

Sustainability Standards, Market Access and Prairie Wetland Conservation

A Research Report for Ducks Unlimited Canada and the Prairie Habitat Joint Venture



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Acknowledgements

Pattison Resource Consulting Ltd. acknowledges the support of Paul Thoroughgood, Shane Gabor and Ian Glass of DUC for providing management support and editorial insights. Photos are compliments of Marilylle Soveran from Ferintosh, Alberta.

About Pattison Resource Consulting Ltd.

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Suggested Citation

Pattison-Williams, J.K. 2018. Agri-Sustainability Standards, Market Access and Prairie Wetland Conservation. Research report produced for the Prairie Habitat Joint Venture and Ducks Unlimited Canada by Pattison Resource Consulting Ltd., Canada.

Executive Summary

Sustainability trends are influencing agricultural production practices globally and within Canada. While sustainability standards have existed for several decades, the momentum for establishing them is increasing. As such, there is an opportunity to promote wetland conservation in Canada within this framework. The purpose of this research report is to understand the role of these standards within the agriculture and agri-food system, and (i) explore specific market access opportunities for Canadian agriculture and (ii) engagement opportunities for wetland conservation strategies. Each section within this report addresses a specific query from the Prairie Habitat Joint Venture (PHJV) and Ducks Unlimited Canada (DUC) within this context.



In Section 2, the current state of agriculture sustainability and food sourcing from a global perspective is presented. Driven by increasing consumer demands for ethical food sourcing, since the 1990s there has been a marked increase in sustainability reporting and certification by corporations, which has impacted agriculture and food supply chains. While the supply chains of specific cash crops such as coffee and cocoa are highly certified, there is currently limited participation within the staple crops of wheat, rice and maize within these certification systems. Reasons for this include the

large number of producers, highly competitive markets and the fact that staples are normally component ingredients in end products, rather than consumable end products. Given that staple crop production is a major driver of land conversion globally and within Canada, this result poses a challenge for wetland conservation. Three standards organizations are identified as key players: the International Sustainability & Carbon Certification (ISCC-Plus), the Sustainable Agriculture Initiative Food Sustainability Farm Sustainability Assessment (SAI-FSA) and Unilever's Code of Agricultural Practice. While none of these international programs were designed specifically to address wetland loss, each program requires zero land conversion for certification compliance, and wetland conservation is explicitly included.

As the Canadian agriculture and agri-food industry is heavily dependent upon international exports, Section 2 also explores the sustainability trends and certification in five of its major trade partners: United States of America (USA), China, Japan, the European Union (EU) and Mexico. Market access opportunities for sustainably certified



Canadian crops and beef were identified within the legislative framework of the USA's 2015 Farm Bill and the EU's Common Agriculture Policy (CAP), and within the voluntary standards frameworks of ISCC-Plus, SAI-FSA and the American ANSI/LEO 4000 and Field to Market Initiatives. While access to the EU market depends upon CETA, EU influence is also an indirect driver of American trends, and

as such early engagement with EU standards will prepare the Canadian agriculture sector for trade with the much larger American export market. While opportunities do exist to engage with China, Japan and Mexico, these countries are currently more production oriented and are therefore unlikely to have a significant influence on the growth of sustainability initiatives in Canadian agriculture in the near future.

In Section 3, trends in Canadian sustainability standards are presented. The Canadian agriculture industry has historically not played a leadership role in sustainability standards and certification, but has recently shifted its approach, most prominently through the Canadian Roundtable on Sustainable Beef (CRSB), the Canadian Roundtable on Sustainable Crops (CRSC) and the Round Table for Responsible Soy (RTRS). In particular, the Canadian Beef Sustainability Assessment Framework, released in December 2017, is an innovative and rigorous approach to certification. The Canadian crop sector has been slower than the livestock sector in the adoption of sustainability standards, and has not yet created a framework for assessment. However, the crop sector shows indications of movement in this direction, as industry groups in Canada link with international certification bodies such as ISCC-Plus and SAI-FSA. The CRSC and various pilot projects for certification are further evidence of this strategic shift. An important example is the Canadian Field Print Initiative (CFPI), which has a similar framework to the Field to Market Initiative in the USA, compliance with which may present opportunities for producers to access similar USA markets.

In Section 4 various environmental initiatives in the Canadian agriculture sector are explored. Examples range from the Environmental Farm Plan (EFP) to more regional programs like the Sustainable Farm and Food Initiative (SFFI) in Ontario. Engagement with these initiatives is a signal that Canadian agriculture is responding to consumer demand. However, although commitments to zero land conversion are required under ISCC-Plus, there is no dedicated wetland certification system in place, and therefore no specific market based incentive programs for wetland conservation. Further, the lack of penalties for agricultural non-compliance with current government wetland conservation policies suggests that there is little political appetite to enforce existing regulation.

Section 5 explores the concept of compliance violation, and the merits of voluntary and mandatory approaches to standards. Mandatory standards exist primarily in the form of government regulation, which has mechanisms for enforcement in place

but rarely employs them. Voluntary standards are more common and appealing to participants from a market-based perspective. However, there are currently no substantial financial incentives in place for sustainability standards in Canada, and therefore engagement with the conventional Canadian agriculture industry is limited.

In Section 6 opportunities for engagement from corporate and environmental non-governmental organization (ENGO) perspectives are explored. Corporate approaches were framed within Canadian case studies of A&W, McDonald's and Earls, showcasing their marketing approach and the inherent strengths and weaknesses of these strategies. ENGO perspectives are then presented, framed within the accepted engagement strategies of collaboration, opponent, opportunistic and sceptic. Canadian case studies are presented based upon World Wildlife Fund (WWF), Nature Conservancy Canada (NCC) and Ducks Unlimited Canada (DUC) engagement with the Canadian sustainability roundtables. These examples highlight the integral role that ENGOs have within collaborative discussion and advancing research and advocacy strategies. As wetland conservation addresses multiple objectives for many corporate sustainability initiatives, further engagement within these initiatives seems a positive way to advance sustainability within the agriculture and agri-food industry.

In conclusion, increased market access opportunities do exist for Canadian agricultural products. These opportunities can currently be accessed through engagement and adoption of sustainability standards such as ISCC-Plus and SAI-FSA. As these certification bodies prohibit conversion of land, certification within these bodies presents an economic opportunity for wetland conservation in Canada. Current limitations for sustainability standards in Canada include that fact that: (i) Canada currently lags behind the EU and USA in the creation and implementation of national standards, particularly in the crop sector; (ii) major Canadian export partners China, Japan and Mexico do not yet have strong public demand for sustainability; (iii) international adherence to standards for staple crops, which are typically ingredients for food products, remains minimal; and (iv)



a prevailing productivist mindset exists among many western Canadian agricultural producers. Current opportunities for sustainability standards in Canada include the fact that: (i) in the last five years stakeholders have increasingly been seeking sustainability through the CRSB, CRSC and RTRS; (ii) the corporate sector is increasing pressure on both industry groups and governments to adopt standards, exemplified in McDonald's integral role in the assessment framework assessment for Certified Sustainable Canadian Beef; (iii) the EU model of sustainability standards influences trends in the USA, meaning that learning and adopting more strident EU sustainability standards could increase trade opportunities with the USA; and (iv) credible ENGOs can influence change through engaging with government and corporate partners.

