



Conseil canadien pour les ressources humaines en agriculture

WORK-INTEGRATED LEARNING AND EXPERIENTIAL LEARNING OPPORTUNITIES CONNECTED TO THE AGRICULTURE AND FOOD & BEVERAGE MANUFACTURING SECTORS



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2. EXECUTIVE SUMMARY





Canada's agriculture and food & beverage manufacturing sectors play an important role in supporting growth and prosperity. They are dynamic and evolving sectors that are closely connected to Canada's economy and society. However, many Canadians are not aware of the significant role of these sectors as today they are farther removed from life on farms compared to previous decades. There are new and emerging opportunities in the sectors that will continue in the years and decades ahead.

The nature of jobs in the agriculture and food & beverage manufacturing sectors has changed considerably over the past several decades. There are significant labour shortages across the sectors that need to be addressed to bolster areas that are key to the future of Canada such as environmental sustainability and food security. Canada's shortage of agricultural workers has been found to be one of the most severe compared to other peer countries with shortages expected to continue without action. It has been projected that Canada could face shortages of more than 100,000 agricultural workers by 2030. The food & beverage manufacturing sector faces similar challenges with labour shortages. In addition, across the agriculture and food & beverage manufacturing sectors, there are concerns about aligning skills with the needs of the labour market now and in the future. The rise of new technologies in the sector is having an important impact on future skills needs in the midst of a "fourth agricultural revolution" primarily powered by data instead of traditional tools in the industry.

There is a critical need for human capital in the sectors to facilitate the entry of the next generation of workers. These workers can provide the skills needed for the future of the sectors and bolster Canada's competitiveness on the world stage. This is why it is important to grow and enhance opportunities to connect students to careers in these sectors across the country. Experiential learning and work-integrated learning (WIL) are increasingly important approaches to provide post-secondary graduates with skills they need to transition to the workforce. There is strong evidence that these opportunities provide significant benefits to students and are key tools to help young people learn what they want to do in their careers while also providing them with valuable experiences.





Overview of the report

This report looks at the landscape for experiential and work-integrated learning to help attract, transition and retain students in careers in the agriculture and food & beverage manufacturing sectors. It examines the following key areas:

- The agriculture and food & beverage manufacturing labour market and educational landscape, providing context on the current state of the sectors and opportunities and challenges
- Experiential and work-integrated learning in Canada, including recent trends and best practices
- Analysis of experiential and work-integrated learning relevant to the agriculture and food & beverage manufacturing sectors in Canada
- Opportunities for enhancing experiential and work-integrated learning connected to the agriculture and food & beverage manufacturing sectors and recommended approaches for making progress in these areas

This report will help CAHRC develop a national agriculture and food workforce strategy. This strategy will support the development of a strong, diverse and skilled workforce that will help advance these sectors and enable them to thrive in the years and decades ahead.

There is reason for optimism as **post-secondary** education institutions and students are increasingly recognizing the importance of programs connected to the agricultural and food & beverage manufacturing sectors. Indeed, enrolments have increased in these programs and fields of study have increasingly diversified. There are also increasingly more WIL opportunities connected to the sectors across Canada. However, the potential of WIL and experiential learning programs connected to the sectors is not being fully leveraged and there are opportunities to enhance and grow these efforts.

In an environmental scan conducted for this project, a range of diverse WIL opportunities were identified connected to post-secondary programs relevant to the agriculture and food & beverage manufacturing sectors. Based on the environmental scan, a snapshot was developed of the landscape of WIL opportunities connected to the sectors identifying 204 opportunities across 54 post-secondary institutions in Canada. Analysis of data in the environmental scan and from other data sources identified some notable trends in WIL opportunities at programs connected to the sectors including top institutions with relevant WIL programs, popular topic areas for fields of study and key examples of programs that can help inform future direction.

The analysis found:

• There are different types of WIL opportunities at post-secondary programs relevant to the agricultural and food & beverage manufacturing sectors, but traditional approaches are the most common. For example, 40.2 per cent of opportunities identified were co-ops and 20.6 per cent were internships.



- Work-integrated learning opportunities at programs connected to the sectors are available on a variety of topics in many institutions across Canada. The top provinces with opportunities were Ontario (32.4 per cent), B.C. (17.2 per cent) and Alberta (15.7 per cent), while the top institutions were University of Guelph, Lakeland College and University of British Columbia.
- The number of WIL opportunities focused on the agriculture and food

& beverage manufacturing sectors is limited compared to other sectors. Out of ten academic disciplines identified by CEWIL, agriculture had the lowest number of identified WIL opportunities.

This report identifies opportunities for the sectors and approaches to help enhance experiential and work-integrated learning connected to the agriculture and food & beverage manufacturing sectors. Opportunities and next steps for consideration are summarized in Table 1.

Table 1: Summary of opportunities and next steps for consideration

Opportunity	Next steps for consideration	
Strategically develop work-integrated learning and experiential learning experiences related to the agriculture and food & beverage manufacturing sectors	 CAHRC can: Play a convening role between post-secondary institutions and employers to improve alignment and plan for demand CAHRC can work collaboratively with others in the sectors to: Target marketing and campaign materials to improve student participation in programs connected to areas where there are future needs in the labour market Provide employers and students with tools and training to better understand and plan for opportunities and challenges related to WIL Support development of mentorship and other tools that can help students get the most out of WIL opportunities 	
Support more interdisciplinary approaches at post- secondary institutions for WIL opportunities related to agriculture and food & beverage manufacturing	 CAHRC can: Play a convening role between post-secondary institutions and employers to improve alignment and plan for demand CAHRC can work collaboratively with others in the sectors to: Target marketing and campaign materials to improve student participation in programs connected to areas where there are future needs in the labour market Provide employers and students with tools and training to better understand and plan for opportunities and challenges related to WIL Support development of mentorship and other tools that can help students get the most out of WIL opportunities 	



Improve access to experiential and work- integrated learning opportunities by increasing awareness on the benefits of working in the agriculture and food & beverage manufacturing sectors	 CAHRC can: Increase outreach to K-12 schools to build awareness of the sectors Enhance support for lighter-touch experiential learning opportunities such as hackathons to improve access for students not participating in WIL Build on existing efforts and develop new strategies to enable better access to WIL opportunities for international students Increase outreach and marketing to underrepresented student populations such as immigrants and Indigenous peoples Enhance connections with Indigenous post-secondary institutions with activities related to the sectors
Improve data availability and collection to better share work-integrated learning and experiential learning opportunities related to the sectors and assess program effectiveness	 CAHRC can work collaboratively to: Create a database of WIL and experiential learning opportunities connected to the agriculture and food & beverage manufacturing sectors, aligned with existing databases, working closely with stakeholders Evaluate experiences by surveying students and employers following WIL opportunities Connect with post-secondary institutions to develop a consistent approach for reporting on job opportunities and skills development connected to programs

In sum, there is an urgent need to address labour challenges in the sectors. The agriculture and food & beverage manufacturing sectors should be reconceptualized as priority industries given their importance. It is critical to enhance efforts to connect new workers to these industries through approaches such as experiential and work-integrated learning. Taking steps to capitalize on the opportunities that have been identified would go a long way in ensuring the industry has workers with the skills needed to lead the sectors into the future.



3. INTRODUCTION





Canada's agriculture and food & beverage manufacturing sectors are innovative with wideranging impacts on the country's economy and society. They impact areas that are key to the future of Canada such as environmental sustainability and food security. As a result, robust agriculture and food & beverage manufacturing sectors are closely connected to the country's future economic prosperity and the quality of life of Canadians. However, many Canadians are two or three generations removed from any connections to farming, and they have limited knowledge about what the agriculture and food & beverage manufacturing sectors do and how crucial these industries are to Canada.¹ Indeed, there are new opportunities that are emerging in these sectors that will continue in the years ahead.

Meeting the labour needs of the agriculture and food & beverage manufacturing sectors is therefore vital to the future of Canada and the country's ability to operate and compete on the world stage. There have been significant challenges meeting labour demand in the sectors in recent years that worsened in the context of the pandemic, resulting in billions of dollars of losses to the economy. These challenges are likely to continue if key jobs in the sectors aren't filled in the years ahead. In addition, the nature of the agriculture and food & beverage manufacturing sectors has changed considerably over the past several decades. Specifically, with increased use of technology, the nature of jobs in the sectors is now different than what has been traditionally associated with them. There are now increased needs for skills such as data science and artificial intelligence.

New approaches are required to address labour shortages and grow the number of workers in the sectors to address future skill needs. A workforce with a mix of in-demand skills focused on data and innovation will be critical to the future.² A key pathway that is being pursued to enhance attraction and recruitment of young people to address these shortages is through experiential and work-integrated learning. There has been growing interest in particular in work-integrated learning (WIL) to help improve student transitions from school to work. There is strong evidence that participation in WIL opportunities offers significant benefits to students and helps them choose specific career pathways to pursue.

3.1 Overview of the report

- The agriculture and food & beverage manufacturing labour market and educational landscape, providing context on the current state of the sectors and opportunities and challenges
- Experiential and work-integrated learning in Canada, including recent trends and best practices
- Analysis of experiential and work-integrated learning relevant to the agriculture and food & beverage manufacturing sectors in Canada
- Opportunities for enhancing experiential and work-integrated learning connected to the agriculture and food & beverage manufacturing sectors and recommended approaches for making progress in these areas

This report will help CAHRC develop a national agriculture and food workforce strategy in the coming months. This strategy will support the development of a strong, diverse and skilled workforce that will help advance these sectors and enable them to thrive in the years and decades to come.

¹ Campbell, L. (2023). Canadians can no longer afford to stay disconnected from farmers and their food sources. The Trillium. Available at: https://www.thetrillium.ca/opinion/canadians-can-no-longer-afford-to-stay-disconnected-from-farmers-and-their-food-sources-7066451

² Stackhouse, J. (2019). Farmer 4.0: How the Coming Skills Revolution Can Transform Agriculture. RBC. Available at: https://thoughtleadership.rbc.com/farmer-4-0-how-the-coming-skills-revolution-can-transform-agriculture/



Report methodology

This report provides insights and analysis based on a robust literature review, an environmental scan of programs relevant to the agriculture and food & beverage manufacturing sectors and interviews with key stakeholders. Data and key examples highlighted in the section analyzing WIL opportunities relevant to the agriculture and food & beverage manufacturing sectors are from an environmental scan and literature review. The environmental scan conducted for this project was designed to provide a snapshot of the current landscape for WIL at post-secondary programs connected to agriculture and food & beverage manufacturing across Canada (see Section 7 for a detailed methodology for the environmental scan).





4. THE AGRICULTURE SECTOR AND FOOD & BEVERAGE MANUFACTURING SECTOR LABOUR MARKETS





This section provides an overview of the labour markets in the agriculture and food & beverage manufacturing sectors and highlights challenges being faced. It identifies growing labour challenges across both sectors and areas in which skill needs are expected to grow in the future.

4.1 Significant labour challenges have been identified across the agriculture and food & beverage manufacturing sectors

The agriculture and food & beverage manufacturing sectors are critical parts of the Canadian economy. The sectors employ approximately two million workers in Canada and represent 12 per cent of total Canadian employment. The sectors also generate more than \$100 billion annually and demand is expected to increase in the years ahead.³ However, significant and persistent labour challenges are barriers to the growth of both sectors. There is a critical need for human capital in the sectors to facilitate the entry of the next generations of workers.⁴

Employment in the agriculture sector

There is significant diversity in the types of jobs across the agriculture sector in Canada requiring varying levels of skills, knowledge and expertise. CAHRC has identified 10 commodity areas with jobs ranging from entry-level to managerial that are part of the sector: $^{\scriptscriptstyle 5}$

- Aquaculture
- Cattle
- Poultry and egg
- Swine
- Other animal
- Crops
- Field fruit and vegetable
- Tree fruit and vine
- Greenhouse, nursery, floriculture and sod
- Other

The agriculture sector has evolved over the past several decades and the number of Canadians employed in the sector has gradually declined. Between 2013 and 2022, the proportion of employed Canadians in the agriculture sector decreased from 1.8 per cent to 1.3 per cent.⁶ For the on-farm part of the sector, there has been a general trend toward a smaller number of farms that are larger in size compared to previous years. While there have been productivity gains, there have also been growing challenges particularly related to human capital.

