transaction cost and the effect of family farms and their limitations in terms of limited ability to scale up production and to reach adequate market power. Cooperative models bring different positive attributes to the activities relevant to agriculture, including the reduction of transaction cost, division of labor, creation and transfer of knowledge, collective and individual self-sufficiency. Tortia, Valentinov, and Iliopoulos (2013) mention that specific to agriculture, some social enterprises provide services that connect farmers, co-operatives and the market.

Table 2. Models that connect farmers, co-operatives and market

Social enterprise model connecting farmers and cooperatives	Characteristics
Marker Linkage Model	Facilitates trade relationships between the target population or "clients," small producers, local firms and cooperatives, and the external market. It functions as a broker connecting buyers to producers and vice versa, and charging fees for this service. Selling market information and research services is a second type of business common in the market linkage model. The market linkage model can be either embedded or integrated.
Service subsidization model	Sells products or services to an external market and uses the income it generates to fund its social programs.
Organization support model	Sells products and services to an external market, businesses or general public. In some cases the target population or "client" is the customer.

Source: Tortia, Valentinov, and Iliopoulos (2013).

1.2. Linking new-commers with agri-food opportunities, and rural innovation

Rural areas can face several challenges in terms of population density, and access to sources of knowledge. However, rural areas are heterogeneous (OECD, 2019). In spite of the limited opportunities of knowledge spill overs in rural areas, and difficulty in accessing tactic knowledge from other places as well as location and distance obstacles, some rural areas are initiators of many innovative enterprises, many of them benefiting from local or newcomer entrepreneurs, and benefiting by the role that multiple stakeholders play to contribute to innovation in rural areas (OECD, 2019; Lee & Cowling, 2014; North & Smallbone, 2000). Some elements that are highlighted as key for the development of innovations in rural areas include:

Rural resources are important in rural innovation. These resources often comprise a high natural resource content (Murdoch, 2000) as well as idyllic imageries and a traditional heritage that may be viewed positively by urban populations, driving demand for rural products (Milbourne, 2007).

Human capital – Local and returning entrepreneurs: Their move is often viewed as central in securing access to distant sources of knowledge for rural innovation. They make a positive contribution to the creation of new ventures and the incidence of innovation. Enterprises located in rural areas often demonstrate success in their innovative activities and contribute to place-making in rural areas. It is 'innovation in the rural'. Policy actions need to focus on attracting more innovative entrepreneurs (Bosworth, 2006; Stockdale, 2006), and ensuring that rural enterprises can access distant relational resources (Bosworth, G. 2006; Tonts & Holmes, 2013). As indicated by Florida (2007), the creative class has a positive effect on local economies through their own involvement in job creation (McGranahan and Wojan, 2007; McGranahan, Wojan & Lambert, 2011), production and consumption (Tonts & Holmes 2013; McGranahan & Wojan, 2007).

Therefore innovation in rural areas needs to be understood 'in context' that include natural resources, the actors in rural areas and connection between them and in place. Bosworth (2006) shows that the impact of immigrants, or return entrepreneurs, is not restricted to their pre – existing networks. Their experience and meaning assigned to place enable them to introduce new linkages to access distant tactic knowledge. He argues that the understanding of place for innovation is necessary to bring together place, entrepreneurs and resources in a triangular process of innovation. In this process, then is vital that newcomers and returning entrepreneurs access relational and distant knowledge and resources through pre-existing networks, as well, as they have the ability to establish new linkages. As suggested by Bosworth (2006) this triad understanding of rural innovation calls for policies that support diversification. This involves the development of connections between innovation networks combining rural and relational, transient and new knowledge resources, and also acknowledging the heterogeneity of rural communities (Stott & Tracey, 2018).

Rural innovation is correlated with economic growth in rural areas (Tonts & Holmes 2013; Stott & Tracey, 2018). Tonts & Holmes (2013) explore the extent to which rural regions and localities have been able to attract 'creative' human capital since 2001 in Australia. They indicate that the 'creative class' presence is positively associated with business and employment growth, and their findings suggest that the presence of the creative class, together with select rural amenity indicators, are powerful predictors of firm numbers but appear to have little influence over employment creation in rural Australia. Their findings suggest that creative workers are important for rural spaces, and they remain an important component of rural revitalisation. Kalantaridis, Bika & Millard (2019) suggest that heterogeneity within rural communities influences innovation. Aliye et al. (2011) argue that migrants coming to rural areas are important agents of change. However, without the involvement of the local population, change cannot happen in the rural areas. In their meta-analysis, Aliye et al. (2011) show that newcomer entrepreneurs are relatively older, better educated, and develop more non-agricultural business. They appear to be predominantly attracted by a rural lifestyle. In many cases, newcomer entrepreneurs are not directly the instigators of economic development, but their contribution to

physical capital formation is greater than that of the locals. Their results suggest that newcomers play a crucial role in the continuity and regeneration of the physical environment in rural areas.

Aliye et al. (2011) elaborate on a set of pull and push factors in rural areas. Push factors are those negative elements such as lack of employment and low incomes, and pull factors are associated with the attractiveness of the rural environment. Kalantaridis et al. (2019) emphasize the importance for the creation of knowledge to innovate. They highlight four dimensions: i) the use (or not) of external knowledge sources which are important in enhancing innovation; ii) the type of knowledge transferred, tactic knowledge about market opportunities and codified knowledge about technological change; iii) the geography of external linkages (regional, national and international ones); and iv) the strength of the external linkages, in terms of durability through time and of frequency of the interactions.

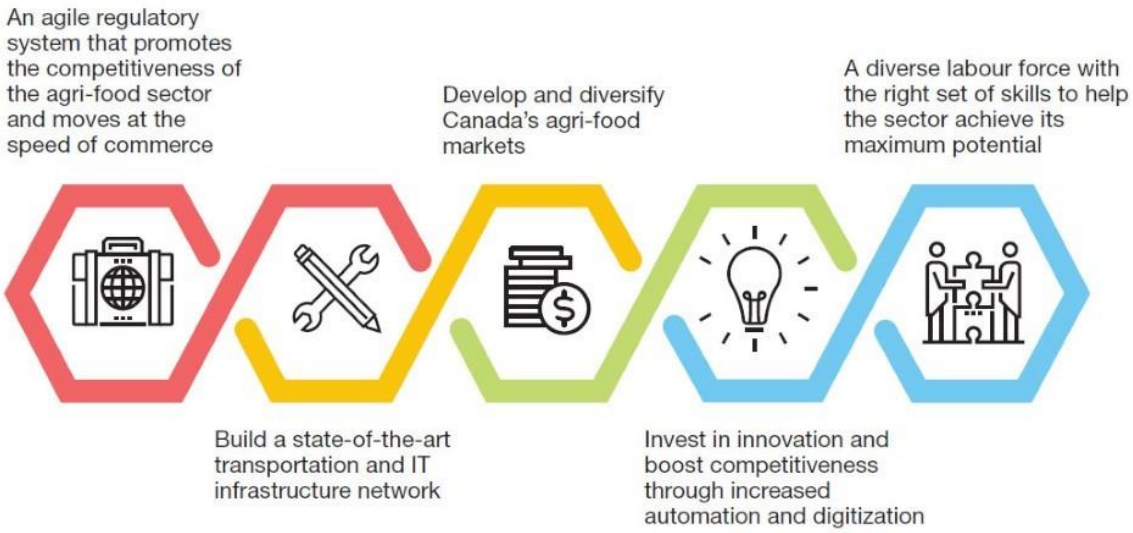
Identifying the effect of newcomers to a rural area and identifying how do they influence innovation strategies in terms of the creation of knowledge and innovation outcomes is relevant for rural areas (Kalantaridis, Bika & Millard, 2019; Aliye et al. 2011; Tonts & Holmes 2013; Stott & Tracey, 2018). In the context of rural innovation, an additional dimension revolves around the introduction of innovation built on the distinctiveness of the place within occurs (Kalantaridis, Bika & Millard, 2019).

The following section elaborates on the context of agri-food and immigration, and elaborates on some success stories that have linked newcomers to agri-food opportunities in Canada and with focus on Nova Scotia.

2. Agri-food context in Canada and Nova Scotia

The government of Canada has proposed five key areas to strengthen the Canadian agri-food sector: an agile regulatory system that promotes the competitiveness of the agri-food sector and moves at the speed of commerce; build a state-of-the-art transportation and IT infrastructure network; develop and diversify Canada's agri-food markets; invest in innovation and boost competitiveness through increased automation and digitization; a diverse labour force with the right set of skills to help the sector achieve its maximum potential (see Figure 1.) These elements are linked to the agricultural industrialization framework suggested by Liu (year), and building capacity along them is necessary to foster the agri-food sector. This framework also emphasises the role of human capital with skills, experience and knowledge to contribute to the growth of the sector.

Figure 1. Areas to strengthen the Canadian agri-food sector



Source: Government of Canada

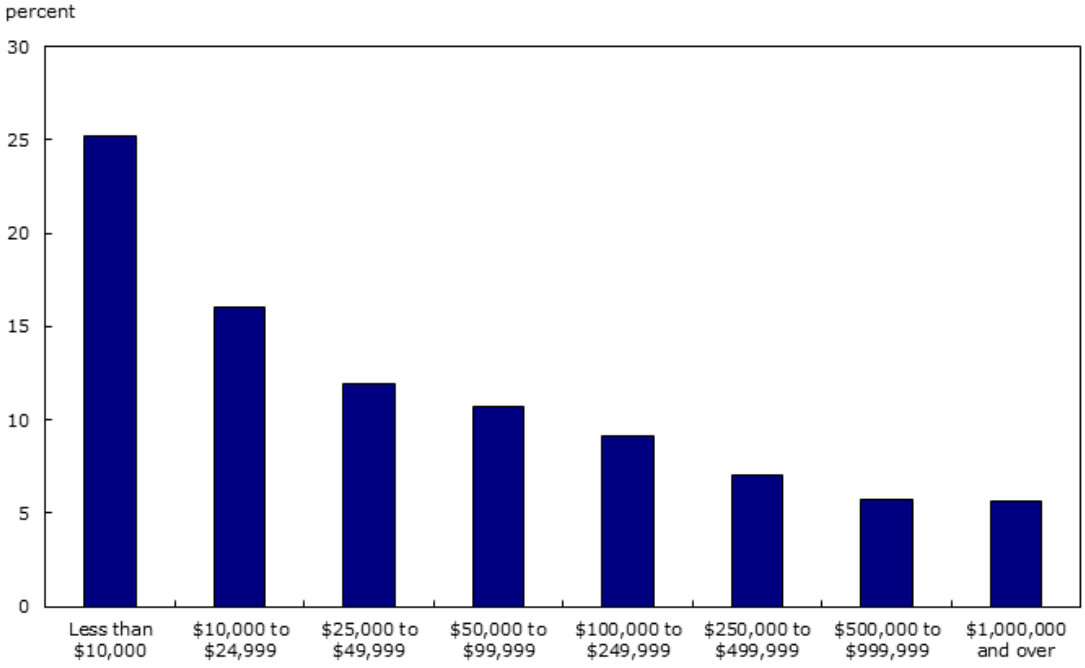
2.1. Agriculture and reaching customers through direct marketing

Direct marketing is the practice through which farms sell agricultural products directly to consumers for human consumption. Farms can sell unprocessed products, such as fruits, vegetables, meat cuts, poultry, eggs, maple syrup, honey, or value-added products, such as jellies, sausages, wine, cheese. Direct marketing represents an important component of connection between farms and communities, and opens several opportunities for farmers to engage in novel ways to bring their products and create a link with their communities.

