



Planning for Tomorrow 2.0 Summary Report, 2017

ONTARIO AGRICULTURAL COLLEGE, UNIVERSITY OF GUELPH

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Orion

Global Business Sustainability Consultants

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SYNTHESIS

Agri-Food Network



ONTARIO AGRICULTURAL COLLEGE

UPDATED STUDY SHOWS A GROWING AGRI-FOOD SECTOR WITH AN INCREASING DEMAND FOR QUALIFIED AND EXPERIENCED GRADUATES

Second time College has polled industry in Ontario about HR needs

Ontario's agriculture and food industry continues to be a strong driver of economic growth and importance in the province. A mixed methods approach of surveys, interviews, and focus groups of almost 200 agriculture and food sector employers has provided a snapshot of the hiring trends and demands in Ontario's largest employment sector.

The demand for qualified food and agriculture graduates is growing. OAC has increased enrollment by 30% over the last five years. Since 2012, key programs such as the Bachelor of Science in Agriculture program have seen an enrollment increase of 50%, but the demand for graduates is still growing. The current study indicates that there are **currently 4 jobs for every OAC graduate entering Ontario's food and agriculture sector**. Not only is the sector growing and this study identified a gap between graduates and employers' needs, but **this gap is expected to continue to grow**. Approximately half of those surveyed project a general increase in the average number of new hires over the next five years.

The survey also examined employer demand for formal training and post-secondary education in the agri-food sector. **77% of food employers and 79% of agriculture employers have a preference for formal training in food and agriculture graduates** and indicated that academic training in agriculture and food is just as important or more important than other training. The majority of companies surveyed employ a workforce that requires post-secondary education as more than half of their employees have a diploma, bachelors, masters, and/or PhD. However, the survey also revealed that there is a large gap in the supply of trained graduates and therefore, **employers are having difficulties in finding suitably trained graduates**.

Finally, respondents also communicated a **strong demand for co-op programs and experiential learning** as both a benefit for the hiring companies and the graduates. 65-74% of survey respondents indicated that their organization would be interested in opportunities to hire OAC students, indicating strong support for an OAC co-op program.

The Ontario Agricultural College (OAC) remains a foundational institution in Ontario's agriculture and food sector, as it generates new ideas, research and solutions for evolving challenges around agricultural and food production. OAC offers certificate, diploma, undergraduate, and graduate programs that prepare students to become industry and policy leaders. Through an

experiential and multi-disciplinary approach, OAC students continue to shape the agriculture and food sector at local, national, and international scales.

Ontario's agri-food sector employs more than 780,000 people and contributes over \$37.5 billion to the province's economy, supporting farmers, agri-food businesses and communities¹. As the sector continues to grow, there is a continued need to develop highly qualified professionals (HQPs) through targeted and effective teaching and training programs.

Project Overview

The key objective of this study was to identify and evaluate the human resource needs in the agriculture and food sector for the next five years in relation to education programs offered by OAC. In addition to understanding the needs of the primary agriculture and agri-business sectors, a significant emphasis for this research was to develop a greater understanding of the needs of the food sector.

A study was commissioned in 2011 (released in 2012) by OAC to determine the projected needs for HQP in the agriculture and food sectors in Ontario. This study confirmed a significant gap exists between the supply of graduates from OAC food and agriculture programs, and the demand of the sector. This demand was estimated to exceed supply by as much as 3:1 for programs such as the BSc. Agriculture. Other key findings included:

- Employers in Ontario's agriculture and food sector will increase the number of hires directly from University over the next few years by 10-20% on average
- OAC delivers well on technical and science-based skills

The results of the 2012 study led to changes in program curriculum to include more opportunities for soft skill development such as team work, leadership, communication and public speaking.

With Planning for Tomorrow 2.0, OAC was looking to update the data and reevaluate the supply-demand gap for the next five years. The results of this study will inform the leadership of OAC, as well as agriculture and food sector leaders, to help with long-term planning (funding, resource allocation, student recruitment, curriculum content and physical resources) and to help prepare students for future careers in the agriculture and food sector. An additional beneficial outcome from the project approach is an increased level of awareness among stakeholders in the food sector about OAC's programs and graduate students.

