



**Nuffield Canada**  
AGRICULTURAL SCHOLARSHIPS

# **Inspiring Gen Z to Consider Careers in Agriculture and Food**

**Becky Parker**

**November 2016**

**NUFFIELD**  
**CANADA**

### **Nuffield Canada Agricultural Scholarships**

Nuffield Canada offers scholarships to agricultural leaders to expand their knowledge and network with top individuals around the world, to promote advancement and leadership in agriculture.

As part of the larger international Nuffield community which includes the United Kingdom, The Republic of Ireland, Australia, New Zealand and Zimbabwe, scholarship recipients become a member of the over 1,500 strong Nuffield alumni which interact to aid the latest scholars and continue the development of past scholars.

Scholarships are available to anyone between the ages of 25 and 45 involved in agriculture in any capacity of primary production, industry or governance.

The scholarship provides individuals with the unique opportunity to:

1. Access the world's best in food and farming
2. Stand back from their day-to-day occupation and study a topic of real interest
3. Achieve personal development through travel and study
4. Deliver long-term benefits to Canadian farmers and growers, and to the industry as a whole

**Applications are due annually by April 30<sup>th</sup>**

## SCHOLAR PROFILE



I currently live in the beautiful Okanagan region of British Columbia with my husband, Hunter Kangas. However, my roots are in Ontario where I was raised as the seventh generation on a mixed livestock farm in Halton County, just outside of Guelph.

My childhood was embedded in the agricultural lifestyle, and I was a 4-H member from ages 10 through 21. However, when I was making postsecondary decisions at the end of high school, none of the applications were for agriculture programs. Instead, I felt drawn to the world of education and pursued a Bachelor of Applied Science at the University of Guelph. This was followed by a Bachelor of Education at the University of Ottawa.

A few years of teaching in the classroom revealed to me two things. Firstly, I was *not* interested in teaching in a school for the rest of my career. Secondly, the students I was teaching knew very little about agriculture and food. Naturally, I would share information about my background with the students and be continually astounded at their lack of connection with, and appreciation of, the systems that provide their food, fibre and fuel.

It was this experience that pushed me to leave the classroom and pursue a Masters of Education, with the hopes of applying my training in a broader scope. I studied at York University where I was able to gain a concurrent Diploma in Environmental and Sustainability Education. This specialization allowed me to focus on what I was truly passionate about teaching: agriculture and the environment. My research project was titled *Lessons of the Land: Best Practices for Educating about Food, Agriculture and the Environment*.

Since completing my Masters, I have been fortunate to dedicate my career to expanding public knowledge about agriculture and food. I have done this through my employment with AgScape (part of Agriculture in the Classroom - Canada), as well as 'advocating' using various mediums.

My goal in applying for the Nuffield Scholarship was two-fold. I was looking for a learning opportunity that would allow me to develop my leadership skills and grow my professional network. However, I was also looking for an opportunity to identify ways to grow the agri-food industry. I was aware of a challenge: a pressing labour shortage. My hope was that organizations and businesses in other countries might have some insights into potential solutions. While there is no silver bullet, I believe that I have identified some exciting opportunities and methods that we can use to inspire Generation Z to consider careers in agriculture and food.

## ACKNOWLEDGEMENTS

THANK YOU...

To my husband, Hunter for helping me believe that I can accomplish anything. You remind me that we are stronger together (even when we are apart).

To my parents, Barb and Tom for always instilling in me a sense of pride and passion for agriculture and for supporting me through thick and thin. To my brother, Adam for taking up the challenge of managing our family farm and being a great example of a young person working in agriculture. To my friends and family for your words of encouragement and interest as I completed this journey.

To my 'unofficial' Nuffield mentors: Karen Daynard, thank you for sharing your experiences and valuable thoughts as I completed my application. Clayton Robins, your steadfast support and excitement for my topic was fuel to my fire - thanks for embodying the 4-H spirit and for your thoughtful comments during the review process. Blake Vince, thank you for helping me to realize that realistic, not necessarily revolutionary ideas, are the ultimate goal of a Nuffield Scholarship.

To the 2015 Nuffield Canada selection committee, who believed in both me and my topic.

To the staff and board of AgScape who encouraged me to pursue this opportunity and for providing me with the flexibility to grasp it.

To my colleagues in Agriculture in the Classroom across Canada, for your shared passion and insight into a national perspective of ag education.

To the many Nuffield Scholars who opened their homes to me during my travels. Thank you for letting me meet your families, and for sharing both your tables and your thoughts.

To the individuals, organizations and businesses who took time to meet with me to share your ideas and programs. I was motivated by each and every one of you.

Last, but not least...to the educators, organizations, and businesses who will read this: thank you for believing that we can address this labour shortage through agriculture education initiatives. I hope that you find these ideas both realistic and inspiring.

## SPONSORSHIP

My Nuffield Scholarship is sponsored by:

GLACIER **farm**media

Lead supporter:



Additional support:

LITHERLAND & COMPANY  
Placing Leaders in Canadian Agriculture

## EXECUTIVE SUMMARY

### Challenge

Many countries around the world, including Canada, are experiencing a labour shortage in the agri-food sector. Without adequate labour to perform work duties, productivity is reduced, and profitability can be impeded through lost sales or hindered opportunities for expansion.

### Target Audience

One potential source of labour is Generation Z (Gen Z), youth born between 1993 and 2011. Gen Z is a viable source for future employees and agri-business entrepreneurs for several reasons:

- They make up 22% of the Canadian population (Statistics Canada 2015)
- They will be entering the workforce over the next 20 years
- Many are looking for entrepreneurial opportunities and a diversity of career options (Sparks & Honey 2015)

### Approach

There are, however, challenges. Few Gen Zers know about the diversity of careers in agri-food. Many associate agri-food careers ONLY with primary production. Therefore, we must use an edu-marketing approach that focuses on marketing agriculture careers to youth using educational settings and programs. The edu-marketing tactics will build awareness, engagement and commitment to ag careers. The steps are:

**Step 1:** Increase **exposure** of the agri-food sector and the diversity of opportunities available to the general population of youth

**Step 2:** Provide opportunities for youth to **engage** with careers through experiential learning (e.g. job shadows, co-op, etc.)

**Step 3:** Introduce mentors and ambassadors who can offer further positive **influence** to students who show an interest in agri-food careers

### Stakeholders

The three key players who need to collaborate on edu-marketing of agri-food careers are:

- Schools and Education Organizations
- Agri-food sector (agri-businesses, producer organizations, industry groups, etc.)
- Youth Development Organizations

### Recommendations:

To fully address the labour shortage in agriculture, we need coordinated collaboration between education (schools & education organizations), youth development organizations, and the agri-food sector. Each stakeholder needs to play an essential role and work with the other(s) to ensure that the best possible programming is offered to Gen Z to encourage and inspire them to pursue careers in agri-food. Collaboration draws on the strengths and resources of each stakeholder, resulting in educational initiatives and programs that excite and engage future agri-food employees.

## DISCLAIMER

This report has been prepared in good faith but is not intended to be a scientific study or an academic paper. It is a collection of my current thoughts and findings on discussions, research and visits undertaken during my Nuffield Farming Scholarship.

It illustrates my thought process and my quest for improvements to my knowledge base. It is not a manual with step-by-step instructions to implement procedures.

Neither The Nuffield Farming Scholarships Trust, nor my sponsor, nor any other sponsoring body guarantees or warrants the accuracy, reliability, completeness or currency of the information in this publication nor its usefulness in achieving any purpose.

Readers are responsible for assessing the relevance and accuracy of the content of this publication.

This publication is copyright. However, Nuffield Canada encourages wide dissemination of its research, providing the organisation is clearly acknowledged. For any enquiries concerning reproduction or acknowledgement contact Nuffield Canada or the report author.

### Scholar Contact Details

Becky Parker  
1143 Forestbrook Drive  
Penticton, BC  
V2A 2G4

613-743-2716  
beckyparker2@gmail.com

In submitting this report, the Scholar has agreed to Nuffield Canada publishing this material in its edited form.

### NUFFIELD CANADA Contact Details

Email: [secretary@nuffield.ca](mailto:secretary@nuffield.ca)

## TABLE OF CONTENTS

### Table of Contents

<b>SCHOLAR PROFILE</b>	<b>3</b>
<b>ACKNOWLEDGEMENTS</b>	<b>4</b>
<b>SPONSORSHIP</b>	<b>5</b>
<b>EXECUTIVE SUMMARY</b>	<b>6</b>
<b>DISCLAIMER</b>	<b>7</b>
<b>TABLE OF CONTENTS</b>	<b>8</b>
<b>1.0 INTRODUCTION</b>	<b>9</b>
1.1.i Agri-food sector in Canada: Reality and Perception	9
1.1.ii Labour shortage in Canada	10
1.1.iii Labour shortage in other countries	11
1.1.iv Filling the Gap: Current Tactics	12
1.2 Objectives of study	13
<b>2.0 INSPIRING GENERATION Z TO PURSUE CAREERS IN AGRI-FOOD</b>	<b>13</b>
2.1 The Audience	13
2.1.i Characteristics of Generation Z	13
2.2 The Stakeholders	14
2.2.i The School System & Educational Organizations	14
2.2.ii The Agriculture Industry	15
2.2.iii Youth Development Organizations	15
2.2.iv Collaborations between Stakeholders	17
2.3 Approach to youth engagement	18
2.4 Current Initiatives in Canada	20
2.4.i Farm Credit Canada: Agribiz Case Study and Gen Ag	20
2.4.ii Golden Hills School Division: Career Connections	22
2.4.iii 4-H as External Credit for High School Credit	24
2.5 International Research	27
2.5.i International Initiatives: Best Practices	29
2.5.ii New Zealand Young Farmers: Get Ahead	30
2.5.iii Ambassador Programs: Bright Crop, Tasty Careers & Young Farming Champions	33
2.5.iv Future Farmers of America	37
<b>3.0 CONCLUSION</b>	<b>40</b>
<b>4.0 RECOMMENDATIONS</b>	<b>42</b>
4.1 Personal Reflection	43
<b>5.0 GLOSSARY &amp; ABBREVIATIONS</b>	<b>45</b>
<b>6.0 REFERENCES</b>	<b>45</b>
<b>7.0 APPENDICES</b>	<b>48</b>
7.1 List of Consulted Organizations	48
7.2 List of countries visited	49
7.3 List of Suggested Ag Career websites	49
7.4 Three Component Model of Agricultural Education (National FFA Organization n.d.)	51
7.5 Delivery of the FFA Mission (National FFA Organization n.d.)	52





Figure 1 depicts a word cloud of the answers of 291 Ontario high school students when they were asked to 'name a career in agriculture'. This question was asked by AgScape, which represents Agriculture in the Classroom in Ontario. In this image, word size is proportionate to the number of people who gave that answer. The majority of respondents associate a career in agriculture with primary production (e.g. farming, farmer, dairy, cash crop). These answers, while not incorrect, fail to capture the true diversity of careers in Canadian agri-food.

What is the impact of this narrow view of agriculture careers? Unfortunately, this lack of awareness is one of the factors affecting the number of people who aspire to be farmers, agronomists, food scientists, heavy equipment mechanics and other agri-food careers. The agri-food sector in Canada is experiencing both a perception issue and a labour shortage.

