



# How Labour Challenges Will Shape the Future of the 'Aquaculture' Industry:

*Agriculture Forecast to 2029*



Canada's agriculture sector faces unique labour market challenges in the coming years, and so will the 'aquaculture' industry. This report explores some of the workforce trends and realities that will shape this industry between now and 2029.



## Industry Overview

The 'aquaculture'\* industry<sup>1</sup> is one of the smallest agricultural employers in Canada, but it's also the fastest growing. The rising global demand for fish protein is predicted to create a strong market for this export-reliant industry over the next 10 years. The main species grown by Canada's 'aquaculture' industry include salmon, mussels, oysters, and trout. Steelhead, arctic char, Atlantic cod, sablefish, geoducks, Atlantic halibut, quahogs, white sturgeon, tilapia, and scallops are also produced.

The 'aquaculture' industry is one of the smallest employers in the agriculture sector. In 2017, the industry employed 4,650 people (including self-employed, paid labour, and foreign workers), which is equivalent to just 1.3% of total agricultural employment.

Although it is small in terms of employment, the 'aquaculture' industry has the most positive growth forecast of any in the Canadian agriculture sector. Output is expected to increase by an average of 3.9% a year, compared to 2.1% for agriculture as a whole.

Canada's 'aquaculture' industry is geographically concentrated, with British Columbia and Atlantic Canada accounting for most of the industry's employment.

The 'aquaculture' industry has limited access to foreign workers because it is not on the National Commodities List, which grants employers access to foreign workers through the Seasonal Agricultural Worker Program (SAWP) and the Agricultural Stream

\*The Labour Market Information data classifies Canada's agriculture sector into 11 commodity areas: 1) 'apiculture'; 2) 'aquaculture'; 3) 'beef'; 4) 'dairy'; 5) 'field fruit and vegetable'; 6) 'grain and oilseed'; 7) 'greenhouse, nursery, and floriculture'; 8) 'poultry and egg'; 9) 'sheep and goat'; 10) 'swine'; and 11) 'tree fruit and vine'.

<sup>1</sup>This report defines the aquaculture industry according to Statistics Canada's NAICS code 1125, which only covers employers involved in primary production; those involved in seafood processing activities (NAICS code 3117) are not included. As a result, the estimated size of the workforce in this report is smaller than some industry estimates.

### 'Aquaculture' industry at a glance

#### In 2017:

- 4,650 people employed
- 125 jobs left unfilled
- 34 million in lost sales due to labour shortages

#### In 2029:

- 600 fewer domestic workers available
- 36% of the workforce lost to retirement
- 470 more jobs than the domestic workforce can fill

of the Temporary Foreign Worker Program (TFWP). As a result, the industry is serviced almost entirely by domestic workers; foreign workers account for less than 0.1% of the workforce. By comparison, the number of foreign workers employed across the entire agriculture sector accounts for 17% of the workforce.



## Production Trends

As productivity gains slow over the next decade, the 'aquaculture' industry will need more workers to meet the strong market demand for its products.

'Aquaculture' has become increasingly efficient over the past decade, as operations have increased in size and capacity. Productivity (the output each worker can produce) increased by an average of 5.4% per year between 2007 and 2017, which is one of the strongest productivity performances within the broader agriculture sector.

Thanks to improving productivity, the industry was able to increase total output by 31% between 2007 and 2017, despite the fact that labour demand contracted by 2.2% a year over that period. However, productivity gains are expected to slow considerably over the next 10 years, which will create a heavier reliance on labour to meet production targets.