Labour shortages have been growing on farms amid issues with attracting and retaining labour.⁷ Increased automation has also impacted the sophistication and size of operations and led to a decreased reliance on manual labour, which has been a key factor in a declining farming population.⁸ Canada's shortage of agricultural workers has been found to be one of the most severe compared to other peer countries.⁹

³ CAHRC (2021). How Labour Challenges Will Shape the Future of Agriculture in Canada. Available at: <u>https://cahrc-ccrha.ca/sites/default/files/2021-11/factsheet_NAT_E_web.pdf</u>

⁴ Government of Canada (2023). What We Heard – Agricultural Labour Strategy. Available at: <u>https://agriculture.canada.ca/en/department/transparency/public-opin-ion-research-consultations/what-we-heard-report-agricultural-labour-strategy</u>

⁵ CAHRC (2021). Occupational Framework for the On-Farm Sector. Available at: <u>https://cahrc-ccrha.ca/sites/default/files/2021-11/ONFAMatrixENG.pdf</u> 6 Statistics Canada (2023). Table 14-10-0027-01 Employment by class of worker, annual (x 1,000). Available at: <u>https://www150.statcan.gc.ca/t1/tbl1/en/tv.ac-tion?pid=1410002701</u>

⁷ CAHRC (2021). How Labour Challenges Will Shape the Future of Agriculture in Canada. Available at: <u>https://cahrc-ccrha.ca/sites/default/files/2021-11/factsheet_NAT_E_web.pdf</u>

⁸ Statistics Canada (2018). The socioeconomic portrait of Canada's evolving farm population, 2016. Available at: <u>https://www150.statcan.gc.ca/n1/daily-quotidi-en/181127/dq181127b-eng.htm</u>

⁹ Yaghi, M. (2023). Farmers Wanted: The labour renewal Canada needs to build the Next Green Revolution. RBC. Available at: https://thoughtleadership.rbc.com/farm-ers-wanted-the-labour-renewal-canada-needs-to-build-the-next-green-revolution/



More than 40 per cent of employers in the primary agriculture sector recently reported not being able to fill vacancies, with the industry experiencing losses of \$2.9 billion in sales as a result of unfilled positions during the pandemic. Indeed, agricultural employment during the pandemic showed both the challenges and opportunities being faced by the sector due to the identified long-term trends. Labour shortages related to the pandemic had major impacts on farm operations including production delays, overtime costs, and delays and cancellations in investment or expansion. At the same time, the agriculture sector demonstrated resilience and outperformed other industries in 2020 in the early days of the pandemic. Agriculture-related GDP increased by 7.6 per cent in 2020, even amid labour shortages.¹⁰

Temporary foreign workers (TFWs) also contribute to the bigger picture of labour demand. Labour shortages related to TFWs in particular led to challenges during the pandemic with employers reporting one in five TFW positions went unfilled.¹¹ As the number of TFWs grew in 2021, a quarter of all agriculture workers were TFWs.¹²

Significant labour demand is expected over the next decade. It has been projected that there will be a shortage of more than 100,000 agricultural workers by 2030 in Canada.¹³ Some provinces are more likely to be impacted in the years ahead. For instance, it has been projected that one in three agriculture jobs in Alberta will be unfilled by 2029 and nearly

half of workers in the sector will retire.¹⁴ Ontario and Quebec are also expected to see significant labour gaps over the next decade.¹⁵

Labour challenges are likely to be compounded by an aging workforce in the sector. For instance, people that are 55 years of age and older make up the most significant proportion of farm operators in Canada. At the same time, young people have had a declining role on farms (see Figure 1). These challenges are compounded by a lack of succession planning, with more than half of farmers expecting to retire in the next decade having no plan for who will succeed them.¹⁶ Additionally, the pandemic has been tied to labour market scarring and learning losses for young people, creating additional challenges to pathways to employment with potential lifelong effects.¹⁷



10 CAHRC (2021). Understanding the Effects of COVID-19 on Canada's Agriculture Workforce. Available at: https://cahrc-ccrha.ca/sites/default/files/2021-11/ COVID_19_E_Fin.pdf

12 Statistics Canada. (2022). Agriculture and agri-food labour statistics. Available at: <u>https://www150.statcan.gc.ca/n1/daily-quotidien/220613/dq220613d-eng.htm</u> 13 Stackhouse, J. (2019). Farmer 4.0: How the Coming Skills Revolution Can Transform Agriculture. RBC. Available at: <u>https://thoughtleadership.rbc.com/farmer-4-0-how-the-coming-skills-revolution-can-transform-agriculture/</u>

16 Sarfraz, A. M. (2023). A growing number of Canadian farmers have no succession plan. National Observer. Available at: <u>https://www.nationalobserver.</u> com/2023/06/16/news/growing-number-canadian-farmers-have-no-succession-plan_

17 C.D. Howe Institute (2022). Canada's youth face career "scarring," learning losses post-pandemic. Available at: <u>https://www.cdhowe.org/media-release/cana-</u> das-youth-face-career-scarring-learning-losses-post-pandemic

¹¹ Ibid.

¹⁴ Canada West Foundation (2022). What Now? Oh, the places youth could go. Available at: https://cwf.ca/wp-content/uploads/2022/06/CWF_WhatNowPolicyBrief_DiversePathways_JUN2022_WEB-1.pdf

¹⁵ CAHRC (2021). How Labour Challenges Will Shape the Future of Agriculture in Canada. Available at: https://cahrc-ccrha.ca/sites/default/files/2021-11/factsheet_ NAT_E_web.pdf





Figure 1: Proportion of farm operators by age (2011, 2016, 2021)

Source: Statistics Canada (2022). Characteristics of farm operators: Age, sex and number of operators on the farm, Census of Agriculture, 2021. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tx.action?pid=3210038101; Statistics Canada (2017). Characteristics of farm operators: age and number of operators on the farm, Census of Agriculture, 2011 and 2016. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tx.action?pid=3210038101; Statistics Canada (2017). Characteristics of farm operators: age and number of operators on the farm, Census of Agriculture, 2011 and 2016. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tx.action?pid=3210044201

The types of jobs needed in the sector in the years ahead are expected to continue to evolve with technological skills expected to be a key need. For instance, CAHRC has identified the following occupations in the sector as "destination occupations." This means these are jobs in which employment is expected to grow faster and which are likely to become more relevant due to technology¹⁸:

- Agricultural representatives, consultants and specialists;
- Biological technologists and technicians;
- Technical occupations in geomatics and meteorology;
- Animal health technologists and veterinary technicians;

- Heavy-duty equipment mechanics;
- Managers in agriculture;
- Specialized livestock workers and farm machinery operators; and
- Testers and graders, food and beverage processing.

Employment in the food & beverage manufacturing sectors

Similar to the agriculture sector, the food & beverage manufacturing sector is made up of a large variety of occupation types. Food Processing Skills Canada (FPSC) has identified 11 sub-sectors:

18 The Conference Board of Canada and CAHRC. (2023). Occupations in the Agriculture and Food and Beverage Manufacturing Industries.



- Grain and oilseed
- Bakeries and tortillas
- Fruit and vegetables
- Seafood
- Dairy
- Animal food
- Sugar and confectionary
- Beverage
- Meat and poultry
- Cannabis
- Other foods

The largest of the sub-sectors is meat processing. The newest sub-sector is cannabis product manufacturing.¹⁹

The food & beverage manufacturing sector is the most significant provider of manufacturing jobs in Canada, making up 19.5 per cent of total employment in the manufacturing sector in 2020. This sector has grown by more than 10 per cent between 2010 and 2020. The food & beverage processing sector is primarily made up of smalland medium-sized businesses, with 91 per cent of businesses employing less than 100 people.²⁰

The sector is also facing significant labour shortages now and is expected to continue to do so in the years ahead. The sector has been estimated to be short 20 per cent of its workforce and it is expected that proportion will grow.²¹ Availability of labour was identified as the greatest challenge in the sector with seven in 10 businesses recently surveyed reporting they experienced at least



some challenges recruiting or retaining qualified workers.²²

A recent survey of employers in the food & beverage manufacturing sector found that 16 per cent used federal programs like the Temporary Foreign Worker Program. Certain parts of the sectors were more likely to rely on TFWs such as seafood and meat processing.²³ In 2021, approximately one-tenth of all food & beverage manufacturing workers were TFWs.²⁴

FPSC has identified that the sector has encountered issues with recruiting young workers, which will lead to growing challenges in the sector as older workers move toward retirement.²⁵ It is estimated that job vacancies in the sector account for a loss of \$3.1 billion annually.²⁶

The "destination occupations" identified by CAHRC in the food & beverage manufacturing sector also project increasing importance of engineering and

- 19 Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: <u>https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf</u> 20 Ibid
- 21 Farrell, K. (2023). How to Strengthen Canadian Food and Beverage Manufacturing. TheFutureEconomy.ca. Available at: <u>https://thefutureeconomy.ca/op-eds/</u>food-beverage-manufacturing-kristina-farrell/

22 Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: <u>https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf</u> 23 Ibid

24 Statistics Canada. (2022). Agriculture and agri-food labour statistics. Available at: <u>https://www150.statcan.gc.ca/n1/daily-quotidien/220613/dq220613d-eng.htm</u> 25 Food Processing Skills Canada (2020). Working Together: A study of generational perspectives in Canada's labour force. Available at: <u>https://fpsc-ctac.com/wp-con-tent/uploads/2020/11/Working-Together.pdf</u>

26 Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf



technical skills in the industry in the future with the following occupations identified as most likely to grow and be more relevant²⁷:

- Chemical engineers;
- Industrial engineering and manufacturing technologists and technicians;
- Electrical mechanics;
- Production and transportation logistics coordinators;
- Chemists;
- Chemical technologists and technicians;
- Bakers;
- Construction millwrights and industrial mechanics;
- Supervisors, food and beverage processing;
- Testers and graders, food and beverage processing; and
- Industrial and manufacturing engineers.

4.2 Future skill needs are evolving to require greater knowledge about data and innovation

The rise of technology in the sector will have an important impact on future skills needs. Canada is in the middle of a "fourth agricultural revolution," primarily powered by data instead of traditional tools in the industry. Canadian farmers are working with smart technology for traditional tasks and shifting focus to strategy and systems. A recent RBC report identified the following areas including technical and soft skills as needed in the future:²⁸

- For farm owners and operators: digital expertise, leadership abilities, critical thinking skills to manage large and complex operations;
- For farm equipment technicians: technological skills to tool robots and write code, software knowledge, business acumen, communications skills; and
- **Specialists:** expertise in areas such as genetics, blockchain, artificial intelligence.

The food & beverage manufacturing sector has similarly identified the importance of emerging technologies and automation in increasing productivity and efficiency, resulting in new skills needs. FPSC has highlighted that greater adoption of smart and autonomous systems could reduce estimated hiring requirements in the years ahead. As a result, it is increasingly important to provide new training opportunities for workers in areas such as biotechnology, nanotechnology, data management, automation and robotics.²⁹

A recent federal report also identified that some of the challenges connected to the sectors are that workers need to have access to skills to transition to an emerging era of agriculture and food & beverage manufacturing that is characterized by sustainability, technology and innovation.³⁰ The new skills that will be required in the sectors are not being developed as quickly as they are needed in the labour market.³¹

However, even with this increased need for technological skills, soft skills also remain in demand in the sectors and will continue to be an important component of education and training in the future.³²

²⁷ The Conference Board of Canada and CAHRC. (2023). Occupations in the Agriculture and Food and Beverage Manufacturing Industries.

²⁸ Stackhouse, J. (2019). Farmer 4.0: How the Coming Skills Revolution Can Transform Agriculture. RBC. Available at: https://thoughtleadership.rbc.com/farmer-4-0how-the-coming-skills-revolution-can-transform-agriculture/

²⁹ Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf

³⁰ Government of Canada (2023). What We Heard – Agricultural Labour Strategy. Available at: <u>https://agriculture.canada.ca/en/department/transparency/public-opin-ion-research-consultations/what-we-heard-report-agricultural-labour-strategy</u>

³¹ Stackhouse, J. (2019). Farmer 4.0: How the Coming Skills Revolution Can Transform Agriculture. RBC. Available at: https://thoughtleadership.rbc.com/farmer-4-0-how-the-coming-skills-revolution-can-transform-agriculture/

³² Sokic, N. (2021). Hot job! The agricultural industry is desperate for workers and Canada is no exception. Financial Post. Available at: <u>https://financialpost.com/fp-</u>work/hot-job-why-you-wont-necessarily-get-a-farmers-tan-while-working-in-agriculture



For instance, the Labour Market Information Council's Canadian Job Trends Dashboard has primarily identified soft skills as among the most important in key jobs in the agriculture sector,³³ including the "destination occupation" job categories identified by CAHRC (see Figure 2). In particular, teamwork was highlighted as critical in job postings over a one-year period of September 2022 to August 2023 among many of the occupations identified as important to the future of the agriculture sector (identified by title and National Occupational Classification (NOC) code).

Figure 2: Top 5 Work Requirements in Job Postings for Destination Occupations in the Agriculture Sector (September 2022 to August 2023)



Source: Analysis based on: LMIC (2023). Canadian Job Trends Dashboard. https://lmic-cimt.ca/data-dashboards/canadian-job-trends-dashboard

33 LMIC (2023). Canadian Job Trends Dashboard. https://lmic-cimt.ca/data-dashboards/canadian-job-trends-dashboard



In the food & beverage manufacturing sector, similar skills were identified among the top work

requirements in online job postings within the same timeframe (see Figure 3).