There are also several methods through which farms can practice direct marketing, some of which include farm gate sales, stands, kiosks, U-pick, farmers' markets, and Community Supported Agriculture (CSA). In Canada, 12.7% of all farms reported direct marketing. Of the 24,510 farms that sold directly to consumers, 96.1% sold unprocessed food products like fruits and eggs, and 14.4% sold value-added products like wine and cheese. The most reported methods of direct marketing were farm gate sales, stands, kiosks, or U-pick, which accounted for 89.4% of farms reporting direct marketing practices. Farmers' markets were reported by 22.0% of those with direct marketing, while 5.2% used Community Supported Agriculture (CSA) initiatives and 3.8% used other methods.[2] Figure 2 indicates the proportion of agricultural operations reporting direct marketing, and Figure 3, provides the report by province. Figure 3 shows that NS is the third province with higher percentage of agricultural operations reporting direct marketing.

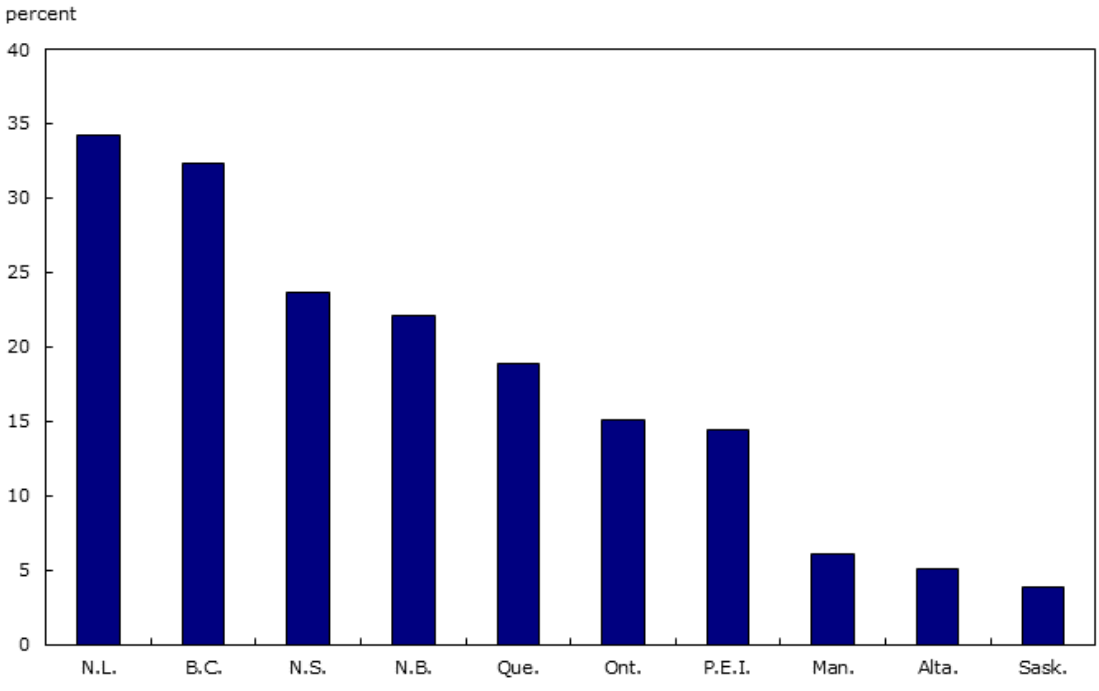
[2] https://www150.statcan.gc.ca/n1/pub/95-640-x/2016001/article/14816-eng.htm

Figure 2. Proportion of agricultural operations reporting direct marketing by receipts class, Canada, 2015.



Source: Census of Agriculture (3438).

Figure 3. Percentage of agricultural operations reporting direct marketing by province, Canada, 2015.

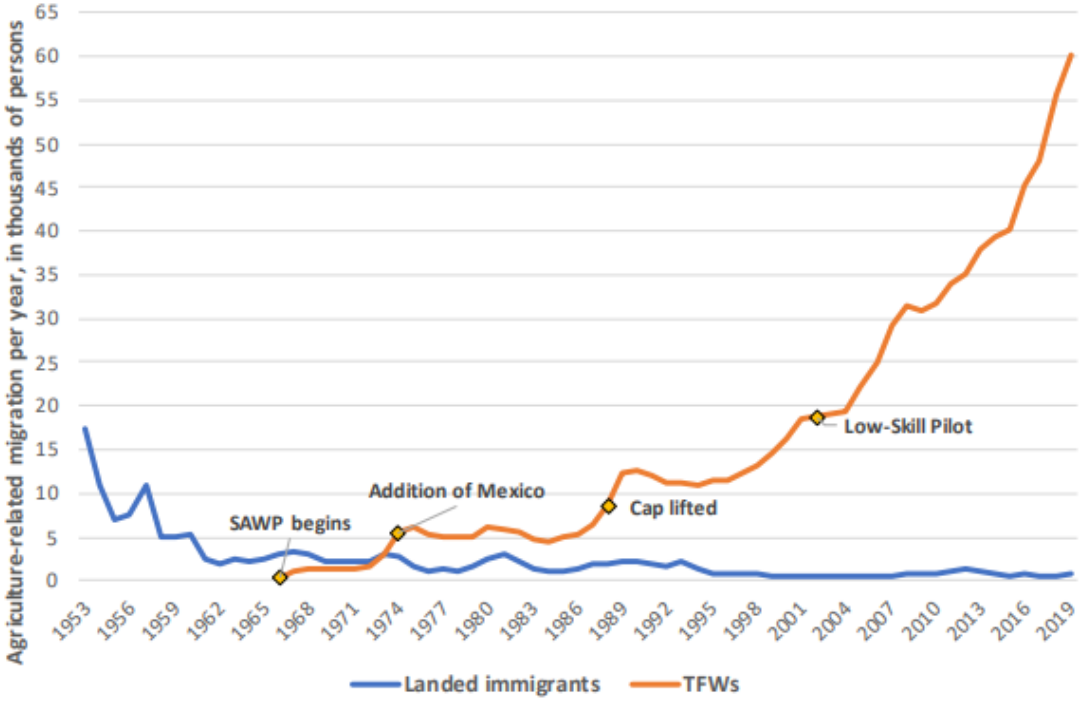


Source: CANSIM table 004-0244.

2.2. Agricultural Immigration to Canada, Permanent and Temporary (1953-2019)

The potential for economic, social and cultural growth as a result of increased immigration is significant. Immigrants and newcomers have contributed to the agriculture and agri-food sector. As we present in this section, immigrants from different origins have settled across Canada and contributed to agriculture, bringing revitalization to different rural areas. Figure 4 indicates the agriculture related immigration in Canada, and differentiates between landed immigrants and temporary foreign workers. Figure 4 shows an increased gap of skilled immigrants that contribute to the agriculture sector in Canada. There have been a number of programs that focus on agriculture temporary foreign workers. For Example, SWAP, beginning in 1966, was initiated as a labour-migration agreement between the Canadian and Jamaican governments, allowing labourers from Jamaica to come temporarily to Canada to work in agricultural production (Budworth, Rose & Mann, 2017). It expanded to include 10 other Caribbean states and Mexico. Mexico joined in 1974 (ESDC, 2020; Preibish, 2007).

Figure 4. Agriculture related migration (1953-2019).



Source: Statistic Canada

Some immigrants become farm operators, managing the day-to-day operations of their own farms. Results from the 2016 Census of Agriculture, along with data from the 2016 Census of Population, show that immigrants made up 8.7% of Canadian farm operators, accounting for 23,440 people. In 1996, immigrants made up 10.2% of Canadian farm operators, accounting for 39,620 people.[3]

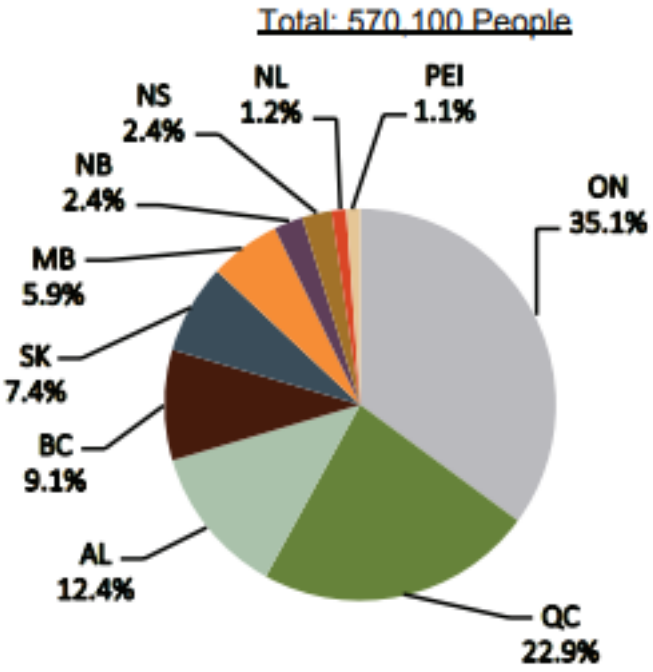
[3] https://www150.statcan.gc.ca/n1/pub/96-325-x/2019001/article/00003-eng.htm

The countries of birth of Canadian immigrant farm operators have evolved over time, gradually moving away from a European origin. In 2016, the United States and China emerged as the two most frequently reported countries of birth for Canadian immigrant farm operators over the most recent period of immigration. Recent immigrants, those who came to Canada between 2011 and 2016, represented 1.7% of immigrant farm operators in 2016. There are many differences between other immigrant, non-immigrant, and Chinese and American immigrant farm operators who came to Canada between 2011 and 2016, from where they live to the type and size of farm they operate.[4] Newcomers to Nova Scotia tend to be highly educated relative to the domestic population (Akbari, 2018), and according to the Nova Scotia Finance and Treasury Board (2019), newcomers are more likely to create jobs through entrepreneurial activities.

2.3. Provincial Contribution to Agriculture Employment in Canada

With 31.9%, Ontario accounted for the largest share of the combined GDP of agriculture and food processing, while Quebec and Alberta accounted for 20.5% and 16.0% respectively (see Fig 5, Fig 6 and Fig 7).

Figure 5. Primary agriculture and food processing sectors accounted for varying shares of the provincial GDP.

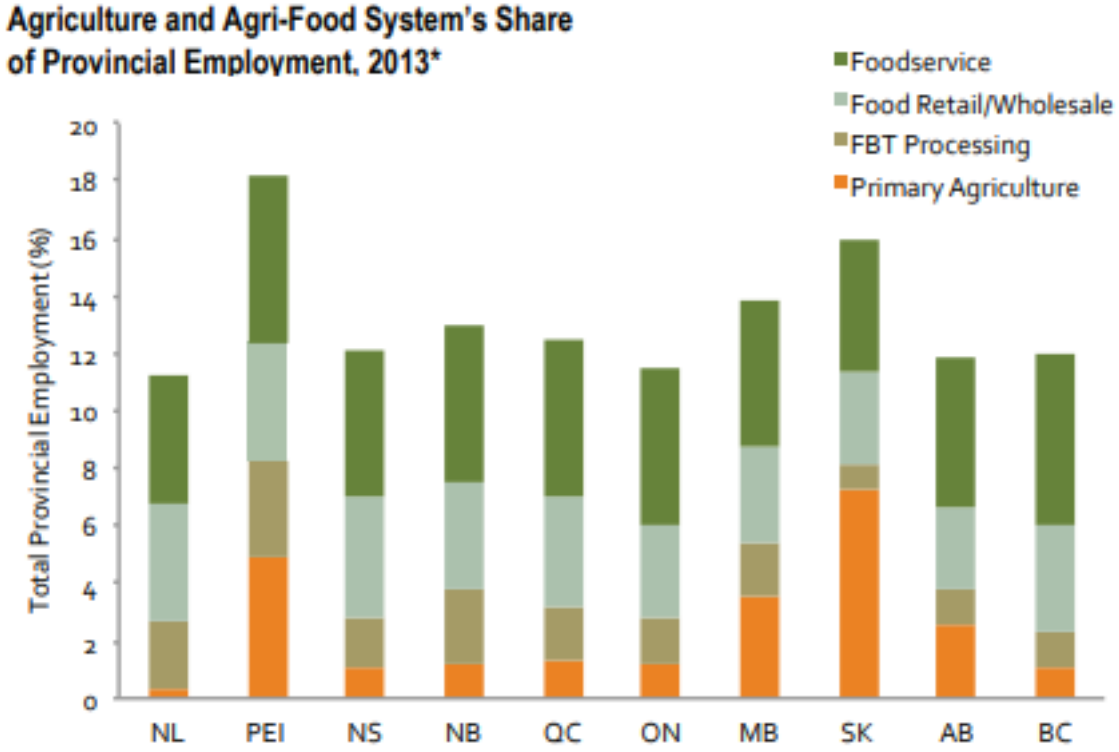


Source: Statistic Canada

[4] https://www150.statcan.gc.ca/n1/pub/96-325-x/2019001/article/00003-eng.htm

In 2013, the primary agriculture and food processing sectors generated the most economic output in both Saskatchewan and Prince Edward Island, accounting for 9.0% and 8.8% of the GDP in those provinces, respectively. Except in the provinces of Manitoba, Saskatchewan and Alberta, food processing accounted for a larger share of the provincial GDP than primary agriculture.