It is important to note that the term *agri-food* is used in this document to describe the sector as a whole, based on the Agriculture and Agri-Food Canada definition (Agriculture and Agri-Food Canada 2016). Therefore, when reference is made to education about agri-food careers, it is implied that there are opportunities to cover a large variety of career paths including "input and service suppliers, primary producers, food and beverage processors, food retailers and wholesalers, and foodservice providers" (Agriculture and Agri-Food Canada 2016).

### 1.1.ii Labour shortage in Canada

The exact numbers of the labour shortage are hard to define. However, most people can agree that the situation is serious and pervasive. The Canadian Agriculture Human Resource Council (CAHRC) has found that in **primary production** "the current gap between labour demand and the domestic workforce is 59,000 and projections indicate that by 2025, the Canadian agri-workforce could be short workers for 114,000 jobs" (Canadian Agriculture Human Resource Council 2016). It is difficult to fathom how big the gap becomes when you consider additional areas of the sector, such as research, processing, and sales. In 2015, Michael Hoffort, CEO of Farm Credit Canada estimated that there will be 74,000 new agriculture jobs by 2022, but that one third of those could go unfilled unless action is taken (Binkley 2015).

What is the impact of this volatility in labour availability? CARHC reports that the labour shortage costs producers approximately \$1.5 billion dollars in lost sales each year (Canadian Agriculture Human Resource Council 2016). Without adequate labour, businesses may not be able to function at full capacity, resulting in lost opportunities for sales. Others echo these findings. Farm Credit Canada's Chief Agricultural Economist, J.P. Gervais identifies the lack of available labour as a trend that has the potential to impact agricultural businesses (Gervais 2016). Clearly, the labour shortage is affecting both the profitability and productivity of the sector. The issue must be addressed.

### **1.1.iii Labour shortage in other countries**

Canada is not alone in experiencing this labour shortage and its negative impacts. The more I investigated the issue in Canada, the more I came to realize that labour market volatility was in the headlines of many other countries. The shared challenge of attracting a skilled workforce to the agri-food sector helped me to identify the need for agriculture career education recommendations beyond our borders. As well, it helped to identify the countries which would be beneficial to visit on my research travels.

One country that shares many commonalities with Canada regarding its agriculture labour force is Australia. Similarly to Canada, agricultural production in Australia is a huge contributor to the economy at approximately \$40 billion each year (New South Wales Government n.d.). As well, 1 in 6 people is employed in agri-food in Australia, which is proportionately about 4% more than Canada (New South Wales Government n.d.).

Abundant research on the state of agriculture labour and agriculture education has been conducted in Australia. An extensive report prepared by a Standing Senate Committee found that the agri-food sector is in dire need of candidates to fill positions:

"Despite the difficulties in identifying every shortage, it is clear that many sectors of the industry are facing severe shortages. Grain Producers Australia (GPA) – the national representative body for the grains industry – relates that in the area of agronomy there are around 10 jobs for every graduate. Elders – a 172 year-old national agribusiness company – provided the committee with some telling statistics regarding the skills shortage, especially of agricultural scientists: In the agricultural sector, there is an ongoing labour market shortage in the field of agricultural science. In 2010, only 40% of advertised positions were filled and there were 1.1 applicants for each job. This is down from 65% filled vacancies and 1.4 applicants per job in 2009." (Education Employment and Workplace Relations References Committee 2012) .

The United Kingdom is also experiencing difficulty in access to labour. A survey conducted by the National Farmers Union found that 29% of growers had trouble recruiting enough labour in 2015 (Fredenburgh 2016). When predicting their future situation, 66% expected less labour availability by 2018, and 43% anticipated labour shortages by that date (Fredenburgh 2016).

South of Canada, the United States sees the economic impact of a declining workforce. A report by the Partnership for a New American Economy found that in crop production, the decline of farm labour in the last ten years has resulted in a loss of \$3.1 billion of potential sales per year (Doolin 2015). Producers there have raised wages, provided accomodation, and offered educational opportunities in efforts to attract workers; yet many companies are still seeing

food rot in fields because they do not have adequate labour to complete the harvest (Brat 2015). One of the many complex factors leading to the labour shortage (particularly in primary production) is that people are flocking to jobs which are less physically demanding. This is common in many countries and is also exacerbating rural depopulation issues.

While the statistics may change slightly from country to country, the availability of skilled people to work in agri-food positions is not meeting demand in most developed regions of the world. Consequently many countries, including Canada, rely on foreign and temporary seasonal labour to fulfill their needs. However, that may not be a sustainable option for the long term.

To further complicate the situation, it is not only field labourers who are needed to fill the skills gap. In many of these developed countries, the decline in labour has coincided with an increase in technology use in agriculture and food production. That does not mean that autonomous tractors and robotic milkers can replace all human labour. The increase in technology and innovation has resulted in the need for highly skilled individuals to work in careers such as agriculture engineering, programming, and equipment manufacturing. Hence, there is a broad spectrum of agriculture careers which need to be filled. Luckily, this means there is a diverse range of careers which we can promote to young people.

#### **1.1.iv Filling the Gap: Current Tactics**

In addressing the labour shortage in agri-food, it is important that a variety of solutions are explored. Given that the labour shortage is happening now, it is essential to consider programs and efforts that can be used to bring in employees to meet short-term needs. This is especially important in an industry with timelines and pressures around planting, harvesting, daily care of animals and processing of products. In Canada, it is encouraging to see the work being done by CAHRC to collect and disseminate Labour Market Information, as well as develop a National Workforce Action Plan. These activities help to identify ways to on-board those individuals who are ready to join the workforce (e.g. temporary foreign labour, second career, recent graduates, immigrants, etc). They play an essential role in providing short and mid-term solutions to addressing the labour shortage.

My approach to this issue is to consider a longer term plan and the role of those who have not yet entered the workforce. Recall the statistic from CAHRC predicting a shortage of 114,000 workers in Canada by 2025, just in primary production (Canadian Agriculture Human Resource Council 2016). When I thought about this number, I asked myself "who will be entering the workforce in 2025?" That is less than ten years away. Those future workers are currently sitting in elementary and secondary classrooms across Canada. This is the audience I believe we need to target with positive messaging and impactful learning experiences about agri-food careers.

## **1.2 Objectives of study**

As someone with formal training in education, I believe that the answer to the labour challenge lies in our future generations. Therefore, I set out on this Nuffield journey to determine how we can fill the labour shortage with a new crop of young workers through agriculture career education.

The objectives of my study were:

- Explore the role of various stakeholders in agriculture career education:
  - Education Organizations/School System
  - Agri-Food Industry
  - Youth Development Organizations
- Identify program models that successfully inspire Generation Z to pursue careers in agri-food

## **2.0 INSPIRING GENERATION Z TO PURSUE CAREERS IN AGRI-FOOD**

### **2.1 The Audience**

At the beginning of this research, I knew that it was essential to define a target audience because to deliver a message to people, it is important to understand them. For the purpose of my Nuffield Study, I identified that target audience as Generation Z.

According to Statistics Canada, Generation Z (Gen Z) is the group of young people born between 1993 and 2011 (Statistics Canada 2015). At the time of writing, the oldest Gen Z members are graduating post-secondary education or have recently entered into the workforce. The youngest have just entered the formal school system. Gen Z represents a huge segment of the population. In the 2011 census, they comprised 21.9% of the Canadian population, or approximately 7.3 million people (Statistics Canada 2015).

#### **2.1.i Characteristics of Generation Z**

While not all members of Gen Z will exhibit the same characteristics, there are some important points about these youths that provide direction regarding educating them about and encouraging them to pursue, careers in agriculture. The following are some key trends about Gen Z, as captured in a survey of 1,000 13 to 17 year olds in the United States (Sparks & Honey 2015):

- 60% expect to have multiple careers by the time they are 30
- 70% were working in entrepreneurial jobs like freelance work or selling products online
- 42% intend to be entrepreneurs or self employed

Other research on a global scale has found that about one-third of Gen Zers make their education and workplace choices based on whether they will be able to help others (Dill 2015). They are also seeking work-life balance and job security, with over half of North American youth indicating that those are key career goals (Dill 2015). A high value is also placed on a chance to exhibit creativity and being provided autonomy and leadership opportunities (Dill 2015).

These characteristics indicate that as we target Generation Z with career information and recruitment efforts, we need to be mindful of their desires for independence and impact. There are almost endless entrepreneurial opportunities in agri-food, which should be a huge selling feature for this sector. As well, we should leverage the messaging around the positive impact agri-food can have in areas such as environment and health to show that you can benefit others through an agriculture career. Most importantly, we need to showcase the incredible diversity of opportunities and mobility within agriculture, both at home and abroad.

## **2.2 The Stakeholders**

In the quest to inspire Gen Z to consider careers in agriculture, there are several stakeholders who must participate in engagement activities. At the beginning of my research, I identified the three I believe are integral to an effective educational initiative.

### **2.2.i The School System & Educational Organizations**

The majority of Gen Z members are currently enrolled in the elementary and secondary school system. Therefore, it is natural for the education system to have a role in these types of initiatives. In agriculture career education, the school often serves as a mechanism through which to reach the target audience. This may happen in one of several different ways:

- the classroom as the place where the agriculture career messages are delivered
- a co-op placement as the impetus for a work experience in agri-food
- a class field trip organized by the educator
- a class project as an opportunity to research about the agri-food sector

Due to the growing disconnect with agriculture that the general population is experiencing, there are fewer and fewer classroom teachers who have the knowledge, confidence or interest to educate about a topic like agriculture careers. Consequently, educator initiated programs are limited and often require a true 'champion' within the school system who is passionate about agri-food topics. Therefore, the role of educational organizations who have the mission to increase food and agriculture literacy, such as Agriculture in the Classroom (AIRC-Canada), is especially important. These organizations often provide:

- curriculum-linked resources educators can use in the classroom to teach about agri-food topics, including careers
- programs to educate the educators (equipping them with knowledge and confidence to teach agri-food topics)
- guest speakers who bring agri-food information into the classroom
- program offerings that provide experiential learning about agri-food for students
- connections to agriculture businesses for field trips and work placements

Working together, the formal school system and educational organizations are an important piece of the puzzle in facilitating opportunities for Gen Z to learn about and become exposed to agri-food career information.

### **2.2.ii The Agriculture Industry**

Another essential stakeholder in this equation is the agri-food sector. Those who require employees to fill vacancies must take action to ensure that those jobs are on the 'career radars' of Gen Z. In my experience, far too often agri-businesses wait to interact with potential employees until they have enrolled in an agriculture related field at a post-secondary institution. This is the equivalent of 'preaching to the choir'.

Fortunately, there has been an increase in enrollment in agri-food programs across Canada. An article in Country Guide in November 2015 highlighted how several universities have seen their numbers of students in agriculture and food faculties increase significantly in the past few years (Kamchen 2015). Many of the faculties report that employers in the sector are eager for their graduates and that they "interact with our students through pizza nights and information sessions" (Kamchen 2015).

While these recruitment activities are positive, there needs to be more involvement of agri-businesses providing hands-on learning experiences and employment opportunities to those students still in secondary school. If they are going to find enough employees to fill the projected vacancies, they must cast the net wider and farther than those who have already chosen the pathway. My research efforts revealed several ways this is possible.