Figure 3: Top 5 Work Requirements in Job Postings for Destination Occupations in the Food & Beverage Manufacturing Sector (September 2022 to August 2023)



Source: Analysis based on: LMIC (2023). Canadian Job Trends Dashboard. https://lmic-cimt.ca/data-dashboards/canadian-job-trends-dashboard



4.3 There is a lack of awareness about the agriculture and food & beverage manufacturing sectors among Canadians

Both the agriculture and food & beverage manufacturing sectors have highlighted that low overall awareness and negative perceptions of the industries among students and job seekers are a key challenge. For instance, a recent Food Processing Skills Canada (FPSC) survey indicated that only one-quarter of Canadians had familiarity with the food & beverage manufacturing sector and only one-sixth reported they would apply to a job in the sector if it was conveniently located.³⁴ Similarly, a recent study for the Canadian Centre for Food Integrity found 91 per cent of Canadians had little or no knowledge about agricultural practices.³⁵

The FPSC survey found there were some population groups that were more open to working in the sector including recent immigrants and Indigenous peoples.³⁶ However, these population groups may face challenges to accessing WIL opportunities in the agriculture and food & beverage manufacturing sectors. For example, employers tended to focus their recruitment efforts on some groups – youth under the age of 30 and women – more than other groups – immigrants, older workers, Indigenous peoples and those with disabilities.³⁷



34 Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf 35 Campbell, L. (2023). Canadians can no longer afford to stay disconnected from farmers and their food sources. The Trillium. Available at: https://www.thetrillium.ca/ opinion/canadians-can-no-longer-afford-to-stay-disconnected-from-farmers-and-their-food-sources-7066451 36 Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf 37 Ibid.



5.

EDUCATIONAL LANDSCAPE CONNECTED TO THE AGRICULTURE AND FOOD & BEVERAGE MANUFACTURING SECTORS





Canada's education system is a critical pathway for young people to transition to the labour market. This section identifies the ways students can access education connected to the agriculture and food & beverage manufacturing sectors in advance of making decisions on post-secondary education and during post-secondary studies. It highlights overall growth but also notes some continued challenges.

5.1 There is limited exposure to agriculture and food & beverage manufacturing before entering post-secondary education

Decisions on post-secondary studies – which will ultimately be critical in determining career pathways – can start to form years before one would enter postsecondary education. However, agriculture and food & beverage manufacturing are topics that generally receive limited levels of attention at elementary and secondary school levels. CAHRC has highlighted concerns that there are not enough educational programs related to agriculture in secondary levels of education, leading to new entrants to the labour market being unaware of the diversity of career options in the sector.³⁸

There would be benefits in offering sector-specific programs at all levels of the education system, building on activities that currently exist.³⁹ For instance, AgScape is a non-profit organization that provides programs and resources related to agriculture and food literacy to educators and

students across Ontario from elementary school to secondary school. AgScape's work has helped to provide young students with greater insights on the role of agriculture and food & beverage processing in Canada's food system and on the types of work in the sector.⁴⁰

Nonetheless, there can be a limited focus on agriculture and food & beverage manufacturing through programs designed to help prepare students for career pathways as they transition from secondary school to post-secondary education, training or employment. For instance, the Specialist High Skills Major (SHSM) program in Ontario is a specialized, ministry-approved program that enables Grade 11 and Grade 12 students to focus on a specific economic sector while completing the requirements of their secondary school credentials. There are 19 sectors that are part of the SHSM program, two of which include agriculture and food processing. However, the sectors make up a very small proportion of the programs among Ontario high schools. Out of a total of 2,521 programs in Ontario high schools in the 2022/23 school year, there were 47 programs focused on agriculture (1.9 per cent) and six focused on food processing (0.2 per cent) (see Figure 4).⁴¹

41 Government of Ontario (2022). Specialist High Skills (SHSM) Program List. Available at: https://data.ontario.ca/dataset/specialist-high-skills-major-shsm-program-list

 ³⁸ Canadian Agriculture Human Resource Council (2021). Ontario Agriculture and Food Processing Skills and Occupation Gaps. Available at: https://cahrc-ccrha.ca/sites/default/files/2022-06/CAHRC_ON%20Skills%20%26%20Occupation%20Gaps_0.pdf
 39 Ibid.

⁴⁰ AgScape (2022). Youth Impact Report 2022. Available at: https://agscape.ca/assets/files/2022%20Youth%20Impact%20Report%20AgScape.pdf





Figure 4: Proportion of programs in the Ontario Specialist High Skills Major programs

Source: Analysis based on Government of Ontario (2022). Specialist High Skills (SHSM) Program List. Available at: https://data.ontario.ca/dataset/specialist-high-skills (SHSM) Program List. Available at: https://data.ontario.ca/dataset/specialist-high-skills (SHSM) Program List. Available at: https://data.ontario.ca/dataset/specialist-high-skills (SHSM) Program List. Available at: https://data.ontario.ca/dataset/specialist-high-skills (SHSM) Program List.

Other provinces have similar types of programs that give students in secondary school access to courses related to specific sectors including agriculture. For instance, Alberta's Provincial Dual Credit Strategy enables students to obtain credits in high school and post-secondary education at the same time and Prince Edward Island's Academy Diploma Program enables students to focus on specific industries in their high school coursework.⁴² There is limited recent data available on uptake on these other provincial programs. Additionally, a recent review of Ontario's secondary school science curriculum found that there are few references to agriculture, food and farming in the Grade 9 and 10 science curriculums. While there were more references in the Grade 11 and 12 science curriculums, many references were suggested options and therefore may or may not be used by educators.⁴³ Connecting with young people early on will be increasingly important to attract and retain workers in the agriculture and food & beverage manufacturing sectors.

42 CMEC (2016). Toolkit of Promising Practices that Assist in the Alignment of Skills and Education Systems with the Needs in the Labour Market. Available at: https://www.cmec.ca/Publications/Lists/Publications/Attachments/349/Toolkit_jan15-2016_EN.pdf

⁴³ Wilkinson, C. (2018). Agriculture and Food Education of High School Students in Ontario. University of Guelph. Available at: <u>https://atrium.lib.uoguelph.ca/</u> items/4633cf20-084d-4238-96e8-feae4fab5bf3



5.2 Post-secondary enrolments have increased in the agriculture and food & beverage manufacturing sectors in recent years

There are growing opportunities to prepare to enter the agriculture and food & beverage manufacturing sectors through post-secondary education. After enrolment declines in programs related to the agricultural sector in the 1990s, admission in programs grew more than 40 per cent since 2003.⁴⁴ These promising signs of growth across Canada's post-secondary landscape have continued.

Enrolments have grown in post-secondary programs connected to both sectors over the past decade. There was growth in the number of enrolments in the field of study of agriculture, agriculture operations and related sciences from 9,732 in 2010/11 to 12,000 in 2020/21. This represents a 23 per cent increase over the period compared to an 11 per cent increase among all fields of study.⁴⁵ Within the agriculture sector, the fields of study with the highest levels of enrolment in 2020/21 were agriculture business and management and applied horticulture/ horticulture business services. Within the food & beverage manufacturing sector, culinary arts and food science and technology were among the areas with high levels of enrolment.46

Innovating with sector-focused coursework

Post-secondary institutions are also innovating with new approaches to coursework and programs. Memorial University's Fisheries and Marine Institute's aquaculture training program, done in partnership with CAHRC, gives participants the opportunity to access four certificate programs to gain skills in agriculture for new entrants, career changers and current aquaculture professionals.⁴⁷



⁴⁴ Yaghi, M. (2023). Farmers Wanted: The labour renewal Canada needs to build the Next Green Revolution. RBC. Available at: https://thoughtleadership.rbc.com/farmers-wanted-the-labour-renewal-canada-needs-to-build-the-next-green-revolution/

⁴⁵ Statistics Canada. Table 37-10-0182-01 Postsecondary enrolments, by detailed field of study and International Standard Classification of Education. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710018201

⁴⁶ Ibid.

⁴⁷ Fisheries and Marine Institute of Memorial University of Newfoundland. (2023). Growing the Canadian Aquaculture Workforce of the Future. Available at: <u>https://www.mi.mun.ca/aquaculturecan/english/</u>





There are a few reasons why growth has occurred. A key factor was efforts by agricultural-focused post-secondary institutions and programs to incorporate programming outside agricultural sciences and move towards topics such as food security and international development.⁴⁸ Increasing use of technology has also been a key reason for a growing focus on post-secondary education in the sectors. For instance, farm operators have been increasingly focusing on educational attainment, particularly at the trades and college level, which can help equip them to use new technologies in farming operations. Between 1996 and 2016, an increasing proportion of farm operators had post-secondary education credentials. Additionally, those with a university or trades or college degree were more likely to report using technology for work on the farm, which has helped to increase efficiency of operations and production output.49

Nonetheless, even with this growth Canada had middling levels of enrolment in 2020 at a bachelor's degree or equivalent level in the field of agriculture, forestry, fisheries and veterinary (at 0.6 per cent), and lower compared to other peer countries such as Germany (at 1.3 per cent), the United Kingdom (at 1.0 per cent) and Australia (0.8 per cent).⁵⁰

5.3 Post-secondary offerings related to agriculture and food & beverage manufacturing have increasingly diversified

It is not only student enrolments that have grown across the agriculture and food & beverage landscape. There has also been growth in program offerings. For instance, the number of programs related to food and agriculture in post-secondary education institutions has grown over the past decade.⁵¹ With growth has come increased variation among the programs available to students. There is increasing variety among program offerings available at post-secondary institutions relevant to the agriculture and food & beverage manufacturing sectors in colleges, institutions, and universities across Canada, with programming ranging from certificate courses at colleges to post-graduate programs at universities.

Part of the growth of the educational landscape connected to these sectors is increasing recognition over the last decade that agricultural education can be connected to innovation. The

- 48 Yaghi, M. (2023). Farmers Wanted: The labour renewal Canada needs to build the Next Green Revolution. RBC. Available at: https://thoughtleadership.rbc.com/farmers-wanted-the-labour-renewal-canada-needs-to-build-the-next-green-revolution/
- 49 Tran, K. and Shumsky, M. (2019). The educational advancement of Canadian farm operators. Statistics Canada. Available at: https://www150.statcan.gc.ca/n1/pub/96-325-x/2019001/article/00002-eng.htm

51 McQuarrie, J. (2021). Monitoring Trends in Academic Programs: Agriculture. Higher Education Strategy Associates. Available at: https://higheredstrategy.com/wp-con-tent/uploads/2021/06/2021-02-09-MTAP-vol3-iss1-v3.pdf

⁵⁰ OECD (2023). Enrolment by field - Students, access to education and participation, Education at a Glance. Available at: https://stats.oecd.org/Index.aspx?DataSet_ Code=EDU_ENRL_FIELD



context of growth in technology use in the sector, as well as an increasing focus on green practices, has highlighted the economic potential of postsecondary programs focused on agriculture – with an increase in programs such as food engineering or agricultural business programs.⁵² Food Processing Skills Canada (FPSC) highlighted that in the fall of 2019 there were 490 post-secondary programs relevant to the food & beverage manufacturing sector across 160 institutions. It identified programs on Culinary Arts and Food Science as the most common to be found related to the industry (see Figure 5).

Figure 5: Proportion of programs in the food and beverage manufacturing sector by area of study



Source: Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf

52 Usher, A. (2021). Faculties of Agriculture. Higher Education Strategy Associates. Available at: https://higheredstrategy.com/faculties-of-agriculture/



College programs focused more in the areas of Culinary Arts (40 per cent of programs) and Baking and Pastry (16 per cent of programs) compared to universities. Universities had a greater focus on Food Science and Technology (37 per cent of programs) and Food Science and Nutrition (34 per cent of programs).⁵³

5.4 Despite growth and diversification in the postsecondary educational landscape, there can be a mismatch between educational offerings and labour market skill needs

While it is positive that there is growth in postsecondary enrolment and programs related to the agriculture and food & beverage sectors, challenges remain in connecting this growth to the labour market. Across the agriculture and food & beverage manufacturing sectors, there are concerns about aligning skills with the needs of the labour market now and in the future.

For instance, nearly half of food and beverage companies rated educational programs designed to produce graduates in the sector as being either inadequate (18 per cent) or non-existent (32 per cent).⁵⁴ Additionally, a lack of qualified applicants or applicants with proper training were among the most significant challenges related to human resources in the food & beverage manufacturing sector.⁵⁵

FPSC has also highlighted that few postsecondary programs are directly related to production, where labour shortages are the greatest.⁵⁶ Therefore, there can be a disconnect between the programs offered by post-secondary institutions and the needs of the labour market. In some cases, stakeholders in this field have noted that programs were created that could have supported areas where labour is needed but ended up not continuing due to lack of student interest, which speaks to the need to build student awareness and interest in these programs.

Additionally, challenges have been identified in integrating agricultural programs with other offerings at post-secondary institutions to enable students to be prepared for the labour market. For instance, there are no opportunities to focus on agri-business among Canada's top business schools, according to a recent RBC report. This report highlighted that enrolment could be boosted further in programs connected to the agriculture sector with better integration of agriculture with more mainstream programs and by better connecting it with other fields such as engineering and social sciences.⁵⁷

⁵³ Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf

⁵⁴ Food Processing Skills Canada (2021). 2020 Labour Market Survey. Available at: <u>https://fpsc-ctac.com/wp-content/uploads/2021/01/2020-LABOUR-MARKET-IN-FORMATION-SURVEY.pdf</u>

⁵⁵ Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: <u>https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf</u> 56 lbid.