Figure 6. Agriculture and agri-food system's share of provincial employment



Source: An Overview of the Canadian Agriculture and Agri-Food System 2015. Statistics Canada and AAFC calculations.

Figure 7. Major Agriculture Commodity By Province

Source: https://www.canadaaction.ca/agriculture_sector_canada_by_the_numbers

2.4. Atlantic Canada

The agriculture sector in Nova Scotia is not a major employer (see Fig. 6). In 2017, it accounted for 1.3% of the Atlantic region's total workforce. Of the 14,800 jobs identified, the vast majority of workers were employed on farms, while aquaculture operations accounted for a relatively small number of workers.

In addition to the general reduction in workforce, major demographic trends are taking place within the Agricultural sector in Atlantic Canada: An aging of the existing workforce, and the second is the entry of younger workers.

Box 1. Highlights. Agriculture in Atlantic Canada

- On average, Atlantic Canada's Agriculture sector accounts for just 1.0% of the region's overall Gross Domestic Product (GDP).
- Its relative importance at the provincial level varies, ranging from 0.4% of total GDP in Newfoundland and Labrador to 4.0% in Prince Edward Island.
- On average, those who work in the Agriculture sector earn significantly less than those in other sectors.
- This gap has widened over the past decade, making it even more difficult for employers to attract and retain workers.
- Labor shortages are common in this sector and employers across all four Atlantic provinces rely on foreign workers to fill job vacancies.

There was a sharp decline in the number of farms in Atlantic Canada (2001 Census of Agriculture).
Box 2.

- The number of census farms in Atlantic Canada declined sharply between 1996 and 2001, continuing a long-term trend.
- The 2001 Census of Agriculture counted 9,445 census farms in Atlantic Canada, a 12.7% decline during the past five years, slightly stronger than the 10.7% decrease at the national level.
- The number of farms in Atlantic Canada has decreased 27.0% from 12,941 in 1981. (A census farm is an agricultural operation that produces an agricultural product intended for sale).
- In 2001, the four Atlantic provinces accounted for about 4% of Canada's total of 246,923 farms, virtually unchanged from 1996. The number of farms declined in all four provinces.
- The decline was strongest in Prince Edward Island, where the number of farms fell 16.8% to 1,845, the largest percentage decrease in the nation. Followed by Newfoundland and Labrador, with a 13.3% decline to 643 farms; Nova Scotia was down 11.9% to 3,923; and New Brunswick was down 10.9% to 3,034.
- Proportionally, Nova Scotia had 42% of farms in Atlantic Canada, the largest share. New Brunswick had 32%, Prince Edward Island, about 20%, and Newfoundland and Labrador, 7%.

Source: https://www150.statcan.gc.ca/n1/ca-ra2001/first-premier/regions/farmalt-fermealt-eng.htm#11

2.5. Nova Scotia, trends and statistics

Total farm area in Nova Scotia increased 2.2% between 2006 and 2011 to 1.0 million acres. Nova Scotia was the only province in Canada to report an increase during this period. A total of 3,905 farms were reported to the 2011 Census of Agriculture in the province, 2.9% more than in 2006. Nova Scotia accounted for 1.9% of Canada's 205,730 farms in 2011

Average area per farm was stable between censuses. Farms in Nova Scotia averaged 261 acres in 2011, compared to 262 acres five years earlier. Table 3. displays the results of Proportion of cropland.

Table 3. Composition of cropland

Composition of cropland	**Percent of croplandNote ***	
	2011	**2006**
Field crops	18.8	15.7
Hay	58.9	64.7
Fruits	18.7	16.3
Vegetables	2.4	2.3
Sod and Nursery	1.2	1.1
Source: Statistics Canada, Census of Agriculture, 2006 and 2011		

Source: https://www150.statcan.gc.ca/n1/pub/95-640-x/2011001/p1/prov/prov-12-eng.htmRef

Box 3. Highlights of Nova Scotia agriculture (2001 Census):

- Nova Scotia's fruit growing area expanded between 1996 and 2001. Farmers had 46,084 acres in fruit production in 2001, up from 40,422 five years earlier.
- The apples area continues to decline. Farmers had 6,546 acres of apple orchards in 2001, down 18.9% from 1996.
- Apple production is concentrated in the Annapolis Valley and surrounding area, with the vast majority of orchards (86%) in Kings County. Orchards there have declined 19.6% to 5,650 acres.
- Blueberries had 37,508 acres of blueberries under cultivation, up from 30,272 acres in 1996. Blueberries accounted for 81% of Nova Scotia's total fruit acreage.
- Nova Scotia is Canada's largest producer of blueberries, producing 35% of Canada's crop.
- In Cumberland County, where 57% of blueberries are cultivated, the blueberry area has increased 25.1% to 21,244 acres.
- Christmas tree area fell to 23,450 acres in 2001 – a decline of 18.1% since 1996.
- The 535 Nova Scotia farms producing Christmas trees was one-third fewer than the last census. Nova Scotia had more area devoted to Christmas tree production than any other province in Canada in 2001.

Source: https://www150.statcan.gc.ca/n1/ca-ra2001/first-premier/regions/farmalt-fermealt-eng.htm#11)

Box 4. Number and Economic Contribution of Farms by Areas

- *Total number of farms:* 795 farms as of 2006.
- *Number of Farms according to county:* Kings County has the most farms of any county with 604 in 2006, followed by Cumberland (553) and Colchester (442). Hants, Lunenburg, Pictou, Annapolis and Antigonish also have over 225 farms. Victoria, Queens, Richmond and Shelburne have fewer than 50 farms.
- Total Area of Farms. The province has 403,044 ha total farm area. Cumberland (73,025 ha) has the most farm area, while Richmond (1,131 ha) has the least. Victoria County has the largest farms on average at 181 ha. Digby (43 ha) has the smallest farms on average.

- Average ha/farm: Nova Scotia average is 106 ha/farm, significantly lower than the Canadian average of 295 ha/farm.
- Contribution to Economy: the contribution to the NS economy from the agriculture and food industries (less fish) as measured by gross domestic product (GDP) was $544.4 million- 1.8 percent of the provincial economy. Primary agriculture GDP was $198.9 million- 0.7 percent of the total economic output of Nova Scotia. Including fisheries, agri-food GDP amounts to $1.05 billion- 3.5 percent of the provincial economy.

Source: Nova Scotia Statistics: Department of Agriculture, Michael Devanney, Economist, Frank Reinhardt, Sr. Economist, Industry Development & Business Services 6/1/2011 An Overview of the Nova Scotia Agriculture and Agri-Food Industry 2010.

Farmers have recognized the importance and benefits of being organized. There have been many farmer organizations that aim to develop and formulate general or common agriculture policies and work with governments to implement them (Garner p :131). There were also more restricted organizations that promote the interests of specific commodity groups. There are organizations that aim to improve the quality of livestock, soil and crops in general. In addition there are cooperatives of farmers that help in the acquisition of farm supplies and in the sales of farm products.

2.6. Agriculture in the Annapolis Valley

The Annapolis Valley is referred to as Nova Scotia's bread basket. Its unique micro climate, fertile soils and skilled farming community make this area one of the most productive and diverse agricultural growing regions in Canada. The Annapolis Valley is home to the majority of Class 2 farmland in Nova Scotia. Class 2 soil has the least restrictions for agricultural production of all the land classes in NS. Agriculture in the Annapolis Valley is diverse, including dairy, poultry, beef and horticultural farms, including the apple orchards. In 2000, agriculture in the Annapolis Valley generated over $180.1 million in farm receipts, about 38.4% of all farm receipts in Nova Scotia. In the same year, farm operating expenses amounted to approximately $151.6 million.

Farm businesses have a strong local orientation; they engage in direct marketing and buy and sell in their local community. The approximately 840 farms in the Valley create significant economic activity. The number of direct and indirect jobs associated with agriculture and their linkage to other industrial sectors in Annapolis Valley is estimated at 3550, or approximately 13% of all jobs in the local economy. In 2001, land in crops accounted for 37.0% of total land use in Annapolis Valley. In the province, 26% of the crop land in use is in the Annapolis Valley.[5] Table 4 shows the use of land in Nova Scotia and the Annapolis Valley.

Table 4. Farmland use in Annapolis Valley and Nova Scotia, 2001

Land Use	Annapolis Valley (Acres)	%	Nova Scotia (Acres)	%
Land in crops (excluding Christmas tree area)	76,811	37	294,596	29.3

[5] http://preservefarmland.com/facts-about-prime-farmland/

Tame or seeded pasture	13,128	6.0	56,520	5.6
Natural land for pasture	17,335	8.0	81,215	8.1
All other land (including summer fallow and Christmas tree area)	101,559	49.0	573,502	57.0

Source: http://preservefarmland.com/facts-about-prime-farmland/

From 2006 to 2011, the total number of farms in Annapolis County had increased by six. The predominant farm types in Annapolis County were other crops (23.5%), cattle ranching (21.8%), and fruit and tree nut (16.2%). Although ranching cattle remains a dominant farm activity in Annapolis, it has dramatically decreased since 2006 from 81 to 51 farms (-37.04%). In addition, sheep, goat, hog and pig farming had slightly decreased since 2006 with the decline of 25% and 100% respectively. All other types of farm production had either increased or remained the same (*Nova Scotia Federation of Agriculture*).

In the next two subsections we provide two examples of agro activities in the valley and Nova Scotia.

2.6.1. Nova Scotia wineries

Nova Scotia's wineries are primarily organized under the Wine Growers Nova Scotia, not all wineries are members. The industry began in the late 1970s with the original Grand Pré Winery in the Annapolis Valley of Nova Scotia. Nova Scotia's climate varies from region to region and grapes grow best where there is a favorable microclimate. Each region's temperatures and soils differ significantly, allowing for different varieties to excel in separate areas. In good climates in the province, temperatures rarely drop below -23 degrees Celsius, allowing greater variety of vines to be grown compared to colder regions such as the Cape Breton Island.[6]

On a CBC report it was indicated that winemakers in the Annapolis Valley, are embracing what might appear as an impossible set of conditions — cool temperatures and rocky, acidic soil — to create award-winning white and sparkling wines. "There's this cardinal rule that basically dictates a great wine always has the ability to highlight the strengths of where it comes from," says Benjamin Bridge winemaker Jean-Benoit Deslauriers.[7]

Nova Scotia is gaining recognition for high quality wines. With the increase in awareness of Nova Scotia as a wine producing region, there is also increased interest in the production of grapes. The growth in NS's wineries has spurred a 12% average annual growth in grape production, increasing from 56 tonnes produced in 1987 to 1,147 tonnes in 2013. According to the 2011 Census of Agriculture, there are 94 farms in Nova Scotia with a total of 658 acres planted with grape vines. The majority of these farms have very small grape acreages, with only 10 farms having 10 or more acres. There is substantial capital investment required for the establishment of a commercial vineyard, and it takes many years to recover these costs.[8]

[6] https://en.wikipedia.org/wiki/Nova_Scotia_wine.