### **2.2.iii Youth Development Organizations**

In the quest to fill the projected labour gap, there is the risk of focusing too much on quantity over quality. While more people are needed, it is also important to ensure that those recruited are equipped to be effective employees, employers and entrepreneurs. This involves not only technical training but also personal development of soft skills. To ensure that agriculture is a vibrant and innovative industry, it will need a workforce of people who not only possess



*"I was heavily involved in Greek life, and it probably did as much for me as anything I learned in the classroom. I think any student organization could have provided this, but it teaches you about how to deal with people, how to change your approaches when dealing with varying personalities. Schools always seem to want to force group work, but it just doesn't compare...."*  
Alum

*"Strategic thinking and problem solving [are skills I did not receive training for while in college]. In today's economy it is CRITICAL to be a problem solver and evaluate problems strategically...Frankly, training in a classroom environment is difficult because most effective strategic thinking and problem solving comes in the moment and on the fly..."* Alum

Figure 2 Participant quotations from Crawford et al. 2011 soft skills study

technical qualifications but who can problem solve, communicate, show initiative and work effectively with peers.

How important are soft skills? An article in Forbes highlights the results of a study that tracked 20,000 new hires over the first 18 months on their jobs. The study found that of those new hires that failed, "89% of the time it was for attitudinal reasons and only 11% of the time for lack of skill" (Schawbel 2012). Successful businesses have found that training can be used to increase the technical skills of an employee, but that it is extremely difficult to change attitude (Schawbel

2012). An American study conducted in 2011 echoed the importance of soft-skills. In a survey of over 8000 people, they found that communication, decision making/problem solving and self management skills were the top three soft-skill clusters identified by students, university faculty, alumni and agri-food employers (Crawford, et al. 2011).

Who, then, is responsible for developing soft skills in future employees? In the Crawford et al. study (2011), over half of survey respondents believed that the responsibility is equally shared between education and employers. However, several respondents indicated that this learning usually happens in extracurricular activities or is not suited for learning in the formal classroom (See Figure 2). (Crawford, et al. 2011).

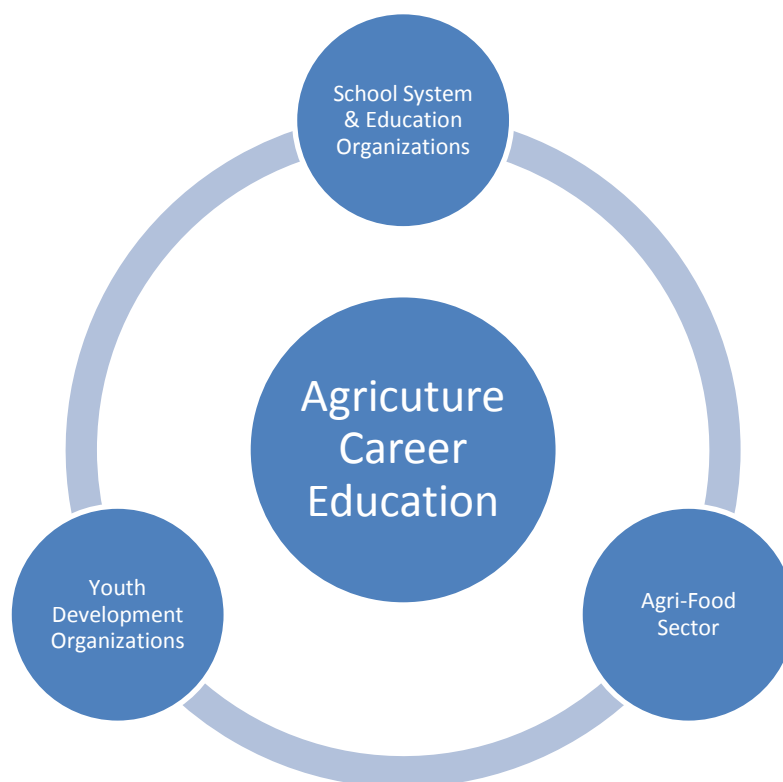
If I reflect on my experience, I developed most of my soft skills such as team work, communication, initiative and time management in the 4-H organization. In my discussions with people on my Nuffield travels, I often heard this opinion echoed. It did not matter which youth organization was under observation (4-H Jamaica, Future Farmers of America, Young Farmers Club in the United Kingdom, New Zealand Young Farmers, Young Farming Champions in Australia, etc.). The common denominator was that people in the agriculture industry felt that the youth who had participated in those activities were well rounded, engaged citizens who exhibited stronger inter-personal skills than their peers.



It seems that the dynamic of these organizations and the participatory engagement and servitude they elicit results in the development of employability skills. Youth development organizations have an explicit mandate to develop youth into engaged citizens and strong leaders. Schools and employers can contribute to the development, but they often focus on technical education as a priority. Therefore, we must look for opportunities to engage youth development organizations in the efforts to develop and recruit employees for the agri-food sector.

## 2.2.iv Collaborations between Stakeholders

One major focus of my Nuffield research was to investigate if there are any models that incorporate all three of these stakeholders (schools/education organizations, agri-food sector, youth development organizations) into one program. Often collaborative initiatives are more effective and well rounded than those run in isolation. Based on this research, I believe that programs with collaborations between at least two of these stakeholder groups are the most effective at inspiring Gen Z to consider careers in agriculture.



**Figure 3 Collaboration between stakeholders for agriculture career education**

In many ways, this is common sense. The agri-food sector needs employees, but agriculture businesses do not have the mandate to connect directly with youth. Therefore, they should collaborate with the youth development and educational organizations who are working within schools, or with youth in the community. In the same respect elementary and secondary educators tend to be 'generalists', not 'specialists'. Therefore, the agri-food industry can provide a valuable role in providing technical expertise and experiential learning for students. When the various parties work together, it becomes an effective way to connect with youth. Examples of these collaborative programs are described in sections 2.4 and 2.5.

It is important to note that this research focuses on education, not training. Therefore, the programs investigated are much more aligned with a general awareness and interest to pursue careers in agriculture, not specific technical skills development. As well, with the audience identified as Gen Z, particularly those in high school, the education is on a more general level, as opposed to a certification for a specific type of work, as would be found in post secondary.

### **2.3 Approach to youth engagement**

When I began this research, I was thinking about programming strictly from an educational lens. I began with questions like:

- "Which educational programming models are most effective?"
- "How do we educate youth about career opportunities in agriculture?"
- "How can we use experiential education to develop employability skills?"

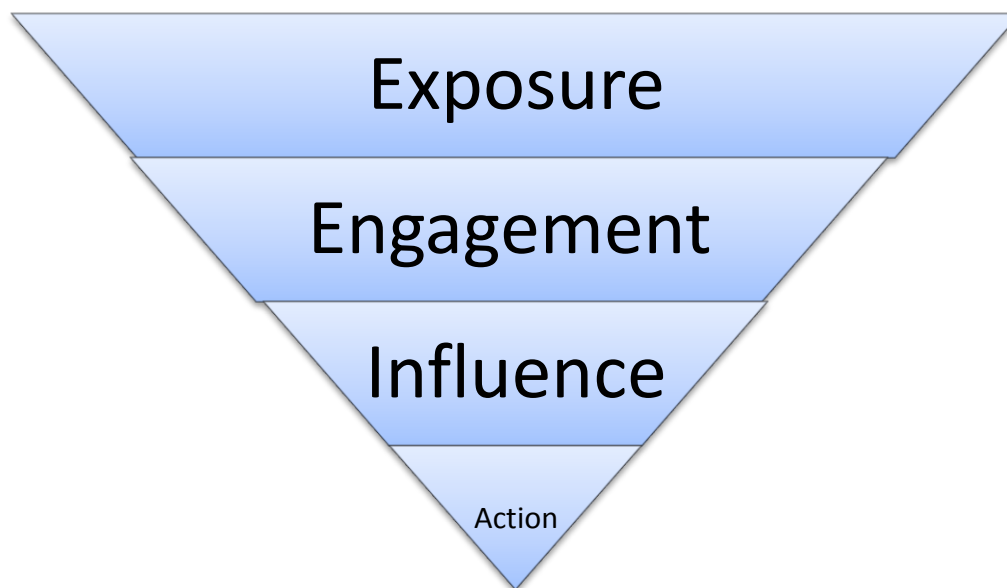
However, as I completed my travels and met with a variety of organizations in the United Kingdom, New Zealand, Australia, United States, and Jamaica the topic of marketing continually came up. I witnessed my thinking evolve to incorporate a marketing lens. I realized that I was asking questions such as:

- "How do we sell the idea of a career in agriculture?"
- "What are the most effective ways to market different careers?"
- "How do we engage youth in the industry?"
- "How do we inspire Gen Z to consider careers in agri-food?"

The last question in this list became the new working title for my research report (evolved from Collaborative Models of Agriculture Career Education).

My new set of questions were pointing me in the direction of an education/marketing approach (edu-marketing, if you will). As I investigated some more marketing models, I came across one that I believe accurately captures the steps and strategy needed for educational programming delivery.

Figure 4 depicts an inverted pyramid. This model is often used to illustrate the process of building a customer base or brand recognition. For this example, let us consider choosing a career in agri-food as the action we are seeking. The brand of a "Career in Agri-food" is what we are striving to build a connection with. So how do we do that?



**Figure 4 Marketing strategy for education initiatives. (Bartholomew 2008)**

The first step is exposure. As the introduction of this document stated, there is a low awareness of agri-food careers among Gen Z in Canada. Therefore, our first task is to ask "How do we expose students to careers in agri-food beyond primary production and farming?" General agriculture awareness initiatives (e.g. events, marketing campaigns, programs, etc.) are something that all 3 of the stakeholder groups can take part in: education, agri-food, and youth development organizations.

Once students are exposed to the broad concept, we need to engage them. This involves asking "Whom can we engage with our messages and how?" This second step is very program focused as it provides the biggest opportunity for a 'real-life' interaction between the audience and the stakeholders.

Following any engagement strategy, the third step is to reflect on its effectiveness by asking "have the perceptions around agri-food careers changed?" If we have students showing interest, it is essential to provide additional persuasion through deepened engagement and relationship building with key influencers. The goal is to move them towards the final action of choosing a career in agri-food.

Each of these steps is important to consider in the planning and implementation of agriculture career education initiatives to attract Gen Z to the sector. A marketing perspective highlights that there are multiple steps to move someone from low awareness to a concrete action. To use a fishing analogy, you first need to cast the line (awareness), then set the hook (engagement) and then reel them in (influence). We need elements of all three actions to make a successful catch. Naturally, not all of those exposed to information at the first stage will move through the entire pyramid. However, it is important to recognize the steps which are needed to bring as many Gen Z as we can from exposure to the action of choosing a career in agri-food.

## **2.4 Current Initiatives in Canada**

Before we can understand how to improve our career education in Canada, it is important to be aware of what programs are already underway. I believe that knowing about these programs provides an opportunity to modify and add value to existing initiatives as opposed to duplicating efforts. Familiarity with the systems and programs in place in Canada did, in fact, make it easier to identify which types of international initiatives could be easily adapted or added on to other programs within the Canadian context.