Overall, the research presented in this report indicates that sustainability standards will have an increasing role in agricultural production practices in the future, and therefore conservation organizations should engage and support private and public sector initiatives to promote agricultural market access. It presents an untapped potential for future wetland conservation strategies in Canada.

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Glossary

Sustainability Standard	A set of voluntary norms and guidelines relating to environmental, social, ethical and food safety issues, adopted by companies to demonstrate the performance of their organizations or products in specific areas. A broad range of stakeholders normally develops standards in a particular sector and includes a set of practices or criteria for how a crop should be sustainably grown or a resource should be ethically harvested. Usually third party assessed for compliance.
Certification	A verification process to evaluate an organization's compliance with a standard, which often includes a traceability process for certified products to be sold along the supply chain, typically resulting in a labelling process for consumer identification.
Traceability	The process or ability to track the source of a product, in this case food, through all stages of production, processing, distribution and retail.
Corporate Social Responsibility (CSR)	The voluntarily actions of a company with regards to socially, environmentally and economically ethical matters.
Ecosystem Services (ES)	The benefits that humans freely gain from the natural environment and properly functioning ecosystems.
Productivist	The belief that measurable economic productivity and growth are the purpose of human organization (for example, work), and that more production is inherently good.
Post-productivist	Concept introduced in the 1990s as an attempt to explain and theorize changes and trends in contemporary agriculture, where the focus on agricultural production gradually shifted towards demands for amenities, ecosystem services and preservation of cultural landscapes (Almstedt 2013).

Acronyms

AAFC	Ministry of Agriculture and Agri-Food Canada
ABP	Alberta Beef Producers
AEGP	Agri-Environmental Group Planning (Canada – Saskatchewan)
AEPA	Agri-Environmental Partnership of Alberta
ALUS	Alternative Land Use System (Canada)
CAFTA	Canadian Agri-Food Trade Alliance
CAP	Common Agricultural Policy
CCA	Canadian Cattlemen’s Association
CETA	Canadian-European Union Comprehensive Economic and Trade Agreement
CFIA	Canadian Food Inspection Agency
CFPI	Canadian Field Print Initiative
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRSB	Canadian Roundtable for Sustainable Beef
CRSC	Canadian Roundtable for Sustainable Crops
CSR	Corporate Social Responsibility
CTCS	Canadian Trade Commission Service
DUC	Ducks Unlimited Canada
EFP	Environmental Farm Plan (Canada)
ETI	Ethical Trading Initiative
FACT	Food, Agriculture, Conservation and Trade Act 1990 (USA)
FDA	United States Food and Drug Administration
FSP	Farm Stewardship Program (Canada)
GRI	Global Reporting Initiative
HFAC	Humane Farm Animal Care (USA)
ISCC	International Sustainability & Carbon Certification
JAS	Japanese Agricultural Standards
JCOEA	Japan-Canada Organic Equivalency Arrangement
LISA	Low Input Sustainable Agriculture Program (USA)
MAFF	Ministry of Agriculture, Forestry and Fisheries (Japan)
MOIs	Market-Oriented Initiatives
NCC	Nature Conservancy Canada
NAFTA	North American Free Trade Agreement
ENGO	Environmental non-government organization
PHJV	Prairie Habitat Joint Venture
PPR	Prairie Pothole Region
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Round Table on Responsible Soy
SAI	Sustainable Agriculture Initiative

SAI-FSA	SAI-Farm Sustainability Assessment
SAGARPA	Mexican Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food
SARE	Sustainable Agriculture Research and Education Program (USA)
SFFI	Sustainable Farm and Food Initiative (Canada – Ontario)
UNGC	The United Nations Global Compact
USDA	United States Department of Agriculture
WWF	World Wildlife Fund

1.0 Introduction

Rapid urbanization and agricultural expansion across the settled areas of Canada has increased food production and enhanced economic growth, but has come at the expense of wetlands ecosystems – nearly 70% have been degraded or lost in the settled regions of Canada since European settlement (Ducks Unlimited Canada 2017). Wetland loss is an environmental problem with important consequences. In addition to loss of habitat and biodiversity for wildlife, this drainage has had quantifiable social and economic impacts on stakeholders across the prairies: increased flooding (Shook and Pomeroy 2016), increased nitrogen and phosphorous loading across watersheds (Yang et al. 2016), release of carbon to the atmosphere (Bridgham et al. 2006; Badiou et al. 2011), and decreased recreational opportunities for hunting, bird-watching and other outdoor activities (Hein et al. 2006). While there is an economic argument for farmers to drain wetlands to increase cultivated areas for crops (Cortus et al. 2011; Packman 2010), the cumulative social benefits of the ecosystem services (ES) described above have been found to be larger than the benefit farmers receive from draining and seeding these areas (Pattison, Boxall, and Adamowicz 2011; Pattison-Williams et al. 2018; Pattison-Williams et al. 2017).

The combination of academic research, efforts of conservation organizations and increased public support for wetland conservation has influenced government policy on wetlands in Canada generally, and the Prairie Provinces specifically (Rubec and Hanson 2009). A Canadian Wetland Policy of “no net loss” was legislated in 1991 (Government of Canada 1991) and today each Prairie Province has some form of legislation protecting wetlands: the Alberta Wetland Policy (Government of Alberta 2013), the Saskatchewan Water Security Agency’s Plan for Growth (Government of Saskatchewan 1995; Saskatchewan Water Security Agency 2016) and Manitoba’s Sustainable Watersheds Act (2017). However, despite research highlighting the problems with wetland drainage and government policies to prevent it, wetlands

continue to be drained across the country. As the current legislative framework exists to conserve wetlands, the implementation and enforcement of this legislation is a major challenge for current conservation strategies.

While all sectors are required to comply with wetland legislation, the agriculture and agri-food sector is particularly implicated in drainage activities (Dumanski, Pomeroy, and Westbrook 2015). An important stakeholder in the conservation of wetlands, the agriculture and agri-food industry has historically viewed wetlands as a nuisance on the landscape and a barrier to be removed for the production of food (Morris et al. 2000; Cortus et al. 2011; Verhoeven and Setter 2010). Classical agricultural economics suggests that from a purely economic position certain wetland drainage makes sense for agricultural producers (Serecon 2017; Cortus et al. 2011). This assertion led to government policies across the Canadian prairies in the mid-1900s that supported wetland drainage to provide food as a public good. However, mounting socio-economic research suggests that while wetland drainage does provide benefit for farmers, it results in fewer social benefits than was previously assumed. Despite this, arguments for the social benefit of wetland conservation must be balanced with recognition of the private costs incurred by these farmers to provide the public goods (Heimlich et al. 1998; Smith and Sullivan 2014). The social and private roles of wetland conservation on agricultural landscapes continues to be a difficult issue to find consensus, as a number of studies have explored (Boxall, Perger, and Weber 2013; Tyrchniewicz and Tyrchniewicz 2007; ALUS Canada 2017).