⁵⁷ Yaghi, M. (2023). Farmers Wanted: The labour renewal Canada needs to build the Next Green Revolution. RBC. Available at: https://thoughtleadership.rbc.com/farmers-wanted-the-labour-renewal-canada-needs-to-build-the-next-green-revolution/



6. WORK-INTEGRATED AND EXPERIENTIAL LEARNING IN CANADA







This section provides an overview of the landscape for experiential and work-integrated learning in Canada. It identifies the variety in types of opportunities and how they help students transition to the labour market. It also highlights recent trends in Canada related to experiential and work-integrated learning.

6.1 Work-integrated and experiential learning supports students to transition from education to the labour market

There has been increased interest in workintegrated learning (WIL) and experiential learning in Canada in recent years. As these concepts have gained greater interest and traction in helping students transition to the labour market, there has been an increasingly formalized role for experiential learning and WIL within postsecondary institutions.

Defining experiential learning and workintegrated learning

Experiential learning broadly refers to opportunities for students to learn through experiences. It involves a range of programming to provide students with hands-on skills and experiences to support them in their career development. Work-integrated learning (WIL) is a form of experiential learning. Experiential learning is typically embedded in post-secondary education program or course design, with WIL a subset of that broader category which typically includes third-party engagement (i.e. employer, industry or community partner). ⁵⁸

WIL has been defined by Co-operative Education and Work-Integrated Learning Canada (CEWIL) as "a model and process of experiential education which formally and intentionally integrates a student's academic studies with learning in a workplace or practice setting."⁵⁹ WIL opportunities can range in duration from a few weeks to many months over a multi-year period. While students use these opportunities to enhance their skills, employers also benefit in many ways, particularly in the form of recruitment.

There are other forms of experiential learning that may or may not be considered WIL, depending on stakeholder perspectives. These include hackathons, case studies, lab work, simulation or business case competitions.⁶⁰ These forms of experiential learning provide benefits to employers and the industry in terms of increasing awareness or to evaluate students that may pursue employment in the future while requiring less involvement or administrative burdens on their part than may be required in more structured work experiences.

58 Drewery, D. (2023). 2022 CEWIL Canada Data Report. CEWIL. Available at: https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/Resource%20Hub/CEWIL%20Canada%20Data%20Report%202022.pdf 59 Ibid.

60 Business and Higher Education Roundtable (2016). Taking the Pulse of Work-Integrated Learning in Canada. Available at: <u>https://www.bher.ca/sites/default/files/docu-ments/2020-08/BHER-Academica-report-full.pdf</u>



The increase in focus in WIL over the last decade has resulted in growing efforts by post-secondary educational institutions, employers and governments to improve school-to-work transitions.

Key stakeholders involved in workintegrated learning

Collaboration among key stakeholders involved in experiential and work-integrated learning is a critical part of success. In particular, as WIL opportunities involve third-party engagement, many kinds of stakeholders are involved in the process. Key stakeholders include: ⁶¹

- **Students:** To participate in work-related experiences that will help them transition to the labour market in their areas of interest or fields of study;
- **Post-secondary institutions:** To develop WIL programs and connect students with opportunities, as well as monitoring and improving content;
- **Employers:** To build their workforce by attracting and retaining students and by helping students transition into their organizations;
- Government institutions: To provide investments supporting WIL opportunities and oversight to ensure programs are run effectively to help students transition to work.

Some key stakeholders such as post-secondary institutions and employers continue to work to enhance their involvement and create more clearly defined roles in experiential and workintegrated learning. While there are ongoing efforts to support greater levels of accessibility and consistency, it remains an emerging field and challenges persist in areas such as data reporting or coordinated definitions of concepts.



61 University of Waterloo. Future Proven: Take a AAA approach to work-integrated learning. Available at: <a href="https://uwaterloo.ca/aaa-approach-work-integrated-learning/sites/ca.aaa-approach-work-integrated-learning/sites/ca.aaa-approach-work-integrated-learning/sites/co.aaaaaapproach-work-integrated-learning/sites/co.aaaa-approach-work-integrated-learning/sites/co.aaaa-approach-work-integrated-learning/sites/co.aaaaaapproach-work-integrated-learning/sites/co.aaaa-approach-work-integrated-learning/sites/co.aaaa-approach-work-integrated-learning/sites/co.aaaaaapproach-work-integrated-learning/sites/co.aaaaaapproach-work-integrated-learning/sites/co.aaaaaapproach-work-integrated-learning/sites/co.aaaaaaapproach-work-integrated-learning/sites/co.aaaaaaapproach-work-integrated-learning/sites/co.aaaaaaapproach-work-integrated-learning/sites/co.aaaaaaapproach-work-integrated-learning/sites/co.aaaaaaapproach-work-integrated-learnin



There are a range of ways that students may participate in experiential and work-integrated learning. CEWIL has identified key categories of experiential and work-integrated learning opportunities (see Figure 6).

Figure 6: Work-integrated and experiential learning identified by CEWIL



Source: CEWIL Canada (2022). What is work-integrated learning. Available at: <u>https://cewilcanada.ca/CEWIL/About-Us/Work-Integrated-Learning.aspx?WebsiteKey=</u> 70188082-f13b-461c-8c8d-74e0e6c01c18

Additionally, the Business and Higher Education Roundtable (BHER), another leader focused on WIL, categorizes key WIL opportunities into three overall types of learning (see Table 2). This typology gives a better view of the range of intensity, with apprenticeships being very intensively hands on, followed by structured work experiences, which also involve working directly with an employer or other entity outside an academic setting. Institutional partnerships still provide students with experience working with employers but are less structured compared to other categories.



Table 2: Categories of WIL opportunities

Category	Description	Types of WIL
Systematic training	The majority of learning by students is completed in a workplace setting through a systematic approach.	Apprenticeships: A combination of in- school and on-the-job workplace training for a skilled trade occupation.
Structured work experiences	Through a university or college program, students participate in structured work opportunities to become familiar with work relevant to their education.	 Co-ops: Students alternate periods of study with work placements related to fields of study. Internships: Extended work experiences typically taking place in the middle or near the end of study. Internships may be paid or unpaid. Mandatory professional practice: Work experiences are typically connected to a professional licence or designation. Field experience: Placements are connected to professional fields but do not require licence or designations. Internships: Extended work experiences typically taking place in the middle or near the end of study. Internships may be paid or unpaid.
Institutional partnerships	Activities or programs coordinated by post-secondary institutions that provide students with experiences that meet the goals of a specific industry or community.	Applied research projects: Students participate in real-world projects with industry partners serving as clients. Service learning: Students provide services to the community while also learning and gaining skills.

Source: Adapted from Business and Higher Education Roundtable (2016). Taking the Pulse of Work-Integrated Learning in Canada. Available at: <u>https://www.bher.ca/</u> sites/default/files/documents/2020-08/BHER-Academica-report-full.pdf



Structured work experiences are the most common type of WIL. In particular, co-operative education (co-op) opportunities are consistently identified as one of the most popular forms of WIL. CEWIL has highlighted that in 2022 most WIL programs were co-ops, internships and field placements (see Figure 7).



Figure 7: Proportion of WIL programs by type of WIL identified by CEWIL

Source: Drewery, D. (2023). 2022 CEWIL Canada Data Report. CEWIL. Available at: <u>https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/Resource%20Hub/CEWIL%20Canada%20Data%20Report%202022.pdf</u>

Additionally, one-third of co-op programs identified were mandatory as part of postsecondary programs. The most common credential levels associated with WIL were bachelor's degree and diploma programs. (Note: This is based on data that was voluntarily reported to CEWIL through four sources, with 92 post-secondary institutions across Canada represented in the data. Due to the voluntary data collection, it likely undercounts the full landscape of programs).⁶²

Entrepreneurship – the name for entrepreneurial forms of WIL – is a growing form of WIL which enables students to engage in the early-stage development of business start-ups and/or to

62 Drewery, D. (2023). 2022 CEWIL Canada Data Report. CEWIL. Available at: https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/Resources/20Hub/CEWIL%20Canada%20Data%20Report%202022.pdf



advance external ideas that address real-world needs for academic credit. Students participating in entrepreneurial WIL can leverage resources, space, mentorship and funding to advance ideas.⁶³

A survey of graduating students in 2021 also reported co-ops were popular but second to work experience in terms of practical program experiences. The survey found the most common opportunities were work experience (16 per cent), co-op (14 per cent) or practicum (13 per cent). Internships (both paid and unpaid) were also among the notable experiences for graduating students.⁶⁴

Best practices for work-integrated learning

While there are a range of different types of WIL opportunities, there are some general best practices that have been identified by leaders in the field including CEWIL, BHER and the Higher Education Quality Council of Ontario (HEQCO).

Key themes that emerge from the literature include: $^{\rm 65}$

- Clarity and structure are important to success;
- Opportunities should be relevant and meaningful;
- Collaboration will help to ensure outcomes are achieved;
- Learning environment considerations should include the physical and social environment;
- Assessment and evaluation connected to outcomes should be built in; and
- Reflection will help to support continuous improvement.



⁶³ CEWIL (2023). What is work-integrated learning. Available at: <u>https://cewilcanada.ca/CEWIL/CEWIL/About-Us/Work-Integrated-Learning.aspx</u> 64 Canadian University Survey Consortium (2021). 2021 Graduating Student Survey Master Report. Available at: <u>https://cusc-ccreu.ca/wordpress/?page_id=32&lang=en</u>

⁶⁵ Business and Higher Education Roundtable (2016). Taking the Pulse of Work-Integrated Learning in Canada. Available at: https://www.bher.ca/sites/default/files/documents/2020-08/BHER-Academica-report-full.pdf; HEQCO (2016). A practical guide for work-integrated learning: Effective practices to enhance the educational quality of structured work experiences offered through colleges and universities. Available at: https://https://https://https://https://https://https://https://https://https://https://https://https://https://kegources/Resource-Hub/CEWIL-Res



6.2 There has been recent growth in participation in workintegrated learning in Canada

There has been major growth in the number of WIL opportunities in Canadian post-secondary education institutions in recent years. ⁶⁶ CEWIL found that in 2022 there were 3,413 WIL programs offered across 13 academic disciplines. associated with credential levels ranging from diploma to doctorate. Between 2021 and 2022, there was eight per cent growth in student placements at universities (67,447 in 2021 compared to 73,140 in 2022). While there was some decline among placements at colleges and polytechnics, the overall number of placements among all institutions were on an upward trend.⁶⁷ As noted in Section 6.1, the CEWIL data is not a full representation of WIL opportunities in Canada, but it does provide insight on some trends in terms of growth. At the same time, efforts are underway to expand WIL including through government programs, organizations such as CEWIL and BHER and business groups.

Several reports have identified that approximately half of post-secondary students participate in a WIL opportunity. A 2021 survey of graduating university students found half (50 per cent) of graduating students reported participating in some type of practical experience.⁶⁸ Additionally, a 2022 survey of first-year university students found that 44 per cent of first-year students were enrolled in a program with an experiential learning component.⁶⁹

Additionally, there have been significant levels of investment by provincial and federal governments in recent years that have helped support the growth of WIL.⁷⁰ For instance, the Government of Canada launched the Student Work Placement Program (SWPP) in 2017 to help ensure all university undergraduates would be able to access WIL. The SWPP was designed to help create student work placements over a five-year period, create partnerships between employers and post-secondary institutions and to provide wage subsidies to employers offering paid student work placements, including elevated subsidies for placements for underrepresented groups.⁷¹ In Budget 2023, \$197.7 million was proposed to continue supporting WIL through SWPP in 2024/25.72

Overall, SWPP created 11,952 work placements over a three-year period (between 2017/18 and 2019/20). A large majority of students reported they were satisfied with the program and employers indicated they wanted the program to be permanent, according to a 2021 review by Employment and Social Development Canada. A large majority of both students and employers

66 Stirling, A. and Pretti, T. J. (eds.) The Practice of Co-op and Work-Integrated Learning in the Canadian Context. CEWIL. Available at: https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/research/The%20Practice%20of%20Co-op%20and%20Work-Integrated%20Learning%20in%20the%20Canadian%20Context%20(2).pdf

67 Drewery, D. (2023). 2022 CEWIL Canada Data Report. CEWIL. Available at: https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/Resource%20Hub/CEWIL%20Canada%20Data%20Report%202022.pdf

68 Canadian University Survey Consortium (2021). 2021 Graduating Student Survey Master Report. Available at: https://cusc-ccreu.ca/wordpress/?page_id=32&lang=en

69 Canadian University Survey Consortium (2022). 2022 First-Year Students Survey Master Report. Available at: https://cusc-ccreu.ca/wordpress/?page_id=32&lang=en

70 Stirling, A. and Pretti, T. J. (eds.) The Practice of Co-op and Work-Integrated Learning in the Canadian Context. CEWIL. Available at: <u>https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/research/The%20Practice%20of%20Co-op%20and%20Work-Integrated%20Learning%20in%20the%20Canadian%20Context%20(2).pdf</u>

