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AGRICULTURAL SCHOLARSHIPS

**Public Trust in Agriculture:  
Viewing a Local Issue from a  
Global Perspective**

**Mark Phillips**

**November 2023**

**NUFFIELD** CANADA

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## SCHOLAR PROFILE

I grew up on a potato and beef farm in Arlington, Prince Edward Island and gained experience working on the farm during my formative years. From a young age, I was very passionate about agriculture and planned to follow in my father's footsteps on the farm. As I got older and my hobbies and interests became more diverse, I became less involved in agriculture and began working and living in more urban settings. After graduating from university with a degree in Business, I found myself back on the farm for a brief stint while I decided where I wanted my education to take me.

The short stint on the farm rekindled my interest in agriculture. When a job opportunity came to join the Prince Edward Island Potato Board, I found it exciting to tie my agricultural interests with the more urban lifestyle I had become accustomed to while at university. At present, I have been with the PEI Potato Board for over thirteen years, starting as a Market Information Officer and then adding marketing responsibilities as their Marketing Specialist. I have remained heavily invested in agriculture through my employment with the Board and keeping tabs on the home farm through my father.

Hearing my general manager talk about the Nuffield Agricultural Scholarship program, I became interested in the program and was fortunately successful in my application. From my time spent between urban and rural life on PEI, I have always been interested in public trust in agriculture. I have a unique perspective of seeing things from a farmer's perspective and also understanding why some issues may not resonate as well with the general public. The Nuffield opportunity has allowed me to research this topic from an international perspective while satisfying my love of travel.



**Photo 1: My father (John Phillips) and I**

## ACKNOWLEDGMENTS

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My 2022 Canadian Nuffield scholar mates.



**Photo 2: 2022 Nuffield Scholars – Odette Menard, Lauren Park, Ingrid Johnson, Ken Coles, Shawn Moen and Mark Phillips**

Finally, I would like to thank Janeen McGuigan, my partner who supported me in the highs and lows of this process—and for supporting me in leaving for my GFP while she was seven months pregnant. I would also like to thank my son, Cal, for making this journey more exciting.

Dedicated to the memory of Laura Phillips.

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## EXECUTIVE SUMMARY

Several key findings have emerged through my period of research and travel. Developed through discussions with producers, industry and regulatory representatives and my fellow scholars, the following concepts have provided significant insight into understanding the challenges of public trust in agriculture.

1. **The Rural/Urban Divide:** There is a growing separation between rural and urban populations, and with this comes a loss of community and a disconnect between farmers and consumers. Consumers are losing knowledge of how food is produced, and this disconnect fosters a weakening of public trust.
2. **Engage, not Educate:** Feeling the need to educate consumers is a typical response to a seemingly rapid increase in misinformation surrounding food production and agriculture; however, using the approach of engagement over education creates a stronger connection with the consumer.
3. **Transparency versus Information Overload:** There is a fine line between industry transparency and providing a consumer with an overwhelming amount of unnecessary information. Transparency inherently casts light on practices that may become issues in public trust, and proactive approaches are necessary.
4. **Tallest Trees Catch the Most Wind:** The larger the industry, the more likely it is to become the subject of public focus.
5. **Competitive Marketing:** Competitive marketing, the act of highlighting the weakness of your competition as a marketing strategy, can result in consumer confusion and an overall erosion of public trust in agriculture.
6. **Economic versus Environmental Sustainability:** The economic sustainability of farming can be threatened by requirements to implement environmentally sustainable practices. Ensuring farmers are at the table when developing environmental goals, and financial aid to implement, can make all the difference in the uptake and success of both the economy and the environment.
7. **The Power of the Consumer:** The consumer is always right. While this statement may not be true, it highlights the power of the consumer. The consumer drives the consumption of agricultural products, and this is irrespective of the knowledge the consumer has of farming practices.

Viewing the issue of public trust from a global perspective has taught me that building public trust and gaining a social license to farm requires efforts tailored to the specific industry and local community needs. In response, the following recommendations are made for consideration for the local potato industry in Prince Edward Island.

1. **Engagement with newcomers:** Engagement with newcomers and sharing agricultural knowledge and product use is the way of the future.
2. **Measuring contributions:** Metrics in place for measuring sustainability lend authenticity and foster public trust.
3. **Go to where the people you want to reach go:** Engagement requires reaching members of the public who may not actively be involved in agriculture or agriculture supporters.
4. **Be Proactive:** Actively maintaining the social license to farm requires a proactive approach to public trust.

## **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.

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## 1.0 INTRODUCTION

In Prince Edward Island, our farmers, particularly our potato farmers, farm under a microscope with much scrutiny. Are we alone in this? What do other areas do? How do farmers deal with damaging misinformation? In the digital age of social media, is this a new normal? Do you need to respond to the vocal minority, and what direction should organizations take to be proactive? Are there public trust issues, and are they deserved? Do we sweep the dirt under the rug or clean up the house? Do we need to look in the mirror before we react to certain issues?

There is a romance for the back-to-basics, small farm. Is that practical? We do not have the land, capable workforce, or desire for agriculture to step back as the worldwide demand for food continues to increase. How do we address the rising cost of food while trying to improve how we grow food? All aspects of life need critical analysis, but what happens when it is not based in fact and substantially impacts your livelihood?

People are “researching” more than ever; unfortunately, their version of research does not meet the traditional standards that previous generations upheld. Research now can be “I watched a single YouTube video” or “Someone shared a lengthy Facebook post.” There is rarely any verification of facts or sources.

Through the Nuffield Canada Agricultural Scholarship program, I was given the opportunity to travel to other farming areas to learn what public trust issues they have, if they are warranted, how they deal with them and what they could improve upon. Gaining perspectives from other areas through my Nuffield scholarship has been worthwhile and has helped pave the way for future decisions within my organization, province, and country. The topic has never been more relevant and needs special attention. Gathering outside perspectives will help us improve, learn what needs to change, and reaffirm what we are doing correctly.

While public trust is essential, it cannot be self-awarded. If you feel you have earned it, it is meaningless if the greater public feels otherwise. It takes years to build a social license, and one careless act can disintegrate it in moments. It is easy to find examples where the relationship has faltered and harder to find ones where it is flourishing.

The irony of the public trust issues in agriculture is that the areas where public trust is often eroded are the areas that rely most on agriculture for economic stability. These economic drivers face some of the most scrutiny. ‘The tallest trees get the most wind.’ This is one of many interesting concepts that I have discovered to be important in understanding the concept of public trust and social license. While agriculture provides a basic need, many people have not experienced extreme food shortages and have not had to feel the importance of food.

## 1.1 Potato Industry on PEI

The potato sector is vital to Prince Edward Island's (PEI) economy, culture, and way of life. PEI ranks amongst the leaders in potato production in Canada. PEI's potatoes are on almost every dining table in Eastern Canada; PEI's seed and table potatoes are shipped to over 20 countries annually. In 2023, PEI had 83,500 acres of land devoted to potato production (Statistics Canada, Table 32-10-0358-01), representing Canada's most significant share of potato acreage. PEI is expected to remain one of the largest potato-producing provinces in the coming years. Most of PEI's potatoes and potato products are shipped off-island to other provinces or exported internationally.

The potato industry is culturally relevant and woven into the fabric of Island lore. The three critical cogs of the PEI economy are agriculture, tourism, and fishing. PEI is informally known to some as the "Idaho of the north." Its potatoes are included in the same sentence as its sandy beaches and Anne of Green Gables. Our potatoes were immortalized in a song by Canadian music icon Stompin' Tom Connors, the song's name being "Bud the Spud." Farming is a huge part of the economy and culture.

An economic impact study was completed in 2020 by the PEI government and estimated the total economic impact of PEI's potato sector (Government of PEI 2020). It determined that the potato sector in PEI is a significant economic driver for the province. The analysis revealed that in 2016, the industry generated \$1.35 billion in output and boosted the provincial GDP by over \$527 million. In addition, the sector created 5,016 Full-Time Equivalent (FTE) jobs in the province, contributed \$240 million in wages, and generated \$48.9 million in taxes. Nationally (i.e. the impact on Canada's overall economy, including PEI), the analysis showed that PEI's potato sector generated about \$1.89 billion in output, added \$784.6 million to the national GDP, created 7,086 FTE jobs and generated over \$73 million in taxes (Government of PEI 2020).



Photo 3: PEI Potato Harvest (Source: Anne Phillips)

In a world where commodities are being squeezed for every penny, technologies are helping lower production costs. Significant advances in agriculture have improved our production efficiency, and farms are becoming bigger and require less staff. When I started at the Potato Board in 2009, there were approximately 350 farm units; in 2023, there were about 175—a massive change in a short period. Farmers are either forced out if they cannot adapt, or the industry pressures have caused potential successors to look in other directions for work. Some operations have amalgamated, or larger ones have taken over smaller farms.

While production may be more efficient, there is an unintended cost - fewer people know or are related to farmers. Fewer farmers mean fewer people in the community who are farmers and fewer farm labour jobs. If your family member is a farmer or works on a farm, you are less likely to doubt what goes on at the farm level. Years ago, there was a more robust rural population, and most people had exposure to farms. This introduces another critical concept affecting public trust in agriculture – the urban-rural divide. The urban-rural divide creates a larger chasm between farmers and the general public, widening the knowledge gap between consumers and producers and creating an environment where farming practices are criticized without understanding the necessity of specific practices for food production.

## **1.2 What is Public Trust?**

Public trust refers to the level of confidence and belief that members of the public have in a particular institution, sector, or system. This trust is based on people's perceptions of transparency, accountability, reliability, and performance. Various factors can easily influence these perceptions, including the quality of information and communication, the behaviour and actions of individuals and organizations, and the policies and regulations that govern institutions.

Agriculture is one of many sectors where public trust is of concern. The power, forestry, pharmaceutical, and mining industries would have similar problems. Issues around public trust incentivize industries to change how they do business and interact with the public. Public trust in agriculture relates to many decisions on whether to buy or not buy certain agricultural products. Per the Canadian Food Agency (CFA), public trust in farm or food production is considered a factor in the length of consumer and market responses to food safety incidents and a factor in public concerns about the use of technology in the food industry (Muringai and Goddard 2019).

Public trust is essential because it enables you to earn a social license. The Canadian Centre for Food Integrity (CCFI) describes social license as the privilege of operating with minimal formalized restrictions (legislation, regulation, or market requirements) based on maintaining public trust by doing what's right (CCFI 2016). An industry that holds the public's trust is typically afforded the social license to continue production.

### **1.3 Importance of Public Trust in Agriculture**

Public trust is critical for the sector's long-term sustainability and success, as it directly affects the ability of farms, food processors, and other stakeholders to build and maintain strong relationships with consumers, regulators, and other key groups.

To maintain and improve public perception, it is essential for the sector to be transparent, responsive, and accountable to the public and to be proactive in addressing public concerns and ensuring that its practices align with the values and expectations of consumers and other stakeholders. The sector must strive to be sustainable and produce safe, healthy, and nutritious food that meets the needs of a growing population while protecting the environment and supporting rural communities.

If a farm or industry has the trust of the public, it is more likely to be granted the social licence to farm with minimal outside intervention.

When the public has confidence in the agricultural sector, they trust that the food they consume is produced under strict regulations and safety standards. This trust is pivotal in preventing foodborne illnesses and ensuring the overall health and well-being of the population. Moreover, public trust strengthens the economic stability of the agricultural industry. When consumers believe in the integrity of farming practices, they are more likely to support agricultural products, leading to sustained demand. Without this trust, economic fluctuations could arise, affecting farmers' livelihoods, industry growth, and surrounding economies.

Public trust motivates environmentally responsible practices in agriculture. When the public believes farmers prioritize sustainable methods, there can be greater collaboration in adopting eco-friendly approaches that protect the environment and promote long-term agricultural sustainability. Trust also nurtures support for agricultural research, enabling innovation that benefits both producers and consumers. Public trust in agriculture is the cornerstone that sustains safe, ethical, and prosperous food systems.

### **1.4 Study Objectives**

In general, farmers are a very proud contingent of the population. They are passionate about their farm and put a tremendous effort towards operating economically and environmentally sustainable, productive farms. While few people would enjoy criticism towards their industry or employment, I believe that farmers' passion and belief in what they do makes any complaint feel particularly upsetting. When people take to public forums to criticize agriculture, it can upset farmers who feel the efforts they have put into their business have been diminished. This is especially difficult for farmers to accept when the commentary comes from those who have not spent enough time on a farm to understand what is practical and acceptable as recommendations. With the popularity of social media platforms, people can share their opinions more than ever before, even if those opinions are not well-researched or even well-thought-out. Social media algorithms are known to skew toward negativity. Posts about the

“top 10 foods that are killing you” generate much more engagement than nuanced, researched material. While this affects every sector, it is undoubtedly a hot-button issue within agriculture.

When some farmers in my industry see a negative post on social media, they immediately want us to refute it. Sometimes, by doing that, we draw attention to something that may not have gotten any attention otherwise. The same issues exist in traditional media with letters to the editors or uninformed news reports. Our industry became sensitive to negativity while dealing with a particularly hot-button issue. I wanted to see what other industries were doing in this situation.

Although my interest in public trust started with the concept of social media, my interest in the topic grew beyond just social media and the larger issue of why farmers were criticized, what could be done differently, and what other areas are doing. I wanted to travel around to see how the social landscape of our agriculture compares to other areas, the challenges they face, and the work they do to earn and keep a social license to farm.

With this in mind, the primary study objectives of my Nuffield studies were to:

1. Study current public trust issues facing local industry and the perception of farming held by consumers and the public.
2. Provide an overview of the countries I visited and a brief overview of some of their public trust issues.
3. Provide case studies showing examples of public trust issues faced by our international colleagues and how farmers and industry have proactively or reactively dealt with these issues.
4. Provide a summary of key findings and recommendations for my industry.

## 1.5 Nuffield Study Tour

My Nuffield Study Tour took place between November 2021 and April 2023. During this time, I visited five continents and travelled domestically within Canada. A summary of my travel itinerary is below:

Location	Date	Events
Winnipeg, Manitoba	November 2021	Nuffield Canada Orientation and AGM
United Kingdom/Belgium/Netherlands	March 2022	Contemporary Scholars Conference and self-guided study
Ireland	May 2022	World Potato Congress and self-guided study
Toronto, Can/Orlando, US	October 2022	Canadian Centre for Food Integrity Public Trust Summit and International Fresh Produce Association Global Produce and Floral Show
New Zealand/Kenya/Chile	March – April 2023	Nuffield Triennial Conference and Global Focus Program

My visits to each continent, country and local township were filled with farm tours, industry and regulatory meetings and time spent with my fellow Nuffield scholars. My travels are summarized below, with details and learning highlights in the subsequent report sections.