[7] https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-great-wine-1.3512006

[8] Nova Scotia Wine Grape Cost of Production and Cash Flow Analysis, NS Department of Agriculture

Most wineries in Nova Scotia are interested in producing a premium quality wine, not a bulk wine, and therefore are concerned with securing the highest quality grapes. The model farms in this analysis represent 10 and 20 acre grape vineyards producing an average yield of grape varieties that are currently growing and in demand by Nova Scotia wineries.[9]

- These varieties include a combination of 80% hybrid vines and 20% vinifera vines. Vineyard spacing: 10 vineyard rows, 500 ft. in length with vines at 4 ft. spacing and a row spacing of 9 ft. This will allow for approximately 1,200 vines/acre at $2/vine;
- The vineyards are 80% hybrid plants and 20% vinifera plants;
- The trellis system is a vertical shoot positioning system (VSP);
- Grapes are hand harvested;
- The vineyards are in full production in year 5;
- The vineyards return an average yield of 3 tonnes/acre;
- The combination of grape varieties return an average price of $2,500/tonne;
- The vineyards have a 28'x32' farm structure priced at $35/ft2 for storage of equipment and machinery.

2.6.2. The Christmas Tree Agriculture.

Christmas trees industry in Atlantic Canada provides jobs to 2,500 Nova Scotia tree growers, employing 400 people full time and 2,000 part time.[10] Annual sales are around $300 million,[11] represented by a harvest of over 1.8 million trees annually, 95% of the trees harvested are sold outside the province, 80% to United States. Christmas Tree Farms are common in Guysborough County, where the growing conditions are ideal and there are generations of skilled growers. The Christmas Tree business provides income for a multitude of people as farms require year-round attention. This includes shearing during the hot summer months, planting, fertilizing, cutting, grading, dragging, bailing and loading the trees on transport trucks.[12]

The total area devoted to Christmas tree production in Nova Scotia fell 18.1% to 23,450 acres (94.9 km2)[11]. Production was spread out over 535 farms, one-third less than in 1996. Despite the overall decrease in land area for the crop, Nova Scotia led Canada in terms of land used for Christmas tree cultivation[11].

Prince Edward Island has a small Christmas tree industry, some growers cater to the "u-cut" and local retail trade.[14] The primary species is Balsam Fir with pines and spruce accounting for most of the rest.[15]. Many growers plant seedlings on old fields but there is increasing interest in managing balsam fir that establishes itself naturally on many old cutover sites[15]. In 2009, approximately 80,000 Christmas trees were exported from Prince Edward Island to the United States.[6]

The Christmas tree Research Programme of Canada aims to enhance Atlantic Canada's knowledge-based bio-economy through the development of science-driven innovative

[9] Nova Scotia Wine Grape Cost of Production and Cash Flow Analysis, NS Department of Agriculture
[10] Facts about the Christmas tree industry in Canada, By Star Staff, Wed., Dec. 3, 2014, the Star News,https://www.thestar.com/news/canada/2014/12/03/facts_about_the_christmas_tree_industry_in_canada.html
[11] Municipility of the District of Guisboroug, http://modg.ca/
[12] https://en.wikipedia.org/wiki/Christmas_tree_production_in_Canada

technologies and products for increasing the sustainability of Atlantic Canada's Christmas tree and greenery industry.[13]

Recently a Ministerial announcement of a $751k investment over three years into the Nova Scotia Christmas Tree and Greenery sector. The five key areas of focus are: R&D, quality standards, marketing, operational efficiencies and developing a sustainability plan.[14]

The next subsection elaborates on two cases that contribute to an understanding of the importance of immigration and its contribution to agri-food.

2.7. Case 1: Dutch immigrants to Nova Scotia

2.7.1. General Overview of the Dutch Immigration

The Dutch are the main immigrants to Canada that immigrated and settled in the agriculture sector. Religion and church affiliation of Dutch immigrants played a role in immigration and settlement to Nova Scotia (Gerrits, 1996, p:93). Between the late 1940s and the beginning to mid 1960s, a total of 230 Dutch immigrant framers have purchased lands with the aid of loans from the Nova Scotia Settlement Board. In addition to framers that purchased farms with the help of other aids. The total number of farmers that settled at the end of 1963 were 24 (Gerrits, 1996, p:74). The settlement and immigration decades lasted from 1940 to 1960. In the middle of the nineteenth century the Dutch immigration to Canada increased due to religious as well as economic factors. In the 1880s the first Dutch immigrants arrived in Canada, and around 250,000 Dutch nationalists immigrated between 1846 and 1900. The minister of interior at that time, conducted a propaganda campaign to encourage immigration. The immigration to Canada started at the Canadian west. Gerrits (1996) provides the following set of events:

Before 1930: Provincial and federal governments encouraged immigration of European farmers in 1920, the Dutch, German and German farmers were the groups with a higher number of immigrants (p: 9-11).
Between 1914 and 1915: In an attempt to settle the Dutch immigrants, the provincial NS government brought a dozen of farm families from Holland to the province in the mainland area of Hans County and Cumberland County (p: 9-11).
Between 1918-1930 (the depression periods): the government of Canada put strict regulations on immigration. Around 1,500 Dutch immigrants settled in Canada, most settlers were in the area of Ontario. During the war, some settled in the prairies drawn by the Dutch communities already residing there. In 1930, although the immigration was restricted, the door was open to immigrant farmers who had capital to start operations of their own. Dutch immigration peaked between 1947 and 1970, with a total of 185,000 Dutch nationals.
After WWII. After the WWII many Dutch faced economic hardship. Agriculture land was not fit. Gerrits (1996) also mentions that the liberation of Netherlands by Canada, and that princess Juliana, the heir of the Dutch thrown, and her family stayed in Ottawa at the beginning of WWII were very strong factors for the popularity of Canada among the Dutch and contributed to the

[13] The Christmas tree Research Programme of Canada, Dalhousie University, https://www.dal.ca/faculty/agriculture/research/labs_groups_facilities/christmas-tree-research.html
Nova Scotia Christmas Tree Journanl http://ctcns.com/nova-scotia-christmas-tree-journal/

[14] https://www.perennia.ca/wp-content/

immigration of Dutch farmers. Another important factor, emphasized by Gerrits (1996) was the neo-Reformed Christians, who served as a drawing factor for post war immigrants. The pre-war Dutch who immigrated to Canada had established communities and attracted fellow immigrants. It is interesting to note that social and family factors had more effect on immigration than the information provided by the governments and non-formal immigration organizations (p:11-13).
1940 and 1970, a number of 185,000 Dutch immigrants arrived in Canada. In 1956 the farm labourers increased, and demand for immigrant workers was more than the numbers placed. During late 1956, attempts were made to attract Hungarian refugees to NS, but they were not successful. In 1957 the supply of farm labour was nearly able to meet the demand. This was not only, because of the immigration, but because of the increased supply of domestic farm labourers from 1945. In 1959 many farm labourers were locals due to the high unemployment in limber and mining. In 1964-65 Britain supplied the single largest group of immigrant farm labourers. The decline of the European Dutch immigrants had a negative impact on the agriculture of NS. The authority and societies continued efforts to attract immigrants (p:61). Those efforts did not reverse the declining trends in immigration.
Between 1970 and after 1990. The number of farms owned by Dutch Canadians in 1990 was 288, and this number represented about 7.25% of the provincial owned farms (P:119-20). These farms were distributed over thirteen or eighteen counties in the province. Numbers varied from 113 in Kings Country to one in in Queens County. Kings County had around 36% of the farmers, and Antigonish county had around 14%(P: 120)

2.7.2. Dutch immigration to Canada and the role of stakeholders

By the end of 1953, farmers made 45% of Dutch immigrants entering Canada. They were unique among other immigrants for entering the agriculture sector in large numbers. Some of the push-pull factors included:

- The government of the Netherlands encouraged emigration.
- The religion dimension facilitated the Dutch immigration. They established church communities which would give them spiritual and material support. These churches established immigration societies to meet the needs of Dutch immigrants.
- The environment in Canada seemed suitable for them to preserve their conservative ways which they saw difficult in post war Holland.

Role of stakeholders

The role of Church and related organization was very important in attracting and settling immigrants in the Antigonish Valley. Churches sponsored immigrants and helped them settle in. Many immigrants were encouraged to come to Antigonish. The Catholic church helped to attract catholic immigrants from Holland (p:20-22). The land settlement program and the diocese of Antigonish, first established in 1940, played a major role in attracting the Dutch immigrants to eastern NS. The program was discontinued in 1955. Many of the families that settled in NS had come from other parts in Canada. They qualified for farmer loans as they had two years farm experience in Canada. It was easier to evaluate the farmers who came from other areas of Canada. One of the reasons that made Dutch settlers from other parts of Canada come to NS was the relative easiness of getting a farm in NS (p:45).

To encourage Dutch immigrants as well as second generation of farmers to take on agriculture, the Diocese of Antigonish established a fund from which qualified applicants can borrow, to add to

their savings or to make them eligible for loans of the Nova Scotia Land settlement board. The fund was later administered by the Extension Department of St, Francis Xavier University. In 1950, the first Dutch immigrant farmers settled in eastern NS with the financial aid of the diocese of Antigonish. The United Church and the Christian Reformed Church were also involved in the settlement of immigrants.

The new reformed church played a strong role in 1953 to attract Dutch immigrants. They wanted to concentrate the immigrants in a number of centers to be able to build a congregation. Most of the settlements were in Glasgow, Truro, Annapolis Valley. The New Reformed Church did not provide financial loans. It provided financial support on a limited scale.

Role of Government in Netherlands

The Netherland Emigration Foundation had the task of organizing the migration of Dutch agriculture workers. The foundation in the Netherland was granted a government mandate to administer the government immigration policies. The authority was concerned about the decline in farming, and on 1940s began to look for ways to reverse this population decline. In 1953, the foundation was recognised as the Netherland Emigration Service, and the Emigration Council was created as an advisory body where immigrants' societies were represented (secular, catholic, protestants). These societies would collect and distribute information about Canada. They maintained close contact and coordination with the corresponding immigrant societies in Canada.

Role of Government in Canada

By 1947 it became clear to the Canadian government that there was a major labour shortage in all industries, mainly in farming, mining, and lodging. This made the Canadian government change the immigration regulation, with preference to farm workers and other needed occupations. The superintendent of settlement of Immigration branch in Canada would distribute the files to district settlement offices where either local settlement officer of the immigration branch, a representative of the Dutch immigration societies, or private Dutch Canadian immigration societies would try to find employment and housing for the immigrants (p:18). Also, the Netherlands emigration services sometimes provided passage for immigrants, and the Dutch government paid to the financial assistance to travel.

To encourage farm ownership by Dutch immigrants, the provincial government of Nova Scotia had introduced a bill allowing the Nova Scotia land settlement board to offer loans to farmers who were not Canadians, or British citizens but wanted to become Canadian citizens after the waiting period. One of the problems that faced Dutch immigrants who want to purchase a farm was the currency restriction after the WWII, which did not allow Dutch citizens to take out large amounts of money until 1950s.

The Canadian and Dutch governments initiated an informal arrangement known as the Netherlands Farms Families Movement or the Netherland Settlement Scheme. The two governments encouraged and coordinated the migration of Dutch farmers to Canada. The Bilateral Migration Agreements, the "Netherland -Canada settlement Schemes" were recommended by the Permanent Migration Committee of the International Labor Office meeting in Montreal 1945. The Dutch government was the first to approach the Canadian government in

accepting surplus farmers and farm labourers to solve the problem of labour shortage. The numbers of immigrants were decided in the beginning of each year by the two governments. The agreement stated that the Dutch immigrants would accept employment in Canadian farms for one or two years or until they could buy their farm. This eased the labour shortage and enabled farmers to be familiar with Canadian farming methods and acquire capital.