Concurrent with the increasing regulatory pressure on the agriculture industry from wetland policies has been an increasing demand from consumers – both domestic and foreign – to understand where their food comes from and how it is produced (Food Marketing Institute 2017). A growing consciousness with respect to ethical food production has shaped the psyche of consumers across the globe (FAO 2017b). In addition, concerns over climate change and human health impacts – such as hormones, steroids and antibiotic resistance – and moral concerns over treatment of workers have united as a powerful driver of change for agricultural production (Rajisic, Ramlal, and

Fox 2012; OECD 2012; ISEAL 2015; Unilever 2010). This movement is influencing, and being influenced by, corporations. Corporate global giants such as Unilever, Coca-Cola and McDonald's to Canadian companies like Earls and A&W have become advocates of the sustainability movement, and financial investors are seeking a balance between socially and environmentally responsible investment in agriculture (Rohan 2014).

These changing consumer attitudes and the resultant corporate and market shifts are not easy for the provisioning agricultural sector, particularly the producers and rural communities, to respond. Economically, small profit margins and often being relegated to the role of price-takers in a global market means farmers have limited time and understanding for this new environmental ethic. Socially, many Canadian agricultural producers feel confused by mixed the signals from the general public, who are simultaneously demanding low-cost and large quantities of agricultural products while protesting the current conventional agricultural production model (Global News 2017; Globe and Mail 2016). This confusion is exacerbated by consumers with food preferences largely uninformed by current scientific understanding (McFadden and Lusk 2016). Socially, current trends in public opinion are challenging the image of farmers as stewards of the land, which is integral to many farmers self-image. Government regulations are considered restrictive, and migration to the urban cores leads is causing angst within rural communities. The result is rural agricultural producers that are sceptical at best, and hostile at worst, to government regulation for wetland conservation.

As populations are concentrating in urban areas, traditional rural production practices being shaped by increasingly urban environmental concerns. If these changes can be perceived as an economic opportunity, then much of these divisions can be prevented. The opportunity for the agricultural sector to comply with environmental regulations, increase profitability and align with current social opinion is possible through the mechanism of **sustainability standards and certification**.

Sustainability standards are broadly defined as voluntary norms relating to ethical, environmental or social issues that are adopted by companies to demonstrate their commitment to a specific issue (Toppinen and Korhonen-Kurki 2013). Within the business world, these standards are closely aligned with the principle of Corporate Social Responsibility (CSR), whereby a company operates voluntarily in a socially, environmentally and economically ethical manner (Global Affairs Canada 2018). According to the ISEAL Alliance, these standards are a *“market-based approach for creating positive social, environmental, and economic change, and driving transformation in how goods and services are produced. They define what is sustainable for a particular sector or crop, drive and maintain change with a verification process, and have additional tools and activities in place for tracing certified products; building the capacity of producers to move from baseline to higher performance standards over time; and bringing supply chain actors together”* (ISEAL 2015).

These standards create a strong incentive to transform how goods are produced in the marketplace with the ideal outcome of expanding benefits to both producers and consumers with the least loss to society. There are challenges to incorporate sustainability standards within a western Canadian context, primarily because many prairie crops are “ingredients”, rather than a single product for consumption. While concepts of Mass Balance – measuring the net nutrient inputs and outputs of production – are commonly used to address this issue (FAO 2017a), these crops are less easy to visualize for certification purposes. However, if properly designed for specific contexts, these instruments can be an effective approach to harness the unique strengths and jurisdictional understanding of government, private and non-governmental sectors.

This report seeks to explore the current state and future opportunities for market access that exist for sustainability standards and certification. We suggest the increasing demand for sustainably produced products creates a unique opportunity for agricultural producers in the Prairie Pothole Region (PPR) of western Canada to meet sustainable sourcing standards for the food commodities while complying with provincial legislation on wetlands. To meet this objective, this report has five primary goals:

1. Describe the types of public and private standards emerging internationally for sustainable sourcing in food markets, and identify what is driving their development.
2. Summarize current Canadian sustainable sourcing schemes for important Prairie commodities from various perspectives within the supply chain.
3. Explore current initiatives in Canada and the USA to satisfy sustainable sourcing requirements.
4. Explore how public and private standards incorporating sustainable sourcing requirements affect market access for prairie producers given that over the past decade, in some areas of the PPR, the majority of crop production violates the land conversion requirements of sustainability standards.
5. Explore corporate and ENGO involvement in sustainable sourcing schemes, including what role have they played, levels of effectiveness and future engagement opportunities.

These objectives will comprise the body of this report, with Sections dedicated to each. Section 2 will provide a summary of global trends in sustainability standards; Section 3 will summarize trends in Canadian food and agriculture; Section 4 will provide an overview of existing standards and the rule of law; Section 5 will provide an overview of lessons and opportunities from the non-governmental sector; Section 6 will explore the opportunities for wetland sustainability standards in Saskatchewan specifically and the Prairie Pothole generally; and Section 7 will conclude the findings and provide suggestions for future opportunities.

2.0 Global Trends in Agri-Sustainability Standards

2.1 Introduction

Globalization and the market economy are structurally dominant economic forces (Reardon and Barrett 2000). While isolationist policies have currently become more evident in recent years, there remains a strong commitment to global trade (Davos Economic Forum, 2018). Recent international free-trade agreements exemplify this commitment: the Canadian-European Union Comprehensive Economic and Trade Agreement (CETA) in 2017, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in 2018, and the current re-negotiation of the North American Free Trade Agreement (NAFTA). Although perspectives differ on the benefits of trade, the ongoing rate of communication technological advance promotes global connectivity. The agriculture and agri-food industry is heavily reliant on such trade.

Canada has deep historical and cultural connections with agricultural production, and the economic influence wielded by this industry is a significant part of the landscape and cultural psyche of the nation (Russell 2012). A major driver within this industry is export marketing. In 2016, approximately half of agricultural production in Canada was exported as primary commodities or indirectly as processed food and beverage products (Agriculture and Agri-Food Canada 2017). Approximately 50% of beef, 70% of soybeans, 70% of pork, 75% of wheat, 90% of canola, and 95% of the pulses were exported internationally (Canadian Agri-Food Trade Alliance 2018).

Integral to free trade policies is the ability to access international markets. The political power of the agricultural sector was highlighted in the recent CETA negotiations, when a group of Belgium¹ farmers, fearing higher competition from the Canadian pork and beef industry that did not have to meet strict EU environmental standards, delayed

¹ From the Walloon region.

and nearly stopped the deal (Global News 2016b). Similarly, a current challenge within the 2018 NAFTA negotiations is concerns from the USA about supply management within certain sectors of Canadian agriculture. Regardless of the level of industrial development, the agricultural sector has a disproportionately strong influence on international trade negotiations. Therefore any discussion of trade and market access must recognize the impacts on the agriculture and agri-food industry.

