Labour Market Report

Nova Scotia Agriculture

FARM & WORKFORCE DEVELOPMENT

NOVA SCOTIA NSFA FEDERATION OF AGRICULTURE

Nova Scotia Federation of Agriculture (NSFA)

What we do
- Review legislative and regulatory issues that impact our agriculture industry
- 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.

Our Mission
To influence and affect change for the continual success of agriculture in Nova Scotia.

Our Vision
A prosperous and sustainable future for Nova Scotia farms and farmers.

About the NSFA
The Nova Scotia Federation of Agriculture has been the voice of Nova Scotia farmers since 1895. Representing the interests of over 90% of all agricultural production across the province.

The NSFA supports farm families and businesses through lobby and advocacy efforts and the delivery of programs and services. The NSFA works in the best interest of our members.

The NSFA monitors and reviews trends, legislations and programs that impact the industry. We actively lobby and advocate for changes and improvements to legislation, programs, and public policy. We work with our members and a wide variety of stakeholders to ensure our members' voices are represented and heard. A few key advocacy areas of the NSFA are:

- Transportation: farm plates, infrastructure, regulatory challenges
- Labour and skills training
- Agricultural land
- Wildlife compensation and control
- Investment in agriculture through funding programs

The NSFA also delivers a variety of programs and services in partnership with other agencies, which support its members through education, awareness, and training. Our core programs include:

- Environmental Farm Plan helps farmers identify and assess environmental risk on their property. It enables farmers to incorporate environmental considerations into their everyday business decisions.
- Farm Safety Nova Scotia works with Nova Scotia farms to keep farmers, their families, and their employees safe. With a goal of ensuring farmers have access to the tools and resources they need to operate safe and productive farms.
- Meet Your Farmer works to increase the public's trust in Nova Scotia's agriculture industry through public awareness campaigns and supporting farmers in sharing their message.
- Farm & Workforce Development supports farms with human resources tools and skills training, along with career promotion, worker recruitment and retention and succession planning.

Charts and Tables

NSFA's Labour Market Report

Purpose

There are many aspects of the agriculture sector that are not well understood due gaps in timely or relevant data, or a lack of institutional interest in research. Given the importance agriculture plays in our economy and community, stakeholders are interested in obtaining relevant standardized and timely Labour Market Information (LMI) to help fill these gaps.

The purpose of this report is to assess the strength of the sector's labour market for employers and key decision-makers. It also serves to create a benchmark report for yearly updates, as well as a tool to identify data gaps and future analysis questions. Below are some of the key challenges facing the labour market in the agriculture sector:

- Declining populations in rural areas
- Insufficient compensation relative to other jobs
- Lack of relevant experience in employee pool

Analysis

The economic research provides a foundation for researchers and other stakeholders looking to find Nova Scotia agricultural labour market data and other relevant information on the agriculture sector. This report touches on the following topics: labour force, farm counts, finances, wages, skills, recruitment, investments, and trends over time. Below is a summary of the analysis which includes:

- Review existing data describing agriculture workforce in Nova Scotia (StatsCan, NSDA, Employer Surveys)
- Identify the importance of selected indicators and implications of the data presented
- Identify gaps in data and knowledge for agriculture LMI and identify areas for future research.

Limitations

Since different data sources can yield incomparable results, it is difficult to get robust data for key variables. For example, the Labour Force Survey and the Census of Population yield different conclusions as to the level of employment in the agri-food sector in provinces. Similarly, data from the Nova Scotia Department of Agriculture yields different results on farm counts than the Census of Agriculture. Analysis becomes more complex when attempting to understand the agriculture sector at a greater level of detail, such as at the 4-digit North American Industry Classification System (NAICS) level.

Likewise, analysis is difficult when assessing occupational trends over time since this information is heavily suppressed by Statistics Canada due to either unreliable or confidential results. As a result, analysis of occupational trends and outcomes are forced to use data that is either outdated or statistically insignificant.

Methodology

The North American Industry Classification System (NAICS) is an industry classification system covering all economic activity and was developed by the statistical agencies of Canada, Mexico, and the United States. It has a hierarchical structure which at the highest level, divides the economy into 20 sectors. At lower levels, it further distinguishes the different economic activities in which businesses are engaged. The NAICS is updated regularly to reflect changes in the economy. The most recent version is NAICS 2017 Version 3.0. The scope of the report is based on the definition of the agri-food sector. As there are many definitions of what constitutes "agri-food" in Canada, for this report, we used the Canadian Agriculture Human Resources Council's (CARHC's) 'Standardized Framework for Agriculture and Food Processing LMI in Ontario' NAICS

breakdown. This breakdown is based on industry definitions from Agriculture and Agri-food Canada (AAFC) and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

Industry (NAICS) Coverage

Agri-food	Agriculture	111 - Crop production	1111	Oilseed and grain farming
			1112	Vegetable and melon farming
			1113	Fruit and tree nut farming
			1114	Greenhouse, nursery, and floriculture production
			1119	Other crop farming
		112 - Animal production	1121	Cattle ranching and farming
			1122	Hog and pig farming
			1123	Poultry and egg production
			1124	Sheep and goat farming
			1129	Other Animal production
		115 - Support activities	1151	Support activities for crop production
			1152	Support activities for animal production
	Food Processing	311 - Food manufacturing (Except aquaculture)	3111	Animal food manufacturing
			3112	Grain and oilseed milling
			3113	Sugar and confectionery product manufacturing
			3114	Fruit and vegetable preserving and specialty food manufacturing
			3115	Dairy product manufacturing
			3116	Meat product manufacturing
		312* - Beverage and tobacco product manufacturing	3121	Beverage manufacturing *excluded
			3122	Tobacco manufacturing *excluded
			3123	Cannabis product manufacturing *excluded

Provincial Overview

Farming in Nova Scotia is becoming increasingly more difficult as farmers face a multitude of challenges from rising input costs, low commodity prices, labour shortages, climate change and aging populations. With rising operating expenses and stagnant farm cash receipts, many farms in Nova Scotia are now earning negative net income. In effect, farmers are paying consumers to eat. As a result, the number of registered farms has been declining steadily in recent years, and those who continue to farm are increasingly using debt to finance their operations.

In 2021, Nova Scotia's agricultural workforce grew to 6,700 workers, accounting for roughly 3% of Canada's total agricultural workforce, including a large percentage of Canada's agricultural TFWs. Despite the contributions to Nova Scotia's economy and the growth in the sector's labour force, the sector continues to struggle with labour shortage issues, hindering the province's ability to reach its full production potential. It was estimated that roughly $28.8 million in sales were lost due to job vacancies on Nova Scotia farms in 2021. Based on data obtained through a 2021 Employer Survey, many farmers feel that their number of job vacancies will likely stay the same into the 2022.

1. Farm Counts

It is valuable to know where the sector's businesses are located, what they produce, and what their operations rely on. This allows researchers to analyze the businesses that would be affected by an isolated shock, like an extreme whether event. Similarly, if market conditions change supply or demand for certain commodities, it is important to know the number of farms this may impact.

Farms eligible to file a farm tax return with the Canada Revenue Agency can voluntarily register with the Nova Scotia Department of Agriculture, which gives them access to government agricultural programs. The registration period starts on April 1st of every year and finishes on March 31st. The total number of farms registered by year in Nova Scotia declined by roughly 23% over the past 4 years. There are a number of factors that have contributed to the declining numbers of farms in the province including retirements, increasing costs, and low-level farm profitability. Additionally, in 2019, changes were made to the Nova Scotia farm registration system that required proof of income, which eliminated many smaller farms from registering with the province.

Chart 1.1
Farm Counts, total registered farms, agriculture

Nova Scotia's largest concentration of farming operations can be found around the Annapolis Valley area, which passes through parts of Hants, Kings, and Annapolis counties, and comprises 35.8% of the total registered farms in the province. The valley is located in the western part of the Nova Scotia peninsula, formed by a trough between two parallel mountain ranges along the shore of the Bay of Fundy. The other large concentration of agricultural operations can be found near the head of the Bay of Fundy, and near the top of the peninsula along the Northumberland Straight through the Cumberland, Colchester, and Pictou counties. These counties account for 32.1% of the total registered farms in the province. Combined, both these areas account for roughly 67% of the total registered farms in Nova Scotia.

Chart 1.2
Farm Counts, by county, agriculture, 2021

Although Nova Scotia has plenty of arable land, much of it is difficult to farm. The land is jagged and rocky, especially on the eastern coastal side of the province. The rains are regular and soil erosion is high. Agri-food Canada researchers have assessed 84% of Nova Scotia's cultivated farmland as severely vulnerable to water erosion if left bare. Despite this fact, in a 2010 report on Atlantic Agriculture, it was estimated that Nova Scotia's population could be fed by the production from just 490,444 hectares of farmland, which is less than half our physical capacity.