'Aquaculture' relies on exports for a significant share of its sales, and a continued expansion in consumption of fish protein globally will be key in driving Canadian aquaculture production. In fact, the



### RESEARCH HIGHLIGHTS

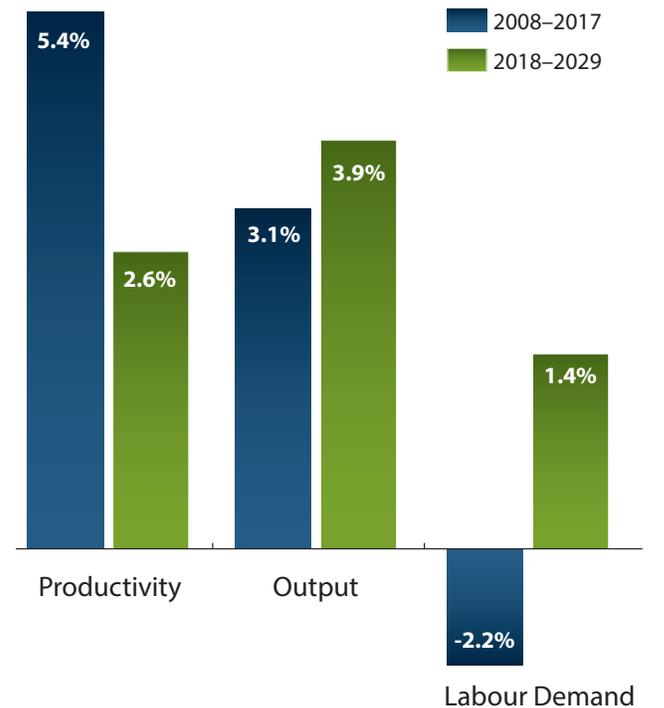
- **63%** of 'aquaculture' producers were not able to find all the workers they needed in 2018, compared to 47% for all agriculture.
- **88%** of 'aquaculture' producers expect employment at their farm to rise over the next five years, while only 8% expect to see a decline.

industry is expected to see output increase by an average of 3.9% per year between 2018 and 2029, which is the strongest outlook of any agricultural sector in Canada.

With productivity growth expected to slow the number of workers required to meet these production targets will increase from 4,800 in 2017 to 5,600 by 2029.

### Productivity, Output, and Labour Demand Trends

(average annual percentage change)



## Labour Forecast

The predicted growth in global demand for aquaculture products will drive the need for additional workers to increase output and meet market demand. However, the number of people available to work in this industry is not predicted to keep pace with the need for workers.

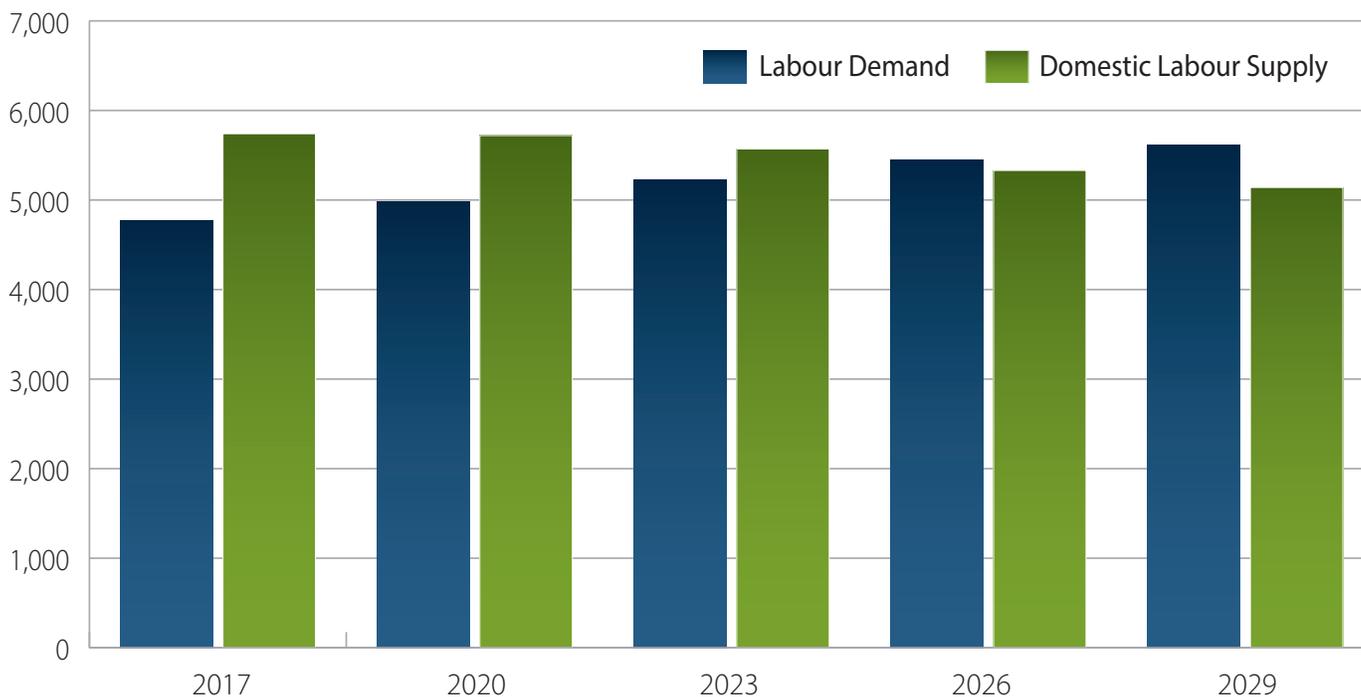
'Aquaculture' has the highest percentage of operators that expressed a need for more workers than they can find. In 2017, the industry was unable to fill 125 jobs. Furthermore, of the 27 surveyed aquaculture operators (who employed a combined 1,700 workers), 17, or 63%, said they were unable to find all the workers they needed, compared to 47% of all agricultural producers.