71 Government of Canada (2017). Government of Canada launches student work placements. Available at: <u>https://www.canada.ca/en/employment-social-develop-ment/news/2017/08/government_of_canadalaunchesstudentworkplacements.html</u>

72 Magnet (2023). 2023 Budget recognizes significant positive impact of the Student Work Placement Program. Available at: https://www.newswire.ca/news-releas-es/2023-budget-recognizes-the-significant-positive-impact-of-the-student-work-placement-program-845388430.html





reported that participation in the program provided students with key skills to prepare them for the labour market.⁷³

Provinces have similarly made investments to enhance WIL in certain sectors, including manufacturing. For instance, Nova Scotia announced in 2023 that it would invest nearly \$7 million in a partnership to deliver a WIL model aimed at the province's manufacturing sector.⁷⁴ The Ontario Premier's Highly Skilled Workforce Expert Panel also recommended in 2016 that all post-secondary students have at least one WIL opportunity during their studies to help prepare them for the labour market.⁷⁵

There has also been increasing interest among Canada's business community in adopting WIL as part of recruitment strategies. Based on a recent survey, the Business Council of Canada identified that employers view WIL as the best way to develop, recruit and transition students to the labour market.⁷⁶ This is an important development as historically, it has been challenging to engage active employer involvement in supporting student transitions to workplaces.⁷⁷ The Business Council of Alberta highlighted in a 2020 report that it is working with businesses to identify and develop WIL programs in new areas, as well as to play a convening role among businesses, postsecondary institutions and government to expand WIL in the province.⁷⁸

6.3 There is strong evidence that work-integrated learning opportunities provide significant benefits in transitioning students from school to work

As WIL has become a more significant part of the post-secondary student experience, evidence has grown pointing to its significant positive impact in helping to transition students from post-secondary studies to the labour market. There is overall evidence that WIL can help improve student engagement, academic outcomes, analytical and critical thinking skills and cognitive development. Several recent

 ⁷³ Employment and Social Development Canada (2021). Evaluation of the Student Work Placement Program. Available at: https://www.canada.ca/content/dam/canada/employment-social-development/corporate/reports/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf
 74 Government of Nova Scotia (2023). Work-integrated learning model aims to bolster manufacturing sector. Available at: https://www.2.gnb.ca/content/dam/canada/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf

ments/post-secondary_education_training_and_labour/news/news_release.2023.03.0130.html 75 HEQCO (2016) Hunting for Good WIL: Put quality over quantity. Available at: https://heqco.ca/heqco-hunting-for-good-wil-put-quality-before-quantity/

⁷⁶ Business Council of Canada (2022). Canada's leading companies are finding innovative ways to identify and develop skilled talent. Available at: <u>https://thebusiness-</u>council.ca/publication/canadas-leading-companies-are-finding-innovative-ways-to-identify-and-develop-skilled-talent/

⁷⁷ Sattler, P. and Peters, J. (2012). Work-Integrated Learning and Postsecondary Graduates: The Perspective of Ontario Employers. HEQCO. Available at: <u>https://heqco.</u> ca/wp-content/uploads/2020/03/WIL-Employer-Survey-ENG.pdf

⁷⁸ Business Council of Alberta (2020). Skilled by Design: A Blueprint for Alberta's Future Workforce. Available at: <u>https://www.businesscouncilab.com/wp-content/uploads/2020/12/BCA_No-Filter_Skills-Training_TaskForceReport_FINAL.pdf</u>



reports highlight the following benefits for students who engaged in WIL opportunities on their subsequent career trajectories:⁷⁹

- Increased likelihood that students will land a job related to their field after graduating post-secondary education compared to those who did not participate in WIL;
- Decreased likelihood of being overqualified for jobs after graduation; and
- Increased levels of income after graduation for students who participated in an opportunity like co-operative education.

Additionally, the review of the federal government's SWPP reported the program offered significant benefits to students, as graduates with work placements indicated they were better prepared for the labour market. The review also found that 95 per cent of students and employers reported they were satisfied or very satisfied with work placements arranged through the program and nearly half indicated there were not enough WIL opportunities available to students. Employers also expressed satisfaction with the program, with 73 per cent of employers indicating they would consider hiring students participating in the program on a long-term basis.⁸⁰

These opportunities were also highlighted as being beneficial in providing students with valuable experiences in developing soft skills beyond what could be accomplished in an academic setting. Key skills that students reported developing through WIL included leadership, teamwork, problem solving and critical thinking skills.⁸¹

Co-op programs are generally associated with more labour market benefits than are work placements, as they tend to provide more extensive experience in terms of the number of work terms and experiences may be more strategically integrated with academic studies.⁸² There is less data available on the effectiveness of other forms of WIL, particularly types that have grown more popular in recent years such as entrepreneurship.

6.4 WIL helps provide students with direction to choose career pathways

A key impact of WIL is that it can help students not only connect with specific jobs but also provide them with insights on their overall career pathways. It is a key tool to help young people learn what they want to do in their careers while providing them with valuable experiences that can help clarify their career choices at the same time.

The evaluation of the federal government's SWPP noted that WIL opportunities helped students to become more informed about career choices, with some students and funding recipients noting that it enabled students to discover new

⁷⁹ Itano-Boase, M., et. al. (2021). Exploring Diversity and Inclusion in Work-Integrated Learning: An Ecological Model Approach. International Journal of Work-Integrated Learning. Available at: https://eric.ed.gov/?id=EJ1313423; Wyonch, R. (2020). Work-Ready Graduates: The Role of Co-op Programs in Labour Market Success. Available at: https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Commentary%620562.pdf; Galarneu, D., Kinack, M. and Marshall, G. (2020). Work-Integrated learning during postsecondary studies, 2015 graduates: Statistics Canada. Available at: https://www150.statcan.gc.ca/n1/pub/75-006-x/2020001/ar-ticle/0003-eng.htm; Martin, S. and Rouleau, B. (2020). An exploration of work, learning and work-integrated learning in Canada using the Longitudinal and International Study of Adults. Available at: https://www150.statcan.gc.ca/n1/pub/89-648-x/89-648-x2020001-eng.htm;

⁸⁰ Employment and Social Development Canada (2021). Evaluation of the Student Work Placement Program. Available at: https://www.canada.ca/content/dam/canada/employment-social-development/corporate/reports/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf 81 Ibid.

⁸² Wyonch, R. (2020). Work-Ready Graduates: The Role of Co-op Programs in Labour Market Success. Available at: <u>https://www.cdhowe.org/sites/default/files/attach-ments/research_papers/mixed/Commentary%20562.pdf</u>



sectors for employment of which they may have otherwise been unaware.⁸³

Another study conducted in 2011 found that co-ops and internships had the strongest benefit in terms of providing students with direction on their career paths, with 85 per cent of students involved in internships and 83 per cent of those participating in co-ops reporting that the opportunities gave them a better idea of what to do with their lives.⁸⁴

Additionally, key benefits that have been highlighted associated with WIL include helping to develop a professional identity, supporting skills development and growing a professional network.⁸⁵ These are all key elements that help to enable and support a specific career trajectory.

6.5 Benefits from WIL are not equal among all post-secondary students and can differ by population group or field of study

The benefits associated with WIL are not shared equally among all who participate in such opportunities, with underrepresented groups not always seeing the same benefits as other types of participants. In a study of WIL and diversity in Canada, it was noted that certain kinds of postsecondary students (women, racialized people, people with disabilities and Indigenous peoples)



face structural barriers to participating in and benefiting from WIL. For instance, it was found that income benefits after graduation may vary among women, racialized people and immigrants who participate in WIL opportunities.⁸⁶

There can also be barriers to access for students from low socio-economic backgrounds. Most WIL programs require high GPAs, which can create barriers to certain students as GPA levels can be closely connected to family income and parental education.⁸⁷ This is because students with lower socio-economic status may be faced with barriers such as having to work to support the family. Between 2017 and 2019, those who participated in WIL were more likely to have a high GPA and come from STEM or business programs according to study data.⁸⁸

Additionally, the benefits of WIL can vary based on field of study. C.D. Howe Institute recently

88 Ibid.

 ⁸³ Employment and Social Development Canada (2021). Evaluation of the Student Work Placement Program. Available at: <u>https://www.canada.ca/content/dam/cana-da/employment-social-development/corporate/reports/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf
 84 Kramer, M. and Usher, A. (2011). Work-integrated learning and career-ready students: Examining the evidence. Higher Education Strategy Associates. Available at:
</u>

https://higheredstrategy.com/wp-content/uploads/2011/11/InsightBrief5-FINAL-1.pdf 85 Ng, N. (2021). Ascension of work-integrated learning in Canada: influence on post-secondary education and governmental priorities. Available at: https://cewilcan-ada.ca/common/Uploaded%20files/Public%20Resources/research/The%20Practice%20of%20Co-op%20and%20Work-Integrated%20Learning%20in%20the%20Co-adaian%20Context%20(2).pdf

⁸⁶ Itano-Boase, M., et. al. (2021). Exploring Diversity and Inclusion in Work-Integrated Learning: An Ecological Model Approach. International Journal of Work-Integrated Learning. Available at: https://eric.ed.gov/?id=EJ1313423

⁸⁷ Ibid.



highlighted that not all WIL opportunities are the same and the benefits of WIL programs can vary based on factors such as program type, field of study and educational institution, among other factors. For instance, co-op opportunities have been found to be more effective for students at the university level compared to the college level.⁸⁹

6.6 International students face particular barriers in accessing work-integrated learning

It is increasingly important to address barriers to international students as growing numbers of international students have arrived in Canada in recent years. Immigrants and international labour make up a notable proportion of workers in the agriculture and food & beverage manufacturing sectors. For instance, FPSC has noted that an overrepresentation of immigrants is the "defining demographic characteristic" of the labour force in the sector, with nearly one-third of the industry's workforce consisting of immigrants compared to 23 per cent of the overall workforce.⁹⁰ New Canadians are among those who indicated more interest in working in the food and beverage manufacturing sector compared to the general public.91

However, international students face barriers in accessing WIL opportunities which could help them use their post-secondary education to connect with employment relevant to their studies. A key barrier is that international students are not eligible for certain WIL opportunities funded by the federal government.⁹² As a result, it can be less appealing for employers to hire an international student compared to a domestic student if it means they are unable to access funding support. International students also face other challenges that are not part of the domestic student experience including limited knowledge about workplace culture and local labour market information, uncertainty related to visa status and perceptions and attitudes of employers.⁹³



⁸⁹ Wyonch, R. and Seward, B. (2023). From Class to Career: How Work Integrated Learning Benefits Graduates Looking for Jobs. C.D. Howe Institute. Available at: https://www.cdhowe.org/sites/default/files/2023-06/For%20release%20Commentary_642.pdf

⁹⁰ Food Processing Skills Canada (2021). At the Crossroad to Greatness: Key insights and labour market research about Canada's food and beverage processing industry. Available at: <u>https://fpsc-ctac.com/wp-content/uploads/2021/04/LMI-Overall-Report_FPSC_04_29_21.pdf</u> 91 Ibid

⁹² Fannon, Anne-Marie (2021). Work-integrated learning's future in Canadian industry. TheFutureEconomy.ca Available at: <u>https://thefutureeconomy.ca/interviews/</u>work-integrated-learnings-future-in-canadian-industry/

⁹³ Business and Higher Education Roundtable (2016). Taking the Pulse of Work-Integrated Learning in Canada. Available at: <u>https://www.bher.ca/sites/default/files/doc-uments/2020-08/BHER-Academica-report-full.pdf</u>



7.

ENVIRONMENTAL SCAN AND ANALYSIS OF WORK-INTEGRATED LEARNING AND EXPERIENTIAL LEARNING CONNECTED TO THE AGRICULTURE AND FOOD & BEVERAGE MANUFACTURING SECTORS



This section provides an overview and analysis of trends in experiential and work-integrated learning connected to the agriculture and food & beverage manufacturing sectors. In particular, it highlights data from an environmental scan of WIL post-secondary program offerings conducted for this report. It identifies key findings based on the environmental scan, as well as based on data analysis and insights shared in the literature and by stakeholders.



Methodology for environmental scan

of post-secondary WIL programs connected to agriculture and food & beverage manufacturing sectors

The environmental scan provided key insights on WIL opportunities connected to the agriculture and food & beverage manufacturing sectors based on a scan of post-secondary programs relevant to the sectors. The environmental scan was also used to identify key examples of WIL programs connected to the sectors.

Through the scan a snapshot of programs connected to the sectors was developed, identifying 204 WIL opportunities across 54 post-secondary institutions in Canada. The environmental scan is original work for this report that reviewed and identified WIL programs reported by post-secondary institutions and relevant stakeholder groups. Analysis was conducted on the data to identify notable trends. It can be considered a snapshot of program offerings connected to these sectors in Canada. Work-integrated learning is an emerging field and while reporting on WIL-related data has improved in recent years, there are limitations in the data on WIL in general. Nonetheless, the snapshot provides perspective of the current state based on the data available at the time of this report.