2.7.3. Farming in Holland and North America

In Holland, there was an awareness to the need to modernise Dutch agriculture since the 19 century. There were agriculture advisors who advised farmers on matters of agriculture. There were also experiment farms. The Dutch had a long history of commercial farming, while the bulk of eastern NS used subsistence farming. The Dutch settlers in eastern NS introduced a new attitude towards farming. After some years they reached a level of success and prosperity, unknown among the subsistent farmers, and this caused fear of colonization among some locals.

While in Canada, the majority of farmers owned the land they work on, in Europe this was not the majority. In Holland, according to 1955 statistics, farmers owned 40% percent of the land they worked. In Holland, the Sandy oil area, where most of the farmers came from, was mostly composed of smaller family farms, while the sea Clay area, included larger production farms. The agricultural crisis in the 1870 pushed restructuring of the Dutch agriculture towards dairy farming and market gardening. These patterns continued during and after the WWII (p:81).

In Holland there was an increase in the number of cooperatives after 1895. They were of three types: purchase, sale, and processing. The farm credit organization in Holland also increased after 1895 (p: 83).

Dairy was the most common farming activity among the Dutch immigrants in NS. Antigonish had the largest owned dairy operations by Dutch, 40% of all dairy farms in that county. The Dutch also engaged in the production of chicken, turkey, eggs, orchids, vegetable, apple, and strawberry (p:130). Some of the farming methods adopted by Canadians at that time were introduced by Dutch farmers, especially in the dairy industry due to the large number of Dutch immigrants that were involved in this type of farming. Dutch practices relating to the stabling and housing of dairy herds were adopted by farmers in NS (p: 154). Some local farmers mentioned the use of Dutch soil management practices, and other techniques (p:155). In general, farmers in NS were generally open towards using Dutch farming ideas and methods.

Challenges in Canada (NS) for settlement

One of the challenges for a large number of immigrant Dutch farmers in 1947 was adequate housing. Not all farmers who were interested in hiring immigrants were able to provide houses for immigrant families (p:29). Another challenge was the acquisition of loans: for Dutch immigrant to be able to get a loan for the farm, they should have at least spent two years of experience with Canadian agriculture. A third difficulty is that some of the immigrants did not find familiarity with the Canadian farming practices. The farms in Canada were bigger than in Holland. Farming in Canada was extensive and highly mechanized, Dutch immigrants had to learn how to operate tractors and farming machinery. Some found that in Canada farmers had to

do most things themselves, while in Holland, they hired people to perform different farm activities.

In addition, when arriving in Canada, many immigrants faced a culture shock they were not prepared for, and many of them spoke very little or no English. There were evening English classes arranged for prospective immigrants. Distance was also a factor of shock specially in the rural areas where mot roads were not paved. Another surprise for the farmers were the hills and rocks, and the long winters and short growing seasons. They also detected a general negative attitude towards agriculture.

Contributors of success in the case:

- There was a selection process that ensured that Dutch immigrants to agriculture and other sectors had the potential for success.
- Most of the Dutch immigrants had come from families with experience in farming.
- They arrived in a time when agriculture in many parts of the province was in decline
- Many farms were abundant and there were demands for products like dairy.
- The immigrants possessed a superior knowledge with regards to soil and crop management. The unfamiliarity with machinery was addressed quickly.
- The financial support provided by the NS land settlement board helped in the success of the farmers.
- The hard work and determination of farmers was an important factor of success.
- The high degree of family solidarity and cooperation was also a factor of success.

2.8. Case 2: Sikh Community in Okanagan Valley

The **Okanagan Valley** is in the south-central British Columbia, extending about 200 km north from the American border. Originally home to the Okanagan First Nations, cities in the region now include Vernon, Kelowna and Penticton. The area is one of the largest producers of fruit and wine in Canada. The first apple trees were planted by Hiram "Okanagan" Smith near Osoyoos (ca. 1857) and Oblate missionaries near Kelowna (ca. 1862). In the 1890s, Governor General Aberdeen, who owned a huge ranch in the northern valley, gave a strong impetus to fruit growing by offering land for this purpose. New plantings were made around Osoyoos for soldiers returning after the First World War.[15]

One of the most representative immigrant groups in this region is the Sikhs. The Sikhs started migrating and buying orchards and vineyards in Oliver and the Okanagan Valley about three decades ago. Their ancestral home state of Punjab, and many have farming experience. Sikhs are also successful farmers in Australia, Kenya, Fiji, among other countries. The Sikhs bought orchards/vineyards predominantly from the Portuguese, who had migrated here in the 1950s. There was also good infrastructure for irrigation in the region.[16]

[15] https://www.thecanadianencyclopedia.ca/en/article/okanagan-valley

[16] Sikhs make world go Round in Oliver, Oliver Chronicle, August 24, 2017 https://www.oliverchronicle.com/sikhs-make-world-go-round-in-oliver/

Most Sikhs immigrants considered themselves as immigrant workers, and they intended to return when the work finished. They were attracted by jobs in the lumber sector. However, this attitude changed after many Sikhs stayed and initiated different forms of settlement, including family reunion, buying property and worship places. Early Sikh communities faced challenges related to culture. Some of the fears of new immigrants were related to cultural loss and identity and discrimination.

The Okanagan Valley in British Columbia attracted Sikh settlers from other parts of Canada, with a sharp increase in 1960s. The opportunity of agriculture and food farms were important to the new settlers (p:62).

In the 2011 census, 4.7% of British Columbia households surveyed called themselves Sikh. Land ownership is important to Punjabi immigrants. The importance of land ownership still continues. Many families are now led by their second and third generations in British Columbia. Some have left agriculture and owned wineries, several are expanding their fruit production businesses.

3. Methodology

3.1. Sources of Data

We relied on several sources of data for the completion of this project. Secondary sources of information include industry and government reports, case studies, and statistics mostly of them have serve to elaborate sections one and two of this report. Primary sources of information include a set of eight in depth interviews with key stakeholders. We describe the sources of data hereunder.

Secondary sources

We relied on agroindustry and agriculture reports from the government and other relevant organizations. The reports provide a good historical overview and trends of the agri-food industry in Canada and with focus on Nova Scotia. In particular, reports on strategy in Agri-food by Innovation, Science and Economic Development Canada, and reports from several organizations are key to provide a good overview of the actions and strategies to help link opportunities in agri-food with new-commers to Nova Scotia.

We searched and analysed reports from organizations that have a mandate related with agri-food in Canada in General, and Nova Scotia in particular. We identified a number of reports from organization that focus on settlement work. We identified 10 reports from ACOA, ISANS, Black Business Initiative, Ecology Action Centre Report, Nova Scotia Institute of Agroecologist, Kentville Agricultural Center, Perennia, Common Good Solutions, and Mount Saint Vincent University. These reports address a number of relevant issues at the intersection of agro-industry and programs for newcomers and locals to engage in the agri-food industry. See table 3.

Table 3. Reports

Report
Pathways to Possibilities: Annual report: ISANS 2018/2019
ACOA- Local Labour Markets as a New Way of Organizing Policies for Stronger Economic Development in Atlantic Canada-2014

Black Business Initiative- Strategic Plan 2017-20
Ecology Action Centre Report 2020, Federation of Agriculture
Nova Scotia Institute of Agroecologist- Nutrition Management Planning in Nova Scotia, Past, Present, and Future 2014
Identification of Crops and Cultivars of World Vegetables. Final Report: Horticulture Nova Scotia, Blair House, Kentville Agricultural Center, Kentville, Project Leader: Kim Best, Prospect Agri-Services Project Cooperator: Dr. Raj Lada, Dalhousie Faculty of Agriculture Date of Submission: March 1, 2016.
Trend report for Nova Scotia Producers and Processors-Perennia , Agri-food Accelerator Program, 2019 for Perennia by SKUFood under the Agri-Food Accelerator Program.
Common Good Solutions, Transportation Special Innovation Lab, Oct 2019
Skills Development and Knowledge Sharing for Cultural Food Security and Occupational Justice for Newcomers Living in the HRM – Mount Saitn Vincent Univeersity
Research Stakeholders Summary repor:, Mount Saint Vincent University, Springboard, FoorArc, Clari, Common roots Urban Farm, Oct 18, 2019, Change Action Research Initiative, CLARI, Saint Mary's University, Jennifer Brady, Manfred Egbe, Meredith Bessey, Jaclyn MacNeil

In addition, we draw from cases of agriculture related to new-comers that integrated and worked in the agri-food sector in Canada and Nova Scotia in particular. We relied on books, reports, websites and papers as information sources for this part. The cases included in this report are: Dutch Immigration to Nova Scotia, and Sikh Community in the Okanagan Valley. These two cases are described in section 2.

Trends and statistics also provide a key source of information to this report. We collected statistics and trends about different aspects of agriculture and related elements (financial, human capital, geographical) in Canada and Nova Scotia. We also collected information and statistics about agriculture immigration and general policies, the information on statistics and trends is mainly from Statistics Canada.

Primary sources of information

The main primary source of information includes in depth interviews with eight stakeholders. We conducted the interviews between May 2020 and January 2021, right in the middle of the pandemic. All the interviews were conducted online. We first elaborated an initial list of stakeholder organizations, and sent an invite to conduct the interview. The stakeholder organizations represent government, non-for-profit organizations and industry associations. We identified 16 stakeholder organizations and sent an invite to participate in the interview, eight stakeholders accepted the invitation, and eight declined it (See table 5)

Table 5. Interviews

Organization	Type	Interviewed
ISANS, two different divisions	Non for profit	Yes (two divisions)
Department of Agriculture	Government	Yes
Perennia	Government	Yes
Chicken Association of Nova Scotia	Association	Yes
Nova Scotia Farmers Market Cooperative	Association	Yes
Ross Farms	Government – education	Yes
Acadia Entrepreneurship Centre, Acadia University	University	No
YMCA- YREACH	Non for profit	No
Black Business Initiative	Government	No
Musquodouboit Chamber of Commerce	Association	No

Common Roots Urban Farm	Non for profit	No
Common good Solutions	Non for profit	No
Hope Blooms	Non for profit	No
Federation of Agriculture	Association	No
Nova Scotia Institute of Agrologists (NSIA)-	Association	No
Horticulture NS-	Association	No
Agri-Commodity Management Association	Association	No

The in depth interview was semi structured and included the following sections: role of the organization and contribution to agri-food and immigration, key programs and contributions, challenges and strategies to address them, and collaboration with other stakeholders. The interviews lasted an average of one hour and were conducted online due to Covid restrictions.

3.2. Data analysis

We followed methodologies of qualitative studies. The unit of analysis is the links between new-commers and agri-food opportunities in Nova Scotia, and we were interested in analyzing the support of programs offered by several stakeholders to support the engagement of new-commers with expertise in agri-food and opportunities in the agri-food sector. We codified the data according to the specific characteristics of the stakeholders, programs, objectives and impacts. In addition, we recognized the importance of collaboration within stakeholders for the development and implementation of the programs and initiatives, and we mapped the types of collaborations that exist between stakeholders using social network analysis. We triangulated the information from reports and interviews. Our results are indicated in the following section.

4. Key stakeholders: roles and interactions

In this section we elaborate on the key stakeholders that play a role in the link between newcomers and agri-food, and elaborate on these three elements: relevant stakeholders, roles, main programs, challenges, collaboration. We depart from primary sources of information from the interviews, and from secondary sources of information from organizations' reports that address key elements on the agri-food and new-commers links, programs implemented, and potential opportunities.