Aquaculture's labour issues are predicted to worsen over the next decade. The demand for workers within the 'aquaculture' industry is expected to rise by an average of 1.4% per year from now until 2029. The supply of domestic labour, however, is predicted



to decline over the same time period. The rising demand combined with falling supply will widen the gap considerably, resulting in a much higher number of jobs at risk of going vacant. By 2029, the number of jobs that go unfilled will increase to 470, which is equivalent to 8% of the total industry demand for workers.

### Labour Surplus to Become Deficit for the 'Aquaculture' Industry



## Regional Trends

While labour challenges will affect the 'aquaculture' industry throughout Canada, Prince Edward Island will be hardest hit.

Canada's 'aquaculture' industry is geographically concentrated, with British Columbia and Atlantic Canada accounting for most of the industry employment. Because most aquaculture operations are located in rural areas, the declining rural population is a top labour concern for this industry.

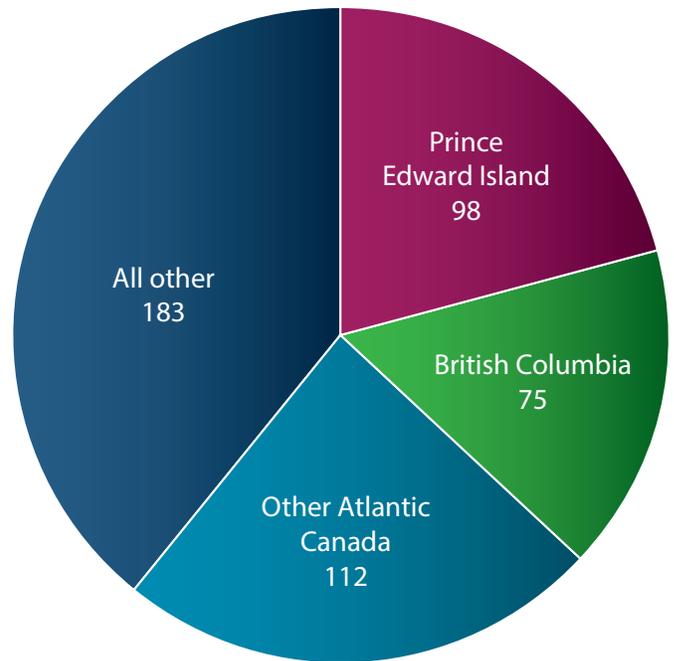
Over the forecast, the labour gap in Canada's 'aquaculture' industry is forecast to rise, increasing from a surplus of 970 workers in 2017 to a deficit of 470 jobs by 2029. Prince Edward Island will have the largest labour gap, although noticeable deficits are expected to emerge in British Columbia, and the other Atlantic Provinces.