#### November 2021

- Winnipeg, Manitoba, Canada – Took part in the Orientation for 2022 Nuffield Scholars, as well as the AGM and Canadian Agriculture Hall of Fame Awards

#### March 2022

- Norwich, Norfolk, London UK – Participated in the 2022 Contemporary Scholars Conference with fellow 2021 and 2022 scholars
- UK solo travel – I went to Coventry, Shrewsbury, York, and Scarborough to visit AHDB, Red Tractor, and scholars James Pick, Helen Wyman, and Anna Jones
- Brussels, Belgium – Visited with Belgapom, EUPPA, VLAM, ILVO, Flemish Ministry of Agriculture, and Vegaplan.
- Netherlands – Beonka Dowstra, HLB, Potato Breeder Romain Slooths

#### May 2022

- Dublin, Ireland – World Potato Congress
- Ireland solo travel – Teagasc, Bord Bia, Bord Bia Bloom Festival, Ag Aware, Keogh's, Nuffield Scholars Brain Rushe, Lorcan Allen, David Dolan, Ray Ó Foghlú

#### October 2022

- Toronto, Ontario, Canada - Canadian Centre for Food Integrity Public Trust Summit
- Orlando, Florida, United States - International Fresh Produce Association Global Produce and Floral Show

#### March-April 2023 – Nuffield Global Focus Program

- South Island, New Zealand – Nuffield Triennial, Willesden Farm, Pamu Farms, Waipara Springs, Kings Truffles, Rural Leaders Agribusiness Summit, Garrickfield Farm, Haldon Station, Cardona Distillery, Wilkins Farming, Mt Nicholas Station, Peregrine Winery, Royalburn Station, Earnsclugh Station, Nelson and Fiona Hancox, Alan and Sonia Richardson, Alliance Group Limited, Southern Dairy Hub, Wayne and Karen Fleck, Flax Mill Museum, Peter Templeton Farm, Dylan and Sheree Ditchfield, Lorne Peak Station
- Nairobi, Kenya – Dudutech, Suyian Soul Camp, Kisima Farm Limited, Agventure, Blackbeard SHamba, Sirimon Cheese Studio, Kakuzi PLC, INSTA Products
- Chile – Odepa, Propal, Matetic Vineyards, Agricola Garces, Agrichile, Kenoz, Agricola Ancali Limitada, Agricola La Selva, Vilkun



**Photo 4: Map of Global Focus Program Travel**

### **1.5.1 Contemporary Scholars Conference, Norwich, UK**

The annual Nuffield Contemporary Scholars Conference (CSC) was held in Norwich, UK, from March 7 to 15, 2022, under the theme 'Food, Climate and Health'. The conference provided an opportunity to meet with scholars from the current year. It was an excellent opportunity to network and learn about agriculture-related issues and innovations in the UK and worldwide. The conference gathered over 150 scholars from 15 countries, including Canada, Ireland, Brazil, Kenya, Zimbabwe, the Netherlands, France, Japan, the US, Australia, New Zealand, the UK, and Paraguay.



**Photo 5: 2022 Contemporary Scholars (Source: Norwich Research Park)**

### **1.5.2 United Kingdom**

Since the CSC was in the United Kingdom, I decided to spend extra time there, meet with past and current scholars, and get an overview of British agriculture. The UK has a rich farming history dating back thousands of years. In broad terms, UK farming can be separated into three key areas: arable farming, livestock farming, and mixed. The north and west of the UK are more suited to livestock farming, while the south and east tend to be more suitable for arable farming. While UK agriculture is historically significant, the industry has undergone significant changes, embracing technological advancements, sustainable practices, and efficiency improvements. Smaller family farms coexist with larger commercial operations, producing a range of crops like cereals, vegetables, and fruits, as well as livestock such as cattle, sheep, and poultry.

UK agriculture has high levels of public trust, with 73% of people trusting UK produced food (Red Tractor 2022) and 63% of people reporting their impressions of agriculture as positive or somewhat positive (Stannard 2021), but both of those figures are down slightly from previous years. UK agriculture has faced several public trust challenges stemming from concerns over practices such as pesticide usage, animal welfare standards, and environmental impacts. Issues like food safety scandals, the use of antibiotics in livestock, and environmental degradation have, at times, eroded confidence in the industry. Other concerns include debates surrounding genetically modified organisms (GMOs), trade deals affecting food standards, and transparency in labelling. To regain public trust, the sector seeks to prioritize sustainable and ethical practices, improve communication about production methods, and collaborate with regulatory bodies to ensure accountability and transparency across the entire supply chain.

### **1.5.3 Belgium**

After my time in the UK, I flew to Brussels. Brussels was a pivotal spot to go, being home to the EU and also home to several potato organizations. Belgium is known for its high-quality produce, including fruits, vegetables, dairy products, and livestock, as well as its food processing industry. The country is divided into three regions, Flanders, Wallonia, and the Brussels-Central, each with distinct landscapes, cultures, and languages.

Crops grown in Belgium include cereals, sugar beets, vegetables, and fruits such as apples and pears. As mentioned above, the country is also a significant producer of potatoes, a staple in Belgian cuisine. Belgium also has a thriving livestock industry, particularly with dairy and beef cattle.

Public trust issues in Belgian agriculture surround food safety, environmental sustainability, and animal welfare. Several incidents in recent years have had an impact on public trust. For example, in 1999, a dioxin crisis caused widespread public concern about the safety of Belgian meat and dairy products (Buzby and Chandran 2001). More recently, there have been concerns about the use of pesticides and the impact of industrial-scale agriculture on the environment (Carter 2022). To address these issues, the Belgian government and the agricultural industry have taken steps to improve food safety, reduce the use of chemicals, and promote sustainable and responsible farming practices.



**Photo 7: Photo Summary of Belgian Travels**

#### 1.5.4 Netherlands

Before leaving Europe, I spent a day in the Netherlands visiting one of the scholars I had met at the CSC and taking a potato tour focused on information related to the potato wart issue in PEI. The Netherlands has a highly advanced and modern agriculture sector. The country is known for its efficient and innovative farming practices, particularly in greenhouse horticulture, dairy farming, and pig farming, and has one of the world's densest populations of livestock. The Netherlands is the second-largest exporter of agricultural products in the world. Major exports include flowers, cheese, tomatoes, other vegetables and beer. Dutch farmers prioritize sustainable agriculture and animal welfare, and the government supports these efforts through various programs and initiatives. The Netherlands also has a robust agricultural sector research and development tradition. It is home to several leading institutes and universities dedicated to agricultural research and education, including Wageningen University & Research.

Public trust issues in agriculture in the Netherlands encompass challenges related to environmental sustainability, animal welfare, and transparency. Concerns about intensive farming practices, use of pesticides, and their impact on ecosystems have led to skepticism about the industry's commitment to ecological balance. Issues surrounding factory farming, animal treatment, and the use of antibiotics have raised ethical concerns.

The urgency to fix issues related to nitrogen and climate change has led to friction between the government and farmers and protests by Dutch farmers. These protests often focus on policies related to environmental regulations, farm subsidies, and trade agreements that affect farming practices and economic viability. Farmers use tactics such as tractor convoys, road blockades,

and rallies to draw attention to their grievances, including perceived challenges to traditional farming methods and calls for fairer representation in policy decisions. These protests highlight the tension between agricultural interests, environmental goals, and broader societal concerns, reflecting a complex dialogue about the future of farming in the country (Holligan 2022).



**Photo 8: Photo Summary of Netherlands Travels**

### **1.5.5 Ireland**

I combined work and study by travelling to Ireland to attend the World Potato Congress. After attending the Congress, I spent extra time in Ireland visiting with organizations and Nuffield scholars. Agriculture is one of the largest industries in Ireland, playing an essential role in the country's economy and rural communities. The main agricultural products in Ireland include beef and dairy cattle, sheep, pigs, poultry, and crops such as barley, wheat, potatoes, and sugar beets. The Irish government and private organizations support farmers through subsidies, research, and development programs. The sector faces challenges such as a decline in profitability, Brexit uncertainty, and the need for sustainability and efficiency improvements. Still, there are also efforts underway to modernize and increase competitiveness.

Public trust issues in Irish agriculture revolve around environmental sustainability, animal welfare, and food quality concerns. The sector's reliance on intensive farming practices and their potential impact on soil and water quality has prompted worries about ecological balance. Debates surrounding animal welfare standards, particularly "factory farming" and antibiotic use, have raised ethical concerns. The Irish dairy industry thrived after the milk quota limit was removed, but the success conflicted with the country's increasing focus on climate goals, and dairy, in particular, has been in the hot seat. Moreover, scandals like the horse meat controversy have raised questions about food traceability and quality control (O'Sullivan 2023).

Rebuilding trust requires adopting more sustainable farming methods, prioritizing animal welfare, and enhancing transparency in food production processes to assure consumers of the industry's commitment to responsible practices and high-quality products.

In Ireland, there are various food organizations aimed at promoting and supporting the country's food industry. Some of these organizations are:

- Bord Bia: The Irish Food Board, which supports and promotes Irish food, drink and horticulture products.
- Irish Farmers Association: Represents the interests of Irish farmers and agri-business.
- Irish Creamery Milk Suppliers Association: Represents Irish dairy farmers.
- Irish Food and Drink Industry Confederation: Represents the interests of Irish food and drink companies.
- Teagasc: The Agriculture and Food Development Authority provides research, advisory and educational services to support the growth and competitiveness of Irish agriculture and food industries.
- Food Safety Authority of Ireland: Ensures the safety and authenticity of Ireland's food and protects consumers.



**Photo 9: Photo Summary of Ireland Travels**

### **1.5.6 CCFI Public Trust Summit, Toronto, Ontario**

The Canadian Centre for Food Integrity (CCFI) is a Canadian organization that fosters public trust and transparency within the food and agriculture industry. Through research, communication initiatives, and partnerships, CCFI aims to bridge the gap between consumers and the agriculture sector, providing credible information about food production, safety, and

sustainability. By engaging with stakeholders, including farmers, producers, and consumers, CCFI strives to enhance understanding and collaboration, ultimately building a stronger foundation of trust in Canada's food system.

The Public Trust Summit was a two-day learning program that brought together some key influencers in Canadian Agriculture, specifically those working towards building and maintaining public trust. The program was excellent, but one of the unique inclusions was Dr. Samantha Yammine, better known as Science Sam. Yammine was fighting similar misinformation stories but from a completely different lens. Being a scientist, she dedicates her time to getting people engaged with science and helping fight inaccuracies. Farmers often feel like they are the only ones dealing with ignorance about their profession. As evidenced by the COVID-19 pandemic, misinformation can spread quickly in all sectors.

### **1.5.7 New Zealand**

My next trip occurred as part of my Global Focus Program (GFP). The first country on our tour was New Zealand, where we participated in the Nuffield Triennial program, connecting with current scholars and alumni. New Zealand agriculture is characterized by its diverse and scenic landscapes and is known for high-quality, export-oriented production. New Zealand agriculture is built around dairy farming, sheep and beef farming, horticulture, viticulture, and forestry. Dairy farming is a significant contributor to the economy, with New Zealand being one of the world's largest exporters of dairy products.

As an Island nation with isolated geography, New Zealand focuses on biosecurity to protect against diseases and pests. In response to environmental concerns, New Zealand has focused on minimizing environmental impacts and has pioneered adopting sustainable practices. Despite facing challenges like changing weather patterns and fluctuating global markets, New Zealand agriculture continues to adapt and innovate, contributing substantially to the country's economy and working to keep a strong connection to its rural heritage.

Public trust issues in New Zealand agriculture include concerns about environmental stewardship, animal welfare, and sustainable practices. While the industry stresses its "clean and green" image, debates have arisen around water use and water quality due to intensive farming and pollution. Like Ireland, the dairy industry has seen strong growth, which conflicts with the country's climate goals. Animal welfare standards have also been scrutinized, particularly concerning intensive livestock systems. These issues highlight the need for enhanced communication between producers and consumers and the adoption of more sustainable and ethical practices to rebuild and strengthen public trust in the integrity of New Zealand's agricultural sector.

### **1.5.8 Kenya**

The next stop on our GFP was Kenya. Agriculture in Kenya is important to the country's economy and sustains livelihoods for a significant portion of the population. Kenya has diverse climatic zones and is home to agriculture in many different forms, from subsistence farming to commercial production. Crops such as tea, coffee, horticultural products, and staples like maize

contribute substantially to domestic consumption and export earnings. Livestock rearing, including cattle, poultry, and goats, are also key agricultural components.

The sector faces challenges with poor or inadequate infrastructure, land fragmentation, and climate variability. Efforts are being made to modernize Kenyan farming practices, promote agribusiness, and improve food security through new technology, value-chain development, and more sustainable resource management. The relatively inexpensive access to labour sometimes results in more manual work and lower adoption of new technology.

Public trust issues in Kenyan agriculture involve concerns about land tenure, corruption, and sustainable practices. Land is a big issue, where land disputes and unclear land ownership have led to conflicts, undermining the stability of agricultural activities and investment. Unfortunately, corruption within regulatory bodies has raised doubts about the fairness surrounding agricultural policies and practices, which affects smallholder farmers' livelihoods and erodes trust in the sector. Other challenges relate to unsustainable farming practices, such as deforestation and soil degradation, which contribute to environmental issues and raise concerns about the long-term viability of agricultural production. To improve Kenyan agriculture's perception, they must address land tenure issues, implement transparent and accountable governance, and promote sustainable farming practices to ensure equitable, moral, and environmentally responsible agricultural development.

### **1.5.9 Chile**

The final stop of my GFP and overall Nuffield studies was Chile. Chilean agriculture is characterized by its diverse geography, ranging from arid regions to fertile valleys. Chile is known for producing various crops, including fruits (such as grapes, apples, and avocados), vegetables, and wine grapes, which contribute significantly to exports as well as livestock farming, particularly cattle and poultry. Chile's emphasis on efficient irrigation systems, modern technologies, and export-oriented production has driven it to become a leading global player in the agricultural market. However, challenges such as soil degradation, water scarcity, and the need for sustainable resource management underscore the importance of balancing agricultural development with environmental preservation.

Public trust issues in Chilean agriculture involve concerns about water management, environmental impact, and transparency. The privatization of water causes many problems in Chile. While it assures large agricultural companies access to water, the allocation of water rights and access to water resources has led to challenges in achieving equitable distribution and sustainable use. Environmental issues such as deforestation, soil degradation, and pesticide use have put pressure on the sector's long-term ecological sustainability. To improve the perception of Chilean agriculture, they must address water management issues through improved regulation, promote sustainable agricultural practices, enhance transparency in production and marketing, and prioritize environmental conservation to ensure responsible and trustworthy agricultural development in Chile.