As evident in the example of the Belgium farmers, a major concern within these trade discussions are differing environmental and sustainability standards between countries. According to the Food and Agricultural Organization of the United Nations (FAO), a major issue of the 21st century is environmental sustainability (FAO 2017b). The language of sustainability – considering the economic, environmental and social impacts of an action – has become elevated as the earth’s natural resources are being depleted at previously unseen levels (Millennium Ecosystem Assessment 2005; United Nations 2015). Stakeholders from the public, private and non-government sectors are collaborating for approaches to mitigate concerns of human-induced climate change and other pressing environmental concerns (UNCC 2018).

An important sector within this group of stakeholders is private corporations. Although sustainability standards started in the 1980s, Bartels et al. (2016) reports a surge of reporting initiatives in the private sector that has been increasing in the last decade: in 2016 there were approximately 400 reporting initiatives within 64 countries – a significant increase from even five years ago. This engagement indicates that stakeholders are responding to scientific evidence and public demand for environmental reporting, and in many cases driving the agenda forward.

This Section provides: (i) a background on the growth of sustainability standards; (ii) a summary of international organizations involved in sustainability reporting; (iii) identifies and describes the primary agri-sustainability standard organizations operating today; (iv) explores the state of sustainability standards within Canada’s five major agri-

food export partners. Opportunities for wetland conservation are explored within each respective section.

2.2 Background

The 20th century was characterized by rapid changes within agriculture and the agri-food system. Rapid mechanization changed the means of operating and allowed labour efficiency to increase (Fedoroff 2015); rapid scientific advances, such as crop hybridization for drought and moisture tolerance, synthetic fertilizer inputs for increased yields and continuous cropping have increased production (Ramankutty et al. 2018); and genetic modification has led to new varieties of herbicide and pesticide resistant crops (Aldemita et al. 2015). These changing conditions have come at high financial costs, however, and forced farmers to adapt by increasing their farm size and economies of scale to maintain profitability. For others, this has meant moving to urban centers seeking comparable standards of living and greater job opportunities for themselves and their children. As these trends continue, consecutive generations of people became – and are becoming – more distant from farming, agriculture and land conservation as a way of life (Beaulieu 2015).

These social and economics trends have exacerbated dichotomy between the provisioning and stewardship roles of agricultural production. To some, it seems recent development in agri-business have minimized the stewardship role of agriculture, and industry that is currently a major contributor to greenhouse gas emissions (Frank et al. 2017; Goglio et al. 2018) and has significantly converted natural landscapes such as forests and wetlands, leading to soil erosion, nutrient loading in waterways, flooding and loss of biodiversity (Millennium Ecosystem Assessment 2005). As the nature of agriculture and farming changed, people simultaneously became more distant from farming and more concerned with the adverse impacts of farming on the environment (Robinson 2006b). Driven by such seminal works as Rachel Carson's *Silent Spring* in the 1960s (Lytle 2007), concern over agricultural land-use practices and change has

evolved in commensurate pace with the advance of agricultural technological change (Royzman, Cusimano, and Leeman 2017). Thus a tension exists between an industry that from one perspective is a land-converting industrial behemoth exacerbating climate change, and from another perspective is an essential, conservation-minded and much-loved “way of life” on the other. This tension is strong, and contributes to increasingly polarized positions between rural and urban communities, even if environmental sentiments are shared (Berenguer, Corraliza, and Martín 2005).

In the 1980s various government and non-government environmental programs within the agricultural industry arose to address these concerns (Robinson 2006b), and led to the term “market-oriented initiatives for environmentally sustainable food production (MOIs)” (Buller and Morris 2004). Agri-environmental programs and sustainability standards have been theorized to represent a move from productivist – concerned with food production only – to post-productivist agriculture, which emphasizes a shift away from conventional industrial style farms (Evans, Morris, and Winter 2002). Examples of such themes, common in the European Union, include set-aside programs for arable land and decreased stocking densities for livestock (Robinson 2006b), which come at a significant cost of public funds.

It is important to identify these agri-environmental schemes separately from the post-productivist farming systems of organic or integrated farming (Robinson 2006b). Agri-environmental schemes reside within the auspices of conventional agriculture, which still comprises the vast majority of farm business and trade globally and within Canada. As such, these schemes can hopefully prove attractive for the many agricultural producers that operate within a productivist mindset (Walford 2003) yet seek an environmental farm stewardship ethic that may not fully align with organic agricultural practices².

² Organic farming is not a utopia of ecological farming, with trade-offs existing with conventional agriculture from soil conservation perspectives and more (Arnhold et al. 2014).

A summary of the trends in sustainability reporting over time is illuminating to explore future potential for engagement. The most comprehensive summary of this kind over the previous decade is the report “Carrots and Sticks: Global Trends in Sustainability Reporting Regulation and Policy” (Bartels et al. 2016)³. Previous editions of this report were produced in 2006, 2010, 2013, and most recently in 2016, allowing a comparison of trends over time. The 2016 report summary findings are presented in Table 1.

Table 1. A summary of the global trends in sustainability reporting regulation and policy as described by Bartels et al. (2016).

Trend	Summary
1	There has been a surge in the number of reporting instruments identified since the last report in 2013. Our 2016 research identified almost 400 sustainability reporting instruments in 64 countries versus 180 instruments identified in 44 countries in our 2013 report. The growth of reporting instruments in Europe, Asia Pacific and Latin America has been particularly strong.
2	Government regulation accounts for the largest proportion of sustainability reporting instruments worldwide with governments in over 80% of the countries studied in this research introducing some form of regulatory sustainability reporting instrument
3	Mandatory instruments dominate but growth in voluntary instruments is also strong. Around two thirds of the instruments we identified are mandatory and around one third voluntary. Around one in ten instruments adopts a ‘comply or explain’ approach
4	The level of activity of stock exchanges and financial market regulators is noteworthy in the 2016 edition of this report, with these two groups together responsible for almost one third of all sustainability reporting instruments identified
5	Almost one third of reporting instruments apply exclusively to large listed companies and of these around three quarters have been introduced by financial market regulators and stock exchanges. The remaining two thirds apply either to all companies or to other types of companies such as state-owned.
6	While most reporting instruments cover all sectors (cross-sectoral scope), those that target specific sectors address the finance and heavy industry sectors in particular. The number of reporting instruments for companies in the financial services sector has more than doubled from 2013 to 2016 and they now account for almost 40% of sector specific instruments
7	Governments and regulators increasingly require or encourage companies to disclose sustainability information in their annual reports
8	There has been a large increase in instruments driving reporting of social information. The number of instruments we identified that focus on reporting of social information has almost doubled since 2013, growing faster than instruments that focus on the

³ This report is a collaborative initiative between the organizations of KPMG, the Global Reporting Initiative (GRI), United Nations Environment Programme (UNEP) and the Centre for Corporate Governance in Africa.