During my research, I made several trips throughout Canada to investigate what types of programs exist that involve the stakeholders mentioned above and tackle one or more of the steps involved in the edu-marketing approach. The following is a list of what I believe are excellent examples that can be modified and applied in other areas of the country or serve as ideas for other regions around the world.

### **2.4.i Farm Credit Canada: Agribiz Case Study and Gen Ag**

There are some agri-businesses that continue to step up to challenges facing the industry. Farm Credit Canada (FCC) is one of those champions. In the city of Regina, Saskatchewan where the company has its headquarters, FCC partnered with a local high school to tackle the challenge of the labour shortage in agriculture. Campbell Collegiate is a public secondary school in Regina, and the student population is largely urban. The partnership was specifically with the business program in the school, and the teacher Jordan McFarlen.

The project was titled the FCC Agribiz Case Study: Promoting Careers to Generation Ag and was piloted in the fall semester of 2015. Students in the Business and Social Technology classes were presented with a challenge to market a career in agriculture to a young person without a farm background. The classes had the opportunity to hear from industry speakers who provided valuable insight about the agri-food industry in Canada. As well, they went on field trips where they were exposed to a variety of agri-businesses that contribute to the economy and employ local community members.

Over the course of four weeks, they worked in small groups to develop their marketing and communications plans. The final challenge was to present their ideas to a panel of agri-food industry representatives, who judged the ideas. The winning team presented a social media campaign idea of "AGing". This was based on the idea of the Ice Bucket Challenge run by the ALS Association (people dumped a bucket of ice water on their head and challenged others to do the same). AGing involved students cracking an egg over their head to increase awareness of careers in the agri-food sector.

The FCC program was quite successful, and participants had an increased knowledge of potential careers in the agri-food sector. With this success, another pilot was completed. In 2016, Agriculture in the Classroom (AITC) Saskatchewan and AITC Manitoba, partnered with Farm Credit Canada to offer the program to additional classroom teachers. Using the same concept of a marketing campaign, paired with industry speakers and field trips, the AITC pilot reached well over 100 students. FCC provided funds for the winning team to have \$500 to bring their plan to life.



Figure 5: Students at Campbell Collegiate presenting their ideas for the AgriBiz Case study challenge (Photo source: Saskatchewan Wanderer).

#### Positive aspects of Program

- The Agribiz/GenAg program is an excellent example of collaboration between a school, education organization and the agri-food sector

- The case study format and group work provide an opportunity for students to develop and apply employability/soft skills
- The challenge format appeals to the GenZ mentality of solving problems and being entrepreneurial
- Giving GenZ the opportunity to design marketing strategies to promote ag careers to youth gives insight into the tactics and approaches that are effective with that audience

#### Requirements for Success

- Requires time commitment from agri-food industry to act as speakers and/or field trip location
- Requires an educator committed to running the case study program in their classroom
- Requires provision of agri-business contacts to a school or the involvement of an agriculture education organization who can coordinate the field trips
- Requires adequate funding for field trips and prizes (optional)

#### Opportunities for Expansion

- The case study format is a ready to-go package that can be implemented by educators in classrooms across the country
- Education organizations such as Agriculture in the Classroom (AITC) are perfectly equipped to roll out this type of a program to local schools in each of the provinces (AITC groups can play the facilitation role between the formal school system and the agri-food sector)
- Youth development organizations, such as 4-H, could run this marketing/communication case study challenge as a club project or member development event, encouraging members to present their strategies to the public as an achievement program

#### **2.4.ii Golden Hills School Division: Career Connections**

In Alberta, Canada there is a school district punching above its weight in its efforts to connect students with information and experiences about agri-food careers. Golden Hills School District is a small division north of Calgary that offers the Career Connections Program for grades 10 through 12.

The Career Connections program is an excellent example of collaboration between the formal school system and the agri-food sector. Students in the Golden Hills School District are provided with the opportunity to participate in the program in a variety of ways. Many of the interactions involve an experiential component with a local business. Students may visit some

of the businesses for a half day job shadow. Others may choose to complete a longer co-op term for their Registered Apprenticeship Program, or an internship lasting a few weeks.

Due to the nature of the rural communities where the schools are situated, many of these local businesses are within the agri-food sector. I visited one company, Linden Agri-Centre, that takes on several students each year for work experience opportunities. These experiences ranged from Registered Apprenticeship programs in heavy equipment mechanics to retail positions at the parts desk. During my visit, I met several young people who had gone on to gain employment with the company once they had graduated high school.

Regardless of how long an experience a student has in the business, the important thing is that they have the opportunity. This experiential component gives students a low-risk way to 'try-out' a career in agri-food, allowing them to make an informed choice about whether or not they would like to pursue that career pathway. I commend the businesses who participate for their commitment to student learning, and to the future of their industry. There are not enough of these companies who open their doors to students in high school. This is an excellent example of a program that can be implemented in any school division across Canada.



Figure 6: Values of the Career Connections Program (Career Connections n.d.)



### Positive aspects of Program

- Students in the program (and their peers) receive valuable exposure to information about career pathways in agri-food
- Provides students in high school with opportunities to gain valuable work experience in real agri-businesses
- Employers expand their pool of candidates for certain jobs, through an increased awareness of opportunities and increased connection with potential employees
- Fosters a connection between the school and the local community (especially important in rural communities as it gives students an understanding of what opportunities exist for them to stay in their local area and find employment once they have graduated)
- Being immersed in a work environment gives students the opportunity to develop and apply employability/soft skills
- Student engagement is high: 55% of students in Golden Hills are involved in off-campus learning, and there is a 98% graduation rate (Career Connections n.d.).

### Requirements for Success

- Requires commitment from agri-food industry to open their businesses for student engagement
- Requires an education community willing to provide flexibility to students for a variety of experiential learning opportunities
- Requires youth willing to take on experiential learning opportunities and commit to going to their placements on a regular basis
- The Career Connections program has a representative who serves as a liaison between the school and the community partners (a key success factor to ensure any potential new partners understand the commitment and value of being involved in the program)

### Opportunities for Expansion

- Many schools have work-experience and co-op programs in place, so there are models that can be expanded to include agri-food career opportunities
- Agri-businesses need to connect with their local schools and inform educators and guidance counsellors that they are willing to welcome high school students into their businesses (building awareness and providing engagement opportunities)

## **2.4.iii 4-H as External Credit for High School Credit**

The 4-H program is a global network of youth development organizations committed to building future leaders. There are more than 7 million members in 50 countries around the



world (National 4-H Council 2016). In Canada, there are 25,000 members between the ages of 6 and 25 who participate in a wide range of programming (4-H Canada 2016).

The provincial 4-H organizations across Canada each run their programming differently. However, at the core of the 4-H program is the concept that youth become members of a club and complete various projects. These projects require a minimum number of hours of programming where youth learn about a specific topic and have the opportunity to practice their skills through experiential opportunities. Club projects are incredibly diverse, including topics such as beef, rabbit, welding, photography, judging, leadership, and a host of other options. Members are required to complete an achievement program at the end of their project to demonstrate their development and mastery of related skills.

Another essential part of the 4-H program is the focus on leadership development in youth members. Youth have the opportunity to develop and practice the 4-H values (managing, thinking, relating, caring, giving, working, being, and living) during their club activities. Also, there are special programs and events (e.g. camps and conferences) that members can participate in to help them to refine both their technical and soft/employability skills. (4-H Canada 2016)

Clearly, the 4-H program is, in itself, an excellent career preparation activity for young people. In fact, in the 2014 4-H Canada member survey, "91% of 4-H members felt that they had been able to advance their career goals as a result of their involvement in 4-H" (4-H Canada n.d.). The most compelling piece of evidence is the connection between 4-H programming and agri-food careers. The 2014 member survey also found that "more than half of 4-H members are planning to pursue a career in a field related to agriculture" (4-H Canada n.d.). While many 4-H members come from a farm background, these statistics still show that 4-H plays a valuable role in the preparation of young people for career pathways, particularly those in the agri-food sector.

Traditionally 4-H has been an activity completed after school, or during the summer months. However, across Canada, there are several 4-H organizations that have relationships with their provincial Ministries of Education. These agreements are in place to provide high school students with credit for their participation in 4-H activities.

Given that education is under provincial jurisdiction each of these agreements looks a bit different. For example, in British Columbia, the credits are for grade 11 and 12 only. Students must complete a variety of activities such as educational displays, public speaking and project skill certificates (4-H British Columbia 2016). The Alberta system allows students the

opportunity to earn Career and Technology Studies credits based on their project work (Alberta 4-H 2011).

I was particularly excited to see a new arrangement forged in 2016 between 4-H Ontario and the Ontario Ministry of Education. The plan allows for external credit in the Specialist High Skills Major (SHSM), utilizing the 4-H Ontario program. Currently, the agreement is for the Agricultural SHSM, but there are plans for expansion. In the 2016-17 school year, there will even be a 4-H club at Acton District High School as part of the educational course work for the Agriculture SHSM cohort.

One of the best aspects of the external credit arrangement is that the 4-H program is incredibly diverse. Therefore, depending on the external credit guidelines and available 4-H programs, a student could complete a 4-H project in a variety of topics (e.g. crops, livestock, food science, mechanics, soil, etc). This diversity is a direct reflection of the multitude of career options in the agri-food sector.

Another benefit of the external credit program is that it allows students to explore topics that may not be possible within the confines of the school. While some schools may be fortunate enough to have a garden, greenhouse or space for animals, many do not. As well, not all teachers have the knowledge to deliver that type of programming to students. There is also the challenge of determining how a resource like a garden will be maintained during summer months when school is not in session. An external 4-H credit opens up the possibility for a student to have that type of hands on agricultural experience, without being limited by school resources and timetables.

#### Positive aspects of Program

- Students develop employability skills and essential work habits through the various aspects of the 4-H program
- Students develop technical skills in fields related to agriculture and food through hands on experiences during their club activities and achievement programs
- A connection is built between community leaders (4-H leaders) and the school (educators) as they communicate and plan for student success
- Students see a connection between real world activities and their formal school learning
- Other students in the school receive second hand exposure to information about 4-H and the agri-food sector, expanding awareness among the general school population
- Program offerings are not limited by the resources available, and timetables of the school year

### Requirements for Success

- Requires uptake and approval from provincial ministries and local school boards to have 4-H recognized as an option for external credit
- Requires a local 4-H program to be in place for students to access projects/clubs
- Requires approved courses be available for students to enrol in within their high school
- Requires initiative from 4-H member/student to bring dual credit request to their school counsellor (if option is available)

### Opportunities for Expansion

- There are several models in existence across Canada that can inform the design of other provincial agreements
- Educators in school boards need to be informed about dual credit options for 4-H members so that they can encourage and support them in the enrollment process [4-H associations can collaborate with education organizations (such as Agriculture in the Classroom) to connect with educators and raise the awareness level of this programming opportunity]
- Incorporate 4-H directly into school instruction time using club projects as school learning activities
- Provide opportunities for entrepreneurial projects and business skills development (In Jamaica, I saw that 4-H clubs are often an opportunity for students to develop products and business models. This addresses youth unemployment and spurs rural economic development)

## **2.5 International Research**

The research which I did within Canada enabled me to understand better how a variety of groups are trying to tackle the issue of the labour shortage in agriculture within my home country. However, I was eager to investigate how other countries around the world were attempting to deal with the issue.