## **2.0 PUBLIC TRUST IN AGRICULTURE**

### **2.1 Local and National Challenges in Public Trust**

#### **2.1.1 Public Trust – The Island Perspective**

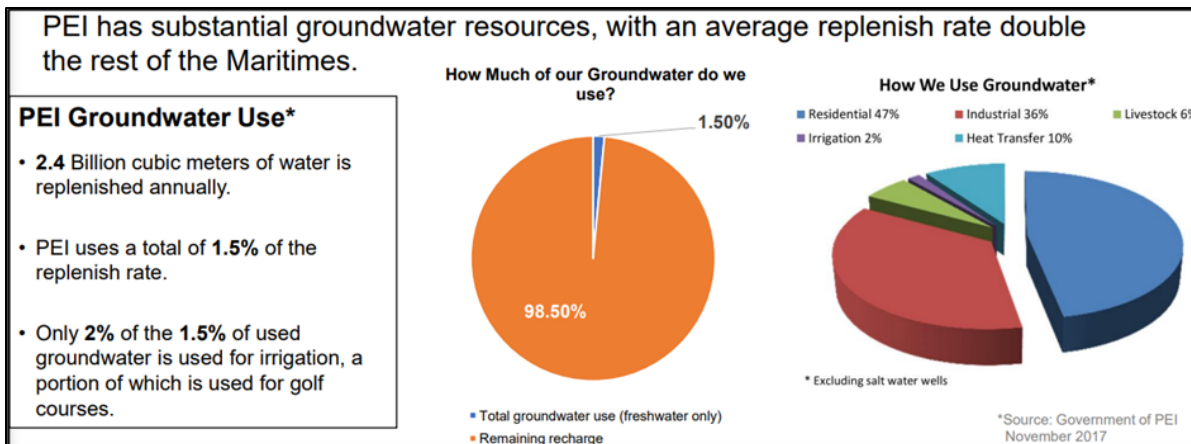
Prince Edward Island Farmers farm under a microscope, as the population intersects more with agriculture than other less densely populated provinces. The production of potatoes is such an essential part of the economy and way of life that the practice commands a great deal of discussion. Farmers are incredibly proud of their work. They work hard, love what they do, and strongly believe in it. A new age of information sharing and a growing divide between rural and urban areas have left producers in a difficult position: defending long-held practices, learning about new agricultural processes ('regenerative agriculture' and soil health, etc.), all while sorting what concerns are relevant and how to adapt to required changes in practices.

Some of the primary challenges in public trust facing island farmers include:

- Irrigation and water use
- Pesticide and fertilizer use
- Soil erosion
- Land use/ownership limits and corporate ownership
- 'Monoculture' affecting soil health
- Quality of product in the local market
- Perceived risk of disease transfer within the international market
- Perceived loss of small-scale farming and move towards larger farms

When I chose my study topic, it was the third drought year in Prince Edward Island. Farmers in PEI had endured a political moratorium on deep wells, giving them a competitive disadvantage by being unable to irrigate. PEI generally gets adequate rainfall, so in most years, only supplemental irrigation was needed, and even that was not necessary in many cases. As the weather patterns trended toward multiple hot, dry summers, farmers grew increasingly frustrated by the lack of access to water.

Water is a non-renewable resource and one of the most essential building blocks of life. Groundwater wells fully supply potable water on the island – so people are right to be wary of how our water is used. PEI has 2.4 billion cubic meters of water replenished annually and uses 1.5% of the replenishment rate. Only 2% of the 1.5% used groundwater is used for irrigation, and a portion of that is used for golf courses (PEI Federation of Agriculture 2020; Government of PEI 2017). However, examples of misuse in places like Chile and California left some residents fearing those issues could arrive at our doorstep even though the situation is quite different.



**Photo 10: Summary of Provincial Groundwater Use (Source: PEIFA from PEI Government)**

While water was the most recent significant public trust issue facing local producers when my scholarship was awarded, people have also raised concerns about pesticide use, land use, farm size, soil health, soil loss (erosion), and fish kill incidents. Pesticide use was a particularly hot-button issue, and special interest groups formed with a mandate to stop commercialized farming and reduce chemical dependency. I questioned whether all Islanders felt this way, or was it just a vocal minority?

In December 2018, the Potato Board commissioned a household summary to gain insights into general public attitudes and perceptions towards Prince Edward Island potato farming and producers.

- 85% of survey participants believe that the potato industry is very important to Prince Edward Island.
- Compared to 5-years ago, 52% of survey participants believe that the importance of the potato industry to Prince Edward Island has stayed about the same. Another 28% believe that the importance of the industry has either increased somewhat or increased a lot.
- 59% of survey participants rated most PEI potato farmers as either responsible or very responsible with respect to being good stewards of the land and environmentally responsible.
- Compared to 5-years ago, 55% believe that the environmental responsibility situation today is better, while another 34% believe that the situation is about the same.
- Weather/climate change/environmental sustainability (22%), chemicals/pesticides/fertilizers (21%), and water/irrigation/wells (15%) are key top-of-mind important issues identified by survey participants.
- Financial stability (72%), water/irrigation/wells (71%) and chemicals/pesticides/fertilizers were important issues that were ranked highest in degree of importance (very important). Chemicals/ pesticides/fertilizers has the highest combination of mentions and high rankings in terms of importance to the survey participant.

Although public trust has been a problem and most producers consider it a crucial issue, overall industry support is generally favourable. While sometimes it feels like the public is

overwhelmingly uninformed about industry issues, getting an unbiased take on how things really are is essential. There is a vocal minority that is against the practices of the potato industry. It is important to remember that they are steadfast in their ways, and there is little you can do to change their mind or invite a nuanced, open discussion. It is important not to focus your advocacy efforts on those whose minds will not likely be changed. Instead, it is important to focus on the moveable middle. While growers sometimes feel unappreciated for what they do, it is important to research and get facts instead of just operating on feel.

As I began my research, I realized that things may not be as bad here as in other parts of the world. However, countries like Ireland once enjoyed a favourable public relationship between agriculture and the general public. But as was demonstrated to me through various visits, things can change. Agriculture quickly became a hotly debated topic when Ireland started focusing on climate goals.

It is also essential to learn how to deal with vocal minorities. Publicly addressing their complaints can bring more attention to the issue. Not responding to public complaints makes it look like you are hiding something. It is a fine line to walk, and the case studies provided in subsequent sections of this report are intended to highlight the experience of other jurisdictions in walking this line.

#### ***2.1.1.1 Sector-Specific Case Study in Public Trust***

##### ***PEI's 2021 Potato Wart Crisis***

The day I was awarded my scholarship, we got the news that the United States had closed its border to PEI seed and table potatoes due to a detection of potato wart within an isolated farming area. It is a profoundly contentious decision with far-reaching implications, which I will not thoroughly discuss in this paper as it would make for an entirely new report. The closure had a major impact on the Island's industry and economy.

However, through the potato wart crisis, an emerging sentiment of public trust unexpectedly arose from locals and consumers. Farmers who had once felt underappreciated and disrespected were suddenly opening social media to find overwhelmingly positive Island-wide support for its number one industry. Radio promotions, potato giveaways, signage, and other support were everywhere. An industry concerned about public perception was enjoying a silver lining during one of its darkest moments.

While those with negative thoughts about the industry were never afraid to share them, those with positive perceptions do not share them as often. In one of the industry's darkest hours, those who supported the industry shared from all directions, and the support was never higher.



**Photo 11: Potato Destruction via snowblower during the 2021 PEI Potato Wart Crisis**

#### ***2.1.1.2 Local Initiatives in Developing Public Trust***

While there is still work to be done, many initiatives are designed to build and maintain public trust in Prince Edward Island. I will discuss some of the most notable below.

##### **Farm Day in the City**

Farm Day in the city is an event through Discover Charlottetown as part of the PEI Fall Flavours Festival. It is designed to celebrate the Island's harvest season and encourages a 'buy local' culture. It is a particularly lucrative weekend for growers who provide for the local market. Prince Edward Island Potatoes have been the title sponsor for over five years. The open-air market occurs in the historic downtown of the province's capital city, Charlottetown. It includes many free activities like live music, a petting zoo, kids' activities, children's entertainment, agricultural displays, a beer garden, and other events. The event sees between 10,000-15,000 people. As title sponsor, the Potato Board sponsors the kid's zone, an information booth where visitors can talk to farmers and industry experts, interactive photo booths, vintage farm equipment, and a virtual reality potato experience. The highlight of their presence is the Cavendish Farms French fry truck, which sells locally produced french fries all day and donates the proceeds to local charities. It is a great way to connect with urban city dwellers who may not have much experience on the farm.



**Photo 12: Farm Day in the City (Source: Discover Charlottetown)**

### **'Fill your Boots' Potato Giveaways**

Led by island farmer Randy Visser and the folks at G Visser and Sons, Fill Your Boots was a way of saying thanks to the residents of PEI who had been supportive during the PEI potato wart crisis. As mentioned above, there was a noticeable turn in public appreciation of the potato industry during the crisis. The Vissers wanted to take the opportunity to thank the public by offering them free potatoes from their storage bins. Through the potato destruction program, which destroyed perfectly good potatoes that had been prevented from entering the US market as tablestock, almost 300 million pounds of potatoes had to be destroyed. The Board teamed up with Vissers and four other Island farms to allow people to help themselves to the potatoes before they were destroyed. Islanders were invited to visit the five locations to “fill their boots” (or whatever other items they had available) with potatoes.

By offering free potatoes, people got a first-hand visit to the farm and saw the scale of the quantity of potatoes that could no longer go to the market. They also met the farmers, learned how their equipment works, and left with free potatoes.

The success of the initial event carried into the fall when Visser saw the opportunity for a second event where he would allow people to dig potatoes directly from the field. With less exposure to farming, some Islanders were not aware of the process of the potato harvest. They could pick their potatoes and learn about the process, which continued to build Visser's relationship with the general public.

In winter 2023, they repeated the initial Fill Your Boots approach, inviting people back to the farm with three other farms. These events have been a great way to maintain the positive relationship with the consumer that had started during the 2021-22 US border closure.



**Photo 13: Randy Visser at the first Fill Your Boots potato giveaway**

## **Farm and Food Care PEI**

Following successful Farm and Food Care programs in Saskatchewan and Ontario, PEI launched its Farm and Food Care division in 2017 to help teach Islanders where their food comes from.

The organization is designed to engage consumers in meaningful discussions about how food is produced and the hard work that goes into making it grow. Farm and Food Care is a coalition of farmers, agriculture and food partners and the government working together to provide credible information on food and farming.

One of the most successful ways to engage with the public is to bring them onto the farm. What better way than a free breakfast made from local ingredients? One of Farm and Food Care's most successful events has been its Breakfast on the Farm. By offering a free breakfast highlighting some core food products like dairy, potatoes, and eggs, people can visit the farm, get a tour, and enjoy a free breakfast and other activities. They usually get about 1,000 visitors from across the Island. The breakfast has been held on a dairy farm, potato farm, and, most recently, a vegetable farm.



**Photo 14: Breakfast on the Farm (Source: PEI Farm and Food Care)**

## PEI Farm Tour

The PEI Farm Tour was a project started by Potato Board employee Ryan Barrett and later supported by Farm and Food Care. The Farm Tour is a simple and effective initiative where crop identification signage is placed along roadside fields. Many Islanders pass by fields but are unaware of what crops are in them. By placing farm signs in select fields, drivers can identify which crop is which and distinguish between wheat and barley, potatoes and carrots and many other crops. Islanders were encouraged to send in pictures of the signs to win prizes.



Photo 15: PEI Farm Tour crop identification sign

## Agriculture in the Classroom

Agriculture in the Classroom PEI (AITC-PEI) is a non-profit, charitable organization committed to providing accurate, balanced, and current curriculum-linked agri-food resources, programs, and initiatives based in science. AITC-Canada is the national voice for agriculture education with a vision for agriculture in every classroom, inspiring every student. As one of 10 provincial member organizations, AITC-PEI acts locally to engage Island students and educators to enhance their knowledge of agriculture and food.

Programs include Canadian Agriculture Literacy Month, GenAg, Tasty Taters and more. The programs help promote agriculture to students who may not otherwise have exposure to it. Programs like GenAg also promote agricultural careers to those who may not have otherwise considered it and help break stereotypes of what agricultural jobs may look like. I had the

opportunity to engage students through classroom outreach programs under AITC-PEI, where I could travel the island showing students details on the production of potatoes on PEI.

### **Open Farm Day**

Put on by the Prince Edward Island Agriculture Sector Council, Open Farm Day is an annual event that sees over 20 farms open their doors to the public, providing fun and interactive ways to learn about life on a farm. Farms range from smaller animal-based operations to larger-scale potato and livestock farms. There are interactive ways for the public to learn from farmers about what goes on in their farms.



**Photo 16: Open Farm Day field event**

This is just a snapshot of the events on Prince Edward Island. While great things are being done, it is crucial not to get complacent and remain proactive. Public trust and social license to farm shifts continuously, with new challenges always arising. While all the events are positive, it is important to ensure they are cohesive, have the right messaging, and not only cater to those already supportive of agriculture.

### **2.1.2 Public Trust in Canada**

While I have primarily focused on public trust issues within the province of Prince Edward Island, issues may be different depending on what part of the country you farm in. With Canada being such a large country, agriculture in the western provinces have unique attributes that do not exist on the East Coast and vice versa. It is tough to make blanket statements about Canadian agriculture or public trust.

In general, Canadian public trust issues include a range of concerns relating to environmental sustainability, food safety, and ethical practices. As consumers become increasingly aware of their environmental impact, farming practices are scrutinized, especially those perceived to contribute to water contamination, soil degradation, and pollution. There is concern about the use of pesticides, herbicides, and genetically modified organisms (GMOs), and some question the long-term effects on ecosystems and human health. These concerns have created public demand for more sustainable and transparent farming methods that prioritize conservation and minimize harmful impacts on the ecosystem.

Food safety issues, like the outbreak of foodborne illnesses, have led members of the public to question the effectiveness of regulations and oversight of agricultural products. Consumer demands for safe and traceable food products have emphasized the need for robust monitoring, testing, and labelling systems that ensure the quality and safety of food throughout the supply chain. Maintaining trustworthy and transparent communication channels between regulators, farmers, and consumers is essential to address food safety concerns and restore confidence in the safety of Canadian agricultural products.

Animal welfare concerns have also become central to public discussions about Canadian agriculture. The treatment of animals in industrial farming operations, such as confined housing and antibiotic use, has led to debates about the morality and sustainability of farming practices. Consumers want transparency about the conditions in which animals are raised and what is being done to ensure their well-being. Producers can adopt humane and ethical practices to address these concerns, increase oversight, and improve communication to help bridge the gap between consumer expectations and industry practices.

According to the Canadian Centre for Food Integrity, as food prices increase, the cost of food is the top concern for Canadians (CCFI 2022). The top five issues reported in 2022 were the cost of food, inflation, energy costs, keeping healthy food affordable, and the Canadian economy. In 2021, climate change concerns had reached an all-time high but fell significantly as prices rose. While most Canadians understand that climate change is one of society's most significant issues, with rising food prices, Canadians are more concerned with the immediate issue of price-related issues than long-term climate goals. Other issues of concern were the global food crisis, food safety, the safety of imported goods, and the availability of quality food.

There is some excellent work being done on public trust in Canada. Some of the great resources and initiatives include:

- Agriculture More Than Ever
- Agriculture in the Classroom
- Agriculture Week
- Open Farm Days
- Before the Plate
- Canadian Food Focus
- FarmFood 360
- Farm and Food Care
- Fields to Forks
- Food Day Canada
- Guardians of the Grasslands
- It's Good Canada
- Real Farm Lives

Moreover, successful commodity-specific campaigns have been done by the Dairy Farmers of Canada, Egg Farmers of Canada, Chicken Farmers of Canada, Canada Beef, and Canada Pork, Turkey Farmers of Canada.