Objective:

- Identify and evaluate the human resource needs in the agriculture and food sector for the next 5 years in relation to education programs offered by OAC

Goal:

¹ [Ontario Ministry of Agriculture, Food and Rural Affairs. \(2015\).](#)

- Help to inform long-term planning (funding, resource allocation, curriculum content, and physical resources)
- Help prepare students for future careers in the ag and food sector
- Help to attract potential students and market the ag and food sector to youth

The following figure outlines the four key phases for this project.

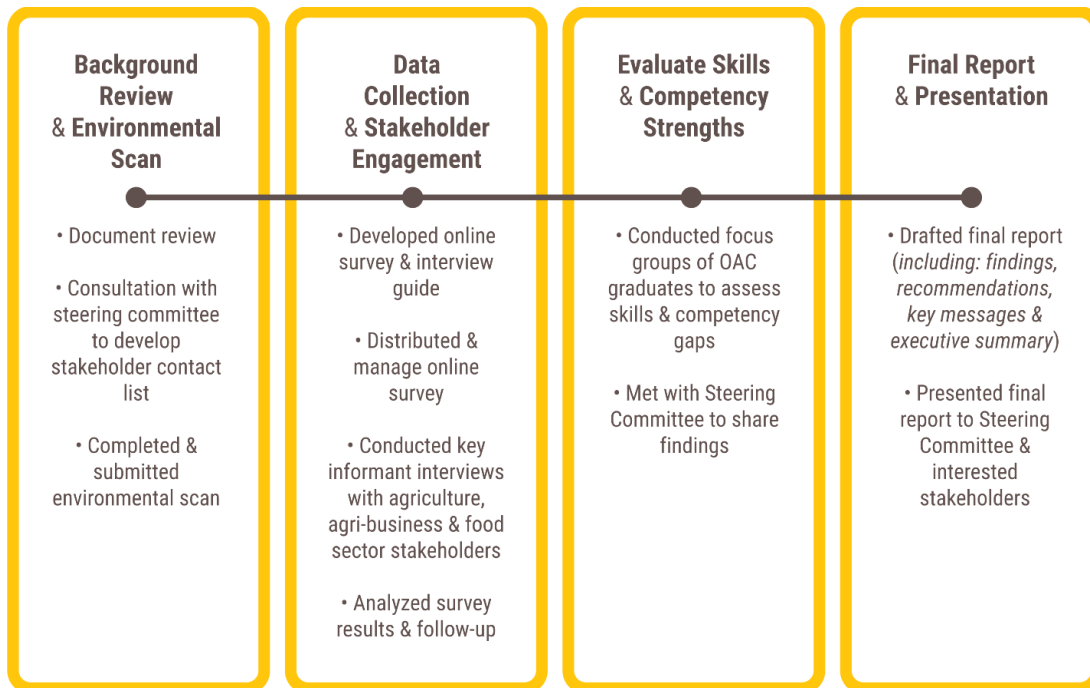


Figure 1: Overview of Planning for Tomorrow 2.0 project phases

Environmental Scan

An environmental scan was utilized to assess the current trends and issues facing human resource needs in the agriculture and food industry. Overall, the environmental scan reiterated that *Planning for Tomorrow 2.0* is very timely, as there is unprecedented attention on the agri-food industry across Canada at this time. Key themes that emerged from the environmental scan include the following:

- Agri-food is positioned for significant growth in Canada
- There is demand for a formally trained agri-food workforce
- There is a need to align skills development with labour market needs
- There is national and international demand for experts in food, agriculture, renewable natural resources and environment

A report released by the Advisory Council on Economic Growth suggests that Canada's agfood (agriculture and agri-food) sector is positioned for significant growth.² The report, led by Dominic Barton, suggests that Canada is already globally recognized for food safety and has strong clusters such as the University of Guelph (the only academic institution mentioned in the report). Global opportunities that Canada's agfood sector can leverage include: exploring emerging market demand for higher-value food (e.g. specialty crops, proteins, functional foods) and the global supply constraints in land, water, energy, and carbon emissions.