Some key stakeholders in agriculture and food processing include the Nova Scotia Federation of Agriculture (NSFA), the Nova Scotia Food Policy Council. NSFA --founded in 1895 as the Nova Scotia Farming Association-- consists of the county federations of agriculture and various agricultural commodities organizations (Gerrits, 1996). The Nova Scotia Food Policy Council (NSFPC) is a non-partisan, citizens' group working with communities, organizations, and governments to develop and implement policies and programs that ensure an equitable, healthy, and sustainable local food system. They work with the Nova Scotia government to develop a comprehensive policy regarding the food system. The NSFPC's mandate is:

- To protect and support local farmers and producers of food by encouraging and supporting the purchase of locally grown and produced food in NS.
- To work toward reducing the carbon footprint created by foods sold in Nova Scotia.
- To build an increasingly secure system to ensure the availability and the affordability of food in Nova Scotia.

In 2006 the Nova Scotia Institute of Agrologists (NSIA) was granted the authority to administer the Certified Nutrient Management Planners (CNMP) designation on behalf of the NS Department of Agriculture. It does so in conjunction with the NS Federation of Agriculture and Dalhousie University, Faculty of Agriculture. The designation ensures that NM Planners are both qualified and competent to deliver NM plans to growers under the NSDA's Nutrient Management Program.

Some of the organizations that contribute with programs to support community integration and provide programs that support integration in job opportunities include ISANS and the Black Business Initiative. ISANS recognizes the key role of immigrants in Canadian society. They work with newcomers to help them integrate in the communities and in job opportunities. They provide a wide range of services to immigrants, from refugee resettlement to professional programs, from family counselling to English in the Workplace (ISANS, 2019). The Black Business Initiative (BBI) aims to influence the Nova Scotia business culture by promoting and assisting in the development of Nova Scotia Black-owned businesses. The BBI accomplishes this within a cohesive framework to achieve several goals, including: economic independence of individuals, improved standards of living, career options for youth (Black2Business Magazine, 2020).

At the government level the Atlantic Canada Opportunities Agency (ACOA) and the NS Department of Agriculture focus on the development of opportunities for economic development in Atlantic Canada and in Nova Scotia. ACOA works to create opportunities for economic growth in Atlantic Canada by helping businesses become more competitive, innovative and productive, by working with diverse communities to develop and diversify local economies, and by championing the strengths of Atlantic Canada. The NS Department of Agriculture focus is to support the development of the agriculture sector that contributes to economic development.

4.1. Main programs

In this subsection, we highlight some of the main programs that several of the key stakeholders have implemented to contribute to the integration of newcomers to Nova Scotia with experience in agri-food, and also the programs that support the agri-food sector. We elaborate first on those programs that focus on newcomers, then on programs that support agri-food, and then om programs that support food security initiatives.

In the past years, ISANS has been expanding its programs and services, and has been growing to help immigrants integrate and build a future in Nova Scotia. Based on the newcomers goals, settlement staff provides a wide range of programs and services, including orientation, settlement counselling, and links to other programs provided by the government, community, and ISANS. ISANS follows an individualized approach to work with each newcomer and identify the relevant programs and opportunities that can benefit each newcomer.

ISANS Employment Services and Bridging Programs provide newcomers with a wide range of opportunities, from job search training and practice interviews, to profession specific bridging programs and financial support for immigrant professionals. Some of the programs from ISANS that support entrepreneurship include the following:

Entrepreneurship for Newcomers: Newcomer entrepreneurs bring investment, global connections, and new business initiatives that contribute to the vitality and economic growth and development of local communities. With expertise in both newcomer settlement and business development, ISANS is the only organization in Nova Scotia that provides business development services expressly to newcomers. ISANS also provides *support for entrepreneurship and innovation*. Recently, ISANS launched the 5th edition of the Connections program: An Immigrant's Guide to Starting a Business, a resource to introduce newcomers to the business start-up process.

The Black Business initiative developed a model that connects people to entrepreneurship opportunities and enables the next generation to build prosperous business. The plan is to confront Black Business Initiative (BBI) current and potential challenges and its ability to serve the Black business community while guiding the organization onto a path of sustainability. Engaging entrepreneurs in enhanced portfolio of training and education, networking, counselling, coaching and advisory programs. Some of the programs and opportunities include:

- Membership programs
- Direct access to venture capital
- Emphasis on entrepreneurship development and business impact
- New partnership of pan Atlantic Canada focus
- New immigrant business
- Online counselling platform
- Investing in growth for future

Within the programs that focus on providing support to the agri-food industry in Nova Scotia, we elaborate on those by the Nova Scotia Institute of Agrologists, Kentville Agricultural Centre, and Perennia.

The Nova Scotia Institute of Agrologists on-line certification course being offered in 2015 through the Dalhousie Faculty of Agriculture provide NM Planners in the region an opportunity to update their skills as well as train new planners.

Kentville Agricultural Centre engaged in a process to evaluate a number of non-traditional crops in successive plantings in two locations in NS, two types of soil, mineral and peat based soils. The most notable crops after two seasons were 'Black Magic', 'Red Russian' and Premier' kale, 'Hakurei' and 'Scarlet Queen' turnip, watermelon radish, 'Chioggia', 'Touchstone old' and 'Tanus beet, 'Punto' dandelion and 'Summerfest' komatsuna mustard green. The main objective of this project was to evaluate crop cultivars for vegetables that are not grown in Canada and are considered as world vegetables. The evaluation process of crops included five planting in two locations of two types of soil --peat and mineral soil.

Perennia has developed a number of programs that seek to support the growth of the agri-food industry in Nova Scotia. For example, the Agri-food Accelerator Program in 2019 by Perennia and SKUFood under the Agri-Food Accelerator Program. This program targeted agriculture producers and food and beverage businesses in Nova Scotia. The focus of this program was to:

- Support access to new markets through skills development and information, as well as food safety support, analytical testing and training to meet scientific, retailer and market expectations for safe food.
- Support the successful commercialization of Nova Scotia agriculture-sourced products into recognized retail markets through skills development and information, as well as market research validation and prototype product development and scale up support with the intent to have the product successfully reach the intended market with sales longevity.

Box 1. Trends in consumer demand by Perennia

- A trend during the 2019 is the Alternative Protein demand. This has been driven by factors like animal welfare, climate change awareness, health and wellness.
- The "buy local" trend continues continues to evolve.
- Farmer markets are these opportunities for producers and processors to learn directly from consumers and implement the feedback into their product offerings.
- Shift to Microbrands: Consumers are supporting the increase in micro brand sales, which results in a decline of mass big brands.
- The opportunity for micro brands creates a shift in consumer demand that opens the door for innovative new product options from potentially smaller and new players.

Source: Perenia

Some of the programs implemented by Common Good Solutions and Mount Saint Vincent University seek to contribute to better business opportunity and to address challenges associated with food security.

Common good solutions engaged in a project that seek to analyze the main challenges associated with transportation and job opportunities. The main objective of the Transportation Social Innovation Lab was poverty reduction.

Mount Saint Vincent University recently championed the project Skills Development and Knowledge Sharing for Cultural Food Security and Occupational Justice for Newcomers Living in the HRM. The project explored the experiences and meaning of cultural food security for newcomers (i.e. immigrants and refugees) living in the HRM. The objective of the project was to identify a core team of committed stakeholders, as well as in-kind and financial support, to design and implement a pilot project that would enable newcomers living in the HRM to grow food at larger scales in rural areas of the province, and put into action the findings of the research project. They identified three relevant areas: 1) The importance of culturally appropriate foods and foodways; 2) Barriers and strategies to access culturally appropriate foods and foodways; 3) Sharing food for cultural connection.

4.2. Challenges

In this subsection we elaborate on some of the challenges identified during our analysis of primary and secondary sources of information:

Producing and consuming significantly more Nova Scotia-grown food than we are now (Ecology Action Centre Report 2020). One of the key reasons for choosing to buy locally-produced

food, is to foster economically viable farming businesses and farming communities in Nova Scotia. Nova Scotia is presently losing farms, along with the related businesses that supply their inputs or process and distribute their products.

Labour shortages: One of the biggest challenges across the agri-food industry is the outmigration of rural areas, producing labour shortages in rural areas. Rural-based positions with seasonal variability do not attract employees who seek job stability. In 2017, a labour gap of 16,500 vacancies was reported with a calculated value of $2.9B in lost revenue to the industry in Canada. The vacancy rate in the agriculture sector in Canada is currently estimated at 5.4%, which is among the highest of any sector nation-wide. (Perennia).

Transportation and infrastructure: Access to transportation can dramatically limit or expand the opportunities available to people based on where they live. For an individual or family living in poverty, access to transportation can mean the difference between accessing jobs, quality food, recreation opportunities, schooling, and healthcare. In many regions there is a correlation between higher levels of poverty and limited access to public transportation. The Cape Breton Regional Municipality (CBRM) is one such regions, where levels of poverty are high and access to public transportation is low. Twenty percent of those living in the CBRM are considered low income based on the low-income measure after tax rate (LIM-AT)5, and the region has an unemployment rate of 17.4%. In a 2011 review of the CBRM's public transportation system, it was also found that the CBRM has the lowest ridership levels of similarly sized municipalities across Canada (Common Good Solutions). Development in rural centres of Nova Scotia is vital to thriving rural communities – investments in rural infrastructure, affordable childcare, training and education initiatives, affordable housing, and transportation can help to grow these areas and to retain newcomers in rural areas (Esses & Carter, 2019).

Food security:

Technology and innovation: Seafood and agri-food industries have two of the most significant innovation gaps in the province, which are related to insufficient industry participation and an over-reliance on government support. More start-ups in these areas would benefit the NS economy and could provide employment opportunities for newcomers who bring significant food skills from their home country. There are also significant opportunities for global trade as the world's population grows and the demand for food increases (Atlantic Provinces Economic Council, 2014).

Barriers to Immigration: A view among Nova Scotians to increased immigration that stem from racism and the view that newcomers take away jobs from Nova Scotians needs to be addressed. It is also possible that negative attitudinal barriers toward immigration stem from the historical and current lack of racial and ethnic diversity in NS. These attitudinal barriers negatively impact upon the success of newcomers' settlement. (Brady)

Challenges in Black and minority business: There are four main challenges that Black businesses and other minority business face and need to be addressed (Black Business Initiative, 2020):

- Low calibre of Black business skills and knowhow.

- Lack of access to capital due to discrimination by funding organization.
- Weak business culture, lack of knowledge of assistance programs for blacks, absence of linkage to community black business leader, absence of role models, poor communication channels.
- Lack of participation in high standard business industries.

4.3. Collaboration for programs and initiatives to link newcomers and agri-food industry Collaboration

Some of the challenges elaborated in the above section have been addressed by programs implemented and tested by the different stakeholders in the province. However, successfully linking newcomers with capacities in agri-food and agri-food opportunities in Nova Scotia has been quite challenging, as highlighted by various key stakeholders. Even though organizations like ISANS, Black business initiatives, and other organizations have contributed important efforts and designed programs, from the interviews it was noted that many of these efforts need to follow a more systemic approach, and communication between organizations needs to be strengthened. From the case related to immigration from Dutch farmers to NS that contributed to agriculture, we saw that many organizations, including government and no government organizations, played a relevant role for the success of attracting and contributing to the settlement of farmers. Collaboration between government, community organizations, churches and other stakeholders played a vital role in this process.

> "and also in the references the Dutch experience, it is good to look at the factors that made that happen but also we need to understand that the conditions are different, the time is different, and the culture of the people is different" - (Department of Agriculture, interview)

The lack of a systemic approach in terms of collaboration and coordination between stakeholders to provide stronger opportunities and programs, creates a sense of fragmentation between organizations that work in the agri-food industry, and organizations that aim to support the integration of newcomers with expertise in agri-food to the agri-food sector in NS. Contributing to this fragmentation, is the lack of clear communication between policy makers and other stakeholders.

One of the key elements highlighted in the interviews is related to the component of community building and community awareness that contributes to diversity and integration. Newcomers lack the social capital that is built throughout the years of belonging into a specific region. From our interviews, some programs seek to address this gap, but the integration seems to remain fragmented within the specific group of new-commers.