When selecting my travel destinations I tried to focus the majority of my time in countries which have a similar demographic to Canada. In this way, I felt that programs and initiatives would be more applicable to our educational setting and agricultural industry needs. This decision revealed some interesting trends around the labour challenge and how it correlated with a nation's culture and population distribution.

For instance, some of the countries I selected were Commonwealth countries, including the United Kingdom and New Zealand. Interestingly, these two countries were experiencing the same situation as Canada whereby many of those involved in agriculture have a deeply rooted

history of ancestral farms (most dating back several generations). In those types of context there can be the perceptions that one has to be 'born' into agriculture, and that there are only limited jobs available in primary production. Consequently, many young people may not even consider an agri-food career as an option. This is particularly true when the percentage of the population employed in agriculture continues to decline. Youth may assume, incorrectly, that a career in agri-food has little to no future.

There was a similar situation in Australia. Several of the people I met with referred to the issue of an increasing percentage of the Australian population living in urban cities like Melbourne and Sydney. Increasing urbanization creates a growing gap between people and the source of their food. They are, therefore, also removed from the various careers which get their food from farm to plate. As well, in very large countries like Canada and Australia, urbanization can be another challenge in acquiring labour. Given that many agri-food jobs are in rural areas and small towns, it can be difficult to recruit employees to those areas when they would rather live in the city limits in proximity to a wide array of services.

It was interesting to contrast the labour situation in countries like Australia, New Zealand, United Kingdom, United States and Canada with a less developed country, Jamaica. I travelled to Jamaica to investigate their 4-H system, which is integrated into schools. The economy in Jamaica is drastically different from the other countries I visited. A higher percentage of people work in the agri-food sector, but there is also a high youth unemployment rate.



**Figure 7: The 4-H Jamaica achievement program held at the College of Agricultural Science and Education. The bottles are examples of the entrepreneurial products which were developed by members as part of the Agro-Processing club using the designated crop: pumpkin. Photos: Becky Parker**

In general, youth were much more aware of agri-food, given that many people sell agri-food products as a way of life. However even though there was a higher familiarity with agriculture, there was still a missing link. Some of the people I spoke to felt that Jamaican youth do not look to agri-food as an opportunity for a rewarding and fulfilling career. They still often associate it with a subsistence way of life.

It was, therefore, encouraging to see the 4-H Jamaica program engaging youth through projects that placed emphasis on business skills and employability skills. Agri-food was presented as an entrepreneurial opportunity and a viable solution to youth unemployment for both urban and rural populations. In fact, they even had an agro-processing project which required youth to design products using a particular crop. This highlighted the diversity of careers in everything from food processing to marketing and expanded youth perceptions of careers in agri-food beyond just production.

Although there were similarities and differences in the countries I visited, I found that each and every one was dealing with a perception issue around careers in agri-food. Regardless of the culture or population demographics, youth in each of these countries needed to hear factual and engaging information about agri-food careers, since it was not on their radar otherwise. This reinforced to me the need to approach agri-food career education through a marketing lens, ensuring that exposure is the first step in our initiatives.

### **2.5.i International Initiatives: Best Practices**

In England, Scotland, New Zealand, Australia, Jamaica and the United States I was fortunate to meet with a wide variety of businesses, organizations and schools. I was impressed by the passion of each of these groups. They were all committed, in their way, to raising the awareness of agriculture, food, and agriculture careers among young people and the general public. A full list of the groups visited can be found in Appendix A.

While each of the organizations I met with deserves praise for their efforts, there were a few examples that stood out for me. The programming examples below are selected from the organizations I met with and highlighted because they met a set of criteria:

- ✓ Involve collaboration between at least two of the groups of focus (schools/education organizations, agri-food sector, youth development organizations)
- ✓ Dedicate a portion of programming to development of soft/employability skills
- ✓ Include opportunities for students to progress through the edu-marketing pyramid (awareness, engagement, influence, action)
- ✓ Include aspects of programming that can be adapted and applied in the Canadian context

## 2.5.ii New Zealand Young Farmers: Get Ahead

New Zealand Young Farmers is a "progressive and dynamic social network for rural youth which develops the leadership and personal skills of our members through participation and achievement" (New Zealand Young Farmers 2016). The organization offers a variety of programs and competitions for youth of different ages. While I was travelling in New Zealand, I had the opportunity to observe one of the programs called Get Ahead. Get Ahead is comprised of 3 areas: Experience Days, Teen Ag Clubs, and In2 The Field.

Get Ahead Experience Days are an amazing example of collaboration between schools, youth development organizations, and the agri-food industry. There are ten events held around the country each year, made possible through sponsorship from Dairy NZ and Beef & Lamb NZ (Get Ahead 2016). In addition to the sponsoring companies a variety of agri-businesses are invited to participate in order to highlight the diversity of careers in the agri-food sector. It is important to see this kind of collaboration, whereby specific players in the agri-food industry are investing in an educational initiative while being inclusive of all areas of the sector.



**Figure 8** Students participating in a career activity at the Get Ahead Experience Day. Photo: Becky Parker

The Get Ahead Experience Day I attended was in Palmerston North in March of 2015. There were 12 stations, each run by an agri-business ranging from financial institutions to commodity/research groups, to equipment companies. Students from local high schools attended, and were broken into groups that included peers from other schools. This was a very interesting touch, as it required students to get outside of their comfort zone and learn how to work with new people.

Logistically the event is based on a rotational structure where groups visit the 12 stations over the course of the day. At each station, they were introduced to a person who briefly describes their career and employer. Most of the ag business representatives were young, and at the entry level of their career. The advantage to using younger individuals to run



the stations is that they are more relatable to the high school students. It creates a sense of 'reality' for the participants when they realize that the person talking to them was only in high school 5 to 10 years ago.

The main focus of the program is for students to complete a short activity that is an application of technical skills related to that career path. For example, at the financial station, students had to complete a math activity to evaluate financial statements and determine which of three farm properties made the best business sense to purchase. At other stations students were required to complete activities like programming Radio Frequency Identification tags, grading meat or matching management tools with areas of a farm where they would be utilized.

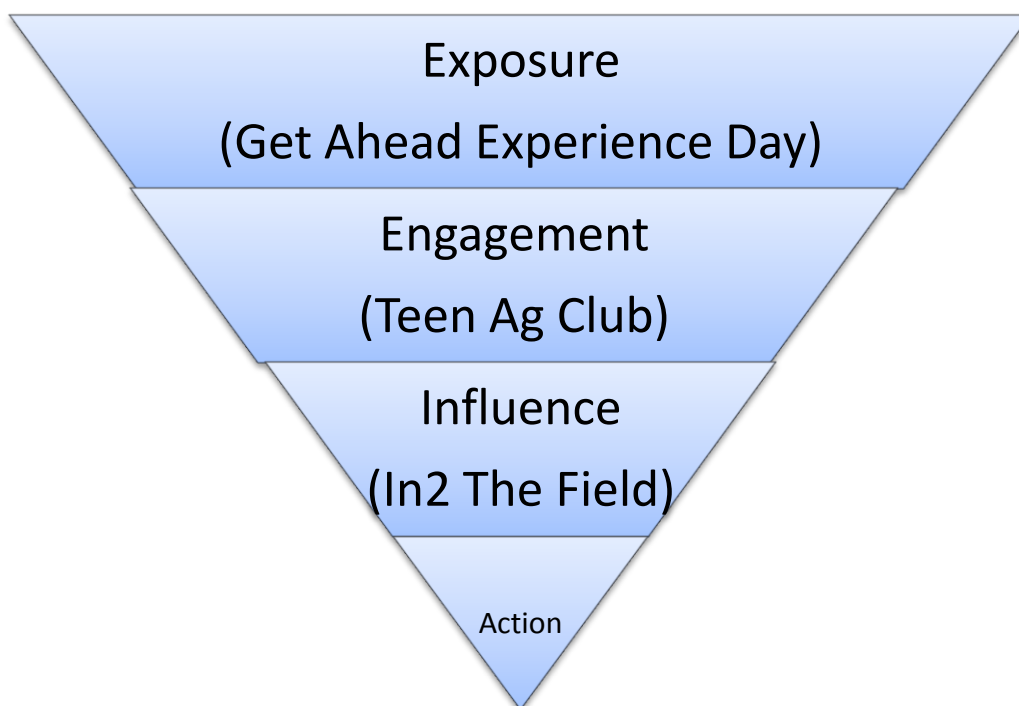
The Get Ahead Experience Day also integrated an element of competition. After the groups had completed the activity at each station, they were judged by the agri-business representative and awarded "dollars" instead of "points". They were judged on how they exhibited technical skills, but also by how well they used their soft skills and worked together as a team. This provided a great lesson about the importance of balancing technical and employability skills to be successful in the work environment. The monetary point system reinforced the concept of business and career opportunities.

Only a small percentage of the students who attended the Palmerston North event were from a farm background. In this way, the Get Ahead Experience Day was an excellent example of how to provide an interactive opportunity for students to increase their awareness of the career opportunities in agriculture (first level of the edu-marketing pyramid). However, New Zealand Young Farmers do an excellent job of having a series of activities that complement the Get Ahead Experience Day and provide opportunities at both the engagement and influence levels of the edu-marketing approach (Figure 9).

The first example of an engagement opportunity is Teen Ag Clubs. These are clubs that are set up in high schools across New Zealand. Teen Ag Clubs give students a forum to connect with other youth, develop their leadership skills and meet with people who are working in the agri-food industry (Teen Ag 2016). Club members compete in competitions, using skills they develop through their club activities.

Teen Ag clubs elect executive members to serve in leadership roles such as Chairperson, Treasurer and Secretary. The New Zealand Young Farmers have even set up a Leadership Pathway Programme to engage further these executive level members with an opportunity to advance their leadership skills, pair with an industry mentor and make plans for their career pathway (Teen Ag 2016). This showcases the potential for collaboration between schools, youth

development organizations and the agri-food industry that gives students the chance to more deeply engage with the prospect of a career in agriculture and food while developing employability skills.



**Figure 9 Graphic showing alignment of NZ Young Farmer programs with the edu-marketing approach.**

The second complementary program is In2 The Field, which is a mentoring program. Considering the need for the progression of edu-marketing initiatives, it is a perfect follow up to the exposure and engagement offerings of the other two programs. Through Get Ahead programs, students are exposed to ag career information (Get Ahead Day) and given the opportunity to engage more deeply with it (Teen Ag Clubs). The In2 The Field program gives them the chance to take the next step and register for the opportunity to be paired with an industry mentor.

Youth can explore a specific career more in depth, through a job shadow or a more long term mentoring relationship with someone in the career they are interested in. A positive mentor can speak first-hand about their career in agriculture and offer advice to a young person. This is an effective method to build a deeper relationship with youth who are showing a keen interest in an agriculture career.

New Zealand Young Farmers have done an excellent job of designing programming that is collaborative in nature, meets the needs of youth, and focuses on agriculture careers.