reporting of environmental information	
9	Regulation on tax disclosure has increased as companies come under increasing pressure to demonstrate they pay their fair share of taxes in all countries in which they operate.
10	There are still more instruments that focus on environmental reporting than social reporting and this is not surprising given the longer history of environmental regulations worldwide. Environmental reporting instruments have been fueled over the past decade by many environmental trends, including the development of new GHG markets and regulations that require disclosure of reliable GHG emissions data and other climate related information.
11	Growth in environmental reporting instruments since 2013 has come predominantly from Europe, Asia Pacific countries and from the US. France, Spain and Australia in particular saw an increase in such instruments. Environmental disclosure requirements could increase globally following the recent Paris Agreement at the UN climate conference in Paris (COP21, December 2015) which is likely to result in a significant increase worldwide in regulations governing the disclosure of emissions of carbon and other GHGs.
12	New environmental reporting instruments introduced since 2013 include measures to set up national GHG emissions registries and improve company disclosure of GHG emissions in Spain, Mexico and the UK for example. Since 2015 in France, Article 173 of the French Energy Transition Law among others requires listed companies to disclose risks related to the effects of climate change in the report by the chairman of the board of directors. France now also requires institutional investors to report on the climate risk exposure of their portfolios, the products that contribute to financing the transition to the low carbon economy, as well as the carbon emissions of their investment portfolios.
13	The green bonds market is another focus for recently introduced environmental reporting instruments. The value of green bonds issued has grown rapidly over recent years. In the year 2007, the value of green bonds issued was only US\$1 billion, whereas green bonds valued at over US\$41 billion were issued in 2015. Issuers include development banks, municipalities and large corporations who may be expected to disclose information on financed green projects regularly, before and after the issuing of green bonds.

Table 2 highlights the numbers associated with these trends. In 2006 there were 60 reporting instruments in 19 countries and regions; in 2016 there were 383 instruments in 71 countries and regions. Nearly two-thirds of these instruments are mandatory, which is an interesting signal of both the private and public sector engagement in operationalizing this approach.

Table 2. Trends in sustainability reporting instruments. Source: Bartels et al. (2016).									
		2006		2010		2013		2016	
Reporting Instruments	Mandatory	35	58%	94	62%	130	72%	248	65%
	Voluntary	25	42%	57	38%	50	28%	135	35%
	Total	60		151		180		383	
Countries and Regions		19		32		44		71	(64 with instruments)

Agricultural sustainability standards have great potential to prevent grassland and cropland conversion. Certification of cropland is particularly important, as crop conversion is a driving force of habitat change and ecosystem loss. Tayleur et al. (2016) estimate that certification of cropland currently exists in 133 countries, and has increased by 11% per year from 2000 to 2012. While this is an encouraging signal from a global environmental perspective, this certification only covers 1.1% of global croplands, and the crops with the highest level of certification (nearly 10% of their global production) were heavily traded commodities such as coffee, cocoa, tea and palm oil; staple crops such as wheat, rice and maize, have far lower coverage (Tayleur et al. 2016). These statistics present challenges for Canadian agriculture and ecosystem conservation, as the majority of crops that are grown and exported are wheat and canola.

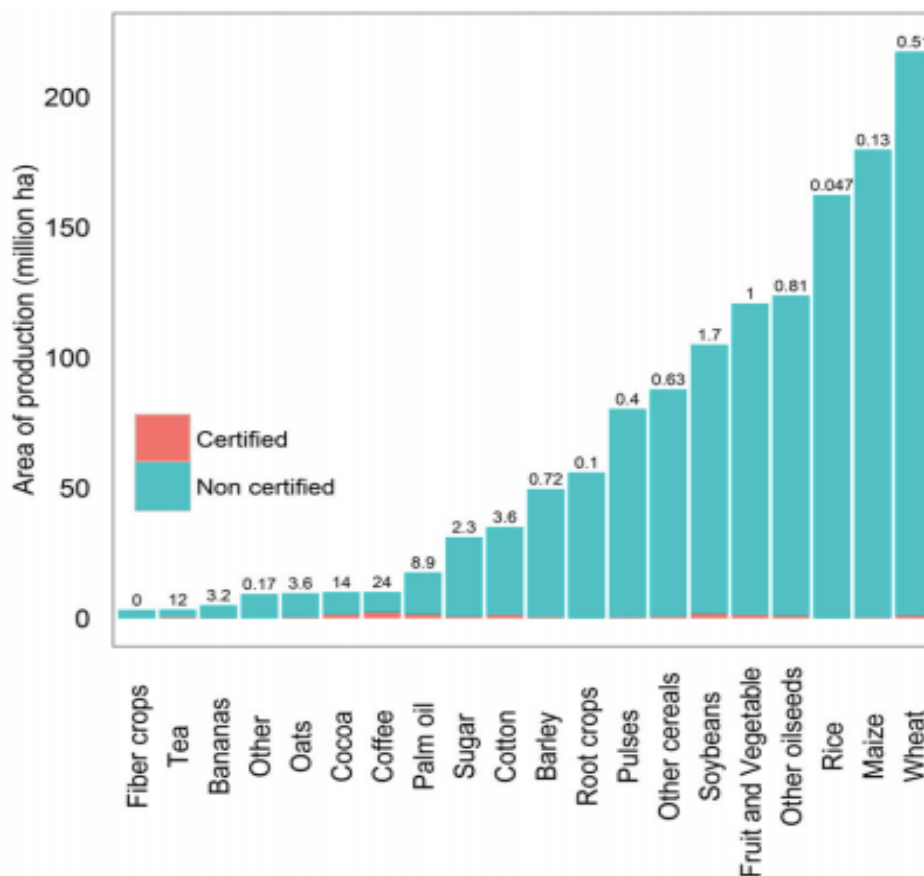


Figure 1. Global crop certification by product and area of production in millions of hectares
Source: Tayleur et al. (2016).

2.3 International Standards Organizations

The importance of sustainability has led to the creation of several international organizations with the mandate to promote and report on standards. These organizations are collaborative consortiums that businesses connect with to increase their marketing potential. Five influential organisations in this category are identified in this section – The United Nations Global Compact, the ISEAL Alliance, the Global Reporting Initiative (GRI), The Ethical Trading Initiative (ETI) and the Fairtrade Network – and evaluated for their emphasis on wetland conservation.

2.3.1 UN Global Compact

The UN Global Compact is a branch of the United Nations and is the world's largest corporate sustainability initiative. It is a voluntary initiative based upon individual corporations' Chief Executive Office (CEO) commitments to implement universal sustainability principles in alignment with UN goals, with a vision to “mobilize a global movement of sustainable companies and stakeholders to create the world we want” (UN Global Compact 2017). The organization supports businesses to do business responsibility with the UN's Ten Principles on human rights, labour, environment and anti-corruption; and take strategic action to advance broader societal goals, such as the UN Sustainable Development Goals (UN Global Compact 2017). The UN Global Compact currently has over 9,000 company and 4,000 non-government organizational participants. Unfortunately, based upon personal communication with their Department of Environment and Climate, there is no evidence of wetland specific standards or certification within this system. However, wetland conservation would fit within their water conservation work.