Several organizations contribute to immigrant settlement like ISANS and YMCA, and they have implemented different schemes to link immigrants with employers, but more directed efforts towards hiring immigrants that involve cooperation and support between organizations is needed.

As indicated from the two cases in agriculture, from sections 2.7 and 2.8, new-commers with experience in agri-food cannot transfer immediately their experience to a new setting. The experience they gained can have been acquired in a different country setting, and it might be necessary to address the educational component in order to understand the specificities of the context in terms of techniques, but also in terms of business rules and other relevant institutions. Our results indicate that there is a number of education and training programs that contribute to the educational component and provide skills that are required to engage in agri-food opportunities in Nova Scotia. However, there are no clear pathways or directions, and no clear educational services for newcomers that want to enter the agri-food industry. There are some organizations that offer separate pieces of education but not as a planned integration program. From example the Agriculture Campus of Dalhousie University offers complete undergraduate and graduate programs in education. ISANS has implemented several initiatives to contribute to the acquisition of skills, such as the gardens initiative (Interview ISANS). Ross Farms also has designed an educational program, but further coordination is needed to avoid the duplicity of efforts (Interview Ross Farms).

Context is also very different across countries "although farm workers have experience, their experience in not gained by education, but it is through living as farmers and managing their own lands" (Interview ISANS). Newcomers with farming experience in other countries have heterogenous experience, many of them farmed small parcels of land for own consumption and engaged in all aspects of the farming process. Others, worked in farms and it was relatively easy to commute from their households to the farms. Many farmers that are hired as temporary foreign workers only engaged and contribute to specific aspects of the farming process and are not engaged in all the farming process. "This indeed can be discouraging for many new-commers that have practiced farming in other country settings, since they did not get to do actual farming work. Rather they only pick-up crops" (Interview ISANS).

As we described in section 2.7, Dutch immigrants brough a set of techniques that benefitted the farming process in NS. Benefiting from external knowledge has also been recognized as an important factor that drives change and innovation. It would be useful for any of the relevant stakeholders in agri-food and immigration, and other organizations committed to link new-commers with expertise in agri-food and opportunities in the agri-food industry, to create a map of countries that have important flows of immigrants to NS, and the processes they employ for farming, with the objective to see what education resources would be appropriate and what are the main obstacles to implement some of those techniques in NS.

In addition, when designing the educational programs and opportunities to acquire skills relevant to the context, it is necessary to have a better understanding of the classes of newcomers who can and want to work in the agri-food industry, in terms of their backgrounds, and specific needs. Without a clear understanding of these elements, many of the programs designed can prove to be unsuccessful. From our interviews, one important point regarding the project of linking farmer newcomer immigrants to farms, implemented by ISANS, is that there was the demand (for farm workers) and there was the supply (farmers with experience). Even though the program provided training to the newcomer farmers regarding regulations, safety gear, and the climate change, the program was not sustainable in the long term, due to the challenges associated with transportation to farm areas from urban hoseholds. "This, in addition to other problems involving

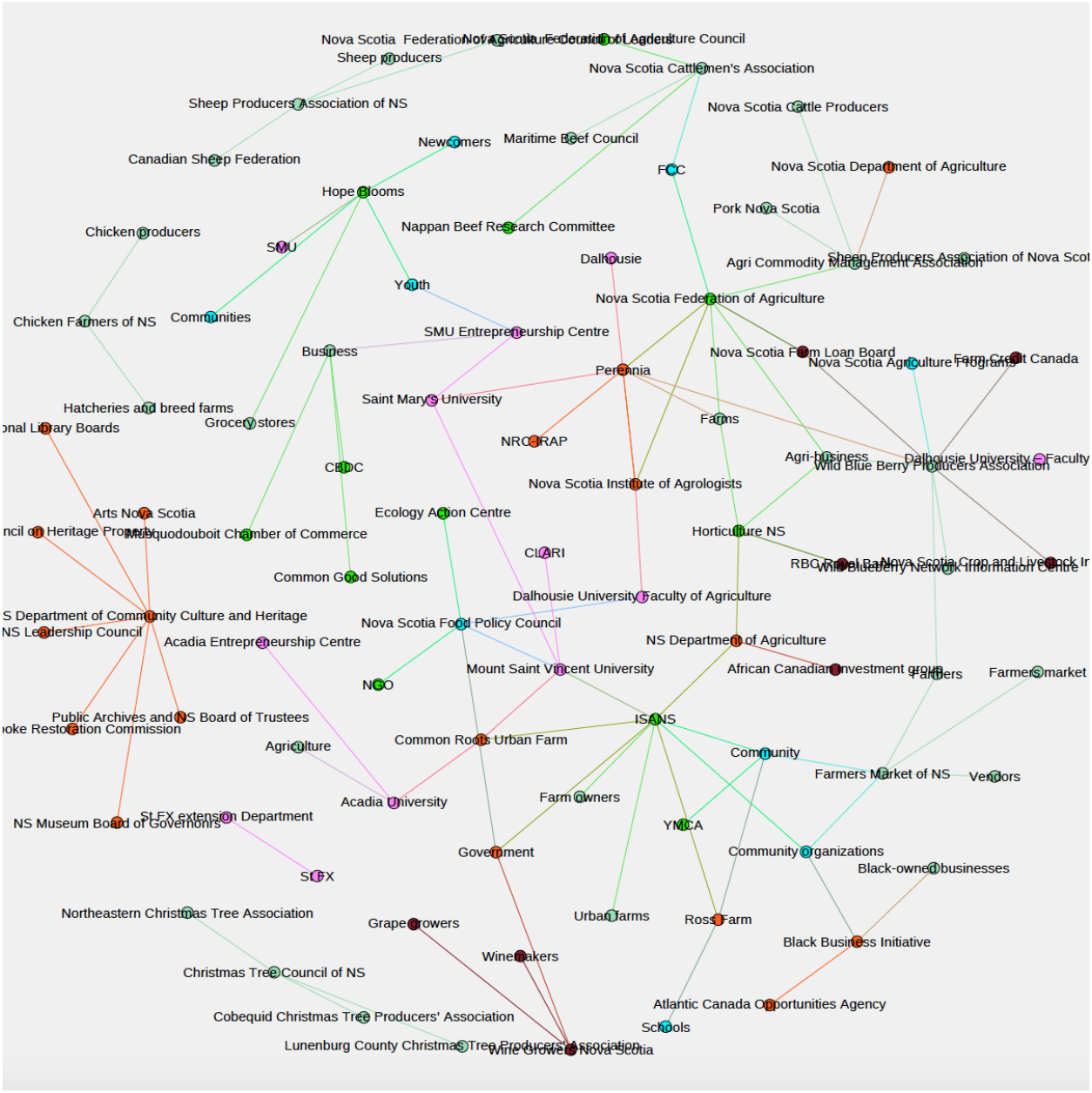
the availability of rest places and water for the farm workers made the program unsustainable." (Interview ISANS).

As we have highlighted along the document, financing has been an important barrier for engaging in agri-food opportunities. Access to seed funding is important, and many organizations provide funding, but it is necessary to address many of the systemic problems related with accessing funding from the newcomers perspective.

The set of elements and challenges to address is quite complex, and there is an urgent call for further cooperation between the organizations that have been committed to link newcomers with expertise in agri-food and agri-food opportunities. This collaboration calls for the need to engage in strategic discussions towards more effective design of programs and the use of resources that will prove to be more impactful. Linking newcomers to agri-food jobs is a project that involve many aspects from demand and supply, with many obstacles and enablers in between.

Based on the interviews conducted, we map the different stakeholders and the collaborations they have for the implementation of initiatives and projects relevant to link newcomers to agri-food opportunities, or relevant to contribute to the development of the agri-food sector. Figure 1 indicates the different stakeholders and their interactions.

Figure 1. Stakeholders and interactions



4.4. Availability and demand

There is an increasing demand for farm workers “We get lots of requests. Every day we have requests from employers. They say: we need farmers, or we need people to work in the valley, or in the fishing industry. So those are some of the fields that are hungry for people, but they don't have enough people.” (Interview ISANS).

There is also availability of farm workers, but there are many barriers to tackle to connect the availability of new-commers with the need for work in the agri-food industry. In addition, it is quite important to ensure that any program that seeks to connect new-commers with agri-food

experience, and farming opportunities needs to consider the requirements in infrastructure, services for the farmer and their families, address differences in culture and work methods, and implement training programs, and integration to a community.

To address integration, it is necessary to address language obstacles. Many of the immigrant farmers do not have the necessary language skills to integrate. ISANS, which is located in Halifax offers classes. However, many of these services are offered in Halifax, therefore there can be transportation challenges associated if the new-comer lives in the farm. "One way to overcome this is to have online classes" (Interview ISANS). However, the development of these projects needs different types of resources and support.

During the interviews, more than one of the interviewees mentioned that newcomers need to be part of a community, otherwise they feel lonely and isolated. Events of integration with the local culture helps in bridging the gaps between the two cultures and supports integration. These initiatives also need resources and planning. Public transportation is one of the enablers to reduce isolation.

Overall, integration of new-commers with farming skills is a process that requires joint efforts of government and no government organizations and individuals, funding, education, and planning. There is a definite need of resources. The financial benefit might not be reaped in the short term, it will be visible in the long term. The benefits will be sustaining the agri-food industry, and establishing rich culture in farming areas. There needs to be strategic plans and initiatives for these efforts. These initiatives may be guided by the Department of Agriculture, municipalities, local government, or other stakeholders, but they require a systemic strategy. The possibility to design and implement sustainable programs that contribute to the integration of new-comers in their work opportunities and the possibility to start business is gaining interest between groups of newcomers and other stakeholders, as indicated by several interviews. Building some of those business close to farm areas would enrich the area of the model of Ross farm is a good example.

Conclusions

The main objective of this project was to identify areas of opportunity that contribute to link newcomers with farming expertise and agri-food opportunities in Nova Scotia. Our study uses a case study methodology that sources information from reports, statistical trends, and previous cases of similar experiences, as well as interviews with key stakeholders from government and non-government organizations.

We identified that there is a real commitment from different organizations to contribute to the opportunities for settlement and integration of newcomers, and also several projects and initiatives that seek to contribute to the growth of the agri-food industry. As well, there are some initiatives that are at the intersection of these two elements and that contribute to link newcomers with agri-food expertise and opportunities in the agri-food sector. Several organizations have implemented pilot activities, but without a truly systemic perspective these contributions are rather fragmented and difficult to maintain over the long term. Additional research that

contributes to understand the needs and challenges from the new-commers is necessary, as well as more integrative solutions from the different stakeholders.

To design these strategies it is necessary to recognize the richness and culture of NS, but is also necessary to identify national and international examples that can provide a good source of ideas can be an important exercise. The case of Ducth farmers is a good example of how different stakeholders played a role in the attraction and retention of skilled farmers that contributed to the growth and revitalization of the agri-food sector in Nova Scotia. But this experience cannot be copied exactly, because there are differences in times and the nature of the immigrant population is also different, as explained by several interviews.

These strategies can look at two different components, on the one hand, design programs for newcomers already in NS with agri-food skills. Many problems in this area is similar to hiring newcomers with other skills. As indicated by many interviewees, this area remains a challenge for them. On the other hand, the potential to identify opportunities of immigration provincial pilot projects focused in agri-food to attract people with farming skills like the Dutch farmers experience, or recent provincial pilot programs like the Manitoba Provincial Nominee Program (MPNP), that has launched an interim process for applying to the Business Investor Stream Farm Investor Pathway (FIP).

In terms of policy recommendations, there are several areas that can be implemented, and can contribute to link newcomers with expertise in agri-food and agri-food opportunities. On the one hand, it remains of high importance to provide access to local connection and external knowledge (Bosworth, 2006), and policy should focus on facilitating access to both tacit and codified knowledge coming from both rural and relational resources through long-established and new linkages and supply chains. Second, in terms of infrastructure and services, any program that seeks to contribute to link newcomers and agri-food opportunities, needs to have a systemic perspective in terms of the infrastructure and services available, and identify potential gaps that need to be addressed, as well as to identify the relevant organizations that can provide support in addressing these gaps.