### Positive aspects of Program

- Collaboration between Youth Development Organization, School system and agri-food sector creates varied and valuable experiences for students
- Students learn about a variety of careers in agriculture and food through hands on activities and interaction with agri-food ambassadors
- Highlights the importance of employability skills, and programming is designed to encourage development of those skills
- Program options provide an opportunity for students to progress through edu-marketing pyramid: increase awareness, engage with career information and develop a deeper "influence level" relationship with the sector
- A competition/business format is integrated into the Get Ahead Experience Days (playing on Gen Z characteristics)

### Requirements for Success

- Investment of time and resources from agri-food sector to participate in programs
- Buy-in from schools to attend Get Ahead Experience Days and to offer supportive environment for Teen Ag Clubs/In2 The Field Mentor programs
- Coordination of programs needs to be taken on by a well connected youth development organization or educational organization

### Opportunities for Expansion

- Get Ahead Experience Day format is easily adapted to be offered in local communities across Canada based on local business availability
- Teen Ag Clubs can be an extension of (or part of) a 4-H club in a local community
- Schools across Canada can be potential host sites for Teen Ag Clubs
- Any agri-business can offer mentorship programs and job shadow opportunities to high school students across Canada (businesses should contact their local high school guidance counsellor to make them aware of desire to offer experiential learning opportunities)

### **2.5.iii Ambassador Programs: Bright Crop, Tasty Careers & Young Farming Champions**

The United Kingdom is experiencing a similar challenge to Canada in recruiting young people into the field of agriculture careers. In response, an industry wide coalition was formed, called BrightCrop. BrightCrop's mission is to "inspire young people to consider careers in food and farming; to inform them of the diverse skills and qualifications needed to succeed and to connect them to a network of passionate industry Ambassadors" (BrightCrop 2013).

One of the main components of the BrightCrop program is the Ambassadors. BrightCrop has partnered with two educational charities, STEMNET (<http://www.stemnet.org.uk>) and Inspiring the Future (<http://www.inspiringthefuture.org>). Both organizations provide in school programming for students built around career and leadership presentations by mentors and volunteers. Cooperation with these two organizations gives BrightCrop access to a vast network of schools across the United Kingdom. Essentially, BrightCrop recruits and trains agri-food industry Ambassadors, and then books presentations through existing STEMNET and Inspiring the Future connections (BrightCrop 2013).

In addition to the collaboration with education organizations, there are also several agriculture industry sponsors who contribute financially to the program. Other involvement from the ag sector is achieved through the volunteering of time as an Ambassador. Collaboration with BrightCrop allows the agri-food sector to connect directly with its future pool of employees.

There are many advantages to an Ambassador program. Firstly, it provides students with real life examples of people who are working in the agri-food sector. This, therefore, serves as an awareness building program for youth, expanding their understanding of agriculture careers beyond primary production. Secondly, Ambassadors can serve as informal mentors for students. They can talk about their career paths and provide guidance and advice to those students whom they meet with (influence level programming). As well, they may be able to highlight the skills that are helpful for them in their jobs and give youth an impetus to develop their soft skills.

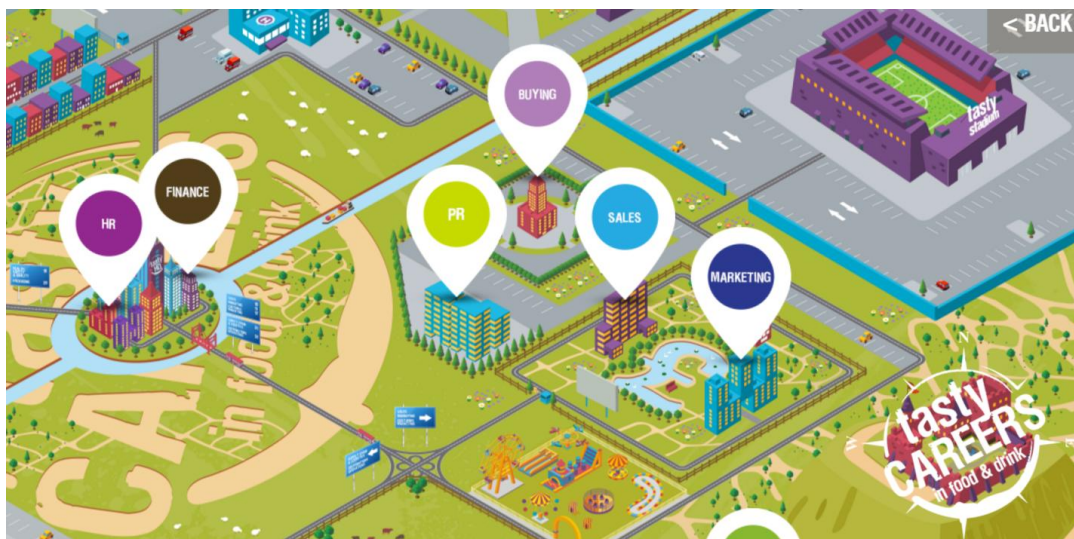
What is particularly impressive about BrightCrop is their decision to align with STEMNET. Science Technology Engineering and Math (STEM) careers have received much attention in recent years. Many educational departments around the world are placing an increased emphasis on the preparation of students for careers in those areas. Unfortunately, many people would not associate STEM with agriculture. However, by using the STEMNET network, BrightCrop is expanding their potential audience of students, to include those with interest in science and its related fields. The Scottish Food and Drink Federation is also partnering with STEMNET to offer in-school presentations by industry ambassadors, so it is clear that the approach has been effective for several organizations.

BrightCrop has also taken advantage of the outreach opportunities at science and STEM-related events, such as the Big Bang Fair. This is an annual event held in England which includes exhibits, theatre shows, interactive workshops and careers information from STEM professionals (Big Bang Education CIC 2016). It also is the host location for the Big Bang Competition; a national science fair where students enter individually or as teams to compete

for titles such as UK Young Scientist and UK Young Engineer of the Year (Big Bang Education CIC 2016). Since its inaugural year in 2009, the Big Bang Fair has grown from 6,500 visitors to over 70,000 (Big Bang Education CIC 2016). BrightCrop can attend the fair and connect with a huge audience of students to provide information on agriculture careers.

During my research, I came across a few other examples of organizations who utilize an ambassador related program. The first was in Scotland, run by the National Skills Academy. Tasty Careers is a program dedicated to connecting youth with careers in the Food and Drink industry. They have a network of ambassadors who are young and in exciting careers like an electrical engineer and product developer. These ambassadors are highlighted on their website, and also available for events and presentations. I especially enjoyed how Tasty Careers integrated their ambassador information into an interactive career map that they put on their website.

The food and drink manufacturing sector is an integral component of the agri-food sector as a whole. However, food processing careers have a similar challenge to agriculture in overcoming a misconception around careers being physically demanding, dirty and low paying. Therefore, it is important to see initiatives such as Tasty Careers creating a positive view of careers in all areas of agriculture and food.



**Figure 10** Screen shot of Interactive Careers Map (National Skills Academy Food & Drink n.d.)

Another impressive ambassador program is the Young Farming Champions (YFC), part of Art4Agriculture in Australia. I had the opportunity to learn about the YFC from the Art4Ag founder, Lynne Strong. The YFC are an elite group of young people working in the agriculture sector. Those who make it through the tough selection process undergo an intensive training

program that equips them with the skills and knowledge to be top spokespeople for the agri-food industry. YFC are often highlighted in the media and contacted for interviews on radio, print and television ads.

I was particularly pleased to see the strong emphasis the YFC training places on soft skills such as communication, relationship building and critical thinking. The YFC are truly developed to be the future leaders of the agriculture industry in Australia. Many are innovative thinkers running their own entrepreneurial business, and all of them are young. They are therefore the perfect kinds of ambassadors who can go into school classrooms to talk to students in primary and secondary school about the agri-food industry, and about their careers. It is impactful for students to see young, articulate, passionate people proudly sharing their story about working in agriculture.

Ambassador programs can serve as a valuable tool in engaging Gen Z to consider careers in agri-food. However, ambassadors must be carefully selected and trained so that they are representing the industry as educated and passionate employees, employers and entrepreneurs. It is also essential to highlight the diversity of careers in the industry and to include representatives who have careers that students may not have associated with agriculture and food.

#### Positive aspects of Program(s):

- Ambassadors offer students real life examples of people working in the agri-food sector
- Connection is established between the agri-food sector and the future pool of employees and interns
- Ambassador programs can expand and improve student's perceptions of the agri-food sector and its career opportunities if the ambassadors are well trained/prepared and positive examples of agri-food employees
- Agri-businesses can contribute to agriculture career education through in-kind contribution of employee hours
- Ambassador programs can be run effectively as collaborations between an educational organization (outreach network) and the agri-food sector (human resources)
- Linkages with popular educational focus areas (STEM) expand student audience

#### Requirements for Success

- Ambassadors should be youthful, to be more relatable to students
- Ambassadors should receive quality training to equip them with the communication and leadership skills to be strong spokespeople for the industry

- Schools need to be willing to invite or welcome ambassadors into classrooms to speak with students
- A centralized database of ambassadors or connection with a large ambassador based organization leverages exposure opportunities with schools

#### Opportunities for Expansion

- Agri-businesses should consider creating more partnerships with education organizations and offering their employees for ambassador programs that connect directly with students
- Youth development organizations, like 4-H, could consider offering soft skills training opportunities to industry ambassadors
- Ambassador programs from different countries should connect to exchange best practices and look for cross-promotion opportunities

#### 2.5.iv Future Farmers of America

Future Farmers of America (FFA) is a prime example of a youth development organization that collaborates with the agri-food sector, while simultaneously being formally embedded into the formal school system. FFA has almost 630,000 members across the United States (National FFA Organization 2015).

When I met with various staff members at the National FFA Center, I was repeatedly told that the secret to their success is the Three Component Model of School Based Agricultural Education. This model consists of a system of programs and experiences that introduce youth to the agri-food sector, help them develop personally and explore career opportunities. For a visual depiction of this model, see Appendix 7.4. The three components are:

##### Classroom/Laboratory

One of the foundational components of the agricultural education framework is the classroom experience. FFA members must be enrolled in an agricultural education program in their local school (referred to as the Chapter level of FFA). The classroom is where they learn technical skills and theory around agriculture topics. This can look a bit different in each school, depending on the resources available and the agriculture teacher's level of expertise. The agricultural teacher delivers the curriculum and also serves as the advisor for the FFA Chapter.

Some schools have long standing agricultural education programs, while some may not have a program in place. The educational policy in the United States makes it possible to propose the development of an ag education program in any school. The National FFA Organization has a

great toolkit to help individuals gather the information and support they require to make such a presentation to their local school board (National FFA Organization 2015).

### Supervised Agricultural Experience (SAE)

Another requirement of the FFA ag education model is a Supervised Agricultural Experience. This is where students have the chance to apply their technical learning from the classroom in a work environment. SAE's represent an outstanding career education platform as the youth have a chance to try out a variety of careers in the context of their choice. Youth may fulfill their SAE through a variety of options including (National FFA Organization 2015):

- Ownership/Entrepreneurship
- Placement/Internship
- Research (entrepreneurial or placement)
- Exploratory
- School Based Enterprise (entrepreneurial or placement)
- Service Learning

### Future Farmers of America

The FFA component of the agriculture education framework is where students have the opportunity to develop their leadership and employability skills. At the local, State and National level youth can compete in a variety of competitions, or participate in leadership development opportunities. The staff at the National Headquarters of FFA explained to me that FFA is really about fostering soft skills and awarding technical skills. This is quite evident when you consider the components of the FFA mission: Premier Leadership, Personal Growth and Career Success.