## Demographic Trends

A relatively young workforce means that retirements will have a more minor impact on the 'aquaculture' industry.

'Aquaculture' faces big challenges in finding enough workers over the next decade. The labour supply for all of agriculture is expected to shrink by 1.2% per year between 2018 and 2029, with retirement being one of the factors affecting the supply of labour.

## Number of Industry Jobs at Risk by 2029



The agriculture sector as a whole will see 37% of its workforce retire over the forecast period, with the most affected industries, such as the 'beef' and the 'grain and oilseed' industries, expecting to see 40% and 39% of their workforce retiring, respectively. By comparison, only 36% of the aquaculture workforce will retire during this time, which is the third-lowest retirement rate of any agriculture industry.



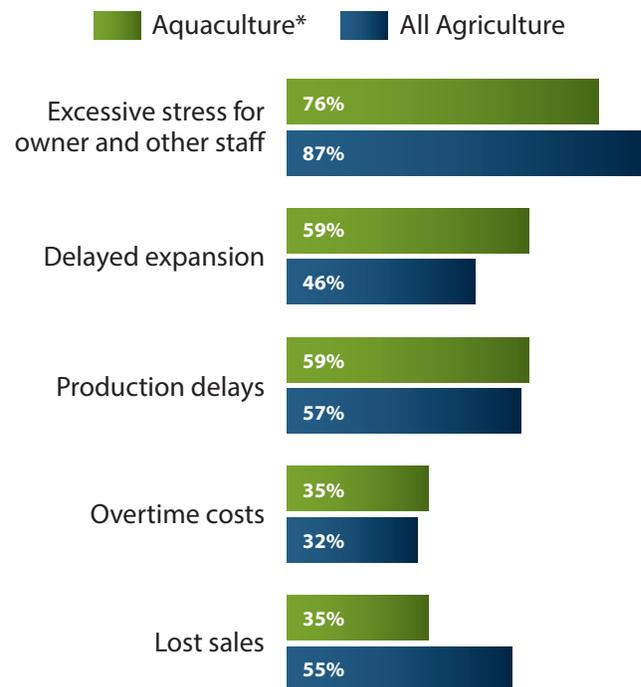
## Financial Impact

In 2017, the 'aquaculture' industry was unable to fill 125 jobs. This number was equivalent to 2.6% of the total number of workers required, which is below the average of 5.4% for the entire agriculture sector.

Survey respondents from the 'aquaculture' industry reported a number of issues caused by labour shortages. Of 'aquaculture' producers who reported labour shortages, over three in four respondents (76%) reported excessive stress for owner and other staff, while roughly three in five (59%) reported delaying expansions of their operations. In other words, labour shortages don't just impact the industry today, they also limit its future growth by preventing or delaying expansion plans.

Labour shortages cost the 'aquaculture' industry 2.4% of sales in 2018, which is a relatively small share of sales compared to those reported by other agriculture industries. Only the 'poultry and egg' and 'dairy' industries experienced a smaller percentage of lost sales due to labour shortages. However, this still represents \$34 million in losses for the 'aquaculture' industry.

## Impacts of Labour Shortages



\*Based on responses of 17 aquaculture producers who reported not having access to all needed workers.



## Labour Challenges

The rural locations of most aquaculture operations are a key challenge in attracting and retaining workers for this industry.

While many industries in the agriculture sector experience challenges in finding and retaining workers, the 'aquaculture' industry faces several unique challenges, with rural locations and worker mobility topping the list.