Chart 1.3
Farm Counts, by primary and secondary commodity (combined), agriculture, 2021
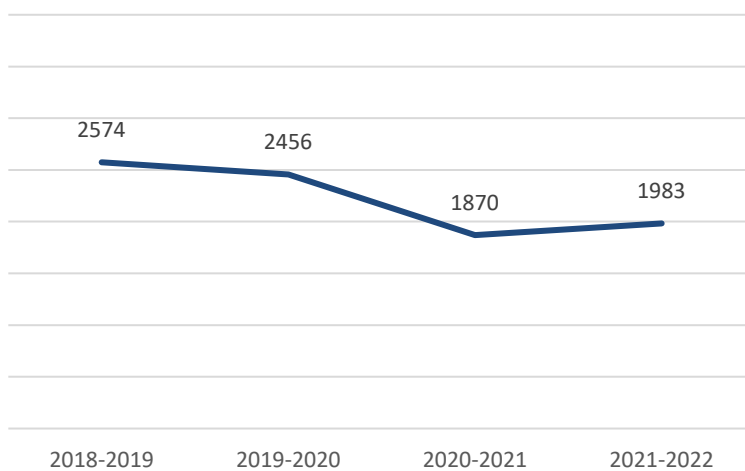
Bar chart showing farm counts by commodity (percentages):
- Beef: 16%
- Other: 12%
- Forage: 10%
- Lowbush Blueberry: 7%
- Vegetables: 6%
- Dairy: 5%
- Chicken: 4%
- Custom Work: 4%
- Eggs: 4%
- Grain: 4%
- Sheep-Lamb: 4%
- Apple: 3%
- Hogs: 3%
- Honey: 2%
- Grapes: 2%
- Greenhouse: 2%
- Christmas Tree: 2%
- Highbush Blueberry: 1%
- Dairy Replacements: 1%
- Turkey: 1%
- Maple: 1%
- Strawberry: 1%
- Small Fruit: 1%
- Haskaps: 1%
- Mink: 1%
- Hops: 0.2%
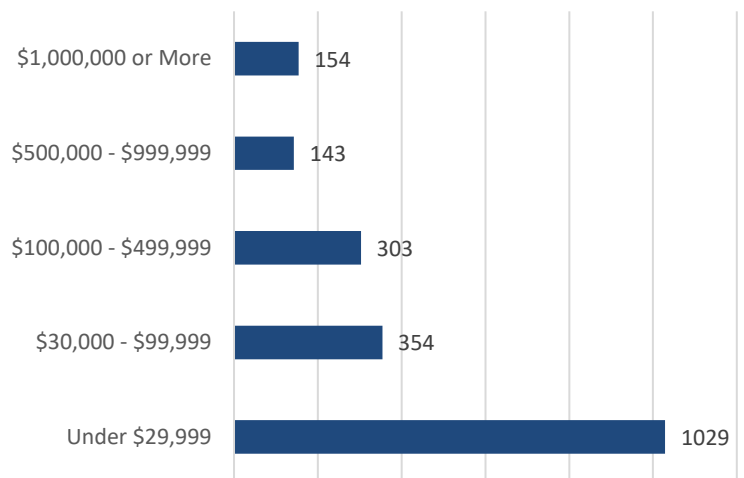- Cranberries: 0.2%
- Oilseeds: 0.1%
- Fox: 0.1%
- Hemp: 0.1%

The majority of registered farms in 2021 were in the Beef, Other, Forage, Low Bush Blueberry, and Vegetable commodities. It should be note that Chart 1.3 is based on the total number of farms registered by commodity, not by the value it produces. It should also be noted that in 2020, Blueberry was subdivided into Highbush and Lowbush Blueberries, and Dairy was subdivided into Dairy Milk Production and Dairy Replacements. Forage refers to plants consumed by animals, particularly livestock (e.g., Hay, Silage). The Other commodity refers to a wide range of possibilities, for example, Rabbits, Alpacas, Deer, Waterfowl, Garlic, Sod, or any other commodity not listed. The expansive list of commodities produced in Nova Scotia indicates high diversity of Nova Scotia's agriculture industry.

For the purpose of the following analysis, the sub-commodities of Dairy and Blueberries were re-combined into the original categories for comparative analysis across years. Since 2018, every commodity category has declined anywhere from at least 10% to as high as 70% in terms of number of registered farms. From the 5 largest commodities shown in Chart 1.3 since 2018, Beef declined by 31%, Other declined by 26%, Forage declined by 25%, Blueberries declined by 37%, and Dairy declined by 18%.

The majority (52%) of all registered farms in Nova Scotia are registered in the 'Under $29,999' revenue category for 2021. A further 33% of the registered farms fall within the $30,000 - $499,999 revenue category, while the remaining 16% of registered farms earn revenues above $500,000.

The large number of farms in the lower revenue category can present an interesting opportunity or potential threat to the sustainability of agriculture in Nova Scotia. There are many opportunities through targeted initiatives, such as accessing new trade opportunities, whether internationally or interprovincially, or increasing local procurement amongst provincial institutions and other local businesses. These programs and policies could encourage more part-time farmers to dedicate more of their time towards their agricultural operations.

Chart 1.4
Farm Counts, by revenue class, agriculture, 2021

Bar chart showing farm counts by revenue class:
- $1,000,000 or More: 154
- $500,000 - $999,999: 143
- $100,000 - $499,999: 303
- $30,000 - $99,999: 354
- Under $29,999: 1029

2. Financials

Farm cash receipts measure the cash paid to farmers for the sale of their agricultural products and from direct program payments to producers. Farm cash receipts signal the agricultural sector's contribution to the gross domestic product and showcase the purchasing power of farmers in Nova Scotia.

Combining total livestock and crop receipts along with direct payments from Chart 2.1, Nova Scotia's agriculture sector's total combined farm cash receipts reached $601 million 2021. From 2010 to 2013 livestock receipts experienced strong growth and expanded by 21%. However, from 2013 to 2020 Nova Scotia's livestock receipts have declined by roughly 19%. Conversely, crop receipts have experienced significant growth over the ten-year period from 2010 to 2020, increasing by roughly 88%. Despite this growth in crop

Chart 2.1
Financials, farm cash receipts and direct payments, agriculture, (x1,000,000)

Legend: ■ Total livestock receipts ■ Total crop receipts ■ Total direct payments

Year	Total livestock receipts	Total crop receipts	Total direct payments
2010	355	128	13
2011	372	144	16
2012	418	154	10
2013	428	167	11
2014	362	177	43
2015	399	187	10
2016	371	183	41
2017	355	185	27
2018	387	174	15
2019	367	210	32
2020	347	240	14

receipts, livestock still accounts for roughly 58% of the total contribution of Nova Scotian farm cash receipts. Overall, total farm cash receipts and direct payments (payments from insurance programs like crop insurance and AgriStability) have increased by roughly 21% since 2010. However, since 2013, overall farm cash receipts and direct payments have decreased by 0.8%.

Chart 2.2 illustrates the industry's operating expenses (after rebates) as well as its depreciation charges. Total operating expenses and depreciation charges for the Nova Scotian agriculture sector totaled $648 million in 2020. From 2010 to 2020, operating expenses and depreciation charges in the sector increased by roughly 35%, and 32% respectively, which is significantly outpacing the growth rates of farm cash receipts over the same period.

Chart 2.2
Financials, operating expenses and depreciation charges, agriculture, (x1,000,000)

Legend: ■ Operating expenses after rebates ■ Depreciation charges

Year	Operating expenses after rebates	Depreciation charges
2010	422	59
2011	442	61
2012	478	62
2013	487	63
2014	500	64
2015	512	67
2016	516	68
2017	517	70
2018	525	73
2019	545	74
2020	570	78

Combined, overall operating expenses and depreciation charges have increased by roughly 35% between 2010 and 2020. This disparity between farm cash receipts and expenses is a major issue impacting farmers across the province. Farmers are increasingly financing their operations with debt and in recent years the sector has been earning negative net incomes, in essence, paying consumers to eat their food. This also limits farmers ability to increase wages and limits potential new hires.

3. Labour Force

With a high reliance on foreign labour and a widening labour gap, Nova Scotia's agriculture sector faces considerable challenges over the next decade. Nova Scotia's agricultural workforce has experienced some growth over the past few years. Nova Scotia's agriculture sector employed 6,700 people, or roughly 3% of Canada's agricultural workforce. Although it was the fourth smallest agriculture sector employer in Canada, it had the third highest reliance on agricultural TFWs in Canada.

The Crop production industry is one of the province's largest agricultural employers, it is also one of the most labour intensives, with many products needing to be picked and packed by hand. Because of this, the industry faces labour challenges, especially during seasonal peaks. Between now and 2025, an aging agricultural workforce and a declining number of young people in rural areas will further reduce the number of domestic workers available. At the same time, the province's need for agricultural labour will rise because of increased production outlooks for a number of key agricultural industries, including the 'tree fruit and vine' and the 'greenhouse, nursery, and floriculture' industries.

Chart 3.1 shows the agricultural labour force has increased by 36% over a 6-year period from 2016-2021, while the number of those who are employed in the sector increased by 49% over the same period.

Chart 3.1 also shows the unemployment rates for the agriculture sector. The unemployment rate is calculated by dividing the number of unemployed persons by the number of persons in the labour force (employed or unemployed). From 2016 to 2019 the unemployment rate for Nova Scotia fell towards the national agriculture average of 4.4%, however in 2020, the rate more than doubled from 4.8% (300) to 10.5% (700) and remained roughly the same into 2021. There are a few factors that could explain this large year-over-year increase from 2019 to 2020. The COVID-19 global pandemic put economic strain on global logistics, trade, and employment. Another explanation could be the declining number of farms in some industries (e.g., mink) which have significantly declined due to market conditions.

Chart 3.2 illustrates the agriculture's labour force broken down into full-time and part-time workers from 2016 to 2021. The number of full-time workers increased by 60%, compared to a 22% increase in part-time workers over the 6-year period. Despite the demand for full-time seasonal employees rather than part-time employment, the sector added 400 part-time jobs between 2020 and 2021.