Finally, financing seems to remain as an important barrier for new-commers with skills in agri-food and they need access to financing to start business opportunities. From our interviews and review of reports, we did not identify any special seed program that targets new-commers, and access to funds remains a high barrier between newcomers.

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Organization/Mandate	Relevant Programs	Collaboration
Government		
ACOA – Federal Government		
The Atlantic Canada Opportunities Agency works to create opportunities for economic growth in Atlantic Canada by helping businesses become more competitive, innovative and productive, by working with diverse communities to develop and diversify local economies, and by championing the strengths of Atlantic Canada		
NS Department of Agriculture - Provincial Government		
Economic development. Assist farmers across the province. Provide support, navigation to help people understand regulation that apply. Provide general expertise about agriculture development.	• Help with Access program funding and support • Help farmers identify funding in other organizations. • Annual presentations with ISANS	ISANS, African Canadian Investment group
NS Department of Community Culture and Heritage - Government		
Responsible for contributing to the well-being and prosperity of Nova Scotia's diverse and creative communities through the promotion, development, preservation and celebration of our culture, heritage, identity and languages, and by providing leadership, expertise and innovation to our stakeholders.	Acadian Affairs and Francophone NS Culture Index	Advisory Council on Heritage Property Arts Nova Scotia Creative NS Leadership Council NS Museum Board of Governonrs Public Archives and NS Board of Trustees Regional Library Boards Serbrooke Restoration Commission
Universities/Research Centres/Education		
Kentville Research and Development Center (Government research centre)		
The Centre focuses its research in three key areas: Primary production and integrated crop production technology for the Atlantic region Food safety and quality Environmental stewardship: improving performance of the agricultural production system	*Evaluation Process* the evaluation of crops included five planting in two locations of two types of soil and they are peat and mineral soil *Current research activities:* .- Improvements in crop production, handling and storage.- Protecting food in a sustainable environment- Safe, nutritious food - a national priority- Sustainable production systems for livestock.- Minor Use Pesticide Program.- Agriculture and Agri-Food Canada's only beef research program in the Atlantic Region, conducted at the Nappan Experimental Farm.	

	A number of non-traditional crops were evaluated in successive plantings in 2 locations in NS, two types of soil, mineral and peat based soils	
Mount Saint Vincent University- University		
Education	Skills Development and Knowledge Sharing for Cultural Food Security and Occupational Justice for Newcomers Living in the HRM.	CLARI, Saint Mary's University Common Roots Urban Farm (CRUF)
Saint Mary's University - University		
Offer graduate, undergraduate, and lifelong learning programs, engage in research and disseminate its results, serve the community from local to the international level		
Saint Mary's University Entrepreneurship Centre		
The Saint Mary's University Entrepreneurship Centre creates opportunities to connect students with businesses through training, mentorship, coaching and consulting activities. With a focus on growth, innovation and cultivating the entrepreneurial mindset, the centre is committed to helping the Atlantic Canadian economy grow and prosper.	Food security	Businesses SMU
St FX- University		
Teaching, engage in research and disseminate its results		
St FX extension Department		
Strives to promote and advance, according to the principles of the Antigonish Movement, the economic self-reliance and social well-being of the people of Atlantic Canada through economic cooperation and education		St FX
Acadia University- University		
Tertiary education and research		Agriculture
Acadia Entrepreneurship Centre		
Acadia Entrepreneurship Centre provides training, advisory and innovation & incubation services for individuals, businesses and not-for-profits.		Acadia University
Ross Farm – Provincial government Museum		
Public services, a museum that educates people about agriculture and ways of life in the 19th and 20th centuries in the area		Schools, families, municipality, community, ISANs
Thinktanks and associations		
Ecology Action Centre (EAC) - Charity		

The Ecology Action Centre has been working on critical environmental issues from biodiversity protection to climate change to environmental justice. EAC is an independent organization that strives to work with partners to: • Provide up-to-date environmental information; • Pursue researched solutions; and • Act as a watch-dog for the Nova Scotia environment.	• Research that helped to identify illegal fishing practices. • Climate Goal Campaign	
Nova Scotia Institute of Agrologists (NSIA) Association		
Serve, improve, protect and promote agriculture.	• Nutrition management planning in NS • Administer the Certified Nutrient Management Planners (CNMP) • On-line certification courses offered in 2015 through the Dalhousie Faculty of Agriculture to provide NM Planners in the region an opportunity to update their skills as well as train new planners	NS Federation of Agriculture Dalhousie University Faculty of Agriculture Twelve CNMP Perennia
Farmers Market of NS Non-profit cooperative	•	
A sector association representing farmers markets. Supporting farmers' market to be safe and inclusive. The non-profit cooperative advances growth and prosperity for member farmers' markets and their vendors through training, resources, advocacy, promotion, and community. With over 30 members and growing, they are the unified voice of the region's farmers' market sector	• Partnered with Wolfville farmer's market to work on labor advanced education department level training to help new farmers or young farmers get access to the business skills required so that they could take advantage of Nova Scotia Small farm accelerator program - (Interview with Farmers market).	Farmers market, farmers, vendors, community, community organizations.
Chicken Farmers of NS - Non-profit organization		
Regulatory body under supply management system for chicken producers. Represents the over 80 registered chicken producers in NS. CFNS has been in existence since 1966 and operates under a marketing system known as supply management or orderly marketing. The CFNS Board of Directors consists of six elected chicken farmers who set policy for all Nova Scotia chicken farmers.	New farmers' program Trade issues, balance between trade and home production, supply managed systems, national markets	Chicken producers Specialty producers growers association, Mills, hatcheries, Breed farms
Nova Scotia Federation of Agriculture - Association		
To influence and affect change for the continual success of agriculture in Nova Scotia. • Review legislative and regulatory issues that impact our agriculture industry	Food miles project, Nova Scotia Young farmers Environmental Farm Plan Farm Safety Nova Scotia	Farms Agri-businesses Perennia FCC

• Lobby the government for changes to existing legislation, regulation and public policy • Develop and deliver programs and services to meet the needs of the farm community.	Ag Sector Program	Nova Scotia Farm Loan Board
Horticulture NS- member-driven, non-profit, non-unionized agricultural commodity group		
Member-driven, non-profit, non-unionized agricultural commodity group. Horticulture NS enhance collaborative efforts among members of the horticultural industry.	Identification of Crops and Cultivars of World Vegetables Advance payments program Liason with government and other organizations Education Annual conference	NS Department of Agriculture Farms Agri-business RBC Royal Bank
Sheep Producers Association on NS - Association		
The mandate is to promote and assist in the sustainable development of Nova Scotia's sheep industry in the best interest of the members and all Nova Scotians.	Conduct research Develop and deliver programs Develop resources	Canadian Sheep Federation NS Federation of Agriculture Council of Leaders Sheep producers
Nova Scotia Cattlemen's Association -Association		
The mandate is to promote and assist in the sustainable development of Nova Scotia's beef production industry in the best interest of the members and, ultimately, all Nova Scotians.		Nappan Beef Research Committee Maritime Beef Council NS Federation of Agriculture Council FCC
Christmas Tree Council of NS - Association		
Christmas tree cultivation is possibly one of the best examples of sustainable development in the world. Tree lots go as far back as the 1950's, and are still producing beautiful trees. Soils are enriched with companion plants.	Training	Lunenburg County Christmas Tree Producers' Association (LCCTPA) Cobequid Christmas Tree Producers' Association (CCTPA) Northeastern Christmas Tree Association (NeCTA)
Wild Blue Berry Producers Association - Association		
Wild Blueberry Producers Association of Nova Scotia provides information about Nova Scotia wild blueberries and the NS wild blueberry industry.		<u>Research:</u> Dalhousie University – Faculty of Agriculture Perennia <u>Agri-business:</u> Wild Blueberry Network Information Centre <u>Government:</u> Farm Credit Canada Nova Scotia Agriculture Programs Nova Scotia Crop and Livestock Insurance Commission Nova Scotia Farm Loan Board

		Associations: Canadian Horticulture Council Canadian Wild Blueberries Nova Scotia Federation of Agriculture Industry partners
Wine Growers Nova Scotia - Association		
Build awareness of the Wines of Nova Scotia brand, serve as a voice for wineries, and work closely with all government levels to grow the industry and expand market opportunities for the sale of Nova Scotia wine.		Winemakers Grape growers Government
Agri Commodity Management Association- non gov		
The vision of ACMA is to be the leading provider of quality professional services to farmers and the farm community in Atlantic Canada.		Pork Nova Scotia (PNS) Nova Scotia Cattle Producers (NSCP) Sheep Producers Association of Nova Scotia (SPANS) Nova Scotia Federation of Agriculture (NSFA) Nova Scotia Department of Agriculture (NSDA)
NGOs and Social enterprises		
CBDC Blue Water/ CBDC Hants Kings: not-for-profit community-based organizations		
Assist in the creation of small business and in the expansion and modernization of existing businesses by providing financial and technical services to entrepreneurs	Provide financial assistance in different forms Business counselling Entrepreneurship development and training Technical assistance.	Small Businesses
Musquodouboit Chamber of Commerce- Association		
Placing a community on a path to success requires organization, skill, accountability, and a great deal of commitment.		
Common Good Solutions - NGO		
Common Good Solutions is focused on growing the social enterprise movement in Nova Scotia and beyond	• Transportation Social Innovation Lab.	
Common Roots Urban Farm – Non-for profit		
Common Roots Urban Farm was established in 2012 as interim land use on hospital land in downtown Halifax.	• Have 195 community plots, common areas open to the public, and a market garden that produced vegetables and flowers for donation and sale. • CRUF's Market Garden	Acadia University
Hope Blooms - Non for profit		

Since 2008, Hope Blooms has had a measurable impact on the community of North End Halifax in food security, community confidence and inclusion, and education.	Community programs • Youth Urban Agriculture • Culinary & cultural arts • Mentorship and tutoring • Changemakers • Scholarships	SMU Communities Youth Grocery stores Newcomers
Black Business Initiative (BBI) – NGO		
"Influence the Nova Scotia business culture by promoting and assisting in the development of Nova Scotia Black-owned businesses. The BBI accomplishes this within a cohesive framework to achieve a number of overall goals: Economic independence of individuals; improved standards of living; career options for youth; Pride in communities."	• Development model that connects people to entrepreneurship opportunities and enables the next generation to build prosperous business. • Engaging entrepreneurs in enhanced portfolio of training and education, networking, counselling, coaching and advisory programs and financial assistance.	Community organizations Black-owned businesses Atlantic Canada Opportunities Agency
Perennia Food and Agricultural Inc. - Provincial development agency		
Nova Scotia's technical development agency focused on food sector and maximizing its value. Support growth, transformation and economic development in Nova Scotia's agriculture, seafood, and food and beverage sectors.	• Agri-food Accelerator Program	NS Institute of Agrologist Local greens, container firms. Universities: Dalhousie, Saint Mary's University NRC-IRAP
Immigration/ Non-for-profit groups:		
The YMCA -YREACH of Greater Halifax/Dartmouth - Charity		
The YMCA of Greater Halifax/Dartmouth is a charity that connects more than 50,000 people daily. Since 1853, the YMCA has been promoting positive values that build individuals' spirit, mind, and body. Provide programs to help those living in our communities and continually work to create stronger, and healthier communities.	Integration	
ISANS – Non-for profit		
Work with newcomers to help them build a future in Canada.	• Provide a wide range of services to immigrants, from refugee resettlement to professional programs, from family counselling to English in the Workplace. • Growing string neighbourhoods, small kitchen gardens. • Connecting client immigrants to local employees in agriculture in NS.	Community, churches, property management companies and other community organizations. Farm owners, government (funding), community. Urban farms Common roots Mount Saint Vincent University