While there are many touchpoints, a problem may be that Canadians have to look for the information (a pull strategy) instead of a push strategy. The information is there, but if people do not look for it, they may not see it in many cases.

While the commodity-specific campaigns do well, it is tougher to have national campaigns representing all industries because of the highly diverse nature of the commodities involved. While many different organizations are trying to do this, it may be helpful for more collaboration.

## **2.2 International Case Studies in Public Trust**

### **2.2.1 Anna Jones and the Divide**

I spent some time with Anna Jones while in the UK. She is a 2016 Nuffield Scholar who studied the media's role in the public perception of agriculture. As a farmer's daughter and now a journalist and media presenter, she had a unique perspective on the role of media and how it affects agriculture. Her studies led her to dive deeper into the complex relationship between town and country – the rural divide.

Her extensive examinations led her to publish her first book, 'Divide.' This book further examined the political, social, and economic differences between people living in rural and urban areas, leaning on her experience having spent significant time in both settings. While the book is written mainly from the lens of a UK citizen, it was very relatable to my own experiences.

The book examines the relationship between urban and rural people, with each chapter tackling a different topic, including home, work, politics, diversity, animals, food, environment,

and community. Anna relates to each through personal experiences working in the media and living in rural and urban settings. While there is no right or wrong side to the divide, the book attempts to help readers understand where each side is coming from and should inspire the reader to consider the other side of each topic. The book warns that if we do not learn to accept and respect our social, cultural, and political differences and rural and urban people, we will have difficulty solving some of the significant issues in our environment and food system.

Anna was raised on a sheep farm on the Welsh borders but has lived most of her adult life in cities pursuing her career in journalism. Most recently, she has moved closer to her rural home, giving her recent perspective from both lenses. She discusses the mysterious feeling of limbo, enjoying the offerings of urban life while missing family, open space, and the lifestyle she was accustomed to growing up and never quite feeling fully at home in either place. It is also tricky to juggle friendships and relationships with people from both groups, as neither understands the other.



**Photo 17: Canadian Nuffield Scholar Lauren Park, Divide author Anna Jones, and Mark Phillips**

She acknowledges the romance of continuing on the family farm, the “no days off” approach many farmers have, and the obligation some feel to carry on the legacy. While this approach works for many people, it can also burden many. The underlying mental health toll is hidden in the underbelly. She does an excellent job not just demonstrating that urban folk do not understand rural dwellers but also that the reverse is true. While many people working in agriculture believe urban workers mainly work 9-5 and enjoy weekends off, that is also not connecting to reality. She also thinks the culture of farmers living like martyrs and constantly working is flawed and flies in the face of the best examples of work/life balance and tending to one’s mental health.

She has an interesting discussion on animal welfare, believing that many are doing the right things and that the “rotten apples” must be exposed so as to not bring down the entire group. She feels these outliers are more damaging to agriculture’s public image than the animal rights activist groups. Unfortunately for those in agriculture, anti-agriculture groups or animal rights groups feed off the same disconnect. They can make claims about food production that the general public accepts as they have a limited understanding of what is necessary for food production.

She also includes several international examples in her book because of her international experience through her Nuffield travels. At one point, she references an interview with a large-scale arable grower from Iowa, who comments, “No one even really knows or cares that we’re out here. We’re nothing and yet, we’re everything.” A common thought amongst farmers is that they are out of sight and out of mind. Most modern people have not dealt with significant food shortages or events that would make them understand the true significance of food.

While she is a friend of agriculture and grew up on a farm, she does not act strictly as a cheerleader for modern agriculture. She stays in the middle on many topics and raises questions about the continued drive for productivity and efficiency that may not gel well with animal welfare or environmental sustainability.

With the urgency of many current issues, some people do not like to sit in the middle on topics. Still, with the complications and variables of many problems, sometimes there are no alternatives. She makes good points about how hardline environmentalists are unlikely to achieve their version of a pastoral utopia, but also hardline farmers can not and should not retain their isolated islands of intensive agriculture that are unaffected by the farm landscape. “Consumers want more than just calories from the farm landscape.”

While Prince Edward Island is not a large place, there are still considerable lifestyle differences between the province's largest urban area, Charlottetown, and growing up in the tiny community of Arlington. I, too, was caught between two lifestyles that I enjoyed and did not know where to hang my hat entirely. I loved the simplicity of country living, being on the farm, knowing everyone. I also loved the music scene in a larger city centre, a better choice of restaurants, opportunities to participate in events, and having your friends close by.

By having both of these lenses, I have a unique perspective of why one area doesn’t understand the other. In writing the Divide, Anna compiled thoughts I had most of my life and gathered them in a well-written and honest discussion of these issues.

Through my work, I noticed that some people in the agricultural workforce could not understand the blind spots people may have regarding agriculture. However, when you spend a lot of time with people not involved in agriculture, you can see why their priorities differ.

Anna's book brought together many ideas I had been starting to form independently about the disconnect between agriculture and consumers. In my research, I found that in 1851, 90% of people lived in rural areas, many of whom would have farmed; that number now is under 20% (Statistics Canada 2015), and farmers make up just 1.6% of the population (Spudsmart 2023). It's much easier to understand things or have trust in it if people you know are involved in it. People had friends and family who were farmers, so there was less unknown, and they did not feel the need to question it. When you live in a rural area, you see the farmers and know them. The urban population continues to grow, while the rural population has remained the same for decades.

Through my role with PEI Potatoes, I have the opportunity to speak to school classrooms. Early in my time with the Board, I would start a presentation by asking the students how many of them knew a farmer. Usually, someone in the class came from a farm, and several others knew someone who worked on a farm. At that time, there were approximately 350 farms on the Island. The number is now closer to 175. When the same question is asked, fewer hands go up, even in predominantly rural schools. As more people move to PEI from other areas and countries and have no relatives in rural PEI, they have even less exposure to agriculture and, therefore, would have less ease in understanding it.

Anna also started Just Farmers. Just Farmers is a not-for-profit organization that gives farmers and growers the confidence to tell their stories with pride through free Media Education workshops while helping members of the media find independent farmer case studies to talk to. This program helps farmers share their stories with the media and feel more confident to do so. Farmers need to share their stories but are often critical of how they are represented when they do. By giving farmers media training, they are more comfortable speaking to the media and can control the story more. She feels farmers must continue to be their own champions; if not, who will?

### **2.2.2 Bord Bia and Other Irish Agri Initiatives**

Bord Bia is the Irish Food Board, a state agency responsible for promoting Irish food, drink, and horticulture exports. It aims to build consumer trust in Irish food and drink products and supports producers in growing their businesses. The organization works with producers to help them meet high quality, safety, and sustainability standards and to develop new markets for their products.

To improve the perception of Irish agriculture, Bord Bia promotes and markets Irish food and drink products domestically and internationally, as well as promotes sustainable food production practices. They run campaigns and initiatives to highlight the quality and safety of Irish food, as well as the commitment of Irish farmers to sustainability and animal welfare. Bord Bia also provides technical and business support to Irish food and drink companies and works with industry stakeholders to promote a positive image of Irish agriculture.

## ***Origin Green***

As Ireland citizens began to pay more attention to their sustainability goals, people demanded more from their food providers. Enter Origin Green. Origin Green refers to a voluntary initiative launched by Bord Bia in 2012. It is a sustainability program focused on the Irish Food and Drink Industry. The main goal of Origin Green is to position Ireland as a global leader in producing high-quality, sustainably produced food and beverages.



Origin Green works with food and drink producers, retailers, and food service operators to drive sustainability through the supply chain. The program encourages participants to set and achieve sustainability targets for environmental impact reduction, social responsibility, and economic viability. These targets are typically aligned with international standards and best practices related to sustainability and responsible production. While many organizations state they are sustainable, it is important to be able to demonstrate that you are.

The program involves collaboration between producers, government agencies, and other stakeholders to track progress, share best practices, and improve the overall sustainability performance of the Irish food and drink industry.

## ***Bloom Festival***

Another way Bord Bia promotes the positive image of Irish Agriculture is through the Bloom Festival. Bloom Festival is an annual garden and food festival in Dublin, Ireland. The festival was underway during my visit to Dublin, and I was fortunate enough to attend as part of the World Potato Congress programming. The festival displays Ireland's horticulture, food and drink, and farming industries and promotes Irish products to the public and trade visitors. The festival includes a range of events and activities, including horticultural demonstrations, food and drink tastings, and educational workshops. The event aims to improve Irish agriculture's perception by highlighting its diversity, quality, and sustainability.

While the event started as a floral show built in the style of the UK's Chelsea Flower Show, Bord Bia incorporated food as an afterthought, and it was wildly successful. The food portion of the program continues to grow. I found this event to be so successful in drawing people out because it is not just an agricultural event. It engages a broad audience with food, flowers,

music and farming demonstrations. In its 17<sup>th</sup> year in 2023, the festival drew over 100,000 people (Lynott 2023). While the garden show is the star of the show, visitors are subtly introduced to presentations from organizations like Agri Aware, who provide demonstrations on sheep shearing and milking cows.



Photo 18: Ireland's Bloom Festival, Agricultural Demonstration



Photo 19: Ireland's Bloom Festival, Agricultural Engagement Signage



Photo 20: Ireland's Bloom Festival, Origin Green Signage

### ***Agri Aware***

Formed in 1996, Agri Aware is an Irish agri-food educational organization that aims to promote awareness and understanding of the importance of agriculture, farming, and the food industry among the general public and students. It operates as a charitable trust and is funded by various stakeholders in the Irish agricultural and food sectors, including the Irish Farmers' Association, the Irish Farmers' Journal, FBD Trust, Bord Bia, and Ornuia.

The mission of Agri Aware involves providing educational resources, events, and campaigns to connect people with Ireland's agricultural and rural heritage. The organization strives to bridge the gap between consumers and the agricultural sector by offering information about where their food comes from, how it is produced, and the role of farmers in society.

Agri Aware's initiatives include interactive exhibitions, workshops, educational materials, and outreach programs targeted at schools, families, and the public. These efforts are intended to promote a greater appreciation for the work of farmers, the challenges facing them, and the role of agriculture in the environment and economy.

In an agriculturally dominant country like Ireland, it was surprising to see some of the best examples of public trust measures being implemented. I viewed this as a proactive approach to

maintaining public trust within an already dominant industry and indicative of a ‘push strategy’ approach to engagement. Many areas are scrambling to make sustainability claims, but Origin Green was a leading initiative and now has over ten years of work to lead the way in the sustainability conversation. Many agricultural commodity groups and organizations say they are sustainable and making changes, but how do you measure that? Bord Bia has a head start on this.



**Photo 21: AgriAware at Ireland’s Bloom Festival**

While from the outside Bord Bia seems to be a great model for others to follow, like any organization, they have detractors. It was interesting to see comments on Twitter following the Bloom Festival regarding greenwashing and the ethics of a marketing company measuring sustainability. However, coming from a country where this platform is not currently in effect, it seemed like a good model for other countries to strive for.

I also feel that Bord Bia has a great approach to public engagement with events like Bloom. Rather than creating a farm event and hoping people come to it, they have the flower show that is supported by agriculture companies. The push strategy of Bloom seems to be quite effective, as evidenced by the crowds they draw.

### **2.2.3 Red Tractor’s Transparency Approach**

Founded in 2000, Red Tractor is a well-known food assurance scheme in the United Kingdom. It is a quality mark that signifies that food and drink products have been responsibly sourced and produced to predetermined standards specific to each industry they represent. The Red Tractor logo on a product indicates that it meets rigorous standards throughout the food supply chain – from farm to fork.



The Red Tractor organization covers various products, including poultry, dairy, beef, lamb, pork, combinable crops, fruits and vegetables. Its primary goal is to ensure that food and drink products are traceable, safe, and responsibly produced, which in turn helps to boost consumer confidence in the quality and safety of the products they purchase.

The Red Tractor standards encompass various aspects of production, including animal welfare, environmental protection, food safety, and traceability. Farmers and food producers who wish to display the Red Tractor logo on their products must adhere to these standards and undergo regular audits to ensure compliance. There are 60,000 checks a year across the supply chain by over 350 independent inspectors, covering over 50,000 farms. A panel of experts agrees upon the standards set by each industry. Not every UK farm meets the standards of Red Tractor. As of 2020, nearly 3,000 farms were suspended from their scheme for not meeting their requirements (Red Tractor 2023).

By offering consumers a recognizable mark that indicates products meet specific high standards, the Red Tractor organization aims to improve transparency, promote responsible farming practices, and ultimately enhance consumer confidence in the food they buy.

When Red Tractor was established in the early 2000s, it was a reaction to several food safety, traceability, and quality concerns. It was created in response to several food-related crises and scandals that eroded consumer trust in the UK food industry. The initiative aimed to address these issues and provide consumers with a reliable way to identify food and drink products that meet specific safety and quality standards.

Some of the key incidents that prompted the creation of Red Tractor include:

- **Foot-and-Mouth Disease Outbreak:** The foot-and-mouth disease outbreak in 2001 led to the culling of millions of animals, causing disruptions in the agricultural industry. This event emphasized the importance of biosecurity and disease control measures in livestock farming.
- **BSE Crisis (Mad Cow Disease):** The outbreak of Bovine Spongiform Encephalopathy (BSE), commonly known as mad cow disease, in the 1990s had significant implications

for food safety and consumer confidence. The crisis highlighted the need for better control and traceability in the production of meat products.

Red Tractor has evolved to adapt to changing consumer expectations and regulatory requirements. It continues to play a role in rebuilding and maintaining consumer trust in the food industry by promoting responsible and transparent farming practices.

While the Red Tractor logo signifies adherence to specific standards, some have criticized that the standards may not be stringent enough in some areas. Some consumers and advocacy groups argue that the scheme should continue evolving to address emerging concerns, although it has been revamped several times since its inception.

Critics have questioned the effectiveness of the scheme's enforcement mechanisms. Ensuring that all farms and producers under the Red Tractor umbrella consistently meet the established standards can be a challenge.

Some of the stakeholders of Red Tractor have complaints though. It was outlined well in a Farmer's Weekly article in 2021 (Clarke 2021). Clive Bailey, a Staffordshire arable grower and founder of the farming forum, did not enjoy the excessive cost, unfair competition from imports, and lack of any premium. It may deliver value to the consumer, but it is difficult for the grower to see advantage. If buyers do not pay a premium, it is hard to demonstrate the value.

Phil Latham, a Cheshire farmer and Nuffield Scholar, wrote that he feels the organization lost its way. He thought they were trying to be everything to everyone. He also found some of their attention to unimportant details troubling. The extra fees and time spent do not equate to added value in his eyes.

On the plus side – Guy Smith, an Essex farmer and chair of Red Tractor cereals and sugar beet admits that while no one enjoys the audits, it helps raise their game, and having another set of eyes on the business is not bad. He noted that 20 years ago, French President Jacques Chirac referred to UK food as “the worst in the world.” He feels Red Tractor is a big reason why that sentiment is no longer there.