The following data sources were reviewed and relevant content was incorporated into the environmental scan of WIL opportunities at postsecondary programs connected to agriculture and food & beverage manufacturing in Canada:

- CEWIL National WIL Directory All opportunities in the directory that had a connection to agriculture and food & beverage manufacturing were included;⁹⁴
- "Agriculture and food manufacturing programs and research at colleges" resource provided by Colleges & Institutes Canada (CICan) – All opportunities identified as WIL at colleges and institutions by CICan were included;
- Literature Review of the Canadian Food and Beverage Processing Sector: The educational landscape by FPSC – All university programs identified were reviewed and those with WIL identified by institutions were included;
- Programs at top colleges and universities identified to have agriculture programs were reviewed and incorporated; and
- Any additional WIL programs if not already included, as identified in the course of conducting the literature review, were added.

The environmental scan focuses on WIL opportunities because there is more data

94 CEWIL. National WIL Directory. Available at: https://cewilcanada.ca/CEWIL/CEWIL/Resources/National-WIL-Directory.aspx



available on WIL in Canada. This scope makes it possible to identify meaningful trends in the data. Nonetheless, experiential learning outside WIL is also an important part of the landscape and key examples of experiential learning beyond WIL are highlighted outside the data snapshot.

The environmental scan focuses on WIL opportunities at post-secondary programs with direct connections to the sectors. Postsecondary programs that were more loosely connected to the agriculture and food & beverage manufacturing sectors were not included to apply targeted boundaries to the scope and because there was a lack of clarity on the degree to which such programs had WIL opportunities connected to the sectors based on available data. The focus of this environmental scan also does not include a specific form of work-integrated learning: apprenticeships. There are some limitations in this scan. Through the course of conducting research, it was identified that there are challenges in tracking WIL opportunities in Canada. For instance, CEWIL has a new database on WIL opportunities - the National WIL Directory.⁹⁵ This database is an important foundation for tracking. As it is an emerging tool and is populated by voluntarily reported data, it likely undercounts the full landscape of opportunities. Additionally, another challenge identified is that institutions may offer WIL or experiential learning at a departmental or program level but do not consider them as such and therefore don't highlight them as part of programs or report on them as WIL or experiential learning. The scan also focuses more on universities compared to colleges not necessarily because there are more opportunities at universities but because certain data sources had more robust reporting of WIL opportunities at universities compared to colleges and institutions.



95 CEWIL. National WIL Directory. Available at: https://cewilcanada.ca/CEWIL/CEWIL/Resources/National-WIL-Directory.aspx



7.1 There are a variety of types of WIL opportunities at postsecondary programs relevant to the agricultural and food & beverage manufacturing sectors but traditional approaches are most common

There are significant benefits to WIL specifically in the context of the agriculture and food & beverage sectors. Links to the industry and farms have been identified as crucial for students. For instance, connecting students with industry enables them to access cutting-edge technology and tools in the sectors earlier in their careers.⁹⁶ A report on programs in California identified that WIL in programs of study related to agriculture and food is particularly beneficial to students because of the nature of the sectors, including a close connection to "on the ground" practical activities and tangible problem solving gained through hands-on experiences.⁹⁷

There are a variety of types of WIL opportunities at post-secondary programs connected to the agriculture and food & beverage manufacturing sectors through a range of methods such as involvement in on-campus farms, completion of applied research projects at post-secondary institutions or participation in internships at organizations across the sectors. There are also currently a number of programs designed to support WIL which employers can apply to for funding, including by the federal government and provincial governments, as well as organizations such as BioTalent Canada, CAHRC and Mitacs.⁹⁸

Many WIL programs are provided through postsecondary programs with institutions connecting students to opportunities in the sector. The snapshot of WIL opportunities based on the environmental scan conducted for this report found that co-ops were the most common type of WIL that were part of post-secondary programs connected to the agriculture and food & beverage manufacturing sectors (see Figure 8).



96 McQuarrie, J. (2021). Monitoring Trends in Academic Programs: Agriculture Higher Education Strategy Associates. Available at: https://higheredstrategy.com/wp-content/uploads/2021/06/2021-02-09-MTAP-vol3-iss1-v3.pdf

 97 Kaplan, K. et. al. (2016). Learning from the Ground Up: Experiential learning in food and agriculture systems education at the University of California. UC Global Food Initiative. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-from-the-ground-up.pdf
 98 EMILI (2023). Work-integrated learning for employers. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-from-the-ground-up.pdf
 98 EMILI (2023). Work-integrated learning for employers. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-from-the-ground-up.pdf
 98 EMILI (2023). Work-integrated learning for employers. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-from-the-ground-up.pdf
 98 EMILI (2023). Work-integrated learning for employers. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-from-the-ground-up.pdf
 98 EMILI (2023). Work-integrated learning for employers. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-fromtkes/experiential



Figure 8: Types of WIL opportunities connected to agriculture and food & beverage manufacturing



Source: Analysis conducted by Medow Consulting based on environmental scan

Current approaches that typically involve funding support are usually focused on co-ops and work placements. For instance, CAHRC's Growing Opportunities student wage subsidy program receives federal funding through SWPP and helps to support agriculture employers hiring postsecondary students for WIL placements.⁹⁹ Part of the goal of the program is to support bringing students into the agriculture sector from nontraditional fields. CAHRC also has designed an experiential learning opportunity through business case competitions.

99 CAHRC (2023). AgriTalent. Available at: https://cahrc-ccrha.ca/programs/agri-talent



Benefits of experiential learning opportunities outside WIL

While WIL is a focus for many post-secondary institutions to provide students with hands-on learning opportunities, particularly through work placements, there are also benefits to experiential learning outside that framework. Experiential learning opportunities can help increase awareness of the sectors in general, as well as specific parts of the sectors, through opportunities that are less of a commitment compared to structured work placements generally associated with WIL. Some notable examples include:

- The National Agri-Marketing Association (NAMA) Student Marketing Competition is an annual competition that challenges students to develop a comprehensive marketing plan and presentation for a new agricultural product or service to improve income or productivity. Students from the University of Guelph placed second at the competition in 2022.¹⁰⁰
- University of Alberta's Faculty of Agriculture, Life and Environmental Sciences capstone project is required for every undergraduate student in the faculty. An example of a goal of a past capstone course was to develop a prototype of an actual food product. Students reported the capstone project were helpful in landing jobs once they finished their course at the university.¹⁰¹

Some post-secondary programs had multiple forms of WIL and/or experiential learning opportunities offered to students as of 2023. Notable examples include:

- University of Prince Edward Island's Foods and Nutrition program provides students with comprehensive training opportunities related to nutritional health, novel food product development and support for sustainable food systems. It offers multiple WIL opportunities including a dietetic internship in the program's third year, a co-operative education program which students can apply to in their second year and applied research projects in areas such as food security, nutrition education and food product development.¹⁰²
- University of Lethbridge's Agricultural Studies program focuses on the relationships between the social, economic, political and environmental factors that impact the agricultural sector — from farm level production to international policy. Students can participate in co-operative education opportunities, applied research projects, international exchanges and volunteer opportunities.¹⁰³
- Vancouver Island University's Fisheries and Aquaculture Technology program provides academic skills training and practical experience related to fisheries management and the aquaculture industry. Students have summer work experiences related to the industry between the first and second year of the program and participate in a practicum

¹⁰⁰ University of Guelph (2022). Students Place Second at North American Agri-Marketing Competition. Available at: <u>https://www.uoguelph.ca/oac/news/students-place-second-north-american-agri-marketing-competition</u>

¹⁰¹ University of Alberta (2016). Capstone projects give graduating ALES students a market edge. Available at: https://www.ualberta.ca/agriculture-life-environment-sciences/news/ales-news-stories-archive/2016/may/cara-mclean-capstone-projects-give-graduating-ales-students-a-market-edge.html

¹⁰² University of Prince Edward Island. Foods and Nutrition. Available at: https://www.upei.ca/programs/foods-and-nutrition

¹⁰³ University of Lethbridge. Agricultural Studies. Available at: https://www.ulethbridge.ca/future-student/program/agricultural-studies



for an entire year. They also participate in weekly practical field placements across the industry landscape.¹⁰⁴ The university highlights that 95 per cent of graduates were hired in related jobs within a month of graduation from the program.¹⁰⁵

• Algonquin College's Culinary Arts and Food Science program produces skilled graduates with culinary and food science backgrounds equipped with the abilities to create innovative, high quality food products for existing and emerging markets. Students participate in two cooperative education opportunities through the program – one in food science and one in culinary arts. Students may also participate in applied research projects.¹⁰⁶

7.2 Work-integrated learning opportunities connected to the sectors are available on a variety of topics in many institutions across Canada

Work-integrated learning opportunities at postsecondary programs connected to the agriculture and food & beverage manufacturing sectors could be found across Canada. Ontario was the province with the greatest proportion of programs identified in the scan of WIL opportunities conducted for this report (see Figure 9).



Figure 9: Proportion of WIL opportunities at post-secondary programs connected to the agriculture and food & beverage manufacturing sectors by province

Source: Analysis conducted by Medow Consulting based on environmental scan

104 Vancouver Island University. Diploma in Fisheries and Aquaculture Technology. Available at: https://scitech.viu.ca/fisheries-aquaculture/2-year-diploma-program# 105 Vancouver Island University. Why study here. Available at: https://scitech.viu.ca/fisheries-aquaculture/2-year-diploma-program# 106 Algonquin College. Bachelor of Culinary Arts and Food Science. Available at: https://www.algonquincollege.com/programdocs/6180X03FWO.pdf



There are many post-secondary institutions in Canada that offer multiple programs relevant to agriculture and food & beverage manufacturing that include WIL. In the scan of WIL opportunities conducted for this report, the snapshot identified WIL opportunities at post-secondary programs related to the sectors at 54 institutions with a range of one WIL opportunity connected to the sector to 17 at institutions with the highest number of opportunities (see Figure 10).

Figure 9: Proportion of WIL opportunities at post-secondary programs connected to the agriculture and food & beverage manufacturing sectors by province



Source: Analysis conducted by Medow Consulting based on environmental scan

Additionally, several institutions with multiple programs had opportunities to focus on topics in a range of areas across the agricultural and food & beverage manufacturing landscape. For instance, the University of British Columbia offers WIL opportunities in multiple fields of study: agriculture business and management, agriculture production operations, animal sciences, food science, food technology and processing and international agriculture.

In the scan of WIL opportunities, the highest number of programs of those reviewed were identified related to agriculture business and management and food science (see Figure 11).



Figure 11: Proportion of WIL opportunities at post-secondary programs relevant to agriculture and food & beverage manufacturing by field of study



Source: Analysis conducted by Medow Consulting based on environmental scan

Among the field of study topic areas with WIL opportunities were a range of programs providing education and training on a variety of topics including on digital agriculture, international food business and urban agriculture. Some programs aimed to incorporate diversity and cultural issues as part of studies. For instance, Cégep de Victoriaville has a program on organic fruit production that incorporates learnings on emerging and Indigenous cultures as part of educational programming.¹⁰⁷ However, overall, the scan found limited post-secondary programs with WIL opportunities that focused on Indigenous students or an Indigenous worldview.

The programs identified in the environmental scan targeted a range of student types though many WIL opportunities related to agriculture and food & beverage manufacturing focused on students within a related department in the institution and had eligibility restrictions related to registration in a related program or department.

107 Cégep de Victoriaville. Study programs: Organic fruit production. Available at: https://www.cegepvicto.ca/programme/gtea-productions-fruitiere-bio/





7.3 The number of WIL opportunities focused on the agriculture and food & beverage manufacturing sectors is limited compared to other sectors

Growth in enrolment and the number of postsecondary education program offerings related to agriculture and food & beverage manufacturing has resulted in the development of a growing number of WIL opportunities across the country connected to the sectors. However, the number of participants in WIL opportunities connected to the sectors are still limited compared to other fields of study. Statistics Canada data identified that in 2015 there were 5,210 graduates in the field of study of agriculture, natural resources and conservation, which represented two per cent of graduates that year.¹⁰⁸

A CEWIL report which provided a look at WIL in Canada in 2022, including insights on WIL programs focused on different academic disciplines, found that of 10 academic disciplines identified with co-op programs, agriculture had the lowest number of program enrolments.¹⁰⁹ Similarly, a limited amount (less than one per cent) of students participating in co-op work terms in 2019/20 were connected to agriculture.¹¹⁰ In

¹⁰⁸ Statistics Canada. Table 37-10-0187-01 Work-integrated learning participation of postsecondary graduates, by province of residence at interview, level of study, field of study and sex. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710018701

¹⁰⁹ Drewery, D. (2023). 2022 CEWIL Canada Data Report. CEWIL. Available at: <u>https://cewilcanada.ca/common/Uploaded%20files/Public%20Resources/Resource%20Hub/CEWIL%20Canada%20Data%20Report%202022.pdf</u>

¹¹⁰ CEWIL (2020). 2019-20 Annual Report. Available at: https://www.cewilcanada.ca/common/Uploaded%20files/Member%20Resources/agm/2019-20%20 CEWIL%20Annual%20Report%20v3%20(1).pdf



2018/19, 27 co-op work terms were reported to CEWIL related to agriculture by two Canadian institutions – University of Lethbridge (with 13) and Fanshawe College (with 14).¹¹¹ In 2022, 46 co-ops related to agriculture were reported to CEWIL.¹¹² While this represents growth it is still a small number of reported co-op opportunities compared to other topic areas.¹¹³

Certain types of students were less likely to participate in WIL opportunities in the sector. As noted in Section 5, international students face particular barriers to WIL in general. Of the 46 co-ops identified in the CEWIL co-op database connected to the agriculture sector in 2022, 42 involved domestic students and four involved international students.¹¹⁴

In comparison to Canada, some peer countries reported much higher levels of WIL participation related to agriculture. A report on WIL participation rates in Australia found high rates in the agriculture, environmental and related studies discipline (the category in which it is tracked in that country), at the second-highest level of participation at 56.5 per cent among the fields of study reported.¹¹⁵

Nonetheless, students in Canada who graduated from an agriculture-related field of study who did participate in WIL were more likely to report it as beneficial. According to Statistics Canada data, of the students who graduated in a field of study of agriculture, natural resources and conservation in 2015, 43 per cent participated in WIL. Of those who participated in WIL in the agriculture, natural resources and conservation field of study, 77 per cent found it useful to finding a job after graduation. The level of participation in WIL among graduates in all fields of study was higher at 50 per cent and the proportion of those who found it helpful to finding a job after graduation was lower among all graduates at 68 per cent.¹¹⁶

In the food & beverage manufacturing sector, WIL is not among the most common tools to support employee recruitment, according to a recent labour market survey, with only nine per cent of employers reporting they use co-ops and internships as a resource. Other forms of WIL are not mentioned though 18 per cent of survey respondents reported that schools, colleges and universities are also a resource.¹¹⁷ Nonetheless, there are indications of ongoing efforts to expand the number of WIL opportunities connected to the sector.