2.3.2 ISEAL Alliance

The ISEAL Alliance is a major organization based in London, United Kingdom that represents the global movement of sustainability standards. The mission of the organization is to “strengthen sustainability standards for the benefit of people and the environment” (ISEAL 2015). Specifically, ISEAL strives to scale up their sustainability impacts and teach their members businesses how to operate and deliver impacts for sustainability, thereby leading to a greater sustainability movement globally (ISEAL 2015). As an organization they have created and follow their Codes of Good Practice, which are supported by international accreditation bodies and whose compliance are a requirement for membership (ISEAL 2018). Organizations such as the Sustainable Agriculture Network, the Rainforest Alliance, Linking Environment and Farming, the Global Coffee Platform, the Alliance for Water Stewardship and the Aquaculture

Stewardship Council are currently members (ISEAL 2018). Unfortunately, no specific wetland emphasis was found within this alliance.

2.3.3 Global Reporting Initiative (GRI)

GRI is an independent international organization based in Amsterdam, Netherlands, established in 1997 and has since become one of the major organizations in sustainability standard setting and reporting. Their goal is to “assist businesses and governments to understand and communicate their impact on sustainability issues, such as climate change, human rights, governance and social well-being” (GRI 2017). The Reporting Standards of GRI were one of the earliest established and remain the most widely adopted standards for sustainability reporting. These standards used in over 100 countries and represent the global best practice for reporting on economic, social and environmental issues. They also advise stock markets and market regulators on sustainability reporting (GRI 2017). Despite the focus and global presence of GRI, they currently have no experience in wetland conservation (personal communication with GRI)⁴.

2.3.4 Ethical Trading Initiative (ETI)

ETI is an alliance of companies, trade unions and non-government organizations that emphasizes respect for workers’ rights internationally. Based in London, United Kingdom, their organizational vision is a world where workers are free from exploitation and discrimination (ETI 2017). Although not specifically focussed on the agri-food industry, they represent partners from food retail companies, such as ASDA and CO-OP in the United Kingdom, and as such are connected with environmental and agricultural sustainability initiatives (ETI 2017). Unfortunately, there are no specific standards or certifications within this network for wetland conservation.

2.3.5 Fairtrade System

Fairtrade is a social movement that began in the United States in 1958. One of the most well-known of these organizations, members of this movement have the goal of assisting agricultural producers in developing countries receive better trading conditions and promote sustainable farming. The Fairtrade Mark was first introduced in 2002, and the international Fairtrade system represents the world's largest and most recognised sustainability certification systems (Fairtrade Foundation 2017). Fairtrade Canada is part of this system, and was established in 1998 and has been part of this global network since that time (Fairtrade Canada 2018). However, personal communication with Fairtrade representatives confirms that they do not have a focus on wetland conservation, either in Canada or internationally.

2.4 International Agri-Sustainability Standards and Certification

2.4.1 SAI Platform

The Sustainable Agriculture Initiative (SAI) Platform is considered the primary global food and drink value chain initiative for sustainable agriculture (SAI 2018; ISCC 2016). Created in 2002 by the collaboration of industry giants Unilever, Danone and Nestle, it is a non-profit organization dedicated to knowledge sharing and the development of best practices for global supply chain. SAI (2018) makes the follow claims:

1. *“SAI Platform is the only global food industry initiative for sustainable agriculture.*
2. *It seeks involvement from all food chain stakeholders willing to play an active role in the development, recognition and implementation of sustainable practices for mainstream agriculture.*
3. *The initiative gathers and develops knowledge on sustainable agriculture, which it then shares with all interested parties to reach common understanding of the concept and of its long-term implications.*

4. *It has an inclusive approach, taking into account any valuable initiatives and concepts, for instance elements from both integrated and organic farming, as far as they contribute to sustainable agriculture.*
5. *It aims at developing sustainable agriculture for the mainstream agricultural produce through a continuous improvement process that allows for an easier and more flexible adoption by farmers, worldwide”.*

In 2014 SAI designed the Farm Sustainability Assessment (FSA) (SAI 2014). FSA 2.0 has three performance levels:

Table 3. Performance level and descriptions of wetlands within SAI’s FSA 2.0 certification. Source: (ISCC-Plus 2016).	
Performance Level	Description
Bronze	Compliance to 100% ‘Essential’ questions and a minimum of 75% ‘Basic’ questions.
Silver	Compliance to 100% ‘Essential’ questions, 80% ‘Basic’ questions and a minimum of 50% ‘Advanced’ questions.
Gold	Compliance to 100% ‘Essential’ questions, 100% ‘Basic’ questions and a minimum of 75% ‘Advanced’ questions.

SAI-FSA is gaining momentum as the “gold standard” of the sustainable models in the international and Canadian context, and the most basic Bronze level of certification requires “no breaking of valuable habitat, including wetlands, in the last five years” SAI (2018). Many industry groups conduct benchmarking against the SAI-FSA system to determine compliance with provincial legislation.

2.4.2 ISCC-Plus

The International Sustainability & Carbon Certification (ISCC) is a German-based organization dedicated to implementing environmental, social and economically sustainable production and to provide “sustainability solutions for fully traceable and deforestation free supply chains” (ISCC 2016). The various iterations of the ISCC – ISCC-DE (Germany), ISCC-EU (European), ISCC-Plus (International), and ISCC-Non

GMO (International) are each certification processes for natural resource supply chains. ISCC complies with other corporate sustainability initiatives, such as SAI, Unilever Sustainable Agriculture Code, Coca Cola’s Sustainable Agriculture Guiding Principles, the sustainable sourcing principles of Heineken and McDonald’s Agricultural Assurance Programme (MAAP) (ISCC 2018). A summary of the optional “add-ons” available within the ISCC system is presented in Table 4.

Table 4. ISCC Add-on summary and description. Source: (ISCC 2018).

Add-On	Name	Description
202-01	Environmental management and biodiversity	Supports farmers to conserve and improve the conditions of soil fertility, water and biodiversity and to reduce energy consumption
202-02	Classified chemicals	Sets a ban for extremely hazardous chemicals and provides requirements for the phase out of moderately hazardous chemicals
202-03	SAI Gold	ISCC PLUS has been determined equivalent to the Sustainable Agriculture Initiative (SAI) FSA Silver level. To fulfil the requirements of the SAI FSA Gold level, a certain set of ISCC “minor must” criteria has to be fulfilled
205-01	GHG Requirements	Emission Calculation methodology and verification of greenhouse gas emissions along the supply chain, including biomass production, conversion as well as transport and distribution
205-02	Consumables	Calculation methodology of the amount of all relevant consumables (e.g. water, fuels, electricity) along the supply chain, including biomass production, conversion as well as transport and distribution
205-3	Non GMO food/ feed	Requirements for the certification of crops not containing genetically modified organisms or for downstream Non GMO raw materials for the food and feed markets.
205-04	Non GMO technical markets	Requirements for the certification of crops claiming not to contain genetically modified organisms for technical markets

Agricultural producers in Canada can also voluntarily engage with this project through ISCC-Plus. A motivation for Canadian producers to become certified with ISCC-Plus is that it provides access to the EU biofuel market for Canadian soybeans and

canola. Canadian farmers only receive payment through this program if they market soy or canola into the EU marketplace. Grain companies such as Cargill and G3⁵ facilitate these efforts by offering ISCC-Plus contracts for soy (Cargill 2018; G3 2018).