Chief Executive of Red Tractor, Jim Moseley, points to the three distinct advantages of the scheme. 75% of UK shoppers recognize the logo, and 70% say they are influenced by it. Most UK retailers require Red Tractor. It is also one-stop shopping, instead of adjusting each company's scheme. This way, you only have a single assessment. He acknowledges that some feel there are excessive standards, but you have to get the balance right. Ultimately, Red Tractor is voluntary, so farmers can choose not to partake, but they will be limited in where they can ship. While the Red Tractor logo is recognizable, there may still be gaps in public awareness regarding what the logo represents and the specific standards it encompasses.

Red Tractor has undoubtedly played a positive role in setting standards and promoting responsible practices. However, the food industry is complex, and consumer trust depends on many factors beyond certification logos, including transparency, communication, and continuous improvement.

While the Red Tractor scheme has enhanced consumer confidence in UK food by promoting standards and responsible practices, its success is an ongoing journey. As the industry and consumer expectations evolve, the scheme will likely need to continue adapting to effectively address the challenges and concerns of the modern food landscape.

#### **2.2.4 Ireland's and New Zealand's Dairy Industry**

I have included Ireland and New Zealand's dairy industry in this case study, as I noted similarities in their issues. The dairy industry plays a crucial role in the economies of both Ireland and New Zealand. However, as these countries experience rapid growth in their dairy sectors, they face complex sustainability and climate goals challenges.

Ireland and New Zealand have experienced rapid growth, and the industry carries economic significance. Ireland and New Zealand have historically been significant players in the global dairy market. Their favourable climates and natural resources have enabled significant dairy production, contributing substantially to their economies. Both countries have capitalized on the increasing global demand for dairy products. This growth has led to economic benefits, including job creation and increased revenue, making the dairy sector a cornerstone of their economic landscapes. From a strictly financial standpoint, dairy has been a great business for both countries.

While dairy industry growth brings economic advantages, intensive dairy farming practices also pose serious environmental challenges. These practices often increase greenhouse gas emissions, and contribute to water pollution, deforestation, and habitat destruction. Agriculture is a leading contributor to greenhouse gas emissions in Ireland and New Zealand, primarily through methane from livestock digestion and nitrous oxide from fertilizers (NZ Ministry for the Environment 2019; EPA Ireland 2023).

The rapid expansion of the dairy industry conflicts with the climate goals set by both Ireland and New Zealand. Both countries have committed to reducing their carbon footprints and adopting sustainable practices under international agreements. The dairy industry's growth exacerbates the challenge of meeting these commitments as increased production intensifies emissions and environmental degradation. While the dairy industry was a concern for animal welfare activists, the increased public interest in sustainability has resulted in tension with the public and government regulators.

Dairy industry expansion often requires increased land use, leading to deforestation and habitat loss. This impact on natural ecosystems contributes to climate change and threatens biodiversity. Both countries value their unique landscapes and diverse ecosystems, making the trade-off between economic growth and environmental conservation particularly contentious.

Farmers in these areas feel that they farm much more sustainably than other areas in the world. Many worry that if they cut back on herd numbers to hit climate goals, the demand will still be there, and it is likely that the demand will be picked up in other countries that are less sustainable. They also feel that livestock does not get recognition for how it enables the preservation of green space.

Addressing the conflict between dairy industry growth and climate goals requires a multidimensional approach. Both countries are exploring sustainable farming practices, including improved feed management, reduced fertilizer use, and more efficient waste management. Though challenging to define properly, regenerative farming practices are being explored by some farmers as a potential solution. Investing in research and development for low-emission farming techniques and alternative feed sources could mitigate the environmental impact of the dairy industry. Organizations like Fonterra and the Southern Dairy Hub in New Zealand and Teagasc and Farm Zero C in Ireland are working to demonstrate how these practices can work.

Ireland and New Zealand's governments increasingly recognize the need to balance economic growth with environmental sustainability. Implementing stricter emissions, land use, and waste disposal regulations can incentivize dairy farmers to adopt more sustainable practices. Supporting farmers in transitioning to greener technologies and practices through financial incentives and education is crucial. During many of these conversations, farmers are not at the table. While many agree that climate change is real and changes must be made to mitigate its effects, they are often discouraged by how impractical some of the proposed solutions are. Even more frustratingly, some will not improve the climate situation. Climate change interventions are more likely to be accepted if interpreted as fair, transparent, and inclusive. Many New Zealand farmers are more concerned about legislative response to climate change than the physical impact. With new proposed mitigation strategies, the cost could make farming no longer viable. The scale of an individual farm and its financial situation might be a factor in how much uptake there is in mitigation efforts.



**Photo 22: New Zealand Farmers protest environmental regulations (Source - Politico)**

The rapid growth of the dairy industry in Ireland and New Zealand has brought economic benefits but also presents significant challenges to each country's climate goals. Striking a balance between economic prosperity and environmental sustainability requires a collaborative effort from governments, farmers, industries, and consumers. By adopting sustainable farming practices, investing in research, and engaging industry in the implementation of regulations, these nations can work toward reconciling the conflicts between dairy industry growth and their commitments to combat climate change while safeguarding their unique natural landscapes.

### **2.2.5 Earning Public Trust for Kenya's Large Farm Operations**

Despite their economic importance, large farms in Kenya face several challenges in earning public trust and these farmers have to be creative in managing their public perception. Tensions can rise between smallholder farmers and large-scale farms.

Large farms often require vast land areas, leading to concerns about land ownership, displacement of local communities, and conflicts over land rights. Many of the large farms in Kenya are owned by white British settlers. In times of political turmoil or poor weather, tensions between poor farmers and their British counterparts can lead to violence. Farmers must be aware of this perception and do their best to support their local communities through outreach, engagement, and employment.

Intensive farming practices can lead to soil degradation, water pollution, and deforestation. These environmental concerns affect nearby communities and contribute to negative perceptions of large farms. Many large Kenyan farms have programs to support local water quality, education, and other support systems. Large farms will adopt programs to share information with smallholder farms to help them succeed. By sharing the knowledge they have access to, they can help both farms better manage their environmental plans.

Labour rights, fair wages, and working conditions on large farms are often subject to scrutiny. Allegations of exploitation and poor treatment of workers can damage public trust. An interesting feature of Kenyan farms was that some farms set aside automated machinery in favour of manual labour. In most parts of the world, this would be costly and inefficient. Due to the relatively cheap price for labour, this approach allowed farms to have a more significant impact on their surrounding communities. If a farm is large, takes up a lot of land, and is seen as successful, it might draw some attention from local people who feel that the land is in the wrong hands. If that farm employs many of the local people, they operate with more acceptance from the local communities.

For Kenyan farms, earning public trust requires large farms to address these challenges proactively. Some key strategies that large farms in Kenya can employ to build and maintain public confidence include community engagement, sustainability practices, ethical labour practices, corporate social responsibility, transparency, and accountability.

Establishing open channels of communication with local communities is vital. Large farms can engage in transparent dialogue, involve local stakeholders in decision-making processes, and address land use and displacement concerns. By engaging with their surrounding community positively and meaningfully, they will develop better relationships and proactively help prevent future conflict.

Implementing sustainable agricultural practices can significantly improve a farm's reputation. Employing eco-friendly techniques, water management strategies, and waste reduction measures demonstrates a commitment to environmental stewardship. One smallholder farmer did not think much of his large British neighbouring farm. It seemed wrong that people from outside the country owned so much of the land. Once he spent some time on the farm, he realized the care that this farm put into the soil and the longevity of the farm. Through watching their management practices, he recognized them as custodians of the land.

When visiting with Anne Powys in Kenya, we witnessed how much care she put into Suyian Soul. The family connections ran deep. For some outsiders, the thought of one family having 44,000 acres of land while others have less than one may be hard for locals to take. However, the care of this land is commendable. The land has been holistically managed for decades as a working cattle ranch with a significant focus on conservation. While Suyian Soul works to manage their relationship with bordering communities, political influence or extreme weather can lead to tension. In one instance, neighbouring farms squatted on the land, killed wildlife, and raised tensions, leaving casualties on both sides (Leithead 2017).

Ensuring fair wages, safe working conditions, and opportunities for employee development fosters positive relationships with workers and the wider public. Regular audits and compliance with labour regulations are essential. Fair wages is a relative term; what is considered a fair wage in Kenya would not be accepted in other parts of the world. Farms must pay what is deemed fair within the context of Kenyan agriculture. On top of paying fairly, employers must be sure the conditions are safe for work. Accidents in the workplace can be very costly.

Investing in community development projects, education initiatives, and healthcare programs highlights a farm's commitment to social responsibility. These efforts directly benefit local communities and demonstrate a dedication to the public good. One of the large farms I visited during my travel did an excellent job investing in the community, though it appears the outreach may have been in response to significant blemishes in the company's history with the local community. They have a quarterly Corporate Social Investment Report to provide updates on the success of their programs. They aim to improve livelihoods and respond appropriately to the community's needs by addressing concerns and implementing community-centred projects. Some projects include food donations, a menstrual hygiene program, computer donations, clean water and sanitation, sanitation facilities, and more. The organization takes these efforts seriously and is well-received by the communities.



**Photo 23: Workers at Kisima farms in Kenya**

Large farms should be transparent about their operations, from production methods to financial practices. Regular reporting on environmental and social impacts can foster credibility and accountability.

In Kenya, large farms face a unique public trust situation intricately tied to land use, environmental impact, and labour practices. Earning and maintaining public trust is imperative for these farms to continue contributing positively to the nation's economy while addressing social and environmental concerns. By engaging with local communities, embracing sustainable practices, prioritizing ethical labour standards, and demonstrating corporate social responsibility, large farms can navigate this complex landscape, build a reputation that aligns with public expectations, and foster long-term trust.

### **2.2.6 Navigating the Complex Relationship between Chilean Farmers and Indigenous Communities**

Chile's rich cultural fabric is woven with the histories and traditions of its indigenous communities, who have inhabited the region for centuries. Amidst this backdrop, the relationship between Chilean farmers and indigenous people is complicated by historical legacies, land rights, cultural identity, economic interests, and social dynamics.

A legacy of colonialism, displacement, and land dispossession marks the history of Chilean agriculture and indigenous communities. The arrival of European settlers led to the marginalization and removal of many indigenous groups, resulting in a deep-rooted history of land conflicts and cultural suppression. These historical inequalities continue to shape the dynamics between Chilean farmers and indigenous people today.

Land ownership and resource access are central to the relationship between farmers and indigenous communities. Many indigenous groups seek to reclaim ancestral lands that non-indigenous farmers have utilized for generations. The conflicting land claims often lead to legal battles, as indigenous communities assert their rights and demand recognition of their historical ties to the land.

Chilean farmers and indigenous communities possess differing cultural identities, beliefs, and practices. These differences can sometimes lead to misunderstandings, miscommunications, and cultural clashes. Preserving indigenous cultural heritage, languages, and traditional practices is essential to many indigenous groups and contributes to their sense of identity and pride. Chilean farmers wish to farm how they have for decades, but many indigenous communities feel it is unfair that they do not have more access to the land.

Despite historical tensions, there are instances of collaboration between Chilean farmers and indigenous communities. Some farmers recognize the value of sustainable practices and traditional ecological knowledge that indigenous communities possess. Collaborative initiatives, such as agroforestry projects and traditional crop cultivation, allow both parties to leverage their strengths for mutual benefit.

Chilean government policies are pivotal in shaping the relationship between farmers and indigenous communities. The government has taken steps to recognize indigenous land rights and cultural autonomy through legal reforms and international agreements. However, implementation and enforcement of these policies can be inconsistent, leading to ongoing challenges.

Navigating the complicated relationship with indigenous communities requires open dialogue, empathy, and shared understanding. Bridging the gap necessitates initiatives that respect indigenous rights, promote cultural exchange, and support economic development. Collaborative projects prioritizing sustainable land use, environmental stewardship, and traditional knowledge exchange can build bridges between the two groups.

For some of the farms we visited in Chile, challenges with the indigenous people were a regular occurrence. It involved weighing the risks versus the benefits. One farm regularly gave large quantities of food to local indigenous residents. In other cases, some indigenous people would demand food or threaten violence. Sometimes, they would concede that the food was worth less than the potential conflict. Other farms we visited had a history of proactive communication, and they did not find much conflict with the local indigenous population.

The Mapuche people have a long history of conflict with forestry and large farming operations. Violence has reached a new level in recent years, with arson, destruction, and sometimes death. Some indigenous groups promote non-violent protests that seek to get political recognition and the right to some of their land back. Other younger groups are less organized and more chaotic and destructive in their means (Newman 2021).

The intricate relationship between Chilean farmers and indigenous communities is deeply embedded in historical, cultural, economic, and legal contexts. Navigating this complexity requires a delicate balance between recognizing indigenous rights, addressing historical injustices, and fostering economic collaboration. As Chile progresses toward a more inclusive society, cultivating mutual respect, understanding, and cooperation is essential to finding common ground and ensuring a harmonious relationship that respects cultural diversity and livelihoods.

### **2.2.7 Issues of Water Availability in Chile**

Water is a significant issue in Chile; with limited freshwater resources, water availability varies depending on which region of the country you are located. Most of the country's water comes from glacial meltwater and precipitation in the southern regions. Extreme dryness and water scarcity exist in the Northern regions, including the Atacama Desert.

Agriculture is a significant consumer of water in Chile, and the sector is highly dependent on irrigation due to irregular rainfall patterns. Cultivating water-intensive crops such as fruits, vegetables, and grapes for wine production places significant demands on water resources. Avocados are particularly water intensive, and as global demand continues to rise, it puts extreme pressure on the country's water supply, especially in areas like Petorca (Mohor 2022, Gerretsen 2019).

Through the years, agriculture has been responsible for cases of over-extraction of groundwater and surface water. This has led to reduced river flows, lowered water tables, and aquifer depletion. The dependence on irrigation for many of Chile's agricultural products, coupled with inefficient practices, has intensified the strain on water resources.

From an environmental standpoint, Chile's water rights system has been criticized for its market-oriented approach, which treats water as a tradable commodity. The privatization of water led to concerns about unequal distribution and the potential for water to be concentrated in the hands of a few large agricultural and industrial users. Water access is not guaranteed to citizens, especially in arid parts of the country. The success of agricultural businesses is sometimes prioritized over the needs of individuals.

Many rural communities, particularly small-scale farmers and indigenous groups, depend on agriculture for their livelihoods. With the private ownership of water, it can be difficult for small-scale or subsistence farmers to gain access to the water they need. Reduced water availability can lead to crop failures, income loss, and food insecurity, directly impacting their ability to cultivate crops, raise livestock, and support their families.

Water scarcity has led to conflicts between different user groups, such as agriculturalists, mining operations, and urban residents. In some cases, this has resulted in tensions between local communities and large agribusinesses with access to more resources and better infrastructure for water extraction. Protests have taken place to fight for the right to water,

and groups have called for a rewrite of the 1981 water code that enshrines one of the most privatized water systems in the world, allowing people to buy and sell water allocations. Chile is the only country in the world that says in its constitution that water rights are treated as private property (Bartlett 2022; Gallagher 2016).