The three component model and the emphasis on soft skills result in FFA being an incredibly well rounded program. Combining the youth development approach with the formal education system and a career readiness mentality develops youth into informed and engaged citizens equipped with the skills necessary to fill the agriculture labour gap and meet the challenges of a growing population. (See Appendix 7.5 for a diagram of the FFA Delivery Model).

In addition to a meeting at the National headquarters, I also had the opportunity to view some of the Indiana FFA State Convention. One of the events I observed was a Career Development Event (CDE). These are competitions that individuals and teams participate in. They compete at their local level and can work their way up to the National Convention.

The youth in the Agricultural Issues Forum CDE had worked together as teams to identify an issue (e.g. Should Antibiotics be Used in Food Animals?, Is the Misinformation found on social media making an impact on consumer preferences for agricultural food products? etc). They



then researched the issue, including connecting with industry professionals for information. A portfolio was developed, and then the students presented their information to a panel of industry judges, often acting as various key players in the issue (e.g. veterinarian, farmer, ag journalist).

Career Development Events are an excellent example of how students can be exposed to information about the agri-food sector, given an opportunity to engage in an interesting activity, and see the real world application of agriculture topics. There is also a large selection of technical CDE's, such as agronomy, food science and technology, poultry evaluation, etc. which expose students to the skill sets necessary to succeed in a variety of agricultural careers.

FFA's focus on career education and career preparedness are also very evident in the resources they make available for youth. One of the newest resources is a website called Ag Explorer ([www.agexplorer.com](http://www.agexplorer.com)). Students can explore over 200 career profiles of different jobs in agri-food. The website was developed in partnership with AgCareers.com and Discovery Education. The amount of information available makes it a great tool for the exposure level of the edu-marketing pyramid, framing youth thinking of ag careers into eight clearly defined pathways.

For the engagement level of programming, FFA has another website called My Journey (<https://www.ffa.org/my-journey>). This is where students and educators can register to access tools such as activity plans, information on how to integrate soft skills, support for SAEs and career exploration. A new feature of the website, called the resume generator, helps students prepare for career opportunities. Students use the program to insert information about their work experiences and core skills. It also helps to highlight the importance of soft skills by assisting students with incorporating that information into their resume.

A tool like a resume builder provides a solid platform for a student to progress along the edu-marketing pyramid. It is important to have these types of resources available for students so that they can move beyond simply reading or viewing information about possible career pathways to making a concrete engagement with an agriculture career.

#### Positive Aspects of Program

- FFA activities integrate agricultural education into school curriculum
- Supervised Agriculture Experiences (SAE) provide students in high school with opportunities to gain valuable work experience through
- The diversity of SAE options allows students to choose an entrepreneurial venture and develop business skills (meets desires of Gen Z)

- Participating in SAEs allows employers to expand their pool of candidates for certain jobs, through an increased awareness of opportunities and increased connection with potential employees (intern/work placement opportunities/competition judging)
- SAEs and competitions foster a connection between the school and local agri-businesses
- Being immersed in a work environment gives students the opportunity to develop and apply employability/soft skills
- The variety of competitions available through the FFA program highlights the importance of employability/soft skills to students

#### Requirements for Success

- Requires commitment from agri-food industry to open their businesses for SAE's
- Requires agriculture education curriculum/programming in place in schools
- Requires an education community willing to provide flexibility to students for a variety of experiential learning opportunities
- Requires organization of agricultural competitions in which students can participate
- Coordination of programs needs to be taken on by a well connected youth development organization or educational organization

#### Opportunities for Expansion

- There is opportunity to make the Ag Explorer and My Journey websites available for Canadian students to use and fully engage with
- Canadian educators (or education organizations) can adapt some of the FFA educational material and project outlines to their classrooms, to bring agricultural education to their students
- Youth development organizations (e.g. 4-H) or the agri-food sector (e.g. events like fairs) can adapt some of the competition formats for use in their events and programs
- Youth development organizations (e.g. 4-H) can consider the 3 component model of agriculture education as a potential addition to the external credit system in the respective provinces

### 3.0 CONCLUSION

My Nuffield research confirmed for me that Canada is not the only country struggling to fill a labour gap in agriculture. It also confirmed that while we may have a shortage of workers, there is no scarcity of ways to tackle the problem. There is a wide range of programs being developed and delivered by education organizations, youth development organizations and the agri-food sector around the world. Many of these programs target youth, specifically Generation Z (those born 1993-2011).



I believe that Gen Z is a key target audience for filling jobs in the agri-food sector. They are a demographic eager to explore careers that allow them to exhibit creativity while addressing challenges and helping people. An agri-food career can address all of those characteristics. Therefore, the industry and education organizations need to do a better job of getting that message out to youth and selling the idea of working in agriculture and food.

However, one of the biggest challenges in getting Gen Z interested in these careers is to build awareness and address the stereotypes of an "agriculture job". Luckily this can be done through engagement and experiential programming, as well as passionate and effective mentors and ambassadors to represent the industry. Each element of exposure, engagement and influence must have a place in these educational strategies. A clear example of this edu-marketing pyramid is illustrated in Section 2.3. Applying a marketing lens to these educational programs can help to ensure initiatives are presented in a way that captures and holds the attention of Gen Z.

While attracting large numbers of young people to the agri-food sector is essential, we must also make an effort to maintain a high quality pool of applicants. Gen Z needs the opportunity to develop and expand their soft skills so that they will be effective employees. Agri-businesses would do well to remember that technical skills are much easier to train for than soft skills. Therefore, they should collaborate with youth development organizations to help young people become well-rounded employees who can join the workforce with a capacity to learn and work with colleagues.

This work needs to be done before youth enter post secondary education and/or training opportunities. High school is a perfect environment for the delivery of messages and programming that introduce youth to agri-food careers, while also giving them the opportunity to foster employability skills. Some of the best examples of these programs were described in sections 2.4 and 2.5. I have also offered suggestions as to how they can be replicated in and across Canada.

Above all, there must be a collaborative effort between the agri-food industry, education organizations/schools and youth development organizations. The collaboration will allow each of the stakeholders to leverage the expertise and network of the others while working towards the common goal of a strong agri-food workforce and sector.

## 4.0 RECOMMENDATIONS

### Program Approach:

Agriculture career education needs to be approached with a marketing lens, providing authentic information and experiences to Generation Z.

Step 1: Increase **exposure** of the agri-food sector and the diversity of opportunities available to the general population of youth

Step 2: Provide opportunities for youth to **engage** with careers through experiential opportunities (e.g. job shadows, co-op, etc.)

Step 3: Introduce mentors and ambassadors who can provide further positive **influence** to students who show an interest in agri-food careers

### Program Content

During my research, I saw a diverse array of programs directed at Generation Z. The content and approach of these programs revealed a series of recommendations for initiatives here in Canada:

#### Recommendations:

- Incorporate a business case study approach for students to apply both technical and employability skills
- Incorporate element of competition/challenge into programming to appeal to Gen Z mentality of solving problems
- Offer more programs that allow youth to increase their awareness of agri-food careers through hands-on activities and interaction with industry representatives
- When offering experiential work opportunities, allow entrepreneurial endeavours as an option (to address Gen Z career preferences and foster business skills)
- Leverage messaging around the positive impact agri-food can have to show youth that you can benefit others through an agriculture career
- Integrate agriculture career information into topics of environment, science, technology, engineering, math, etc. to expand audience

### Stakeholder Participation

To fully address the agriculture labour shortage we need coordinated collaboration between education (schools & education organizations), youth development organizations, and the agri-food sector. Each stakeholder needs to play an essential role and work with the other(s) to ensure that the best possible programming is offered to Gen Z to encourage them to pursue careers in agri-food.

#### Recommendations:

- Agri-businesses need to collaborate with schools and education organizations to act as speakers, mentors, and/or to provide field trip destinations
- Agri-businesses need to provide authentic work experiences to high school students (job shadows, co-ops, etc.) and should contact their local high school guidance department to make them aware of desire to offer experiential learning opportunities
- Agri-businesses should identify young, successful representatives who can be trained to speak with young people about agri-food careers (partner with education organizations/youth development organizations to offer programming in schools)
- Schools need to offer flexibility in scheduling so that students can pursue experiential learning opportunities in agriculture and food with local businesses
- Ministries of Education, school boards and schools should explore the option to offer external credit for 4-H programs to provide opportunities for entrepreneurial projects and business skills development
- Youth development organizations (e.g. 4-H) should work with education organizations (e.g. AITC) to integrate soft skills development in agriculture career education programs

### **4.1 Personal Reflection**

As I indicated at the beginning of this report, my goal in applying for the Nuffield Scholarship was two-fold. Firstly, I was looking for a learning opportunity that would allow me to develop my leadership skills and grow my professional network. The opportunity to travel the world as a Nuffield Scholar was a life changing experience and I feel that it has indeed allowed me to develop both my network and myself.

At my first ever Nuffield event, I was told that a Nuffield Scholarship "opens doors". I did not realize what it meant at the time, but it is certainly true. Many scholars in other countries opened their doors so that I could stay with them. It was a true pleasure to stay with those who shared their homes with me, and the sense of community is truly one of my favourite aspects of the program. I had to challenge my introverted side every time I stepped into another person's house, but it was so rewarding to hear about their Nuffield studies, meet their families and learn about their country. They are all incredible individuals. We all share a passion for agriculture and adventure, yet each person has their areas of interest and expertise.

The Nuffield scholarship also opened doors to some of the best in the industry. I was overwhelmed by how excited people and organizations were to candidly share their thoughts with me about agriculture career education. I feel that I gained insight into the best practices

and best ideas for engaging the next generation in agri-food career pathways. Now, having completed the Nuffield program, I have a deep knowledge of my research topic. Hence, I am proud to say that I feel I am a young leader in the field of agriculture career education.

One of the interesting things I found as I travelled was that those I met with wanted to learn from me, as much as I did from them. The same can be said for my network here in Canada, which is eager to hear about my findings. I have already had the honour of sharing my Nuffield stories with diverse audiences, ranging from provincial 4-H associations to agricultural conferences, and education organizations. It has been particularly interesting that the groups I have spoken to are the three stakeholder audiences I identified in my report. Through sharing ideas with these groups, I am confident that there will be implementation of approaches that align with the mandates and capacities of individual organizations. I believe that the layout of my report, with positive aspects of the program, requirements for success, and opportunities for expansion can help to make it feasible for organizations to plan and execute accordingly.

The ability to share my findings with my network in Canada has been very rewarding, and it has helped me to meet my second goal of addressing the labour shortage challenge through engaging education initiatives. Through my job at AgScape I have already been able to implement one of the best practices which I witnessed in my research. In September 2016 at Canada's Outdoor Farm Show, I facilitated a Career Competition based on the premise of the Get Ahead Day from New Zealand Young Farmers. There were industry partners who led activities to introduce high school students to a variety of agri-food careers. Students were judged on their technical abilities, as well as how they exhibited soft skills in a group setting. The competition was well received by both the agri-food partners and the school participants. Hopefully, there will be the opportunity to offer this type of competition again in the future.