2.4.3 Unilever’s Sustainable Agriculture Code

Unilever is considered to be the leader in corporate social responsibility (CSR), and in 2010 developed a Sustainable Agriculture Code in 2010 as part of their corporate ‘Continuous Improvement’ efforts (Unilever 2010). It was created and tested by stakeholders across the agriculture and sustainability sector, and is applied to all raw agricultural materials sourced by the company. Unilever expects farmers to comply with a minimum standard of performance in the areas of agrochemicals and fuels, water, soil, biodiversity, energy, waste, social and human capital, animal welfare, the value chain and the local economy (Unilever 2010) and requires SAI-FSA 2.0 certification. A multi-year assessment by Pretty et al. (2008) summarizes the progress towards the sustainable supply of certain crops and generally supports this initiative, while recognizing the trade-offs between sustainable practices, yield and financial returns. While this model has not been a primary player in Canadian sustainability discussions, Unilever is a global leader that exerts international pressure from a corporate perspective.

2.5 Summary Table of Wetland Reference

Table 5. Review of international sustainability initiatives with reference to wetland conservation.			
General	Initiative	Wetland Reference (Explicit or Implicit)	Description
Reporting Organization	UN Global Compact	Implicit	Some partner organizations focussed on water quality and quantity programs
	ISEAL Alliance	Implicit	Some partner organizations focussed on water quality and quantity programs

⁵ A relatively new grain buying company in Canada, with the vision to increase connectivity from Canadian farms to global markets (G3 2018).

	Global Reporting Initiative	None	Some partner organizations focussed on water quality and quantity programs
	Ethical Trading Initiative	None	No reference
	Fairtrade	None	No reference
Sustainable Agriculture Initiative	ISCC-Plus	Explicit	No conversion or new production on “high carbon production” landscapes, such as wetlands.
	SAI-FSA Platform	Explicit	No conversion or new production on “high carbon production” landscapes, such as wetlands
	Unilever Sustainable Agriculture Code	Implicit	Implicit through ES reference of water quality and quantity and carbon sequestration

2.6 Sustainability Standards of Major Trading Partners

Canada is one of the world’s largest exporters of agricultural commodities. Within the auspices of the Ministry of Agriculture and Agri-Food Trade (AAFT), this industry is also supported by the Canadian Agri-Food Trade Alliance (CAFTA), which promotes the trade and export of Canadian food products (Canadian Agri-Food Trade Alliance 2018); and the Canadian Food Inspection Agency (CFIA), which is responsible for verification to ensure exported Canadian food and food products meet the requirements of both Canada and the importing country (Canadian Food Inspection Agency 2018).

Approximately half of primary agricultural production in Canada was exported in 2016 as primary commodities or indirectly as processed food and beverage products (Agriculture and Agri-Food Canada 2017). In general, 50% of beef, 70% of soybeans, 70% of pork, 75% of wheat, 90% of canola, and 95% of the pulses grown in Canada are exported (Canadian Agri-Food Trade Alliance 2018). As such, understanding the trends in sustainability standards of international organizations is complemented by the trends among the major export trade partners of Canadian agriculture and agri-food products.

First, it is important to have a general understanding of Canadian agriculture and agri-food industry. According to the Government of Canada’s Overview of the Canadian

Agriculture and Agri-Food System 2017, in 2016 the industry generated CAD\$ 111.0 billion in gross domestic product (GDP) and accounted for 6.7% of Canada’s total GDP (Agriculture and Agri-Food Canada 2017). In the same year, the exports were approximately CAD\$56 billion, an increase from 2015.

According to Statistics Canada, the trade balance for agri-food products between 2014 and 2016 trade within the Canadian agri-food industry was heavily export oriented (Table 7), with a strong trade surplus.

Table 6. Canadian agri-food trade between the years 2014 – 2016 in Canadian million dollars (CAD\$ million). Source: Statistics Canada and Agriculture and Agri-Food Canada (2018).

Trade	2014	2015	2016
Domestic Agri-Food Exports	51,604	55,636	55,977
Agri-Food Imports	39,461	43,515	44,522
Agri-Food Trade Balance	12,142	12,121	11,454

During this same time period, the top exported products were domestic agri-food exports, followed by canola seeds, non-durum wheat, soybeans, lentils and baked goods.

Table 7. Highest Canadian agri-food exports between the years 2014 – 2016 in Canadian million dollars (CAD\$ million). Source: Statistics Canada and Agriculture and Agri-Food Canada (2018).

Exports	2014	2015	2016
Domestic Agri-Food Exports	51,604	55,636	55,977
Canola seeds	5,149	4,954	5,631
Non-durum wheat (other than seed for sowing)	5,771	5,882	4,454
Soybeans (other than seed for sowing)	1,904	2,237	2,460
Lentils, dried, shelled	1,462	2,493	2,125
Bakery products	1,205	1,619	1,912

The emphasis of major trading partners shapes the response of the Canadian market. Canada's major trading partners in agricultural products are presented in Table 8.

Table 8. Countries of major Canadian agri-food exports from 2011 - 2015 in Canadian billion dollars (CAD\$ billion). Source: (AAFC 2016a).

Country	2011	2012	2013	2014	2015
USA	22.1	23.6	26.0	29.5	32.6
China	3.1	5.4	5.6	5.2	6.3
Japan	4.0	4.2	4.1	4.1	3.8
European Union*	-	-	-	3.2	2.8
Mexico	1.7	1.8	1.6	1.7	1.7
India	0.6	0.5	0.7	0.9	1.5
Hong Kong	0.6	0.8	0.9	0.9	0.9
South Korea	1.1	0.6	0.4	0.6	0.6
Indonesia	0.4	0.4	0.6	0.6	0.7

** AAFC factsheet separated individual EU countries between 2011-2013.*

Exporting individual or companies are required to know the different requirements set by the importing country, and require labelling stating the country of origin. Therefore, the following section will explore some of the major trends in sustainability standards among Canada's top five trading partners in agri-food: the United States of America, China, Japan, the European Union and Mexico. Each section will specifically address: the local government import agency, the attitudes towards sustainability as evidenced by policy initiatives and the development of sustainability standards and certification.

2.4.1 United States of America

The USA is the world's largest economy and Canada's largest trading partner. As evident in Table 5, the export of agriculture and agri-food products is significantly higher than with any other nation; according to USDA comprised 51% of Canada's agricultural trade in 2016 (USDA 2017). As such, market and sustainability trends, such as the 2018 re-negotiation of the North American Free Trade Agreement (NAFTA), will have serious

implications for the Canadian economy in general and in the agriculture industry specifically (AAFC 2018c).

Several sources are available for producers seeking to export agricultural products to the USA. The Canadian Trade Commission Service (CTCS) provides a manual for Canadian businesses seeking export to the USA (CTCS 2018); the CFIA: Manual of Procedures for Meat and Poultry Products (CFIA 2018e) describes the export requirements of Canadian meat to the USA; and an Alberta government commissioned report by (Melvill 2012) provides a detailed summary of the export requirements of grain and plant products to the USA. The Canadian Grain Commission provides summary statistics of this information annually (Canadian Grain Commission 2018a).