Some families and communities have been forced to migrate to seek better living conditions elsewhere in areas with chronic water shortages. This can lead to population shifts and affect the social fabric of the rural regions.

Over-extraction of water for agriculture harms ecosystems, including reduced river flows, the loss of wetlands, and the degradation of aquatic habitats. There are significant impacts on the environment and the availability of water resources for future generations.

The market-oriented approach to water rights is a contributing factor to social inequality. Those with more financial resources can afford to secure water rights, leaving marginalized communities disadvantaged.

Chile has undertaken efforts to address water scarcity and its impacts, including implementing water management plans, promoting more efficient irrigation practices, and investing in desalination technology in coastal regions. Additionally, there have been discussions about reforming the water rights system to prioritize equitable access and sustainability.

In 2019, an ambitious new constitution process was launched as thousands of Chileans took to the streets with a list of demands that led to a referendum that saw an overwhelming majority support the creation of a new constitution. The draft maintains a system that enables private ownership of water through exploitation rights, but it also recognizes a human right to water and its character as a national asset for public use at the constitutional level. The first attempt was rejected by more than 60% of voters. At the time of writing, work was being done on an amendment (Parra Galaz 2023).

There are cautionary tales about the Chilean water situation. It highlights the importance of water use and what can go wrong when mishandled. Quality potable water is currently available to PEI residents for drinking, with few limitations on its use. However, agricultural industries should be careful not to take this availability for granted or unnecessarily waste water. When the general public sees examples like Chile or California, one could understand how they would get defensive about allowing industry to access public water. Farmers should value water availability while enjoying their ability to share it with their communities and protect it.

### **2.2.8 Belgium's Dioxin Affair**

In speaking with contacts in Belgium about public trust, most people mentioned the Dioxin Crisis as a key part of the origin of Belgium's public trust issues within agriculture.

In 1999, Belgium experienced a monumental food safety crisis that reverberated across Belgium and beyond. The dioxin crisis, triggered by contaminated animal feed with toxic dioxins, had far-reaching implications for public health, agriculture, and the trust citizens placed in their food supply chain. This crisis exposed vulnerabilities in the agricultural industry and impacted public perceptions and trust in the safety of agricultural products in Belgium.

The dioxin issue began when dioxin-contaminated animal feed intended for poultry and livestock consumption was introduced into the food chain. Dioxins are highly toxic and persistent environmental pollutants that can cause various health issues, including cancer, reproductive problems, and developmental disorders. The contamination occurred due to the improper disposal of industrial waste products containing dioxins into animal feed ingredients. When animals consumed the contaminated feeds, it caused dioxins to enter the food supply chain, eventually reaching human consumers (WHO 2016).

The discovery of dioxin-contaminated foods ignited widespread panic among consumers. Health concerns surged as authorities advised against consuming specific poultry and livestock products, resulting in mass recalls and destroying contaminated food items. The crisis had a profound impact on the Belgian agricultural sector. Farmers suffered economic losses as market demand plummeted and trade partners imposed stringent import restrictions. The incident demonstrated the interconnectedness of the agricultural and food industries and highlighted the need for strict safety regulations and monitoring mechanisms.

The dioxin crisis significantly influenced the erosion of public trust in Belgian agriculture. Before the incident, the sector was regarded as a stable and dependable source of nourishment. Now, the industry was under intense scrutiny. The crisis exposed weaknesses in the regulatory framework, oversight, and accountability measures in place to govern food safety. Most consumers had taken the safety of their food for granted but were now confronted with the potential that hazardous substances could infiltrate their food.

Consumers questioned the integrity of the food supply chain and became more cautious about their food choices. The shift in perception catalyzed a trend toward increased demand for organic and locally sourced products perceived as safer alternatives. Furthermore, the crisis prompted greater public awareness of the importance of transparent labelling, food traceability, and rigorous safety testing.

The dioxin crisis is a poignant example of the vulnerability of modern food systems to contamination and the importance of stringent regulations. While the situation led to short-term economic losses and public panic, it became a turning point for the agricultural industry. Stricter regulations and enhanced safety measures were put in place in an effort to prevent similar incidents in the future. However, rebuilding public trust after an event of this magnitude is challenging. It requires continuous efforts from stakeholders across the sector to demonstrate transparency, responsibility, and a commitment to ensuring the safety and integrity of the food supply. The dioxin crisis is an important case study for governments,

industries, and consumers worldwide to appreciate the fragility of public trust and the importance of safeguarding it through adequate regulatory and communication strategies.

As a result of the dioxin affair, Vegaplan and Codiplan were created for the respective regulation of produce and meat markets. I had the opportunity to visit Vegaplan while in Belgium. Vegaplan is a Belgian assurance system that aims to guarantee food safety and the quality of the supply of vegetable raw materials. Purchasing a Vegaplan-certified product ensures it is safe and produced using sustainable agricultural practices.

Vegaplan was established in 2001 to respond to the dioxin crisis and other food quality concerns. While Vegaplan has succeeded in putting faith back in the Belgian agricultural sector, some believe consumers have short memories, and people sometimes think that some of the measures are unnecessary because the food is safe. However, that is how people felt before the dioxin crisis. This may illustrate the program's success in restoring public trust after the crisis.

### **2.2.9 Differences in Belgian Perspectives on Agriculture**

Despite its small size, Belgium is divided into three distinct regions: Flanders, Wallonia, and Brussels-Capital. Each of these regions has its own unique characteristics, cultural differences, and perspectives, which can influence how agriculture is perceived.

Flanders, the northern region of Belgium, is known for its rich historical and cultural heritage, picturesque landscapes, charming medieval towns, and vibrant cities. Flanders is a unique blend of the old and new. It is known for its modern and technologically advanced agricultural practices, and the region strongly emphasizes efficiency, innovation, and adopting cutting-edge technologies in agriculture. Flanders is multilingual, with Dutch being the predominant language. It is home to larger, industrialized, and smaller, family-owned farms. This diversity contributes to different perceptions of agriculture.

Wallonia, the southern region of Belgium, is distinguished by its diverse landscapes, rolling hills, scenic valleys, and industrial centers. The region has been shaped by its coal and steel industries. Wallonia is primarily French-speaking and holds onto a more traditional and rural identity. Agriculture is often associated with the countryside and is sometimes seen as a reflection of the region's heritage, and there is a perception of a closer connection to nature. There is a focus on preserving traditional farming practices and maintaining a sense of continuity with the past. Wallonia has more expansive rural areas and more extensive agricultural land than Flanders. This has historically led to a prevalence of smaller-scale farming operations. Flanders has a higher population density and smaller agricultural land compared to Wallonia. As a result, agriculture often tends to be more intensive and focused on higher yields.

While not a traditional agricultural region, the Brussels Capital region still plays a role in shaping perceptions. The region is more urbanized and cosmopolitan, which can lead to a different outlook on agriculture. As an urban hub, Brussels has a diverse population with varying food

preferences. This can influence attitudes toward local and sustainable food production and consumer preferences for organic and specialty products.

The proximity of Brussels to both Flanders and Wallonia has led to the emergence of agricultural awareness campaigns and initiatives within the city. These efforts can impact public perceptions of agriculture and promote dialogue between urban and rural communities.

It is important to note that various factors influence perceptions, including economic considerations, cultural values, environmental concerns, and policy priorities. These differences in perception can affect public attitudes, policy decisions, and agricultural practices in each region.

Through my travels in Belgium, despite its relatively smaller size, it seemed that there was a distinct difference in how each area would react to agricultural issues, stemming from significant differences in these areas' ideologies. One visitor explained they went on television in Flanders about a sunflower oil shortage caused by the Ukraine War. In some cases, the short-term solution was to use palm oil, considered less sustainable. There was little reaction from the Flemish side, but the Wallonian part of the country got into a heated debate. Even within a relatively small country, there can be a significant difference of opinion from geographic areas.

#### **2.2.10 The Belgian Field Liberation Movement (FLM)**

The Belgian Field Liberation Movement (FLM) was a socio-political movement that emerged in the early 2000s in response to the cultivation of genetically modified (GM) crops, particularly GM potatoes, in Belgium. The movement opposed the introduction of GMOs into the country's agriculture, citing concerns about environmental impact, potential health risks, and the corporate control of food production.

The FLM gained attention through its acts of civil disobedience, which included direct actions such as destroying GM potato crops planted in experimental fields. These actions sparked public debates and discussions about the benefits and risks of genetically modified organisms. The movement's activities garnered both support and opposition within Belgian society, reflecting a broader global conversation on the role of biotechnology in agriculture.

During my study tour, I visited ILVO (Flanders Research Institute for Agriculture, Fisheries, and Food). A protest occurred at one of their trials, leading to destruction and arrests. Despite the protestors' intentions, the scientific community defended scientific freedom to perform the trial.



**Photo 26: Protestors destroy GMO potato trials in Belgium (Source - Nieuwsblad.be)**

While the FLM's direct impact on the public acceptance of GMO potatoes might be difficult to quantify, it certainly raised awareness about the perceived potential consequences of genetically modified crops. The movement prompted media coverage and public discussions, leading to increased scrutiny of GMOs and their regulatory frameworks. This heightened awareness likely influenced public attitudes toward genetically modified potatoes and other crops.

Overall, the Belgian Field Liberation Movement protests notably impacted public awareness, policy discussions, and the regulatory environment surrounding genetically modified crops in Belgium and beyond.

## **3.0 CONCLUSION**

### **3.1 Key Findings**

#### **3.1.1 Rural/Urban Divide**

I had experienced the rural/urban divide my whole life but had not put as much thought into its impact on the public perception of agriculture. When meeting with UK scholar Anna Jones and following up by reading her excellent book *Divide*, I felt like she was reading some of my feelings back to me.

The critical point is the growing chasm between the rural and urban people and their values. Rural people do not understand the desire to live in a highly populated area. They believe that urban people are out of touch with rural life and do not understand where their food comes

from –some of that is true. Some urban people feel that living in the country may be cute or romantic or view rural populations as politically backward, uninformed, and out of touch. An interesting highlight of this was watching the BBC show Clarkson’s Farm, where hired man Kaleb Cooper spends some time criticizing the city. When asked when he had travelled to the city, he says never, then pauses and realizes he went for a school trip once but never left the coach. He hated it without really giving it a chance. Many rural folks feel that urban dwellers have not experienced the countryside and do not understand it. Alternatively, how do you know you do not like the city if you have not tried the unique restaurants, enjoy the varied entertainment, and enjoy the diverse cultures and backgrounds congregating in cities?

Neither side is necessarily right or wrong, but the belief that one is better than the other is becoming a hot-button issue. Many problems in society could be solved with a bit more empathy. It is important to view people, places, and situations from another perspective to see why they are the way they are before you judge them for being that way.

### **3.1.2 Engage, not Educate**

I often hear it at meetings - people know nothing about farming! But really, why should they? If you grow up in an urban area where food is readily available, you would not need to know about the inner workings of the farm that produced it. Your priority may be educating yourself on where the lowest meat price is any given week. This is the same way a farmer might be naïve about how their computer works, how Netflix is available through their TV or how their cell phone knows they want to buy new hockey skates. Everyone has specialties and interests, and the differences between people make people interesting. If we were all the same, everyone would want to farm.

While discussing my topic with another UK-based scholar, she shared an article by Janet Barnard entitled “Don’t kid yourself with these two narratives” (Barnard 2022). It helped capture some of my ideas about the “engage, not educate” narratives I have been developing.

While I understand the concern about people not appreciating their food or understanding how it gets to their plate, I think it is wrong to assume we should be educating. We need to work to make people want to learn more about agriculture rather than feel obligated to. If someone came up to a farmer and said we need to educate farmers on online platforms, they may be simultaneously offended, stressed, and uninterested. Similarly, shaming people to learn about our industry does not go far.

While I understand the sentiment behind “Have you eaten today? Thank a farmer” posts, many farmers have contempt for them. Firstly, if you are trying to be relatable to the public, it does not help to place yourself on a pedestal. Secondly, it undermines the work other industries do. Do we thank nurses, plumbers, IT workers? Farming is essential, but if your toilet is backed up, all of a sudden, a plumber jumps to the top of the list. Also, do we thank the consumer? While it is true that everyone must eat, they may not need to buy your food or commodity. Consumers are as important to agriculture as farmers. Asking for thanks may be a harmless bumper sticker catchphrase, but it indicates a bigger issue.

We are working in an industry that has centuries of information at its disposal. People can spend a career in agriculture and still not feel like an expert. How can we expect others with their full-time jobs, families, hobbies, and other responsibilities to want to ensure they are educated about food?

When farm organizations create pamphlets, commercials, or other media, when the only goal is to educate – it can be an exercise in futility. We need to engage. We need to help people care and get them to relate to what we do. Some farmers find fault with the hit BBC program Clarkson’s Farm, but it has been one of the best tools to engage people on agricultural topics in years. It humanizes the farming conditions, shows the challenges, and provides entertainment. People want to be entertained and have education as a pleasant side effect.

Farmers need to look at their audience from a different perspective and learn what they want to know about farming. Make them want to ask questions and answer those questions without overwhelming them with data that would not be necessary for everyday grocery shoppers. The conversation with consumers should not start with “you should know” but “what would you like to know.”

### **3.1.3 Transparency versus Information Overload**

Transparency versus information overload is an important offshoot of the educate versus engage conversation. People often discuss how the answer to public trust is transparency. Transparency is essential, but it is a delicate balance of being open, honest, and forthcoming while not overwhelming the consumer. If you tell a consumer everything, they may get so much information they are unsure what to do with it all.

Transparency may help consumers trust your messaging, and you may look more authentic. With that being said, you must be careful as to how you approach this. Increased transparency inherently brings awareness to issues that may not be on the public radar. By talking about the kind of sprays you use, you may bring attention to the fact that your produce is sprayed. By mentioning you raise bobby calves to a later stage in life, some consumers are oblivious and would not even know the traditional fate of bobby calves.

We want an engaged consumer, but we also want autonomy. We want the public to understand what we are doing, but most would not want their opinion on every action that takes place on the farm. It is the equivalent of your boss hanging over your shoulder on a project. While messaging needs to be proactive, it is a fine line between getting ahead of issues that will become a problem and delving into details no one would otherwise be interested in.

Industries that rely on export markets must take a unique approach to public trust. In many cases, their buyers would have little to no insight into local concerns with production. From the outside, a country like New Zealand is generally considered a scenic pastoral place where food is grown harmoniously with nature. Yet, while visiting there, I learned of the public pressure to change farming practices to meet the demands of the public. Suppose they put out proactive

messages saying what they are doing to deal with these issues in a manner that reaches both local and export markets. In that case, they must avoid introducing a problem to their export market while trying to minimize it closer to home.

We have a similar situation on PEI, where we rely on off-island markets to support our industry. Most of the criticism we get from groups is on the Island, which is not where most of our sales occur. People from off-island associate PEI with sandy beaches and pristine scenery and likely are not in tune with any of the environmental challenges of potato production. If we spend time on our consumer-facing social media pages addressing issues with erosion, pest control, and water use, we are bringing people into the conversation that would not have been concerned about these issues otherwise.