¹¹¹ CEWIL (2019). 2018/19 Annual Report. Available at: https://cewilcanada.ca/common/Uploaded%20files/Member%20Resources/Association%20Update%20 Content/Annual%20Reports/CEWIL_2019_AGM_Report_- Amended_Oct_17_2019.pdf

¹¹² CEWIL (2023). CEWIL Co-op Statistics Database. Available at: https://cewilcanada.ca/CEWIL/CEWIL/CEWIL/Members-Only/National-Co-op-Statistics-Dashboard.aspx 113 CEWIL figures on work-integrated learning and co-op work terms do not fully align with the data in the snapshot based on the environmental scan due to different ways in which WIL opportunities are reported across different sources of data. However, trends identified remain relevant when analysis is conducted within the same data sources that have the same limitations.

¹¹⁴ CEWIL (2023). CEWIL Co-op Statistics Database. Available at: <u>https://cewilcanada.ca/CEWIL/CEWIL/Members-Only/National-Co-op-Statistics-Dashboard.aspx</u> 115 Universities Australia (2022). Work Integrated Learning in Universities. Available at: <u>https://www.universitiesaustralia.edu.au/wp-content/uploads/2022/03/</u> WIL-in-universities-final-report-April-2019.pdf

¹¹⁶ Statistics Canada. Table 37-10-0187-01 Work-integrated learning participation of postsecondary graduates, by province of residence at interview, level of study, field of study and sex. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710018701

¹¹⁷ FPSC (2021). 2020 Labour Market Survey. Available at: https://fpsc-ctac.com/wp-content/uploads/2021/01/2020-LABOUR-MARKET-INFORMATION-SURVEY.pdf



8.

OPPORTUNITIES AND APPROACHES TO ENHANCING WIL IN THE AGRICULTURE AND FOOD & BEVERAGE MANUFACTURING SECTORS



This section highlights opportunities to enhance experiential and work-integrated learning to increase and improve transitions for students from education to jobs connected to the agriculture and food & beverage manufacturing sectors. It also identifies challenges in making progress in these areas and promising practices that can be drawn upon for inspiration. Recommended next steps are highlighted that will help with seizing the identified opportunities. The recommended actions target CAHRC in some capacity, either in leading or supporting roles. However, this still entails CAHRC working collaboratively with employers, post-secondary institutions and other stakeholder groups.

8.1 Strategically develop work-integrated learning and experiential learning experiences related to the agriculture and food & beverage manufacturing sectors

Key opportunities and challenges

There is strong potential to expand upon the growth that has already occurred in WIL opportunities in post-secondary programs connected to the sectors. When comparing the number of opportunities at programs related to agriculture and food & beverage manufacturing relative to other sectors, as well as when looking at approaches in other countries, there is clearly room to grow. There are also indications there is untapped potential in terms of growing participation in WIL in the agriculture sector, as participants in WIL connected to the sector have highlighted greater benefits from WIL compared to WIL participants in other fields of study.

However, enhancing WIL in the agriculture and food & beverage manufacturing sectors is not simply about increasing the number of opportunities relevant to the sectors but doing so in a way that is strategic and provides the most benefits in an efficient and effective way. As HECQO has highlighted, the quality of workintegrated and experiential learning opportunities is more important than the quantity.¹¹⁸

There are opportunities to make existing and new WIL opportunities more strategic. Indeed, there can be a disconnect between the types of programs post-secondary institutions are offering and the types of programs that are needed. The food & beverage manufacturing sector has highlighted that there are fewer programs available in areas where there are greater labour shortages in the sector.

Furthermore, while some institutions and employers have well-developed WIL programs, others may not. This can impact the effectiveness of programs as students and employers may not be aligned on what they can get out of WIL opportunities. For instance, some employers may expect students to have more skills than they do while students may expect more development opportunities than were provided.

Employers with smaller organizations or who are new to WIL are more likely to encounter such challenges. This can impact the experiences of students and employers, as well as potentially make students less likely to pursue opportunities in the sectors in the future. A 2019 survey identified that employers believed it was

118 HEQCO (2016) Hunting for Good WIL: Put quality over quantity. Available at: https://heqco.ca/heqco-hunting-for-good-wil-put-quality-before-quantity/





challenging to find employees with the right combination of technical and soft skills, and they expressed an interest in building stronger relationships with post-secondary institutions to help prepare students to meet workplace needs.¹¹⁹

Promising practices

WIL opportunities that incorporate best practices identified by organizations such as CEWIL and BHER are most likely to succeed in meeting objectives. This means being thoughtful about objectives, collaborating with key partners and creating pathways to continuous improvement. Stakeholder organizations have identified the value of tools such as mentorship and career advisory services as key to student success in WIL, as well as helping to support lifelong learning.¹²⁰ Students in the SWPP program benefited from supports including training, mentorship, guidance, and regular meetings and check-ins.¹²¹ In the environmental scan of WIL opportunities conducted for this report, there were limited post-secondary programs that identified career pathways that were closely aligned with "destination occupations" identified by CAHRC for both sectors. However, there were some programs identified with opportunities that were closely connected to these skill needs that will be important for the future of the sectors. For instance, the British Columbia Institute of Technology's Food Technology program reported the top jobs graduates obtained related to the program, with nearly 90 per cent of those employed in program-related jobs reporting that they worked in two occupations identified as "destination occupations" identified by CAHRC - chemical technologists and technicians (61 per cent of graduates) and testers and graders, food and beverage manufacturing (26 per cent of graduates).122

 ¹¹⁹ Employment and Social Development Canada (2021). Evaluation of the Student Work Placement Program. Available at: https://www.canada.ca/content/dam/canada/employment-social-development/corporate/reports/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf

 120 Currie, K. (2021). A qualitative research review of student learning after work- integrated learning placements from a faculty perspective. CEWIL. Available at: https://tess/bubic%20Resources/research/The%20Practice%200f%20Co-op%20and%20Work-Integrated%20Learning%20in%20

 the%20Canadian%20Context%20(2).pdf

¹²¹ Employment and Social Development Canada (2021). Evaluation of the Student Work Placement Program. Available at: https://www.canada.ca/content/dam/canada/employment-social-development/corporate/reports/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf 122 EBCIT (2022). Program overview (3-year average) – BC Diploma, Associate Degree and Certificate Student Outcomes: Food Technology. Available at: https://www.bcit.ca/files/ir/gp/5135dipma.pdf



Next steps for consideration

The following recommended next steps will help with seizing the opportunities connected to strategic development of work-integrated learning and experiential learning experiences related to the agriculture and food & beverage manufacturing sectors. The recommended actions target CAHRC in some capacity, either in leading or supporting roles, and involve CAHRC working collaboratively with employers, post-secondary institutions and other stakeholder groups.

There would be significant benefits to growing and enhancing experiential learning and WIL opportunities relevant to the agriculture and food & beverage manufacturing sectors in Canada. Doing so would not only benefit the sectors but also students looking to transition from school to work and interested in new and diverse opportunities. As the literature has demonstrated, WIL plays an important role in helping students choose career pathways. Efforts that can be undertaken to develop more strategic WIL programming can help to better transition students participating in them to the agriculture and food & beverage manufacturing sectors. Doing so would also make opportunities more beneficial to all relevant stakeholders including students, employers and post-secondary institutions.

CAHRC can help to heighten collaboration between employers and post-secondary institutions with an aim to enhance WIL opportunities and make them more strategic and aligned with the needs of the sectors.

CAHRC can:

 Play a convening role between post-secondary institutions and the agriculture and food & beverage manufacturing sectors to improve alignment between program offerings and work-integrated learning opportunities with areas in which there are current and future needs in the labour market including identified "destination occupations"

CAHRC can also target its efforts at marketing and provide tools and resources that can help make WIL experiences more effective. CAHRC can work collaboratively with others in the sector to:

- Target marketing and campaign materials toward greater student participation in programs that would provide skills connected to labour shortages or in which future needs have been identified
- Provide employers and students with tools and training that will enable them to better understand the opportunities and challenges they may face with different types of WIL opportunities to better decide which are most relevant and effective
- Support development of mentorship and other tools that can help students get the most out of WIL opportunities connected to the sectors and support their development of lifelong learning



8.2 Support more interdisciplinary approaches at post-secondary institutions for WIL opportunities related to agriculture and food & beverage manufacturing

Key opportunities and challenges

One of the most significant benefits of WIL is in providing students with opportunities to get hands-on work experience related to their field of study. However, it has been noted that there are benefits to using WIL approaches to also expose students to sectors outside their field of study and to provide them with a larger range of skills and experiences including soft skills.

As part of the environmental scan conducted for this report, it was found that many WIL opportunities connected to the sectors had eligibility restrictions related to registration in a related program. Additionally, challenges were identified in the literature in integrating agricultural programs with other program offerings at post-secondary institutions.

Nonetheless, many post-secondary institutions are now taking more significant steps to apply interdisciplinary approaches. Interdisciplinary approaches to post-secondary education that break down academic silos, enabling students to be exposed to different fields and to connect with communities, industries and organizations outside an academic setting are becoming an increasingly important theme across the educational landscape.¹²³

Promising practices

The WIL team at the University of Waterloo has noted that there should be efforts to break down the "traditional notion" that students should only participate in work experiences related to their academic discipline.¹²⁴ Similarly, the University of California has identified that the challenges facing agriculture and food systems require interdisciplinary approaches that reflect intricate society and environment linkages, including new approaches to design and management in the field.¹²⁵

The Enterprise Machine Intelligence and Learning Initiative (EMILI) is an industry-led non-profit that aims to support growth of digital agriculture. It partners with community colleges and universities in Winnipeg to offer internships and co-ops focused on digital agriculture, targeting students in academic programs not focused on the agriculture sector such as graduates with a credential in artificial intelligence.¹²⁶

125 Kaplan, K. et. al. (2016). Learning from the Ground Up: Experiential learning in food and agriculture systems education at the University of California. UC Global Food Initiative. Available at: https://www.ucop.edu/global-food-initiative/best-practices/experiential-learning/learning-from-the-ground-up.pdf 126 EMILI (2023). Work-integrated learning for students. Available at: https://emilicanada.com/wil/students/

¹²³ McQuarrie, J. (2021). Monitoring Trends in Academic Programs: Agriculture. Higher Education Strategy Associates. Available at: <u>https://higheredstrategy.com/</u> wp-content/uploads/2021/06/2021-02-09-MTAP-vol3-iss1-v3.pdf

¹²⁴ Fannon, Anne-Marie (2021). Work-integrated learning's future in Canadian industry. TheFutureEconomy.ca. Available at: https://thefutureeconomy.ca/interviews/ work-integrated-learnings-future-in-canadian-industry/





Next steps for consideration

The following recommended next steps will help with seizing the opportunities connected to support for more interdisciplinary approaches at post-secondary institutions for WIL opportunities related to agriculture and food & beverage manufacturing. The recommended actions target CAHRC in some capacity, either in leading or supporting roles, and involve CAHRC working collaboratively with employers, post-secondary institutions and other stakeholder groups.

An enhanced interdisciplinary approach to WIL would help students develop more diverse skill sets and connect them to institutions in the agriculture and food & beverage manufacturing sectors of which they may have otherwise lacked awareness. Doing so will improve the effectiveness of WIL programs connected to the sectors and enable greater connections to the sectors across the population of students at colleges and universities in Canada.