Among the largest employers and economic engines in Canada, the agri-food sector is forecasted to grow.³ Furthermore, as the global middle class continues to expand, demand for agri-food production is estimated to rise 70% by 2050. Canada is positioned as a leader in meeting global objectives to provide safe, nutritious and sustainably produced food for growing populations. ***However, meeting this demand will require a strong and stable output of highly qualified personnel with formal training in agriculture and food.***

Aligning skills development with the agri-food industry as it continues to grow and evolve to meet global challenges such as climate change and an expanding middle class will continue to be a challenge. A report from the United States Department of Agriculture, led by Purdue University, anticipates job opportunities in food, agriculture, renewable natural resources, and environmental positions to grow. It is expected that the strongest job market will be for plant scientists, sustainable biomaterials specialists, water resource scientists and engineers, precision agriculture specialists, and farm animal veterinarians.

OAC is a core provider of highly qualified agriculture and food personnel, and is positioned to meet the growing demand through their course offerings.

² [Government of Canada: Advisory Council on Economic Growth, 2017. *Unleashing the growth potential of key sectors.*](#)

³ During the past 5 years, agfood exports have had an average annual growth of 9.5%.

Stakeholder Consultation

Our approach included the following data collection methods:

- **2 online surveys (agriculture sector focused; food sector focused)** were distributed
 - 93 Agriculture/agri-business respondents
 - 59 Food sector respondents
 - Total of 123 organizations representing 22% of Ontario's agri-food employment
- **Key informant interviews** with agriculture and food stakeholders (primarily employers, including senior management and human resource staff)
- Hosted one **student focus group** with OAC soon-to-be graduates and graduates
 - 12 attendees and 4 telephone interviews

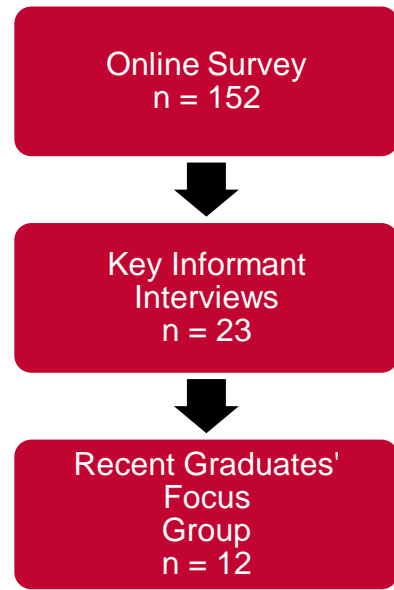


Figure 2: Data collection methods

Overview of Findings

In order to provide OAC with rich, contextual data that represents the diversity found across Ontario's agri-food sector, two online surveys were developed. One survey focused on the agricultural sector (e.g. primary production, agribusiness and financial subsectors); the other was developed specifically for the food sector (e.g. food processing, manufacturing, quality assurance, research and development).

In total, ***the agricultural survey was completed by 93 stakeholders representing 79 organizations.*** A majority of the survey respondents were in the agricultural inputs and services sub-sector (51%), with 18% from primary agriculture and 14% from commodity organizations. The majority of survey respondents were working at the management level with others coming from the director, president, owner level. Interview participants included financial and policy sectors, as well as agri-business and input suppliers.

In total, ***the food sector survey was completed by 59 stakeholders representing 44 organizations.*** A majority of the respondents were in the food manufacturing sub-sector (46%), with 36% from food processing and 32% from food retail companies/organizations. Survey respondents were working at the VP/senior executive level, director, manager or other. Interview participants included a mix of food processing/manufacturing companies, retail and restaurant groups and trade associations.