While the demand for labour in agriculture is expected to increase, the available pool of labour is forecasted to trend in the opposite direction. The domestic supply of labour will undergo a decline over the coming years. Mounting retirements and a small number of young people in rural areas will result in ongoing and future labour supply issues. Chart 3.3 illustrates employers' growth

Chart 3.1
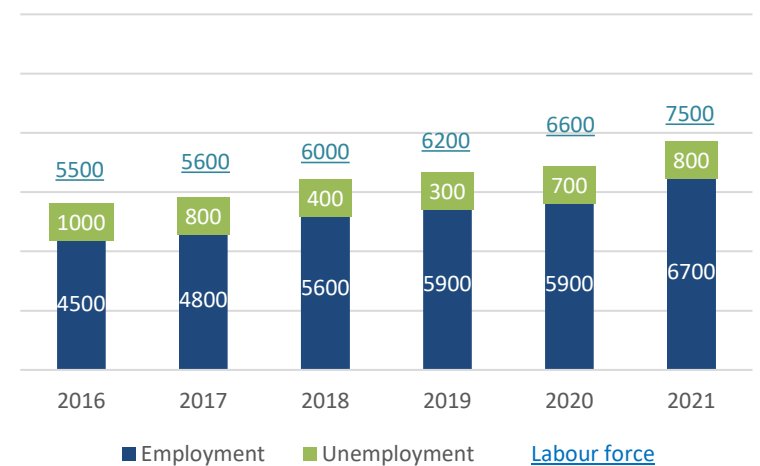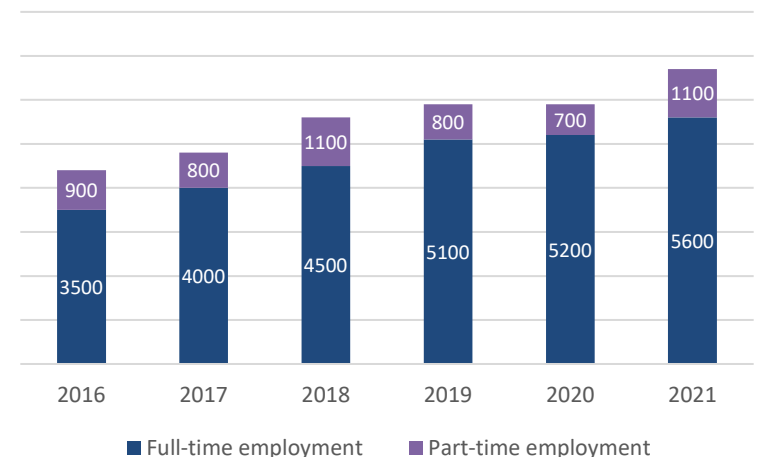**Labour force, by worker class, agriculture**

Chart 3.2
Labour force, by worker type, agriculture

expectations for their 2022 workforce from a 2021 employer survey. The majority (68%) of the respondents indicated that their workforce will likely stay the same, while 23% indicated they expect the workforce to increase. Only 2% of employers expect their workforce to decrease. These results align with our data seen in Chart 3.1 where the workforce has been steadily increasing since 2016. It also correlates with data seen in Chart 3.4 showing employers' expectations for 2022 job vacancies. Similar to the workforce growth expectations, 68% of businesses expect job vacancies to remain the same while only 4% expect them decrease, and 15% expecting them to increase. These charts, combined with our data on the labour force numbers, indicate that the workforce is growing, however the demand for labour is also continuing to grow, and businesses are having trouble filling all the required positions to meet full production. Data collected from our Employer Workforce Insights Survey estimates that lost sales in the agriculture sector from labour shortages amounted to roughly $28.8 million in 2021.

Charts 3.5 illustrates Nova Scotia's agriculture employment breakdown by age cohorts. In 2021, 23% of Nova Scotia's workforce in the agriculture sector was between 15-24 years of age. This age cohort significantly grew year over year by 70% from 2020 to 2021, increasing from 1,000 workers to 1,700. This portion of younger farmers is above the 15% average across all Canadian agriculture sectors, as well as the 14% average across all Nova Scotian sectors for the same cohort.

In 2021, 36% of Nova Scotia's workforce in the agriculture sector was 55 years of age or older. This is slightly lower than the 39% average across all Canadian agriculture sectors, and significantly higher than the 24% average across all Nova Scotian sectors for the same cohort.

As the average age of the Nova Scotian farmer continues to increase, effective succession planning is critically important, particularly for a sector that will transfer millions of dollars in assets to the next generation in this decade alone. With new entrants into the industry facing a variety of obstacles and barriers to entry, including massive capital costs, tax laws in Canada should not disincentivize willing entrants into the sector nor the continuation of multigenerational family farms.

Chart 3.3
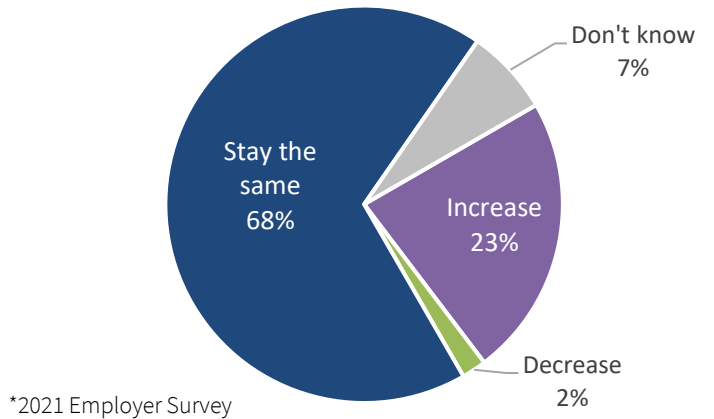**Labour force, 2022 workforce growth expectations, agriculture**

*2021 Employer Survey

Chart 3.4
Labour Force, 2022 job vacancy expectations, agriculture
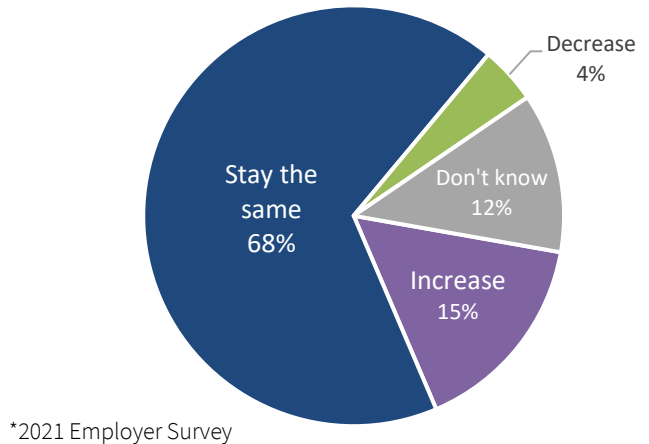

*2021 Employer Survey

Chart 3.5
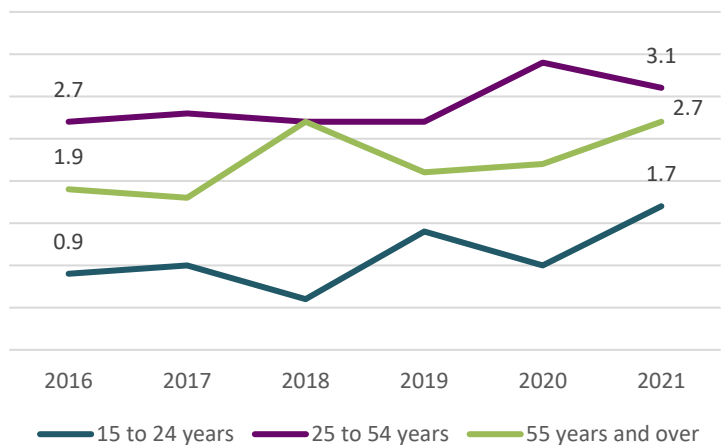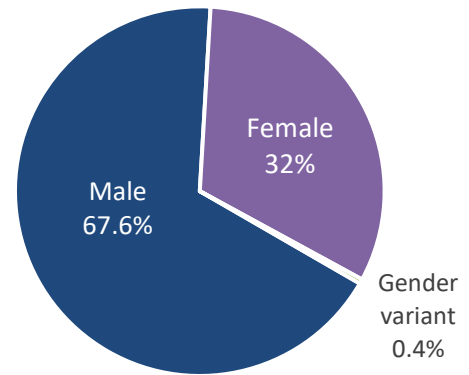**Labour Force, by age groups, both sexes, agriculture (x1,000)**

Chart 3.6 demonstrates the labour force's gender breakdown for 2021. The female to male ratio in Nova Scotia's agriculture sector is roughly 1:3 with a very small percentage identifying as gender variant/non-conforming. An increased focus on the opportunities for women in agriculture may be a potential recruiting tool for farms looking to fill job vacancies. Since 2016, the female agriculture labour force has increased by 53%, from 1,500 workers to 2,300 in 2021. The portion of female workers in the agriculture workforce has increased from 28% of the total workforce in 2016, to 32% in 2021.

Labour productivity, also known as workforce productivity, is defined as real economic output per labour hour. Growth in labour productivity is directly attributable to fluctuations in physical capital, new technology, and human capital. Physical capital are the tools, equipment, and facilities that workers have available to use to produce goods. New technologies are new methods to combine inputs to produce more output, such as assembly lines or automation. And human capital represents the increase in education and specialization of the workforce.

Chart 3.6
Labour force, gender breakdown by employees, agriculture, 2021

Male 67.6%
Female 32%
Gender variant 0.4%

*2021 Employer Survey

Businesses and government can increase labour productivity of workers by direct investing in or creating incentives for increases in technology and human or physical capital. For workers, increased productivity can translate to higher wages and better working conditions, and in the longer term, increased productivity is key to job creation. A decrease in productivity means higher relative unit labour costs, which may result in higher expenses compared to revenues. Unless there's a decrease in other expenses or an increase selling prices, profits for these industries will decrease. There have been small gains to labour productivity in the Crop Production and Food Manufacturing industries in Nova Scotia, however both these industries lag their national averages, meaning it's more expensive to operate in those industries here in Nova Scotia relative to some other parts of Canada. Conversely, our Animal Production industry in Nova Scotia trends above the national average for labour productivity and experiences lower unit labour costs on average.