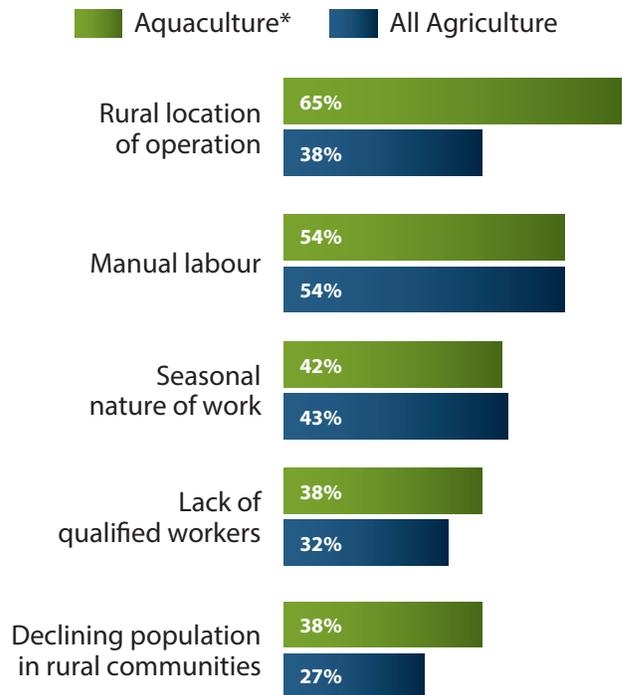
### Recruiting Workers

The 'aquaculture' industry is affected by many of the same recruitment issues facing other agricultural industries across the country, including manual labour, and the seasonal nature of work.

However, the industry also faces some unique challenges. Most notably, 'aquaculture' operators were almost twice as likely as other agricultural employers to identify their location in rural areas as a problem. Specifically, declining populations in rural areas is a greater concern for 'aquaculture' operators, as 38% of survey respondents identified this trend as a key barrier to recruitment, compared to just 27% of producers across Canada.

However, a relatively lower share of 'aquaculture' producers reported a lack of experienced candidates. Just 12 per cent of survey respondents in the

## Challenges in Recruiting Workers



\*Based on responses of 26 aquaculture producers.

industry indicated a lack of experience in the sector as a key barrier to their recruitment efforts, which is almost a third of the share of producers across all agricultural industries (30%).

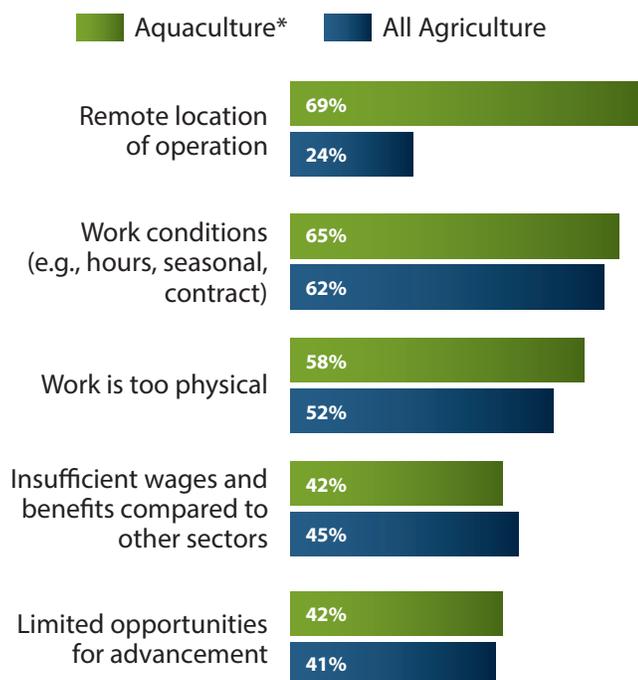


## Retaining Workers

The 'aquaculture' industry has difficulties retaining workers. The industry not only has the second-highest voluntary turnover rate among agricultural industries (20.6% versus the national sector average of 10.3%), it also has the highest involuntary turnover rate of 9.8%, which is almost four times the national sector average of 2.5%.

The 'aquaculture' industry does benefit from a work environment in which there are stable earnings and less demanding working hours. However, the industry faces unique retention challenges. Over two in three employers (69%) cite the remote location of their operation as a retention issue, compared to 24% of employers across the sector. Specifically, the remoteness of aquaculture operations represents an obstacle to worker mobility. This includes the limited ability of workers to get transportation to worksites and the need for workers to move from their original location to one that is closer to work.

## Challenges in Retaining Workers



\*Based on responses of 26 aquaculture producers.