Both agriculture and food respondents indicated similar demands for soft skills including:

- Communication skills
- Leadership
- Relationship building
- Teamwork/collaboration
- Project management

“WE’D LOVE TO SEE MORE SOFT SKILL DEVELOPMENT AMONG GRADS, BUT [WE] RECOGNIZE THAT 70% OF SKILL DEVELOPMENT WILL HAPPEN ON THE JOB”

- Agriculture sector interviewee

Similarly, a summarized list of commonly mentioned technical skills from all sectors includes:

- Business acumen
- Software knowledge (Excel)
- Data analysis
- Succinct technical writing
- Knowledge of new technology and innovations
- Regulatory knowledge

“TECHNICAL SKILLS ARE STRONG BUT DO NOT TRANSLATE WELL TO THE REAL WORLD. WE OFTEN MEET GRADUATES THAT LOOK GOOD ON PAPER, BUT DO NOT INTERVIEW WELL”

- Food sector interviewee

Overall, survey respondents and interviewees indicated that OAC graduates emerged with strong technical skills. As found in the previous Planning for Tomorrow study, soft skills (such as communication, presentation skills, leadership) are still found to be lacking. However, interviewees noted that graduates with co-op or internship experience tend to have more refined soft skills. Furthermore, some organizations/companies acknowledged that soft skills are often built upon entering the workforce.

Key Findings

Demand Exceeds Supply

Based on the survey results, the demand potential for OAC graduates currently exceeds the supply. There are 4 jobs available for every OAC graduate entering the agri-food sector. Over the past 5 years, OAC graduates have only filled 50% of the jobs in the agricultural companies surveyed and 25% of the jobs in the food companies surveyed. The agriculture sector regularly and actively recruits from OAC more than the food sector.

These results demonstrate the current growth that is already occurring in the agri-food sector. There was also overwhelming feedback from respondents reporting difficulties in finding recruits. In 2012, only 40% of agricultural companies and 28% of food companies reported difficulties in finding new hires. This has almost doubled in 2017 as 67% of the agricultural companies surveyed and 51% of the food sector companies surveyed reported difficulties in finding appropriate and qualified recruits.

THERE ARE 4 JOBS AVAILABLE FOR EVERY OAC GRADUATE ENTERING THE AGRI-FOOD SECTOR.

Examples of positions that were difficult to fill include: sales, land resource positions (soil science, geology, etc.), agronomists, and policy/regulatory specialists.

**THE AGRICULTURE SECTOR
REGULARLY AND ACTIVELY
RECRUITS FROM OAC MORE
THAN THE FOOD SECTOR.**

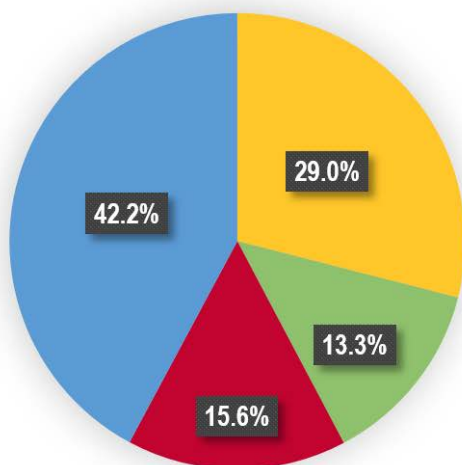
Not only has the agri-food sector grown, and companies are struggling to find employees to meet their needs, but the companies surveyed predicted it will continue to grow. 56% of agriculture respondents and 44% of food respondents projected an increase in the average number of new hires over the next 5 years.

Preferences for Formal Training in Agriculture and/or Food

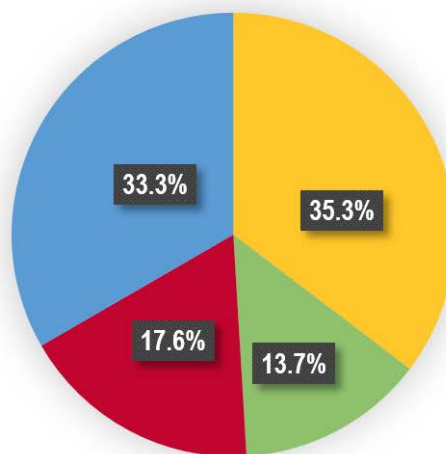
The agri-food sector is a high calibre field that requires formal training to keep up with the quickly evolving needs of new and innovative technology. The results of this study showed that there is a strong demand for formal training in agriculture and food. **77% of food organizations/employers and 79% of agriculture organizations/employers indicated a preference for formal training in agriculture and food.** This is an increase of 20% since the last study in 2012. As well, 58% of agricultural companies and 51% of food companies require more than HALF of their employees to have post-secondary education. OAC provides the sector with students that cover the entire farm to fork spectrum. Agriculture may play an important role in the food sector as consumers demand to understand how their food is produced. This further supports the notion that the high tech and high growth agri-food sector demands highly qualified personnel with formal training and understanding in agriculture and food.