Chart 3.7
Labour Productivity, Chained (2012) dollars per hour, by industry, agri-food

Crop production: $32.70, $43.30
Animal production: $23.30, $24.40
Food manufacturing: $33.10, $35.00

2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020
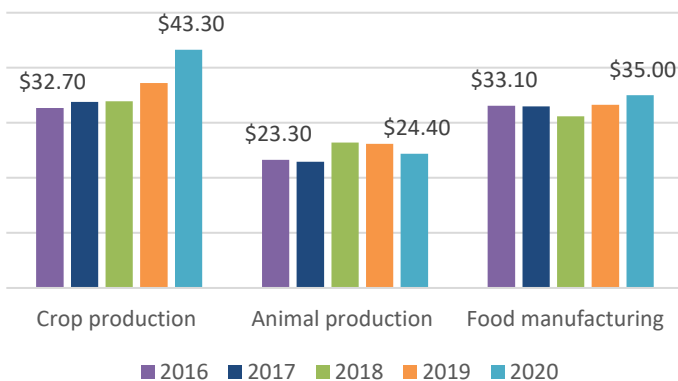
Chart 3.8
Unit Labour Costs, Dollars per unit of real GDP, by industry, agri-food

Crop production: $0.39, $0.38
Animal production: $0.55, $0.59
Food manufacturing: $0.86, $0.90

2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020
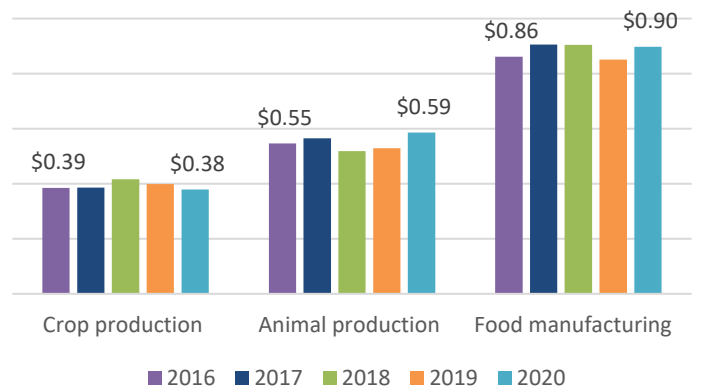
4. Temporary Foreign Workers (TFWs)

Like any industry, agriculture requires a sufficient workforce to keep operations going. Farmers continue to identify critical labour shortages as one of the biggest risks facing their operations and a major constraint on growth. Agriculture is a complex industry that in some cases requires specific skillsets and experience to produce, in some cases, highly perishable products, most seasonal in nature.

Temporary Foreign workers are an important source of labour for many industries in the agri-food sector. A Temporary foreign worker is a worker (not Canadian or a permanent resident) who is hired through the Temporary Foreign Worker Program (TFWP), the Seasonal Agriculture Workers Program (SAWP), or the International Mobility Program (IMP) to fill short-term labour shortages. A Labour Market Impact Assessment (LMIA), a work permit and other requirements are needed to hire a TFW through one of the programs available.

In 2020, Nova Scotia employed the highest share of agri-food TFWs for any Atlantic Province, and the third highest share for all Canadian provinces. Despite Nova Scotia's agricultural labour force growth (Chart 3.1), the province's population is also continuing to grow along with the demands for food production. Therefore, as long as the demand for food production is exceeding the rate of domestic employment in the sector, the need for temporary foreign workers will continue.

Chart 4.1
Temporary Foreign Workers, employed, agri-food

1653 1581 1453 1329

2017 2018 2019 2020

Chart 4.2
TFWs, by industry, agri-food, 2020

Industry	Value
Fruit and tree nut farming	723
Greenhouse, nursery and…	220
Other crop farming	196
Vegetable and melon farming	143
Cattle and ranch farming	26
Other food manufacturing	20
Meat product manufacturing	17
Hog and pig farming	11
Poultry and egg production	10
Dairy product manufacturing	6

Chart 4.2 breaks down by the number of TFWs employed by agri-food industries. In general, TFWs are mainly hired for harvesting labour jobs. Fruit and tree nut farming is the largest employer of TFWs employing 53% of the total share of TFWs in 2020. The next three largest employers of TFWs are Greenhouse, nursery, and floriculture production (16%), Other crop farming (14%), and Vegetable and melon farming (10%). The 'Fruit tree and nut farming' industry, the province's largest agricultural employer of TFWs, is also one of the most labour intensives, with many products needing to be picked and packed by hand. Because of this, the industry faces labour challenges, especially during seasonal peaks. Breaking down the TFWs by their country of origin, Jamaica is the largest source of TFWs contributing 60% of the TFW workforce in 2020, while 32% arrived from Mexico, and the remaining 8% came from Guatemala, India, and Ukraine.

It should be noted that due to the unique situation with COVID-19, the province tracked the arrival of all TFWs for quarantining purposes, and it is known that the number of TFWs in 2020 was slightly higher than what is currently reported by StatsCan (Chart 4.1 and 4.2). The data presented for Nova Scotia Agricultural TFWs in 2020 is considered preliminary data and is expected to be revised and increased by StatsCan at a later time.
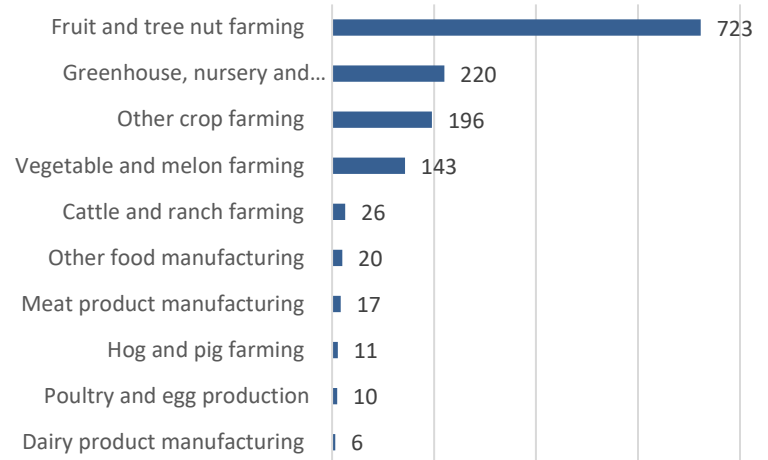
5. Wages and Hours

Wages are an important aspect of the labour market since labour market weakness is often reflected in wages. When the labour market is weak there is downward pressure on wages. Comparing wages across occupations and industries can provide insight on wage gaps and inequalities. It can also provide a better understanding of the relative competitiveness of occupations and industries, with more competitive jobs generally offering relatively higher wages.

The average hourly wage rate for all agricultural workers in Nova Scotia was $17.87 an hour. This wage rate has increased by roughly 20% over the 6-year period from 2016 to 2021. Despite this increase, Nova Scotia agricultural wages lag the average wage rate for all agriculture workers nationally by $2.78 an hour ($20.65/hr.). Additionally, agriculture's average wage rate lags the provincial average for all industries by $7.99 an hour ($25.86/hr.). This disparity creates a major challenge for the agriculture sector's recruitment and retention efforts.

Chart 5.2 illustrates Nova Scotia agriculture's average hourly wage rate between full-time and part-time workers. Between 2016 and 2021, full-time wages have increased on average by 23% compared to only a 6% increase in part-time wages over the same period.

Chart 5.3 breaks down the average hourly wage rates for agriculture workers by gender in Nova Scotia. Over the 6-year period from 2016 to 2021, average male wage rates have increased by 15%, while average female wage rates increased by 33% over the same period. It should also be noted that the Nova Scotia agriculture sector virtually eliminated its gendered wage gap in 2020. From our labour force analysis in section 1, the number of women participating in agriculture is strongly correlated with the wage rates offered to women in the sector.

Data collected through our Employer Workforce Insights Survey provides insights into the average wage rates by relevant agriculture occupations, presented in Table 5.1. This allows employers to better understand their offered wage for a vacant position, and whether the wage offered for a position is above or below the average wage rate within the sector.