## Toughest Jobs to Fill

The 'aquaculture' industry will have the most trouble filling aquaculture and marine harvesting labourer jobs, with 680 jobs in this occupation predicted to go unfilled due to a lack of domestic workers by 2029. The second largest gap, at 650 positions, will occur in managers in aquaculture. While these occupations will account for the majority of the jobs this industry will be challenged to fill over the next 10 years, a surplus of workers in natural and applied science occupations will reduce the industry's aggregate labour gap.



## Conclusion

A growing market demand for Canada's 'aquaculture' products, a growing need for workers, and a declining labour supply is predicted to impact the industry significantly over the next decade.

While the 'aquaculture' industry benefits from a younger-than-average workforce, and a work environment in which there are stable earnings and less demanding working hours, it still faces significant labour challenges.

In the past, productivity gains have helped to offset the impact of labour challenges, but the growing need for animal protein in global emerging markets will place additional pressure on the 'aquaculture' industry's labour force. Combined with a declining labour supply, this is projected to significantly increase the number of jobs that go unfilled. This number is expected to reach 470 by 2029, which is equivalent to 8% of the total demand for workers.

To reverse this trend, the industry must overcome a number of unique labour challenges:

- ➔ Aquaculture's remote operations and the trend toward rural depopulation make it harder to find and retain workers.
- ➔ Aquaculture operators do not have access to foreign workers through SAWP or the Agricultural Stream of the TFWP.



- ➔ The industry has very high voluntary and involuntary turnover rates, which creates considerable cost and strain for employers.
- ➔ Labour shortages for this industry are more likely to affect expansion plans, an issue of real concern for an industry facing robust growth.

To meet these labour challenges, the industry has several strengths it could leverage:

- ➔ It has a below-average retirement rate.
- ➔ The 'aquaculture' industry benefits from a work environment in which there are stable earnings and less demanding working hours.
- ➔ Tapping into pools of workers who may only be interested in working part of the year (e.g. retired fishers) may help to address the sector's need for large numbers of workers for limited periods of time.

Finding solutions to these labour challenges and increasing the pool of available domestic workers will be critical if the 'aquaculture' industry is to continue to grow in the years to come.



## About This Report

This report represents an update to the Labour Market Information (LMI) study that the Canadian Agricultural Human Resource Council (CAHRC) undertook between 2014 and 2016. The purpose is to re-assess the labour market, project supply and demand for agricultural workers from 2018 until 2029, and recommend potential solutions to labour issues.

The Conference Board of Canada, commissioned by CAHRC, constructed an economic model that forecasts agricultural labour demand and supply for each province, for 11 different commodity groups, and for 25 occupational groups.

The economic model was validated through several industry consultation activities conducted Canada-wide, including:

- **A large-scale survey** of 1,316 employers, 278 workers, and 110 industry stakeholders.
- **Eight webinars** focused on specific commodity groups, with 160 participants in total.
- An Advisory Group presentation.

This data was used to produce the following reports:

### **Commodity-specific reports and fact sheets**

Apiculture ■ Aquaculture ■ Beef ■ Dairy ■ Field Fruit and Vegetable ■ Grain and Oilseed ■ Greenhouse, Nursery, and Floriculture ■ Poultry and Egg ■ Sheep and Goat ■ Swine ■ Tree Fruit and Vine

### **Regional reports and fact sheets**

National ■ British Columbia ■ Alberta ■ Saskatchewan ■ Manitoba ■ Ontario ■ Quebec ■ New Brunswick ■ Prince Edward Island ■ Nova Scotia ■ Newfoundland and Labrador

For more information on the research, and to access additional commodity-specific, national, and provincial reports, please visit the CAHRC website at [www.AgriLMI.ca](http://www.AgriLMI.ca).

## About CAHRC

The Canadian Agricultural Human Resources Council (CAHRC) is a national, nonprofit organization focused on addressing human resource issues faced by agricultural businesses across Canada. CAHRC conducts industry research and develops products and services designed to help agricultural employers attract, retain, and develop the workforce they need to succeed.

For more information about the Council and its products and services for Canada's agriculture sector, please visit [www.cahrc-ccrha.ca](http://www.cahrc-ccrha.ca).





## Acknowledgements

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