On top of exposing issues that may not have been top of mind for consumers, we also must be aware not to get too detailed in our description of things. People have a limited window to receive your message. When communicating with consumers, it is essential to ensure you give them the correct information – especially when there is so much nuance in agricultural terminology and approaches. However, you will lose the viewer if you spend too much time ensuring every detail is covered. Sometimes, it is best to think like the consumer - what information do they want to know?

People have shorter attention spans than ever. With the uptake of social media and the invention of the endless scroll, things need to be interesting to engage people. If it is too long, you cannot hold their attention. Being bogged down in trivial details may completely lose the end user.

People want to be able to trust a company and do not want them to be seen as hiding information. So, agricultural marketers must finely balance what their audience wants to know and what they need to know. Too much information can leave them overwhelmed and create even more questions.

### **3.1.4 Tallest trees catch the most wind**

In the context of public trust, the ‘tallest trees catch the most wind’ refers to an industry that becomes a focal point of public trust issues. An industry may gain public focus due to its size, the nature of the industry, the type or quantity of emissions produced, or even based on perceived or actual issues with public trust within that industry in other jurisdictions or areas.

I had an interesting discussion with several potato producers in Ireland. Ireland and potatoes are synonymous – for good and bad. Potatoes were a big part of establishing Irish culture and identity. The potato famine caused by the late-blight fungus caused the death of many Irish people and led to a mass exodus of people from the country.

While potatoes are a big part of Irish culture and cuisine, Ireland is not a large producer of potatoes. Compared to PEI, the country’s production is relatively small, and most potatoes are grown for consumption within Ireland.

When I was discussing public trust with Irish potato producers, they did not draw attention to any significant public pressure on potato farming. I spoke to Ross Keogh of Keogh's Crisps, a successful family-owned chip company. When discussing public trust issues, he did not have many negative things to report. People in Ireland love potatoes. The Tayto chip company mascot is beloved, and the potato is an integral part of their diet. What is not to love?

I asked Ross if there were any issues with water use, environmental sustainability, or pesticides. He said he did have one complaint. One neighbour complained about spraying – but not about the chemicals, about the fact that they did it too late one evening and woke them up! I found this to be interesting. While details about their approach to potato production in Ireland differ from ours, it is essentially the same practice, yet no one complains.

On PEI, potatoes are the number one driver of the economy and the most significant agricultural commodity. While dairy cattle are an important part of the Island's economy, culture and more, dairy farmers on PEI do not receive as much criticism for their farming. In Ireland, the exact opposite is true. Potatoes are secondary to dairy in terms of public criticism.

Ireland and agriculture had enjoyed a harmonious relationship, especially compared to places like the Netherlands. However, as part of the EU, there was a growing concern about greenhouse gases and carbon emissions. Ireland abandoned their dairy quota system in the early 2010s, which resulted in a massive uptake in herd numbers. Prices were good, demand was good, people were making a lot of money, and the dairy industry flourished. This was great news for those involved, but bigger is not always better. In the intensively farmed areas, this was putting more stress on the ecosystem and environment.

When the EU started putting more emphasis on climate goals, attention was directed to Irish agriculture as it was reported as the leader in greenhouse gas emissions. As an impartial observer, Ireland seemed to have a lot going right in their approach to dairy farming. However, many other industrialized nations have other industries to hide behind. Large factories, coal plants, and other less sustainable industries are the most significant culprits; therefore, agriculture is typically in the shadows of other industries. With no one to hide behind, Ireland's dairy industry has become a primary focus of regulators as it is viewed as an obstacle to the country's climate reduction targets.

There is a similar story in New Zealand. New Zealand had a significant increase in milk production as areas traditionally not farmed were growing due to the adoption of irrigation technology. New Zealand is one of the largest exporting countries in the world. Fonterra is one of the largest dairy companies, and agriculture is a massive part of their economy. There is nothing to hide behind.

In PEI, potatoes are the tallest trees, facing the brunt of environmental and economic criticisms. Many know it is a significant driver of our economy, but they also consistently put it under the

microscope. Dairy Farmers, while not without any criticism, enjoy a bit more anonymity and do not get the negativity in the spotlight.

### **3.1.5 Competitive Marketing**

Many farmers want to protect their land, want to be sustainable, and want to do better, but they need to be compensated for it. If you are implementing costly policies, but your competition is not, you are at a competitive disadvantage.

This leads to competitive marketing. When Nike rolls out a new shoe, they usually show a celebrity who will wear it, the new features, demonstrate how the consumer will feel when they wear them, and hopefully pique the interest of interested parties. Nike does not start their ad by saying this shoe is more sustainable than Adidas, it's made in more humane conditions than Reebok, and you're less likely to have an injury with Under Armour sneakers.

Perhaps the companies mentioned above would like to do this, but it is typically not a great marketing strategy. The number one drive for these exorbitant shoe prices is not that the other products are inferior but that their product is the product to have.

I understand that organic, sustainable food has to demonstrate why it is more expensive, or consumers may not purchase it, but there is an unintentional side effect of doing so. By promoting organic food, they are not just improving their probability of a sale but also casting doubt, and sometimes fear, to the alternative products.

The pros and cons of organic food can be debated, but how it is marketed can be troublesome, especially for those who cannot afford it. An organic product sales pitch is rarely regarding what is in the product but what is not. They promote the sale of their products by saying how much better it is than the alternative, and often it works. One issue with this is that those who cannot afford the premiums of organic food still see the message. They may now doubt the safety of conventional produce but not have the extra income to pay for organic.

When fast food giant A&W launched their "better beef" campaign (McKenna 2013), saying that their beef is hormone-free may get more people to eat at A&W, it also put fear into consumers about what is in other food. The program resulted in them bringing in beef from Montana and Australia, as Canadian beef did not immediately meet the standards. Is this more sustainable and better? The amount of hormones in beef is small and considered safe by regulators, but this campaign does not just promote A & W beef as safe; it makes consumers feel uneasy about the safety of other restaurants and doubt that the strict food safety regulations in Canada protect them. This marketing approach casts more doubt on the food system.



**Photo 27: A&W beef ad campaign highlighting no hormones or steroids (Source: X – A&W Canada)**

With all the food safety regulations in Canada and other developed nations, food is safer than ever, yet people fear what their food might do to them.

Greenwashing and marketing efforts targeting the environmentally conscious consumer are often harmful. You can find items that do not have genes with non-GMO labelling, like non-GMO salt (Knutson 2018). This makes people doubt the alternatives and try to avoid a risk that was never there in the first place.

When people fear that produce could contain sprays or other harmful items, they get frustrated and unintentionally turn to more harmful processed foods because those dangers are sometimes not as well marketed. Is it better to eat hormone-free fast food than conventional produce?

As mentioned before, the consumer does not have the time to do a deep dive into every product at the grocery store and has seconds to choose which product to take. Food producers often take advantage of this notion, which has unintentional side effects.

If the food system wants less confusion or doubt surrounding produce and products, retailers and producers should turn to promote the benefits and reduce the use of competitive marketing strategies – promote what the product is, not what it isn't.

### **3.1.6 Economic vs Environmental Sustainability**

It is hard to farm green when you are in the red (Teagasc 2022). I heard this phrase many times throughout my Nuffield travels. As people frantically work towards climate goals, the economic viability of farms is often overlooked.

Farmers want to farm sustainably, but the environmental part of sustainability has to harmonize with economic sustainability. There is a worldwide influx of well-meaning green initiatives being enforced that have made or will make certain farms no longer economically viable. The 2021 Irish Farm Report, published by expert accountancy and financial advisory group IFAC Accountants, reports that 87% of beef farmers, 75% of sheep farmers and 63% of tillage farmers acknowledge that their farm enterprise does not provide an adequate income (Teagasc 2022). Input costs are continually on the rise, complicating matters further.

Balancing acres grown or animals raised with farm size is always a delicate balance. When environmentally-based rules limit the amount of crops or animals raised, it is hard for farmers to balance their bottom line. This is compounded by a growing pressure on the food system to feed more people for less cost and the speed at which environmental regulations are being pushed onto farmers. Having farmers at the table during the development of environmental regulations is critical to making practical solutions that ensure the economic and environmental sustainability of farming.

From a financial perspective, farming is high risk and often low reward considering the high capital cost for start up and maintaining operations. During my travels, I heard a discussion regarding the concept that farmers could invest the capital they spent on food production into the stock market, or property development, and receive a much higher return on investments. Still, in this scenario, it overlooks the critical contribution of food production. Farmers in many areas already accept this lower financial return, so further reducing the farm's ability to make money makes the future of agriculture much less appealing. For this reason, succession planning is becoming a big issue among farmers. Many farmers love what they do but are uncertain about the future of farming and encourage their children to seek other career paths. Federal and provincial funding programs incentivizing the shift to environmentally sustainable practices and supporting younger farmers with initial investments help mitigate the financial barriers to environmental sustainability.

### **3.1.7 The Power of the Consumer**

The customer is always right. You hear it all the time – but is it true? I have discussed how we need to engage the consumer, as they do not have the time or experience to be experts in complicated parts of the food system. Yet, they dictate many decisions made by retailers and food producers. How can we provide environmentally sustainable, ethically produced food while maintaining the low prices that large-scale farmers have enabled them to enjoy? Unfortunately, being a morally conscious shopper is a luxury many cannot afford.

Do those who drink almond milk over cow's milk know of the extreme pressure the increase in almond production has put on the California water supply? Do those who pay extra for organic food know their produce is still sprayed?

One interesting story came at the Canadian Centre for Food Integrity Public Trust Summit. An unnamed cosmetic company was criticized for using plastic packaging for their products. They felt the pressure to change and thought it might also provide a competitive advantage to offer sustainable packaging as it would resonate with their target audience. Consumers were happy the company cared when it rolled out and assumed the change was positive. Unfortunately, despite best intentions, the glass containers were more sustainable but required copious amounts of Styrofoam packaging to ensure no damage to the containers during shipping. The weight of the packages was now significantly more, so shipping was not as efficient. Plus, even with the added Styrofoam, more products were damaged at shipping. Therefore, while the consumer may have felt better about the product, the overall result was not more sustainable.

While I get the sentiment and well-intentioned message behind the customer is always right, perhaps it is time to rethink this policy. If the customer is always right, we must deliver safe, nutritious, sustainable food grown by farmers who care. We also need the food to be competitive price-wise.

Consumers want the lowest price. Agriculture has been racing to the bottom to deliver food at a price that is hard to fathom. In the UK, you can buy a broiled chicken for less than a pint of beer. How can you produce food at such a low price? The industry had to be creative to deliver food at these prices. People enjoy having food available year-round, even if it is out of season, taken from all over the world.

Now, consumers are looking behind the scenes of this food system and are unhappy with what they see. If you want sustainable food, you need to pay for it. People need to start prioritizing food. It is often the first thing people cut back on when times are tough: you cannot negotiate your rent/mortgage or pay less for utilities. Food is usually the first shoe to drop when something has to give.

Well-intentioned shoppers prioritize organic food, local food, and whole foods. The benefits of these options can be discussed at another time, but there is no denying the difference in cost. Whether or not people support these types of food – to many, it is a luxury they cannot afford.

Agricultural professionals often complain about the general public's lack of agricultural knowledge. If this group is so uninformed, why are they in charge of what products should be available and what is reasonable to pay? Understanding the customers is always right; I cannot argue that the consumers ultimately decide whether to buy your product. You may be growing more sustainably than the competition, but if the customers are unwilling to pay for it – who cares? So perhaps the customer is always right...but the customer is not always reasonable.

## 4.0 RECOMMENDATIONS

When it comes to public trust, I have learned there is no solution. There is no finish line. Things that will need to be addressed in the future may not even be on our radar now. Foresight and adaptation are critical to maintaining public trust and a social license to farm.

The most important takeaway from my studies is understanding that the consumer thinks like a consumer. Take off your John Deere hat and put on an urban one. If the average consumer does not understand the how and why of agriculture, how come? Why would they?

If I am a mother of three with kids in sports activities and a full-time job, I am just in survival mode. Often, I do not have the time to brush my hair, let alone go down a rabbit hole online of what food is truly the best and healthiest. The attitude that consumers are uninformed is unhelpful. Think of a topic you are not knowledgeable on, and think about why that is. It does not interest you? Do you have no exposure to it? Is it too complicated?

We all have blind spots. Food is necessary to survive, so some agricultural specialists think people are ignorant if they do not understand where it comes from. Think of other things we need to survive. The human heart, everyone has one, and everyone needs it to survive. Do you fully understand how integral it is to your survival, how it works, and how to keep it healthy? We all know we need 20 minutes of exercise daily to be healthy. Does everyone get it?

Everyone is stressed, tired, and overwhelmed by the media. Algorithms designed to find your weaknesses are presenting people with information every day. Algorithms that feed off negativity present people with information every day. A lie can make it around the world while the truth puts its shoes on. How far is the “farmers having consultation meetings to work toward an action plan to combat global warming” message being spread? No one wants to read that. “Eat less meat: UN climate-change report calls for change to human diet” is much more captivating and generates more conversation.

Farming has never been more complicated. How can we expect the ‘average Joe’ to realize the necessity of crop protectants? They are not just to pad the farmer’s wallet. In reality, they make crops viable and often mean the difference between a crop and no crop.

People who are specialized in their field are now more specialized than ever before. Becoming an expert is a daunting task. People cannot possibly know about everything, and agriculture is no exception. We shouldn’t turn our nose up at the tech programmer living in a large urban area because he doesn’t know the difference between wheat and barley if we do not know how to get from 2<sup>nd</sup> Street to 22<sup>nd</sup> and how to ensure that the newest live website functions on both desktop and mobile operations. Remove the superiority and expectations and be more compassionate about where people approach the conversation.

Does that fix the agricultural issue with public trust? No.

Once we understand why people may not understand agriculture, we have a better idea of learning how to manage it. You cannot educate those who do not want to know. Instead of being frustrated about why your 20-minute video on an intricate part of farming didn't generate much attention, consider what people want to hear and meet them where their interests lay.

The BBC's Clarkson's farm has been a great example of that. It's education disguised by entertainment. People can laugh at Jeremy Clarkson's failed attempts to farm, and they do not feel as bad about what they do not know. Jeremy Clarkson already had a following, and people wanted to see what he was doing. Clarkson's Farm engages people to discuss agriculture. Jeremy Clarkson gained negative media attention recently. So, while his show was a great way to share about agriculture, we must also be careful about whom we associate our industry with.

If the BBC created a well-funded 2-season exploration of farming, would people watch? Again, think of the consumer. They have likely worked all day at a job that is draining mentally and physically. Do they have time to come home and peruse Netflix for a deep dive into the pros and cons of a topic like hormone-free beef?

People often speak about conversations with consumers, and the takeaway is that the consumer was more understanding of the farmer's actions once they could discuss the how and the why. What about when circumstances are reversed? When you look at your target audience's day-to-day, do you now see why they may be misinformed?