Chart 5.1
Wages, average wage rate, both sexes, FT and PT, agriculture

	2016	2017	2018	2019	2020	2021
Nova Scotia (Agriculture) Both sexes	14.85	15.48	16.45	17.48	17.57	17.87
Canada (Agriculture) Both sexes	17.46	18.07	19.51	19.67	20.29	20.65
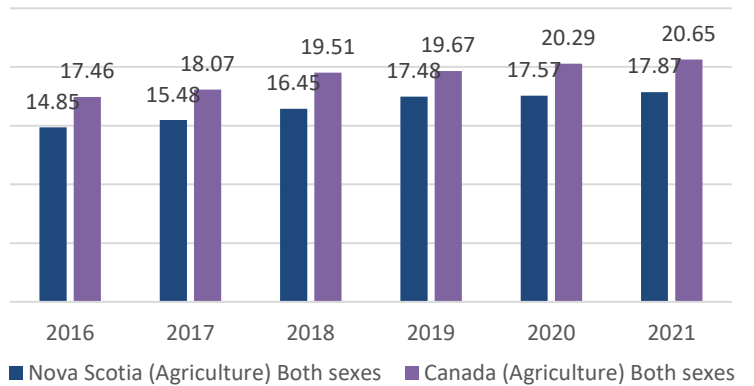
Chart 5.2
Wages, average wage rate, N.S. full-time vs part-time, both sexes, agriculture

	2016	2017	2018	2019	2020	2021
Nova Scotia (Agriculture) Part-time	13.14	17.48	14.56	12.86	13.38	13.9
Nova Scotia (Agriculture) Full-time	15.32	14.99	16.86	18.61	18	18.9
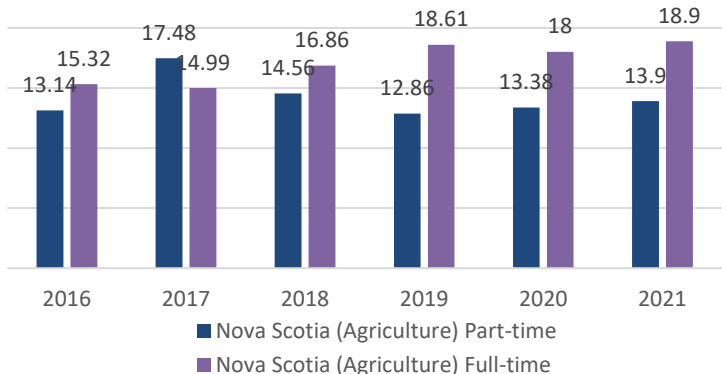
Chart 5.3
Wages, average wage rate, N.S. males vs. females, FT and PT, agriculutre

	2016	2017	2018	2019	2020	2021
Nova Scotia (Agriculture) Females	12.54	14.52	14.75	15.1	17.52	16.7
Nova Scotia (Agriculture) Males	15.95	16.09	17.36	18.63	17.59	18.35
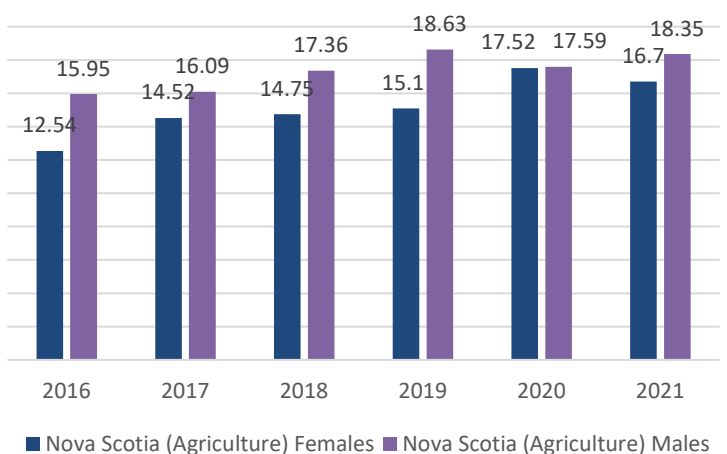
The wages presented in Table 5.1 were broken down into 10th, 50th, and 90th percentiles, and correspond to the Low, Avg, and High categories respectively. The average wage of all listed occupations is $18.04, which corresponds closely to our average wage rate observed in Chart 5.1 (StatsCan data). Key insights gained from Table 5.1 are the low wages of Farm Owners/Operators and the low wages for the more experienced workers (Managers), relative to the provincial average of $25.86 per/hour.

Labour productivity was previously mentioned in section 3 including its importance, and possible implications on the labour market. Labour productivity is measured by output per worker; however, this metric fails to capture the true labour input into production because workers in different industries can work different hours. Therefore, data on hours worked is an important estimate to properly measure productivity levels. Data on hours worked can also be valuable to highlight rising demands within an industry and the current struggles to fill job vacancies if hours are increasing.

Table 5.1 Wage, average hourly wage rates by occupation, agriculture, 2021,		
Occupation	Avg	High/Low
General Farm Worker	$15.00	High: $19.00 Low: $13.00
Harvesting Labourer	$15.00	High: $20.40 Low: $12.95
Office Worker/Administrator	$18.25	High: $30.00 Low: $15.00
Farm Manager	$20.00	High: $25.90 Low: $16.00
Crop/Livestock Manager	$20.00	High: $25.00 Low: $15.50
Farm Owner/Operator	$20.00	High: $30.00 Low: $15.00
*2021 Employer Survey		

Chart 5.4 illustrates the average yearly hours worked for paid jobs by industry from 2016 to 2020. The hours worked for paid workers has slightly decreased in the Crop and Animal Production industries, and the Food Manufacturing industry. Despite these declines in the average annual hours worked for paid jobs in Chart 5.4, the agri-food industries still trend above the provincial average for all industries (1,691). This data, combined with the increases seen in the labour force, labour productivity and wages, suggest that the overall labour market for the agriculture sector in Nova Scotia is trending in a positive direction, but still requires a lot of support as many of those indicators lags the provincial averages for all industries.

Chart 5.4
Hours, Average annual hours worked for paid jobs, by industry, agri-food

6. Skills, Recruitment and Retention

Skills can encompass a wide range of abilities workers may have or a wide range of abilities that are lacking within an industry. Understanding what are the most important skillsets that employers are seeking can help new entrants understand what skills to focus on to maximize their potential to be hired. It can also help organizations like the NSFA to address labour gaps within certain industries, to be able to incentivize business owners or governments to engage in upskilling or training programs. Additionally, it can help to guide secondary education institution programs (e.g., Dalhousie University Faculty of Agriculture), to understand what skillsets will be required for their students to have the greatest chance of success within the agriculture sector upon graduation.

From our 2021 Workforce Insights survey, employers were asked to list what are their most in-demand personal attributes, and technical skills they are looking for when hiring a new employee. There was a heavy emphasis from many employers on the importance of personal attributes (Table 6.1) compared to technical skills. Many employers throughout the agriculture sector listed punctuality, work ethic, and honesty as some of the biggest personal attributes that they are seeking for new employees. These results suggest that someone can compensate a lack of relevant agricultural experience with strong personal attributes.

Table 6.2 lists the most in-demand technical skills required from employers. An emphasis on mechanical experience, aptitude and repair was frequently listed as a desired skillset. However other skillsets such as plant care, marketing and retail experience were also listed. This suggests that there are many technical skillsets that can be transferrable to the agriculture sector and vice versa. This can be useful for addressing labour gaps within the sector, recruiting potential workers from other sectors, or to support farms recruitment strategies for workers looking to gain transferable skills.

Chart 6.1 illustrates the biggest recruitment challenges indicated by farmers from our 2021

Table 6.1   **Skills, most in-demand personal attributes, 2021, agriculture**
Ability to work on a team
Ability to work unsupervised
Attention to detail
Commitment
Common sense
Creative
Efficiency
Good observation
Hard worker
Honest
Initiative
Multi-tasking
Organized
Positive attitude
Problem solving
Punctuality
Reliable/dependable
Respectful
Take direction
Willingness to get dirty
Willingness to learn
Willingness to work

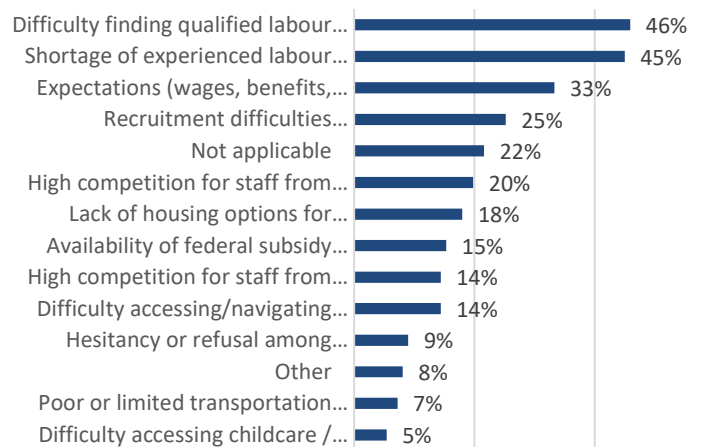| Table 6.2
 Skills, most in-demand technical skills, 2021, agriculture |
| --- |
| Administrative experience |
| Equipment operator (Machinery, Tractors, Milkers) |
| Equipment safety |
| Experience with livestock |
| Field/Farm experience |
| Food safety |
| Good vision |
| Hand/eye coordination |
| Mechanical repair |
| Marketing |
| Mechanical aptitude |
| Packaging experience |
| Physicality |
| Plant care |
| Retail experience |
| Vineyard management |

Workforce Insights Survey. 46% of all farmers who answered the survey indicated that finding qualified labour in their local area was the biggest recruitment challenge they faced. Similarly, 45% of farmers indicated a shortage of experienced labour in their area was also a major challenge for recruitment, while 35% of farmers indicated the high expectation for wages and benefits as a major challenge in their recruitment efforts as well. This aligns with the below average wage rates observed in section 5 (Wages and Hours) relative to the provincial average.