“[GRADS] WILL NEED MORE UNDERSTANDING OF WHERE AND HOW INGREDIENTS ARE SOURCED AND MADE – IT IS AN EXCITING TIME TO BE IN THE FOOD BUSINESS. WE HOPE YOUTH WILL REALIZE IT AND GET INTO IT!”
- Food sector interviewee

AGRICULTURE SECTOR



FOOD SECTOR



■ 0-25% require post-secondary education
 ■ 25-50% require post-secondary education
 ■ 50-75% require post-secondary education
 ■ 75-100% require post-secondary education

Interviewees in the food sector highlighted how a shift in consumer demand (wanting to understand where and how food is produced) is resulting in a larger demand for graduates with a background in agriculture as they offer a nuanced understanding of the sector and its practices. Food sector interviewees indicated this trend is expected to continue in the future.

Low Familiarity of OAC in Food Sector

While there was high familiarity and engagement with OAC for the agriculture sector (83% of respondents are familiar with OAC and 57% were OAC grads themselves), there was significantly lower familiarity and engagement with OAC in the food sector. Only 20% of survey respondents were OAC grads themselves and only 51% of those who completed the survey were familiar with OAC. Similarly, 41% stated they had limited knowledge of OAC and 8% had no familiarity with OAC at all. Food sector interviewees demonstrated there is an inaccurate perception of OAC and low awareness of the variety and value of OAC programs. OAC's name is found to be misleading or confusing as food sector stakeholders were unaware of the potential hires within OAC and perceived that OAC was primarily agriculturally-focused. Once they understood that OAC has a broad set of programs, not just agriculture, they were much more receptive and very favorably viewed graduates in specific programs (e.g. business) with exposure to agriculture and food being as being a very strong value add.

Demand for Co-op Program and Experiential Learning

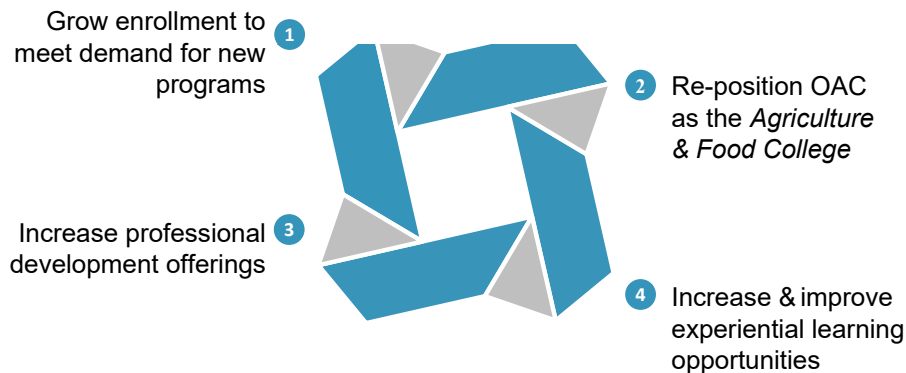
From both the agriculture and food respondents, there was a strong demand for experiential learning opportunities (including co-op programs, internships, etc.). 65% of agricultural respondents and 74% of food respondents indicated that their organization would be interested in opportunities to hire OAC students during their formal education. Key informants provided several examples of previous co-op students and how they were able to “hit the ground running” upon graduation. This is seen as a benefit for both grads and employers. On average, 2-3 positions could be available at each company / organization surveyed.