Much of the social license to farm enjoyed in the 1900s was not because people had better farming practices or because people in the past were predisposed to care about where their food came from. More of the population was rural, and more people farmed. More people knew farmers and were more sympathetic to their causes.

While there is no single solution to the issue of public trust in agriculture, I have several recommendations arising from my research that I think could be beneficial in building public trust with our surrounding communities and customers.

### ***Engagement with newcomers***

When travelling internationally for my Nuffield scholarship, I had the benefit of trying traditional foods and food products from the nations I visited. I discovered new foods and new ways to experience foods I considered traditional to my own culture. As countries like Canada become more culturally diverse, we can expand our traditional palette with the influence of a global population. This allows us to engage newcomers in a learning opportunity regarding Canadian agriculture and foods while learning about agricultural practices and products from other countries. What can we do to invite newcomers into the conversation? More media collaborations showcasing foods from different cultures. Some cultures do not use food products like potatoes; some cultures use potatoes in ways Canadians are not traditionally used to. Why not introduce some media connecting the two? You may discover new ways to eat old

foods or find new products to use in your traditional recipes. Either way, we are creating an open conversation about it.

### ***Measuring contributions***

Sustainability and the newest catchphrase, “regenerative agriculture,” are well-intentioned. However, it can be hard to separate what is meaningful and what is marketing. Right now, there are few limitations on what you can call regenerative, sustainable or green. If everyone uses these terms, the meaning is weakened.

In areas where sustainability is key, regulators and industry are beginning to set climate goalposts. It seems that will be the norm in the not-too-distant future. People realize it is not enough to say something sustainable; an industry must demonstrate it. This is evidenced by Ireland’s Origin Green, where producers cannot say they are green until they prove they are sustainable through an independent auditing process. This puts more faith in the statements and ensures the companies are making changes without just plucking the latest keywords and using them as a marketing tool.

### ***Go to where the people you want to reach go***

A common issue in agricultural marketing may involve a clear vision but not always an effective follow-through. It is easy to promote agriculture to like-minded or supportive individuals. To be fully effective, you have to make sure you reach the people who do not already have their minds made up about agriculture.

If you want to inform the market about the benefits of red meat, a rodeo probably is not the best place to go. You do not start at the church if you want to convert people to Christianity.

Often, when agricultural groups start social media accounts, growers will join, and friends of growers join. You can get an impressive engagement from people already invested in your story. People like your post and give enthusiastic heart emojis and thumbs up. However, this has not expanded the audience for our agricultural messaging. Most organizations should be able to get the support of their members. While it may feel nice to pat each other on the back occasionally, it is not the most effective spend of marketing dollars.

It is interesting to look at some of the pages of commodity groups. You may have support for your posts, but it comes from growers and people connected to them. Good content alone is not enough. An approach similar to the Bloom Festival in Ireland uses multi-interest attractants to gather a diverse subset of the population, allowing agricultural messaging to reach folks who may not have been an audience otherwise.

### ***Farmers need to be at the table***

Policy developers, regulators and grower organizations must make an effort to ensure farmers are at the table when developing standards and regulations that will govern their industry. The negativity surrounding programs and measures starts when they are not considered practical or feasible to implement. Some measures have been implemented with little farmer consultation

that starts the relationship off on the wrong foot. This reduces the likelihood of adoption of voluntary measures and creates unnecessary stress and friction over mandatory measures. Farmers know better than anyone what is practical and achievable on a farm. By openly discussing public goals and farmer's capabilities, it empowers and engages farmers, increases the likelihood of successful adoption and highlights areas where farmers may need support before adopting new measures. Financial support through funding and grant initiatives is an important step towards easing the issue of economic versus environmental sustainability in farming. Supporting learning opportunities for farmers to easily adjust practices to meet future policy or regulatory changes can significantly reduce stress and negativity surrounding needed changes.

### ***Be Proactive***

As evidenced by the swift change in public perception of the dairy industry in Ireland, it is never too early to be proactive in public outreach. If you feel you do not have an issue with public perception but continue to contribute to and engage with your local community, you may find the public is supportive when you need it. This engagement may also flag rising issues with public trust and allow for a proactive response. If your industry is a 'tall tree,' I view a proactive approach as critical in maintaining social license. As an additional measure, public perception polls can give you a relatively inexpensive and more definitive view of how the public views your industry. Take advantage of the great public perception opportunities in your area. The next time someone asks you to do an interview, share your story, or invite someone onto the farm, I encourage you to do it. The extra time out of your day could pay huge dividends.

### ***Concluding Thoughts***

Public trust is the foundation of the social license to farm. While there are no guaranteed solutions to the public trust issues that face agriculture, any more than there are solutions to other challenges facing our sector, there are actions we can take to limit negative impacts and strengthen our relationship with the public. We need to continue to engage with the public, including newcomers and youth, and meet them where they congregate. We must keep an eye on trends in public perception and get ahead of them where possible. It is very tough changing a narrative once it has been established, so if you can work to help shape the story while it's being formed, you are much more likely to be successful. When we do put effort into reaching the public, we must make sure our messaging has purpose and is clear, succinct, and easy to understand.

Today's consumers have less time to consider all the aspects of agricultural food production yet are more interested than ever in knowing where their food comes from. Using well defined and identifiable metrics to measure the success of sustainability practices your organization or industry is taking on provides the public with clear messaging and works to establish the public's trust in industry. Having farmers at the table when developing these metrics, and other key policy decisions, is imperative to ensuring the success of both the sustainable initiative and the farm. While it may be difficult for farmer's to make the necessary sacrifices of time to be a part of these discussions, the long term gains could be immeasurable.

In short, the best way to reach a consumer, is to think like a consumer. If we can meet consumers at their level, and present relevant information in a presentation that appeals to them, we will develop a better relationship with the public.

## 5.0 GLOSSARY

Arable Farming - involves growing crops such as wheat and barley rather than keeping animals or growing fruit and vegetables. Arable land is land utilized for arable farming.

Bord Bia – The Irish Food Board, which supports and promotes Irish food, drink and horticulture products.

Canadian Centre for Food Integrity (CCFI) - a national non-profit organization with a clearly defined mandate as the service provider to help Canada’s food system earn trust by coordinating research, resources, dialogue, and training.

Livestock - Animals such as cattle and sheep, which are kept on a farm.

Prince Edward Island - a Canadian island in the Gulf of St Lawrence, the smallest Canadian province.

Public Trust - Public trust refers to the level of confidence and belief that members of the public have in a particular institution, sector, or system

Regenerative Agriculture - is a conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services, supporting biosequestration, increasing resilience to climate change, and strengthening the health and vitality of farm soil.

Social License - the privilege of operating with minimal formalized restrictions (legislation, regulation, or market requirements) based on maintaining public trust by doing what is right.

Teagasc – The Agriculture and Food Development Authority provides research, advisory and educational services to support the growth and competitiveness of Irish agriculture and food industries.

## 6.0 REFERENCES

- A&W Canada. "A&W Is the Only National Burger Restaurant in Canada to Serve Beef Raised without the Use of Hormones or Steroids. Pic.Twitter.Com/Lilukire8f." Twitter, March 31, 2014. <https://twitter.com/AWCanada/status/450779171648573441?s=20>.
- Barnard, Janette. "Let's not kid ourselves - 2 narratives that need to go." February 7, 2022. [https://primefuture.substack.com/p/dont-kid-yourself-with-these-2-narratives?utm\\_campaign=post&utm\\_medium=web&utm\\_source=direct](https://primefuture.substack.com/p/dont-kid-yourself-with-these-2-narratives?utm_campaign=post&utm_medium=web&utm_source=direct).
- Bartlett, John. "'Consequences Will Be Dire': Chile's Water Crisis Is Reaching Breaking Point." The Guardian, June 1, 2022. <https://www.theguardian.com/world/2022/jun/01/chiles-water-crisis-megadrought-reaching-breaking-point>.
- Buzby, Jean C, and Ram Chandran. "The Belgian Dioxin Crisis and Its Effects on Agricultural ... - USDA ERS." USDA, May 30, 2001. [https://www.ers.usda.gov/webdocs/publications/41603/15642\\_aer828j\\_1\\_.pdf?v=0](https://www.ers.usda.gov/webdocs/publications/41603/15642_aer828j_1_.pdf?v=0).
- Canadian Centre for Food Integrity (2022). Accessed September 2, 2023. <https://www.foodintegrity.ca/wp-content/uploads/2022/10/2022-ENG-Public-Trust-Research-Report.pdf>.
- Carter, Dylan. "Belgium Must Reduce Pesticide Use by 58%." The Brussels Times, August 13, 2022. <https://www.brusselstimes.com/271193/belgium-must-reduce-pesticide-use-by-58>.
- Clarke, Philip. "Red Tractor - The Pros and Cons of Farm Assurance Schemes." Farmers Weekly, January 28, 2021. <https://www.fwi.co.uk/news/red-tractor-the-pros-and-cons-of-farm-assurance-schemes>.
- Statistics Canada "Figure 1 Proportion of the Population Living in Rural Areas, Canada, 1851 to 2011." Figure 1 Proportion of the population living in rural areas, Canada, 1851 to 2011, December 21, 2015. [https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-310-x/2011003/fig/fig3\\_2-1-eng.cfm](https://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-310-x/2011003/fig/fig3_2-1-eng.cfm).
- Fuentes, Valentina. "Truckers Strike, Block Roads in Chile to Protest Arson Attacks." AJOT.COM, August 27, 2020. <https://ajot.com/news/truckers-strike-block-roads-in-chile-to-protest-arson-attacks>.
- Gallagher, Daniel. "The Heavy Price of Santiago's Privatised Water." The Guardian, September 15, 2016. <https://www.theguardian.com/sustainable-business/2016/sep/15/chile-santiago-water-supply-drought-climate-change-privatisation-neoliberalism-human-right>.

- Gerretsen, Isabelle. "5 Everyday Foods That Are Making Droughts Worse." CNN, April 8, 2019. <https://www.cnn.com/2019/04/05/health/everyday-foods-water-drought-climate-intl/index.html#:~:text=In%20Chile's%20arid%20Petorca%2C%20every,of%20irrigated%20water%20a%20day.>
- Holligan, Anna. "Why Dutch Farmers Are Protesting over Emissions Cuts." BBC News, July 29, 2022. <https://www.bbc.com/news/world-europe-62335287>.
- Ireland Environmental Protection Agency. "Latest Emissions Data." Environmental Protection Agency, 2023. <https://www.epa.ie/our-services/monitoring--assessment/climate-change/ghg/latest-emissions-data/#:~:text=In%202022%2C%20Ireland's%20GHG%20emissions,below%20pre%20COVID%2C%202019%20figures.>
- Leithead, Alastair. "Are Kenya Ranch Invasions Driven by Drought or Politics?" BBC News, February 4, 2017. <https://www.bbc.com/news/world-africa-38866389>.
- Lynott, Laura. "Bloom 2023: 'Our Best Year yet' – Soaring Temperatures Leads to 'Bloom Boom' as Festival Draws 100,000." Independent.ie, June 5, 2023. <https://www.independent.ie/irish-news/bloom-2023-our-best-year-yet-soaring-temperatures-leads-to-bloom-boom-as-festival-draws-100000/a2101813617.html>.
- McKenna, Niall. "Ranchers Have a Beef with New A&W Hamburger Campaign | CBC News." CBC News, November 14, 2013. <https://www.cbc.ca/news/canada/edmonton/ranchers-have-a-beef-with-new-a-w-hamburger-campaign-1.2426659>.
- Mohor, Daniela. "A Rural Town's River Vanished. Is Chile's Constitution to Blame?" CNN, November 22, 2022. <https://www.cnn.com/2022/11/22/americas/chile-petorca-drought-intl-latam/index.html>.
- Newman, Lucia. "A Journey through Chile's Conflict with Mapuche Rebel Groups." Indigenous Rights | Al Jazeera, April 12, 2021. <https://www.aljazeera.com/features/2021/4/12/a-journey-through-chiles-conflict-with-mapuche-resistance-groups>.
- New Zealand Ministry for Environment. 2019. "New Zealand's Greenhouse Gas Inventory 1990 – 2017". Vol 1. April 2019. <https://environment.govt.nz/assets/Publications/Files/nz-greenhouse-gas-inventory-2019.pdf>
- O'Sullivan, Kevin. "A Decade on: How the Horsemeat Scandal Changed the Way the World Thinks of Food Safety." The Irish Times, January 7, 2023. <https://www.irishtimes.com/health/2023/01/07/a-decade-on-how-the-horsemeat-scandal-changed-the-way-the-world-thinks-of-food-safety/>.

- Parra Galaz, Francisco. "Chile's Second Attempt at a New Constitution Dials down Green Ambitions." Dialogo Chino, July 19, 2023. <https://dialogochino.net/en/climate-energy/373051-chiles-second-attempt-at-a-new-constitution-dials-down-green-ambitions/>.
- Government of Prince Edward Island. Accessed September 2, 2023. [https://www.princeedwardisland.ca/sites/default/files/publications/af\\_potato\\_econ\\_impact\\_study.pdf](https://www.princeedwardisland.ca/sites/default/files/publications/af_potato_econ_impact_study.pdf).
- PEI Federation of Agriculture (PEIFA). "Water Act presentation." 2022. Accessed September 2, 2023. <https://peifa.ca/wp-content/uploads/2020/10/Water-Act-Presentation-September-2020.pdf>.
- Public Trust in Agriculture and Food: Literature and Case Studies. Accessed September 2, 2023. <https://www.cfa-fca.ca/wp-content/uploads/2019/05/Final-Literature-review-on-Public-Trust-and-Agriculture-and-Food-March-31.pdf>.
- Red Tractor "Our Impact & History: Red Tractor." Red Tractor Consumer, February 17, 2023. <https://redtractor.org.uk/about-red-tractor/our-impact-and-history/>.
- Red Tractor The UK's Trust in Food Index. Red Tractor, July 2022. [https://redtractorassurance.org.uk/wp-content/uploads/2022/07/HL\\_UKTIFI\\_2022\\_final\\_screen.pdf](https://redtractorassurance.org.uk/wp-content/uploads/2022/07/HL_UKTIFI_2022_final_screen.pdf).
- Rdc. "Verminderde Straffen Voor Field Liberation Movement." Het Nieuwsblad, December 23, 2014. [https://www.nieuwsblad.be/cnt/dmf20141223\\_01443882](https://www.nieuwsblad.be/cnt/dmf20141223_01443882).
- Spud Smart "Canadian Farm Populations Becoming Smaller, More Diverse." Spud Smart, August 31, 2023. <https://spudsmart.com/canadian-farm-populations-becoming-smaller-more-diverse/#:~:text=The%20Canadian%20farm%20population%20is,cen%20of%20Canada's%20total%20population>.
- Villegas, Alexander, and Rodrigo Gutierrez. "'We Beg God for Water': Chilean Lake Turns to Desert." Reuters, June 8, 2022. <https://www.reuters.com/investigates/special-report/climate-change-chile-drought/>.
- World Health Organization. "Dioxins and their effects on human health". (2016). <https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>