CAHRC can work with post-secondary institutions and employers to help them strengthen connections between educational programs connected to agriculture and the food & beverage manufacturing sectors and other related programming at their institutions. CAHRC can advocate for and support post-secondary institutions and employers to:

- Strengthen connections between post-secondary departments with programs connected to agriculture and food & beverage manufacturing, and departments focused on other relevant topics such as business and engineering, starting with institutions identified as having more robust WIL programming connected to the sectors
- Expand eligibility for WIL to a wider range of students beyond those within specific departments or faculties connected to agriculture and food & beverage manufacturing
- Ensure employers providing WIL experiences offer opportunities to develop transferable skills including soft skills to maximize the ability of students to go into in-demand occupations even if they are not studying in that field



8.3 Improve access to experiential and work-integrated learning opportunities by increasing awareness on the benefits of working in the agriculture and food & beverage manufacturing sectors

Key opportunities and challenges

Amid challenges to attracting and retaining workers in the agriculture and food & beverage manufacturing sectors, there is a need to heighten awareness on the benefits of the sectors to all types of students throughout their education. While there are some existing initiatives that aim to increase agricultural and food literacy at elementary and secondary school levels in Canada, more can be done to boost the value proposition of a career in the sectors to young people. Doing so could also help to increase demand for WIL opportunities connected to the sectors.

As underrepresented groups have been found to be less likely to participate in WIL opportunities in general, there is value in better targeting these groups to expand participation.¹²⁷ International students face specific challenges to accessing certain WIL opportunities and addressing barriers they face could help to increase interest and participation in WIL related to the sectors.

Awareness of the sectors can be heightened through experiential learning as well. Indeed, experiential activities are increasingly being used not only to support innovative thinking but also to raise awareness about organizations or industries. For instance, hackathons provide an opportunity to not only bring awareness to an organization or sector with a low level of commitment but can also be targeted to specific types of groups such as underrepresented populations who may otherwise have challenges breaking into careers in the sectors through other pathways.¹²⁸

Promising practices

Other jurisdictions have taken steps to encourage students early on to transition to careers in agriculture such as the Victorian Government in Australia, which has developed a \$5.5-million Secondary Schools Agriculture Fund. The Fund has an objective to increase student and teacher awareness about agriculture-related careers, as well as supporting student transitions to agriculture careers.¹²⁹

In Australia, experiential learning has also been used to increase awareness among students about work opportunities related to the agriculture sector. For instance, Australian post-secondary institutions have used field trips to provide STEM undergraduate students with a better understanding of the big picture issues facing organizations and communities related to agriculture and environmental science, as well as the type of work being done in the areas. The level of awareness associated with these kinds of opportunities can be comparable to work placements but involve less levels of time commitment.¹³⁰

Additionally, some provinces have made progress in helping to improve access to international students. In New Brunswick a partnership between CEWIL and Future NB was recently announced to help postsecondary institutions develop specific programming

¹²⁷ Itano-Boase, M., et. al. (2021). Exploring Diversity and Inclusion in Work-Integrated Learning: An Ecological Model Approach. International Journal of Work-Integrated Learning. Available at: https://eric.ed.gov/?id=EJ1313423

¹²⁸ Ismail, N. (2018). Raising awareness through diversity hackathons. Information Age. Available at: https://www.information-age.com/change-diversity-hackathons-9772/ 129 Victoria Government. Secondary schools agriculture fund. Available at: https://www.vic.gov.au/secondary-schools-agriculture-fund

¹³⁰ Edwards, D. et al. (2015). Work Integrated Learning in STEM in Australian Universities. Australian Council for Educational Research. Available at: https://research.acer.edu.au/cgi/viewcontent.cgi?article=1046&context=higher_education



for international students, removing funding barriers and increasing access to WIL.¹³¹ Additionally, BHER is also working on improving access for international students. It recently launched a request for proposals in March 2023 to build partnerships to help create quality WIL experiences for international students in Canada.¹³² There were some examples identified of programming related to agriculture and food & beverage manufacturing at Indigenous post-secondary institutions. An example of a program with a WIL component is at the Saskatchewan Indian Institute of Technologies, which offers an agri-food processing microcredential that includes a work placement.¹³³

Next steps for consideration

The following recommended next steps will help with seizing the opportunities connected to improving access to experiential and work-integrated learning by increasing awareness on the benefits of working in the agriculture and food & beverage manufacturing sectors. The recommended actions target CAHRC in some capacity, either in leading or supporting roles, and involve CAHRC working collaboratively with employers, post-secondary institutions and other stakeholder groups.

Improving awareness of the opportunities in the agriculture and food & beverage manufacturing sectors would help to increase post-secondary enrolment in relevant fields and to attract nontraditional students to agriculture degrees. Experiential and work-integrated learning can help to support increased awareness by providing key hands-on learning experiences. Focusing efforts on diversity and inclusion can also help to expand the base of students who may participate in postsecondary education and experiential learning relevant to the sectors.

CAHRC could play a role in targeting messaging related to the sectors to increase awareness in key areas including at education levels before students enter post-secondary and among students at all education levels who may face barriers to workintegrated learning opportunities. CAHRC can:

- Increase focus on outreach to K-12 schools to raise awareness of the sectors and provide opportunities for students to learn more about what agriculture and food & beverage manufacturing entails through coursework or field trip experiences
- Enhance support for experiential learning opportunities such as hackathons or field trips to help recruit students from a wider array of fields and help enable students who may face barriers to WIL opportunities to learn more about the sectors
- Build on existing efforts and develop new strategies to enable better access to WIL opportunities among international students
- Increase outreach and marketing to underrepresented populations including organizations focused on immigrants and Indigenous peoples to support greater awareness of the benefits of the sectors and education and training opportunities connected to them
- Enhance connections with Indigenous post-secondary institutions that have some activities in agriculture and food, and explore industry partnerships to support development of more educational opportunities and WIL related to agriculture

¹³¹ CEWIL (2023). CEWIL Canada and Future NB Partnership announcement. Available at: <u>https://www.cewilcanada.ca/CEWIL/Updates-and-Events/Updates-and-News/2023/CEWIL%20Canada%20and%20Future%20NB%20Partnership%20announcement.aspx</u>

¹³² BHER (2023). BHER launches request for proposals focused on advancing opportunities for international students. Available at: https://bher.ca/news/bher-launch-es-request-proposals-focused-advancing-opportunities-international-students

¹³³ SIIT. Agri-food processing microcredential program. Available at: https://siit.ca/programs/agri-food-processing/



8.4 Improve data availability and collection to better share work-integrated learning and experiential learning opportunities related to the sectors and assess program effectiveness

Key opportunities and challenges

To obtain a better understanding of the benefits of experiential and work-integrated learning relevant to the agriculture and food & beverage manufacturing sectors, it is critical to have a strong understanding of the landscape. Indeed, education and training programs can only be successful if Canadians can accurately identify the skills required for certain jobs, as well as the courses or programs that are available to teach those skills.¹³⁴

In reviewing the landscape for experiential learning and WIL opportunities relevant to the agriculture and food & beverage manufacturing sectors in Canada, it is clear there are limitations to the data available to conduct a full analysis. There was also significant variability in the type and level of detail of information on postsecondary institution websites on the availability of WIL and experiential learning programs relevant to the sectors. Information on what WIL programs entail, duration of programs, career opportunities and graduate success stories were also varied.



Data challenges were affirmed in interviews with key stakeholders. Limited information on the availability of programs can impact the ability for students to pursue options that are both aligned with their interests and connected to these sectors. Furthermore, it is important to have methods for feedback to determine the effectiveness of programs in supporting transitions from school to work.

Nonetheless, this is a challenge across the experiential learning and WIL landscape. Assessments so far on effectiveness have typically focused on co-op opportunities and insights are not as available on other forms of WIL. There are also gaps in some of the data sources that are available and relied upon to make conclusions on the effectiveness of WIL. For instance, inaccurate and inconsistent

134 Bonen, T. and Oschinski, O. (2021) Why Canada needs an information tool linking training, skills, and jobs. Policy Options. Available at: <u>https://policyoptions.irpp.</u>org/magazines/january-2021/why-canada-needs-an-information-tool-linking-training-skills-and-jobs/



reporting was identified as a challenge in a review of the federal government's SWPP, creating limitations in the ability to analyze data in some areas.¹³⁵ It has been noted there is a need for new datasets to provide meaningful insights on experiential and work-integrated learning in Canada.¹³⁶

Promising practices

There are currently ongoing efforts to improve tracking on WIL opportunities in Canada. CEWIL publishes data that is voluntarily reported by post-secondary institutions in a national directory that includes information such as type of WIL, academic discipline and duration. The organization also analyzes the data and identified annual trends in 2022.

Some post-secondary institutions with programs and WIL opportunities relevant to the sectors published student testimonials or data on educational and employment outcomes of graduates. However, this kind of information was shared by post-secondary institutions in less than 20 per cent of programs with WIL opportunities identified in the environmental scan. Student perspectives specific to WIL opportunities, when they were shared, typically came in the form of testimonials. While these are helpful to support marketing and provide insights on benefits to students based on individual experiences, these cannot provide as meaningful insights on trends as could be accomplished through more rigorous data-reporting methods.

The British Columbia Institute of Technology shares important information on its Food Technology program including employment and education outcomes. As part of education outcomes, graduating students reported on levels of satisfaction with their education, quality of instruction and relevance of courses. Students in the program also assessed the amount of practical experience received through the program (with nearly 80 per cent rating it as good or very good).¹³⁷

Additionally, the University of British Columbia's Master of Food and Resource Economics provides another example of the type of information that would help provide important insights to students including identifying career outcomes of graduates by organization type and sectors of employment.¹³⁸



138 University of British Columbia. Work after MFRE. Available at: https://mfre.landfood.ubc.ca/work-after-mfre

 ¹³⁵ Employment and Social Development Canada (2021). Evaluation of the Student Work Placement Program. Available at: https://www.canada.ca/content/dam/canada/employment-social-development/corporate/reports/evaluations/student-work-placement/evaluation-student-work-placement-prog.pdf
 136 Usher, A. (2020). How to answer questions about WIL. Higher Education Strategy Associates. Available at: <a href="https://https//https://https/

¹³⁷ BCIT (2022). Program overview (3-year average) – BC Diploma, Associate Degree and Certificate Student Outcomes: Food Technology. Available at: https://www.bcit.ca/files/ir/gp/5135dipma.pdf



Next steps for consideration

The following recommended next steps will help with seizing the opportunities connected to improving data availability and collection to better share work-integrated learning and experiential learning opportunities related to the sectors and assess program effectiveness. The recommended actions target CAHRC in some capacity, either in leading or supporting roles, and involve CAHRC working collaboratively with employers, postsecondary institutions and other stakeholder groups.

While there are ongoing efforts to improve data collection and tracking of workintegrated and experiential learning opportunities by stakeholder organizations, efforts can be undertaken that are more specifically focused on agriculture and food & beverage manufacturing to improve data availability which will ultimately help to boost the effectiveness of programs focused on these topics.

CAHRC could work with post-secondary institutions and employers to develop a system to track WIL experiences in a consistent way and post it publicly for students to access, providing greater awareness and transparency around WIL opportunities connected to the sectors and their effectiveness. CAHRC can work collaboratively to:

- Create a database of WIL and experiential learning opportunities connected to the agriculture and food & beverage manufacturing sectors, aligned with existing databases, working closely with employers, postsecondary institutions and other stakeholder groups to populate the data
- Evaluate experiences by surveying students and employers following WIL opportunities to help determine whether objectives are being met, to identify effectiveness of different forms of WIL and to determine areas in which there are gaps or challenges that need to be addressed
- Connect with post-secondary institutions to develop a consistent approach for reporting on job opportunities connected to postsecondary programs and how they connect to future skill needs in the sectors, as well as skills that can be developed through associated experiential and WIL opportunities



9. CONCLUSION







Labour challenges in the agriculture and food & beverage manufacturing sectors can have wide-ranging impacts, with potential detrimental impacts in key areas such as on share of global exports and productivity. In the midst of significant levels of retirements among aging workers and as young Canadians have been slow to fill labour gaps, the potential detrimental impacts go beyond economic considerations though. There are also significant potential impacts on food security and the ability to operate sustainably if current trends continue.¹³⁹

There is an urgent need to address labour challenges in the sectors. The agriculture and

food & beverage manufacturing sectors should be reconceptualized as priority industries given their importance. It is critical to enhance efforts to connect new workers to these industries through approaches such as experiential and workintegrated learning. Taking steps to capitalize on the opportunities that have been identified would go a long way in ensuring the industry has workers with the skills needed to lead the sectors into the future.

139 Stackhouse, J. (2019). Farmer 4.0: How the Coming Skills Revolution Can Transform Agriculture. RBC. Available at: <u>https://thoughtleadership.rbc.com/farmer-4-0-how-the-coming-skills-revolution-can-transform-agriculture/</u>





WORK-INTEGRATED LEARNING AND EXPERIENTIAL LEARNING OPPORTUNITIES CONNECTED TO THE AGRICULTURE AND FOOD & BEVERAGE MANUFACTURING SECTORS