“GRADS WHO HAVE CO-OP / INTERNSHIP EXPERIENCE ARE MUCH FURTHER AHEAD AND MORE SUCCESSFUL THAN THOSE WITHOUT.”

Demand for Professional Development Offerings from OAC

Both agriculture and food respondents were asked if they think OAC is meeting professional development needs for the agri-food sector (in terms of post-graduate opportunities, such as short courses, workshops, seminars, etc.). 60% of food respondents and 70% of agricultural respondents felt OAC is meeting some professional development needs, but *there are gaps*. When interviewees were asked to describe professional development needs for the sector, suggestions included short “brush-up” courses for employees (e.g. as policies/regulations are updated/changed) or introduction to agriculture courses for employees working in agriculture and food that lack formal training.

Recommendations



1. Grow Enrollment and Meet Demand

With a current gap of 4:1, there is a need to increase enrollment to meet the demands of the sector. As the sector is projected to continue to grow, there is further need to develop highly qualified personnel (HQP) through targeted and effective teaching and training programs. Efforts should be made to attract high caliber students that will bring value as the sector continues to grow and innovate.

2. Reposition OAC as the Agriculture and Food College

To increase awareness and ensure an accurate perception of OAC for the food sector, OAC must identify new and creative ways to engage with the food industry. This will require efforts to reposition OAC and increase enrollment and influence. OAC should consider how to strategically focus communications and marketing on food programs and research.

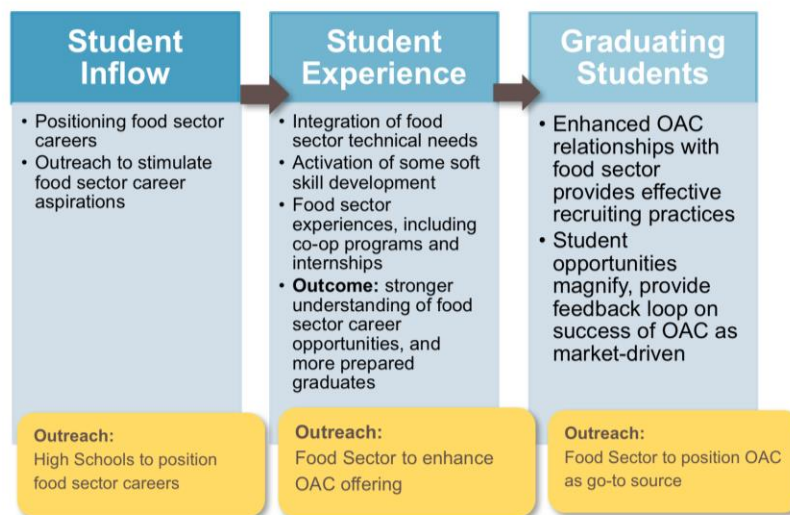


Figure 3: Opportunities to strengthen OAC's engagement with the food sector

3. Increase Professional Development Offerings

There is demand and interest from agri-food organizations/employers to add value to the sector through professional development programs/services. Some gaps in OAC graduates that could be filled by professional development include: financial analysis skills, IT, data analytics, farm business management practices, policy/regulatory training, marketing and sales, leadership/management training, food safety/HACCP, etc. Furthermore, there is the potential for short courses, seminars or workshops on a variety of these topics to help fill the gap for new graduates and to help those already in the workforce to refresh their knowledge or learn new skills. This provides an opportunity for OAC to play an important role in Ontario's agri-food sector post-graduation.

4. Increase and Improve Experiential Learning Opportunities

There was very strong demand for a co-op program from both agriculture and food sectors through all data collection. Some interviewees have already taken on OAC co-op students and spoke very highly of the caliber of these students, and have often hired them on after graduation. A co-op program gives students an opportunity to apply their technical skills while fine tuning soft-skills such as project management and communication. The most successful recruits are those who participated in experiential learning opportunities (e.g. Co-op or internship programs). These students are able to "hit the ground running" upon graduation and are more desirable to potential employers.

Acknowledgements

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