As I was selecting the best practices to highlight, I was careful to choose those that can be adapted and applied in the Canadian context. Having already implemented one idea, I am confident that others will follow. I believe that there is particular opportunity for Agriculture in the Classroom Canada and 4-H organizations to play a role in implementing some of what is contained in this report. I intend to work with my contacts in these organizations to bring additional ideas to life.

Lastly, I am especially keen to see a deeper involvement from the agri-food industry in the engagement of their future workforce. My goal is to encourage more agri-businesses to connect with their local schools and offer work placements to secondary students. If we all collaborate, we can inspire youth to pursue careers in agri-food, and address the labour gap which threatens the success and sustainability of the industry.

## 5.0 GLOSSARY & ABBREVIATIONS

**4-H:** A youth development organization run through experiential programming (Motto: Learn to Do by Doing). The four H's stand for Head, Heart, Hands, and Health and represent the areas of emphasis for youth development.

**Agri-Food:** The sector of the economy that encompasses the production of crops and livestock, as well as food manufacturing, and food and beverage retail.

**AITC:** Agriculture in the Classroom

**CAHRC:** Canadian Agriculture Human Resource Council

**FFA:** Future Farmers of America

**Generation Z:** The demographic of youth born between approximately 1993 and 2011

**Primary Production:** The production of agri-food products in their raw form. In agriculture careers, this represents "on-farm" jobs.

**STEM:** An area of education encompassing activities focused on Science, Technology, Engineering and Math.

## 6.0 REFERENCES

4-H British Columbia. *External Credits*. 2016. <http://bc4h.bc.ca/opportunities/externalcredits> (accessed August 13, 2016).

4-H Canada. *About 4-H*. 2016. <https://www.4-h-canada.ca/about-4-h> (accessed August 13, 2016).

—. *Sustainable Agriculture and Food Security*. n.d. [https://www.4-h-canada.ca/sites/default/files/4hcan\\_sustainableagfood\\_pillar.pdf](https://www.4-h-canada.ca/sites/default/files/4hcan_sustainableagfood_pillar.pdf) (accessed September 5, 2016).

Agriculture and Agri-Food Canada. *An Overview of the Canadian Agriculture and Agri-Food system*. August 18, 2015. <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2015/?id=1428439111783> (accessed September 5, 2016).

—. *An Overview of the Canadian Agriculture and Agri-Food System*. May 9, 2016. <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2016/?id=1462288050282> (accessed July 14, 2016).

Alberta 4-H. *Stakeholder FAQ's*. 2011. <https://www.4h.ab.ca/SchoolBased/assets/pages/faqs-and-testimonials/index.html> (accessed August 13, 2016).

Bartholomew, Don. *A new model for social (and traditional) media measurement*. August 29, 2008. <https://metricsman.wordpress.com/2008/08/29/a-new-model-for-social-and-traditional-media-measurement/> (accessed August 20, 2016).

Big Bang Education CIC. *About Us*. 2016. <https://www.thebigbangfair.co.uk/the-big-bang-fair/about-us/> (accessed August 20, 2016).

Binkley, Alex. "Thousands of skilled ag jobs will likely go unfilled; Right now no one can say with certainty just how great the demand will be." *Ontario Farmer*, June 9, 2015: A13.

Brat, Ilan. *On U.S. Farms, Fewer Hands for the Harvest*. August 12, 2015. <http://www.wsj.com/articles/on-u-s-farms-fewer-hands-for-the-harvest-1439371802> (accessed September 27, 2016).

BrightCrop. *The BrightCrop Story*. 2013. <http://www.brightcrop.org.uk/Information-For-Industry/Support-Us.aspx#.V7jafkrLX4> (accessed August 20, 2016).

Canadian Agriculture Human Resource Council. *Vacant jobs in agriculture costs producers \$1.5B and impacts Canadians*. March 15, 2016. <http://www.cahrc-ccrha.ca/news-events/news/vacant-jobs-agriculture-costs-producers-15-b-and-impacts-canadians> (accessed July 14, 2016).

Career Connections. *About*. n.d. <http://acmeschoolcareerconnections.weebly.com/about.html> (accessed August 23, 2016).

Crawford, P., S. Lang, W. Fink, Dalton R., and L. Fielitz. "Comparative Analysis of Soft Skills: What is Important for New Graduates." 2011.

Dill, Kathryn. *Seven Things Employers Should Know About the Gen Z Workforce*. November 6, 2015. <http://www.forbes.com/sites/kathryndill/2015/11/06/7-things-employers-should-know-about-the-gen-z-workforce/#792e128a2188> (accessed July 20, 2016).

Doolin, Sarah. *Ten Year Decline in U.S. Farm Labor Has Cost U.S. Economy \$3.1B Annually in Crop Production, Report Shows*. August 13, 2015. <http://www.renewoureconomy.org/uncategorized/ten-year-decline-u-s-farm-labor-cost-u-s-economy-3-1b-annually-crop-production-report-shows/> (accessed September 27, 2016).

Education Employment and Workplace Relations References Committee. *Higher education and skills training to support agriculture and agribusiness in Australia*. Government, Commonwealth of Australia, 2012.

Fredenburgh, Jez. *Analysis: Farming's access to labour if the UK left the EU*. May 20, 2016. <http://www.fwi.co.uk/news/analysis-farmings-access-to-labour-if-the-UK-left-the-eu.htm> (accessed September 27, 2016).

- Gervais, J.P. *The top 5 economic trends facing agriculture in 2016*. January 4, 2016. <https://www.fcc-fac.ca/en/ag-knowledge/ag-economist/the-top-five-economic-trends-facing-agriculture-in-2016.html> (accessed July 14, 2016 ).
- Get Ahead. *Experience Days*. 2016. <http://www.getahead.co.nz/get-involved/experience-days/> (accessed August 20, 2016).
- Kamchen, Richard. *Agriculture classes on university campuses continue to grow*. November 13, 2015. <http://www.country-guide.ca/2015/11/13/agriculture-classes-on-university-campuses-continue-to-grow/47608/> (accessed July 24, 2016).
- National 4-H Council. *4-H Around the World*. 2016. <http://4-h.org/about/global-network/> (accessed August 13, 2016).
- National FFA Organization. "2015-16 Fact Sheet: National FFA Organization." Info Sheet, 2015. —. *Delivery of Mission and Three Component Model*. n.d. [https://www.ffa.org/sitecollectiondocuments/about\\_delivery\\_of\\_mission\\_and\\_three\\_component\\_model.pdf](https://www.ffa.org/sitecollectiondocuments/about_delivery_of_mission_and_three_component_model.pdf) (accessed August 23, 2016).
- . *Local FFA Chapters*. 2015. <https://www.ffa.org/about/who-we-are/local-ffa-chapter> (accessed August 21, 2016).
- . *Supervised Agricultural Experiences*. 2015. <https://www.ffa.org/about/supervised-agricultural-experiences> (accessed August 21, 2016, 2016).
- National Skills Academy Food & Drink. *Interactive Career map*. n.d. <http://tastycareers.org.uk/map> (accessed August 23, 2016).
- New South Wales Government. "Review into agricultural education and training in New South Wales: Summary Report." n.d. <https://www.det.nsw.edu.au/media/downloads/about-us/statistics-and-research/public-reviews-and-enquiries/agricultural-education/summary-report.pdf> (accessed September 27, 2016).
- New Zealand Young Farmers. *About us*. 2016. <http://www.youngfarmers.co.nz/about-us/> (accessed August 20, 2016).
- Schawbel, Dan. *Hire for Attitude*. January 23, 2012. <http://www.forbes.com/sites/danschawbel/2012/01/23/89-of-new-hires-fail-because-of-their-attitude/#3f1200146742> (accessed July 24, 2016).
- Sparks & Honey. *Generation Z 2025: The Final Generation*. 2015. [https://reports.sparksandhoney.com/campaign/generation-z-2025-the-final-generation?utm\\_source=slideshare&utm\\_medium=social&utm\\_term=organic&utm\\_content=2015\\_genz&utm\\_campaign=slideshare\\_clickable\\_link](https://reports.sparksandhoney.com/campaign/generation-z-2025-the-final-generation?utm_source=slideshare&utm_medium=social&utm_term=organic&utm_content=2015_genz&utm_campaign=slideshare_clickable_link) (accessed July 19, 2016).



Statistics Canada. *Generations in Canada*. December 21, 2015.

[https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-311-x/98-311-x2011003\\_2-eng.cfm](https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-311-x/98-311-x2011003_2-eng.cfm) (accessed July 19, 2016).

—. *Highlights and Analysis*. March 13, 2016. <http://www.statcan.gc.ca/eng/ca2011/ha#a1-1> (accessed July 18, 2016).

Teen Ag. *Leadership Pathway Programme*. 2016. <http://www.teenag.co.nz/opportunities-2/leadership-pathway-programme/> (accessed August 20, 2016 ).

## 7.0 APPENDICES

### 7.1 List of Consulted Organizations

- 4-H British Columbia
- 4-H Ontario
- 4-H Jamaica
- Acton High School
- AgCareers.com
- Agriculture in the Classroom Canada
- Agriculture Centre of Excellence Washington State
- AgScape
- Art4Agriculture
- Askham Bryan
- AusCott Limited
- Banting High School
- Beef & Lamb NZ
- Campbell Collegiate
- Canadian Western Agribition: ThinkAg
- Canadian Agricultural Human Resource Council
- Career Harvest
- Chicago Agricultural High School
- ConsiderAg
- Dairy Australia
- Dairy NZ
- Fair Oaks Farms
- Farming and Countryside Education - Bright Crop
- Future Farmers Network
- Future Farmers of America

- Golden Hills School District: Career Connections Program
- Lackham College: Wiltshire Campus
- Lincoln University - Telford Campus
- Meat and Livestock Australia
- Scottish Food and Drink Federation
- National Federation of Young Farmers Clubs
- National Skills Academy - Tasty Careers
- National Trade Academy
- New Zealand Young Farmers
- NZX Agri
- Primary Industries Capability Alliance
- Primary Industries Education Foundation Australia
- Primary ITO
- Royal Easter Show
- Royal Highland Educational Trust
- Rural Skills Australia
- Salesian College
- Scotland Rural College
- Scottish Young Farmers
- Shire of Manjimup: Southern Forests SEED Program
- St. Paul's Collegiate School - Centre of Excellence Agricultural Science and Business
- Taratahi Agricultural Training Centre
- Victorian Farmers Federation: Young Agribusiness Professionals

## **7.2 List of countries visited**

- France
- Scotland
- England
- New Zealand
- Australia
- Jamaica
- Canada

## **7.3 List of Suggested Ag Career websites:**

- <http://www.growingnz.org.nz/>
- <http://www.agexplorer.com>
- <http://tastycareers.org.uk/>
- <http://www.brightcrop.org.uk/>

- <http://www.careerharvest.com.au/>
- <http://www.ruralcareers.net.au/career-guide/>
- <http://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/agribusiness-farmers-and-ranchers/thinkag>
- [www.GrowingCareers.ca](http://www.GrowingCareers.ca)
- <http://www.agcareers.com/career-profiles/>

## 7.4 Three Component Model of Agricultural Education (National FFA Organization n.d.)



## 7.5 Delivery of the FFA Mission (National FFA Organization n.d.)