Chart 6.2 offers some insights into the strategies that farmers are implementing to try and increase their recruitment efforts to address job vacancies. Nearly half (46%) of all the farmers who answered the survey indicated that improved wages, benefits, and perks was the top recruitment strategy they were using to address their vacant positions. Wages continue to be a problematic area in the sector for addressing the labour gaps on farms. Despite farmers indicating that improving wage rates as one of the most common recruitment strategies, we observe from section 5 that the average wage rates for the agriculture sector still significantly lags the provincial average for all industries by almost $8/hr. Another difficulty for increasing the wage rates are the relatively low wage rates for Farm Owners/Operators. This indicates that farmers are not disproportionately earning higher wages for themselves, that they are likely taking pay cuts to try and increase employee wages.
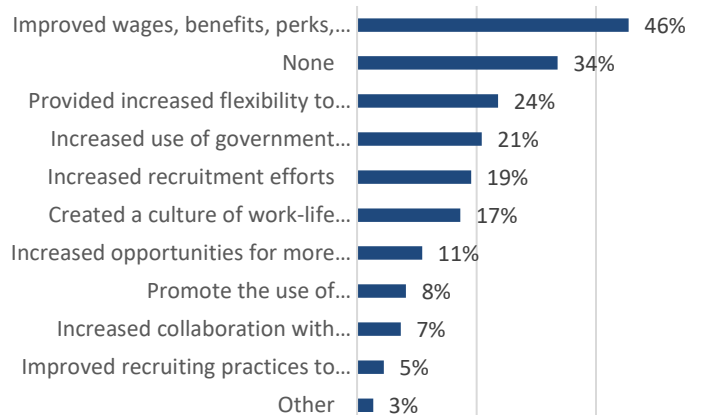
Chart 6.3 lists some of the recruiting methods that farmers are using to advertise their job openings. Half of all farms still use personal contacts, referrals, and informal networks as one of their top recruiting methods. There is however an increasing use of technology for farms recruitment efforts, selecting social media (41%) and Online job boards (34%) as the next highest methods. It should be noted that in the spring of 2020, the NSFA launched the NS Ag Jobs board for agriculture employers to highlight their job openings, which may explain the increased use of this method. Of concern is the large number of farmers who indicated None of the above (31%). This could be skewed from self-employed farms who are not actively recruiting employees, or it could indicate some farms lack of awareness of available marketing options. Chart 6.5 lists some of the biggest retention challenges that farms are experiencing. Not surprisingly, expectation of wages, benefits, and perks

Chart 6.1
Recruitment challenges, agriculture, 2021

Difficulty finding qualified labour…	46%
Shortage of experienced labour…	45%
Expectations (wages, benefits,…	33%
Recruitment difficulties…	25%
Not applicable	22%
High competition for staff from…	20%
Lack of housing options for…	18%
Availability of federal subsidy…	15%
High competition for staff from…	14%
Difficulty accessing/navigating…	14%
Hesitancy or refusal among…	9%
Other	8%
Poor or limited transportation…	7%
Difficulty accessing childcare /…	5%

*See appendix for full table

Chart 6.2
Recruitment strategies, agriculture, 2021

Improved wages, benefits, perks,…	46%
None	34%
Provided increased flexibility to…	24%
Increased use of government…	21%
Increased recruitment efforts	19%
Created a culture of work-life…	17%
Increased opportunities for more…	11%
Promote the use of…	8%
Increased collaboration with…	7%
Improved recruiting practices to…	5%
Other	3%

*See appendix for full table

Chart 6.3
Recruitment methods, agriculutre, 2021

Personal contacts, referrals,…	51%
Social media	41%
Online job boards	34%
None of the above	31%
Government, employment centre…	22%
Professional networking, head-…	9%
Company website	8%
Posting a 'help-wanted' sign at…	7%
Job or recruitment fairs at…	5%
Newspaper ads	4%
Other	2%
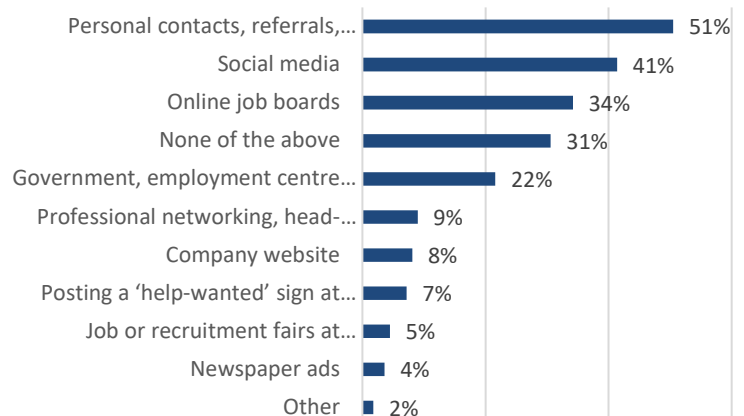
*See appendix for full table

(36%) ranked as the biggest retention challenge for keeping workers on farm. Difficulty retaining qualified local qualified labour (26%), and employees being unfit for the role within the organization (24%) also ranked highly for retention challenges. This supports the previously mentioned data on personal attributes over technical skills. Many farms feel that strong personal attributes, like work ethic, punctuality, and honesty are as essential to an employee's success as strong technical experience. Because the 2021 Workforce Insights Survey was also open to self-employed farms with no employees, the Not applicable category also ranked highly for employee retention challenges (34%). Of interest is the low number of employees who left citing difficult working conditions (3%). Despite many anecdotes from business owners that employees aren't willing to deal with the difficult working conditions on farms, the data would suggest wages are a much bigger issue.
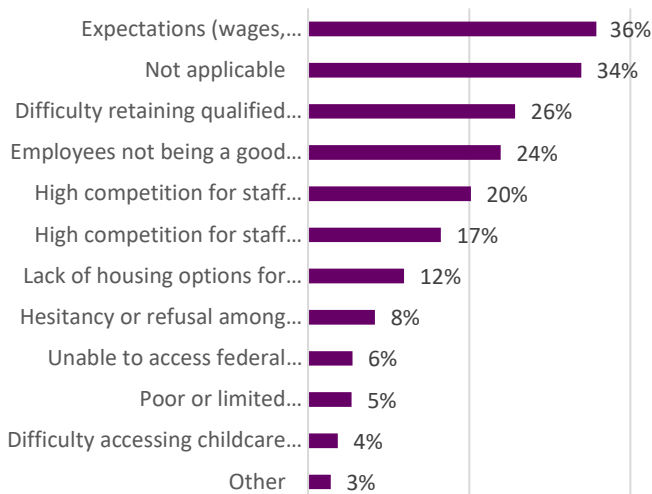
Chart 6.4
Reason for employee departures, agriculture, 2021

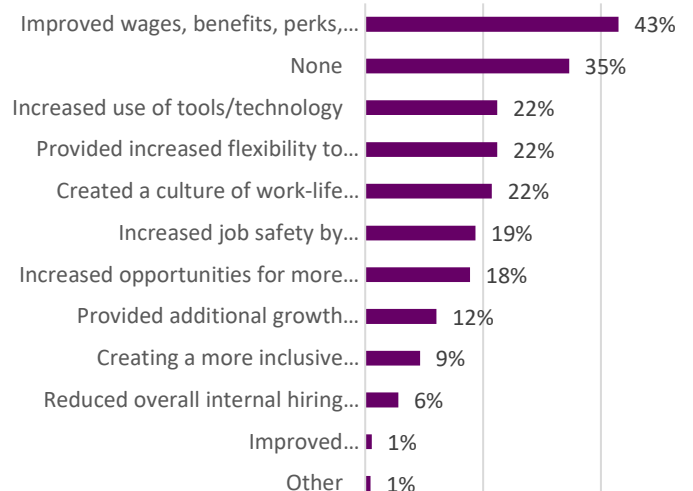| Reason	%
Voluntarily quit	26%
Returned to school	22%
Higher pay from another business	13%
Retirement	11%
They were fired or asked to leave	9%
They relocated/moved	8%
COVID-19 related	6%
Difficult working conditions	3%
Loss of funding	1%
Lack of career opportunities	1%
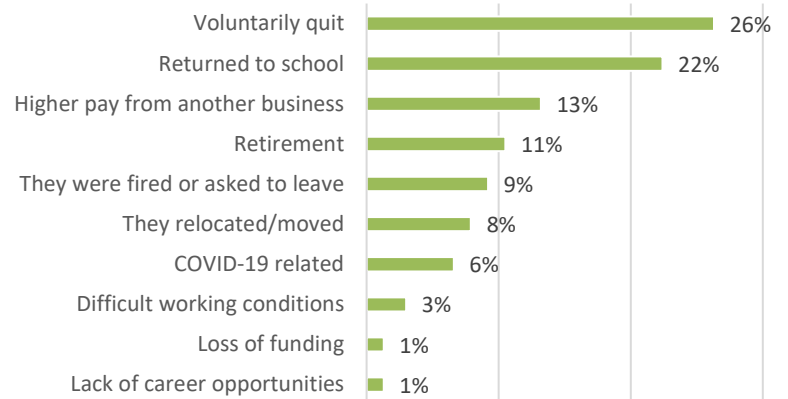
*See appendix for full table

Chart 6.6 illustrates some of the retention strategies that farms are implementing for their operations to try and retain employees. Improved wages, benefits, and perks ranked as the highest retention strategy (43%) which correlates with the wage data, and the data from recruitment strategies in chart 6.2. This means that farms are not only trying to offer high wages to attract new employees, but also offering higher wages to try and keep the workers they have. Of concern is the high number of farms who indicated None (35%) when asked what retention strategies they have implemented. There is the possibility that this category was skewed by self-employed farmers with no need for a strategy, however it may also indicate a gap in some business management strategies on farms. Of interest, is the increased use of tools/technology as a method to try and retain employees. The agriculture sector is seeing a massive increase in new innovations and technologies to address challenges like climate change and labour gaps. This could become a major attractant for new entrants and existing employees who are looking for an innovative industry, and who want to build experience with new innovative technologies.

Chart 6.5
Retention challenges, agriculture, 2021

Challenge	%
Expectations (wages,…	36%
Not applicable	34%
Difficulty retaining qualified…	26%
Employees not being a good…	24%
High competition for staff…	20%
High competition for staff…	17%
Lack of housing options for…	12%
Hesitancy or refusal among…	8%
Unable to access federal…	6%
Poor or limited…	5%
Difficulty accessing childcare…	4%
Other	3%

*See appendix for full table

Chart 6.6
Retention strategies, agriculture, 2021

Strategy	%
Improved wages, benefits, perks,…	43%
None	35%
Increased use of tools/technology	22%
Provided increased flexibility to…	22%
Created a culture of work-life…	22%
Increased job safety by…	19%
Increased opportunities for more…	18%
Provided additional growth…	12%
Creating a more inclusive…	9%
Reduced overall internal hiring…	6%
Improved…	1%
Other	1%

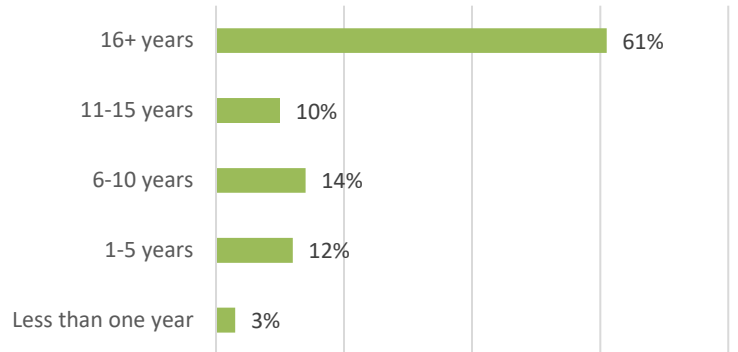*See appendix for full table

7. Retirement

Farm families face challenges related to retirement planning and implementation similar to other small businesses. As the average age of the Canadian farmer continues to increase, effective succession planning is critically important, particularly for a sector that will transfer millions of dollars in assets to the next generation in this decade. Chart 7.2 provides insights into farm's succession planning in Nova Scotia. When asked about their operations succession plan, an alarming 66% of farmers indicated they do not have a plan for when they retire. Additionally, of the estimated 31% of farms who do have a succession plan for when they retire, nearly half (14%) of those do not have their plan within a written legal document.

In many cases farmers plan to hand their farm down to their children who have grown up on the farm and are willing to take it over. Of the planned successors listed by farmers, 62% plan or anticipate a family member taking over the business. However, tax laws in Canada have created an environment where it can be more expensive to transfer your farm assets to a family member than it is to transfer them to a third party. Tax laws in Canada should not disincentivize willing entrants into the sector nor the continuation of multigenerational family farms. Despite this disincentive for family transfers, 0% of farmers from our 2021 employer survey indicated they have a planned successor outside of their family.
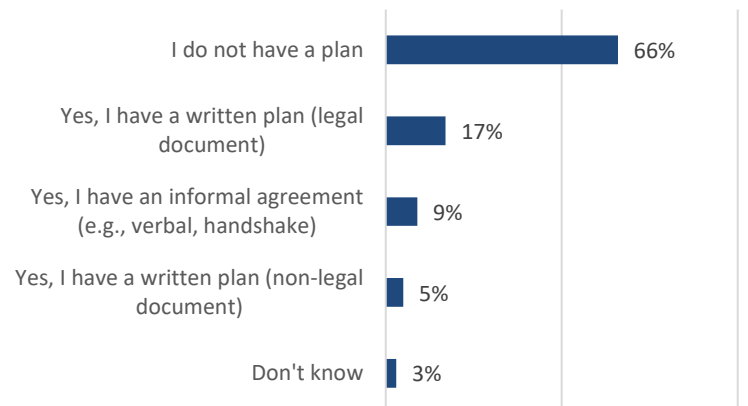
New entrants into the industry see a variety of difficult obstacles to entry, including massive capital costs and a lack of benefits and support services for farm families. Creating sound succession plans and easy pathways for the next generation of farmers to take over operations is a critical element to the health of the sector. This is in the interest of all Nova Scotians, as studies show that family farming encourages sustainable growth and environmental stewardship. Farmers also tend to spend their money in their own community. A 2000 survey of farmers in Kings County showed that 88% of farm expenses were spent in businesses within the county.

Chart 7.1
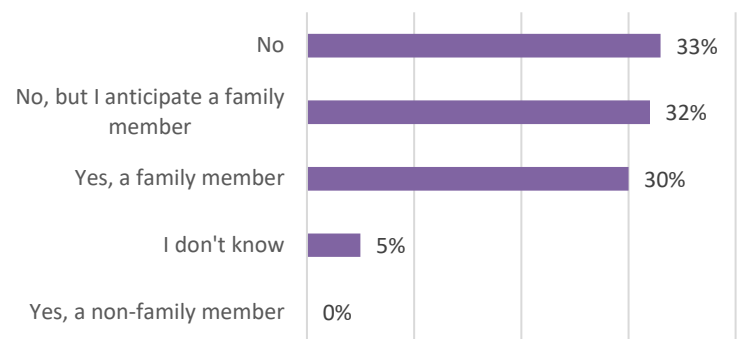**Farm Counts, by years in operation, agriculture, 2021**

Years	Percent
16+ years	61%
11-15 years	10%
6-10 years	14%
1-5 years	12%
Less than one year	3%

*2021 Employer Survey

Chart 7.2
Retirement, farm's succesion planning, agriculture, 2021

	Percent
I do not have a plan	66%
Yes, I have a written plan (legal document)	17%
Yes, I have an informal agreement (e.g., verbal, handshake)	9%
Yes, I have a written plan (non-legal document)	5%
Don't know	3%

*2021 Employer Survey

Chart 7.3
Retirement, planned farm successsors, agriculture, 2021

|	Percent
No	33%
No, but I anticipate a family member	32%
Yes, a family member	30%
I don't know	5%
Yes, a non-family member	0%

*2021 Employer Survey

8. Innovation and Tech Adoption

Technological change has been the major driving force for increasing agricultural productivity, and for rising income. New technologies would enable farmers to raise yields, manage inputs more efficiently, adopt new production systems, and improve the quality of their products while conserving natural resources and adapting to climate challenges.

Chart 8.1 illustrates data collected from a 2021 employer survey and asked whether farmers have plans to invest in any new areas of technology or innovations for their operations. Over half (57%) the respondents indicated they are planning to make investments in new technologies. When asked what the timeline is (Chart 8.2), over half (56%) indicated within the next 2 years or less, while 88% indicated they have plans to make investments within the next 5 years.

Chart 8.3 asked which area(s) of tech farms are planning to invest in. Farm automation ranked the highest with 38% of farmers indicating their plans to automate some of their labour needs and improve the productivity on farms. Also ranked highly was nutrient management/soil health (35%), and green energy (31%). Like previously mentioned, technology investments in agriculture can improve productivity, meet rising food demands, and be used to fight climate change, which is all reflected in the top responses of Chart 8.3.

Chart 8.1
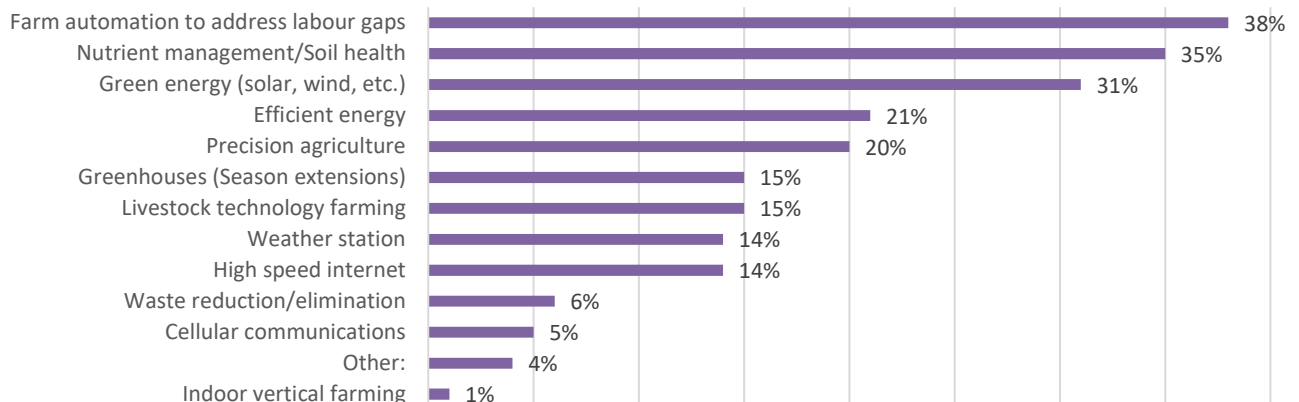**Tech Adoption, planning to invest in new tech, agriculture, 2021**
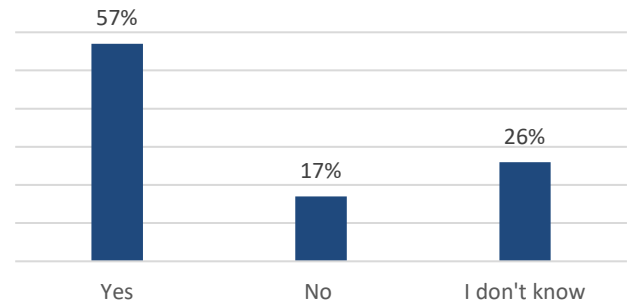
*2021 Employer Survey

Chart 8.2
Tech Adoption, timeline to invest in new tech, agriculture, 2021
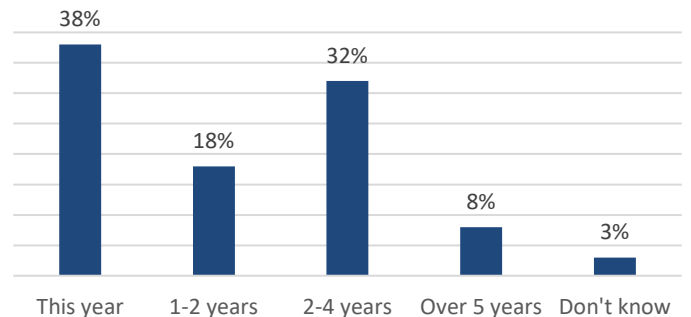
*2021 Employer Survey

Chart 8.3
Tech Adoption, areas of new technology investments are planned for, agriculture, 2021

*2021 Employer Survey

9. Conclusion

Like any industry, agriculture requires an adequate workforce to keep operations going. The sector faces unique workforce challenges due to rural depopulation and seasonal production of highly perishable products. Farmers continue to identify chronic labour shortages as one of the most pressing risks facing their farms. Solving the labour shortage issue in agriculture is only one aspect of the problem. Farmers are facing a variety of challenges from rising input costs, low food prices, climate change and aging populations. With rising operating expenses and stagnant farm cash receipts, farmers in Nova Scotia are now earning negative net income.

No single government or institution can resolve all of the challenges. Where domestic workers aren't available to meet the industry's workforce requirements, producers need access to hire willing agriculture workers from abroad to ensure a sustainable workforce. Government and institutional policies that support immigration, outreach to under-represented groups, access to international workers, improved education & skills training, and continuous improvements are essential to managing the labour issue in agriculture.

Businesses and government can also increase agricultural productivity by direct investing in or creating incentives for increases in technology. An increase in productivity through technology can reduce labour needs, increase production, and increase profits. For workers, increased productivity can translate to higher wages and in the longer term, increased productivity is key to job creation. A major focus of businesses, governments and institutions should be targeted towards supporting the adoption, investment and implementation of continuous improvements and new technologies on farms. Additionally, ensuring human resource best practices as well as employment options like childcare, healthcare, and attractive compensation packages will also support the recruitment and retention of workers to the sector.

Understanding the current state of the Agri-workforce in Nova Scotia helps to highlight the fact that unless the agriculture sector can adapt and secure a reliable workforce, our ability to produce food will be at risk. Information and data can help us identify problems and develop strategies to address these issues effectively. More research and data around job vacancies, turnovers, local procurement, value-added contributions, and the barriers to growth are required to fill data gaps and support the development and sustainability of the agricultural workforce in Nova Scotia.

One-way that the NSFA supports the development and sustainability of the sectors workforce is through our Farm and Workforce Development team. Farm and Workforce Development supports farms by providing access to the tools and resources they need to ensure a sustainable workforce. Our work is focused on the needs of employers and workers, and actively promotes agriculture as a rewarding career.

Resources for attracting and retaining a sustainable workforce
- Delivering human resources support and best practices.
- Navigating labour legislation and programs.
- Supporting succession planning through tools and resources.
- Promoting innovative approaches to workforce challenges.
- Fostering a culture of diversity and inclusion within the industry.
- Strengthening the workforce through skills development, education and training, and career promotion.

How we do it
- Deliver training and workshops
- Develop templates, tools, and best practices for use on farm
- Keep you up to date through newsletters, websites, and social media
- Work with stakeholders and industry partners
- Promote agricultural careers to Nova Scotians

For more information on the NSFA's Farm and Workforce Development resources visit: https://nsfwd.ca/

Appendix

Recruitment	
Chart 6.1 Recruitment challenges, agriculture, 2021	
Shortage of experienced labour in local area	45%
Expectations (wages, benefits, perks, etc.) of potential employees are too high	33%
Recruitment difficulties associated with seasonal nature of business/organization	25%
Not applicable	22%
High competition for staff from businesses/organizations in other industries or sectors	20%
Lack of housing options for potential employees	18%
Availability of federal subsidy programs (e.g., EI, CRB)	15%
Difficulty accessing/navigating government programs	14%
High competition for staff from businesses/organizations in the same industry or sector	14%
Hesitancy or refusal among potential workers to be in the workplace during Covid-19 pandemic	9%
Other	8%
Poor or limited transportation options for employees	7%
Difficulty accessing childcare / elder care	5%
Chart 6.2 Recruitment strategies, agriculture, 2021	
Difficulty finding qualified labour in the local area	46%
Improved wages, benefits, perks, etc.	46%
None	34%
Provided increased flexibility to workers (work location, work hours)	24%
Increased use of government programs	21%
Increased recruitment efforts	19%
Created a culture of work-life balance	17%
Increased opportunities for more consistent work/better job security	11%
Promote the use of tools/technology	8%
Increased collaboration with post-secondary education partners	7%
Improved recruiting practices to hire more workers from underrepresented populations	5%
Other	3%
Chart 6.3 Recruitment methods, agriculture, 2021	
Personal contacts, referrals, informal networks	51%
Social media	41%
Online job boards	34%
None of the above	31%
Government, employment centre or website	22%
Professional networking, head-hunters, or employment agency	9%
Company website	8%
Posting a 'help-wanted' sign at the front of the office	7%
Job or recruitment fairs at schools, colleges, or universities	5%
Newspaper ads	4%
Other	2%

Retention

Chart 6.4
Reason for employee departures, agriculture, 2021

Voluntarily quit	26%
Returned to school	22%
Higher pay from another business	13%
Retirement	11%
They were fired or asked to leave	9%
They relocated/moved	8%
COVID-19 related	7%
Difficult working conditions	3%
Lack of career opportunities	1%
Loss of funding	1%

Chart 6.5
Retention challenges, agriculture, 2021

Expectations (wages, benefits, perks, etc.) of employees are too high	36%
Not applicable	34%
Difficulty retaining qualified labour in the local area	26%
Employees not being a good fit within the business/organization	24%
High competition for staff from businesses/organizations in other industries or sectors	20%
High competition for staff from businesses/organizations in the same industry or sector	17%
Lack of housing options for potential employees	12%
Hesitancy or refusal among potential workers to be in the workplace during Covid-19 pandemic	8%
Unable to access federal programs to subsidize wages during the pandemic	6%
Poor or limited transportation options for employees	5%
Difficulty accessing childcare / elder care	4%
Other	3%

Chart 6.6
Retention strategies, agriculture, 2021

Improved wages, benefits, perks, etc.	43%
None	35%
Provided increased flexibility to workers (work location, work hours, etc.)	22%
Increased use of tools/technology	22%
Created a culture of work-life balance	22%
Increased job safety by improving workplace conditions/policies	19%
Increased opportunities for more consistent work/better job security (e.g., more full-time work, fewer layoffs, less use of EI)	18%
Provided additional growth opportunities (e.g., training, professional development, career progression)	12%
Creating a more inclusive workplace for underrepresented employees (e.g., empathetic workplace, safe to learn, proactive HR policies)	9%
Reduced overall internal hiring need (e.g., outsourcing, automation)	6%
Improved orientation/onboarding processes for new hires	1%

Data Sources:

Chart 1.1:
Nova Scotia Department of Agriculture – 2021 Farm registration data (by request)
Chart 1.2:
Nova Scotia Department of Agriculture – 2021 Farm registration data (by request)
Chart 1.3:
Nova Scotia Department of Agriculture – 2021 Farm registration data (by request)

Chart 1.4:
Nova Scotia Department of Agriculture – 2021 Farm registration data (by request)
Chart 2.1:
Nova Scotia Department of Finance (Economics & Statistics Branch) (by request)
Chart 2.2:
Nova Scotia Department of Finance (Economics & Statistics Branch) (by request)
Chart 3.1:
Statistics Canada. Table 14-10-0023-01 Labour force characteristics by industry, annual
Chart 3.2:
Statistics Canada. Table 14-10-0023-01 Labour force characteristics by industry, annual
Chart 3.3:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 3.4:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 3.5:
How to cite: Statistics Canada. Table 14-10-0023-01 Labour force characteristics by industry, annual (x 1,000)
Chart 3.6:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 3.7:
Table 36-10-0480-01 Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts
Chart 3.8:
Table 36-10-0480-01 Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts
Chart 4.1:
Statistics Canada. Table 32-10-0218-01 Temporary foreign workers in the agriculture and agri-food sectors, by industry
Chart 4.2:
Statistics Canada. Table 32-10-0218-01 Temporary foreign workers in the agriculture and agri-food sectors, by industry
Chart 5.1:
Statistics Canada. Table 14-10-0064-01 Employee wages by industry, annual
Chart 5.2:
Statistics Canada. Table 14-10-0064-01 Employee wages by industry, annual
Chart 5.3:
Statistics Canada. Table 14-10-0064-01 Employee wages by industry, annual
Table 5.1:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 5.4:
Statistics Canada. Table 36-10-0489-01 Labour statistics consistent with the System of National Accounts (SNA), by job category and industry
Table 6.1:
2021 AISC/NSFA Workforce Insights Employer Survey
Table 6.2:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 6.1:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 6.2:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 6.3:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 6.4:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 6.5:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 6.6:
2021 AISC/NSFA Workforce Insights Employer Survey
Chart 7.1:
2021 AISC/NSFA Workforce Insights Employer Survey

Reports:

Agriculture and Agri-Food Canada. "Opportunities and Challenges in Atlantic Agriculture". Newfoundland and Labrador, April 2010.

AIC (2017), An overview of the Canadian Agricultural Innovation System. Ottawa, ON: Agriculture Institute of Canada

Canadian Agriculture Human Resources Council (CARHC). *"A Standardized Framework for Agriculture and Food Processing LMI in Ontario"* September 2020.

Canadian Agriculture Human Resources Council (CARHC). *"How Labour Challenges Will Shape the Future of Agriculture in Nova Scotia: Agriculture forecast to 2029"* September 2019

Canadian Agriculture Human Resources Council (CARHC). *"Supporting the Advancement of Women in Agriculture: Is your organization Representative? – A best Practice Guide to Ensuring Women are Included"* 2016

Canadian Agriculture Human Resources Council (CARHC). *"Supporting the Advancement of Women in Agriculture: Needs Assessment"* 2016

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