The US Department of Agriculture, Food Safety and Inspection Service (USDA/FSIS) and the Food and Drug Administration (FDA) manage meat and poultry products entering the USA jointly. All Canadian registered establishments are eligible to export meat to the USA and must meet the hygiene requirements. Canada and the USA share an “equivalence of inspection systems”, whereby the USA recognizes that Canada has a sanitary system for meat that produces similar outcomes as the USA system (CFIA 2018e). Exporting Canadian grains – such as cereal grains, oilseeds and special crops – to the USA must also meet requirements at the border. While Canadians can purchase space on rail cars or truck the grain themselves (Melvill 2012), the most common approach is to use the Canadian Grain Commission. Upon entry to the USA, all grain is tested to ensure compliance with USA regulations on weed seeds, insect pests, plant diseases and approved pesticides (Melvill 2012).

Sustainability Standards

The *1985 Food Security Act* had provisions to promote sustainable agriculture in the USA, and as a result the 1988 Low Input Sustainable Agriculture Program (LISA) was developed (Constance 2010). The 1990 “Farm Bill”, or *Food, Agriculture, Conservation and Trade (FACT) Act 1990* changed the name to Sustainable Agriculture Research and Education (SARE) Program and defined sustainable agriculture in the

USA as practices that satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depend; make the most efficient use of non-renewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole (Gold and Gates 2007). This seminal legislation supported other state systems, such as the Wisconsin Farm Assessment System which exists in over 29 states (Robinson 2006b).

Since 1990 there has been many changes and pressures on sustainable agriculture in the USA, and many attempts to reach a standard for sustainable agriculture (Constance 2010). In 2015 the American National Standard for Sustainable Agriculture (ANSI/LEO-4000) was adopted. This standard created through a multi-stakeholder evaluation process facilitated by the American National Standards Institute and the Leonardo Academy and is designed for food and non-food crops to decisively advance sustainability in agriculture (Leonardo Academy 2018). It is a mechanism to implement and compare sustainability achievements across all users in the supply chain, including producers, processors, manufacturers, distributors, brands, retailers and consumers (Leonardo Academy 2018). Crops or products can be “Certified Platinum Sustainable Agriculture”, indicating compliance and third-party certification if they meet the ANSI/LEO-4000 standard.

Field to Market: The Alliance for Sustainable Agriculture is an alliance of stakeholders across the food supply chain seeking to “champion solutions for tomorrow's safe, accessible, and nutritious food, fibre and fuel in thriving ecosystems” (Field to Market 2017). The goal of this initiative is to produce enough food for population growth with conserving natural resources for future generations, and member organizations belief that sustainability is a goal that requires transparent and straightforward measurement tools. Field to Market is guided by the following goals: 1) efficient energy use from USA crop production; 2) reduction in greenhouse gas emissions; 3) improve irrigation efficiency for water conservation; 4) increased land-use

efficiency by increasing productivity on existing cropland and conserving natural ecosystems; 5) reduction of soil erosion; 6) commitment to increase water quality by reducing sediment, phosphorous, nitrogen and pesticide loading from cropland (Field to Market 2018). They also boldly state that to achieve these goals they will pursue a rigorous research agenda and will engage 20% of cultivated acres of American crop production, approximately 50 million acres, in the Supply Chain Sustainability Program by 2020 (Field to Market 2018).

Various other smaller certification standards exist with the USA. These standards include: Certified Organic, Food Alliance Certified, Fair Trade, Rainforest Alliance, Human Safe and Handled, Animal Welfare Approved, Salmon Safe, Marine Stewardship Council, and Protected Harvest (Food Alliance 2018). These each have varying levels of focus on agri-food sustainability.

The combination of these standards and initiatives in the USA are a signal that the American agriculture and agri-food industry is taking sustainability seriously. While a unique wetland sustainability certification process does not exist, the ANSI-LEO 400 and FTM programs all promote conservation of natural habitat and reduced soil erosion and water quality contamination – all ES provided by wetlands. The Canadian Field Print Initiative (CFPI) has been loosely modelled from the Field to Market Initiative, with the expectation that our certification process could expand and be used to access this American market.

2.4.2 People’s Republic of China

The second largest importer of Canadian agriculture and agri-food products is China, comprising approximately 9% of exports in 2016 (AAFC 2016a). Trade with China differs in many ways from the USA: transportation distances, political economy, and environmental attitudes. The recent signing of the CPTPP means that a closer trade relationship with China is expected. According to the statement from the Government of Canada, the CPTPP will *“provide new market access opportunities for a*

wide range of Canadian products, including meat, grains, pulses, maple syrup, wines and spirits, seafood and agri-food products. The agriculture and agri-food sector is a key driver of Canada's economy, and the CPTPP will help Canada reach our government's ambitious goal of increasing agri-food exports to \$75 billion annually by 2025" (Government of Canada 2018a).

Several sources are available for those wishing to export product to the China. The Canadian Trade Commission Service (CTCS) provides a manual for Canadian businesses seeking export to China (Canadian Trade Commission 2018); the CFIA: Manual of Procedures for Meat and Poultry Products describes the export requirements of Canadian meat to China (CFIA 2018a). The Asia Pacific Foundation of Canada and the Canadian Grain Commission provides summary statistics of this information annually (Canadian Grain Commission 2018a; Asia Pacific Foundation of Canada 2018).

The primary Canadian agricultural export to China is cereal grains and oilseeds. While meat is also exported, it does not comprise such a large percentage of our exports, and is required to pass testing from Chinese authorities under the National Chemical Residue Monitoring Program and the National Microbiological Monitoring Program. Due to concerns over BSE, only frozen and de-boned beef under thirty months of age (UTM) is accepted (CFIA 2018a).

Sustainability Standards

Despite increases awareness of the environmental degradation arising from agricultural practices (Zhao et al. 2008), the Republic of China maintains a strict productivist mentality with regards to agricultural production (IIED 2015). There is a general reticence to promote sustainable agricultural practices that may decrease production. However, in 2017 the United Nations Forum on Sustainability Standards (UNFSS) and the Chinese government launched the China National Platform on Voluntary Sustainability Standards, a landmark move for agricultural sustainability in the country. There are also academic workshops being held to explore the subject and several initiatives, such as Shared Harvest and the Wanzai County organic food

experiment, have had successes (IIED 2015). Despite these indications of change, there remains a heavy emphasis on food security over quality, and we expect little market support for promoting sustainable practices in agri-food products imported from Canada in the near future. This information suggests that market pressure from China regarding the sustainably sourced Canadian food imports will be limited for the foreseeable future.

2.4.3 Japan

The third largest importer of Canadian agriculture and agri-food products is Japan, with approximately 7% of exports in 2016 (AAFC 2016b). These products primarily include pork, beef, greenhouse products and cereal and oilseed grains. Japan is a signatory of the CPTPP and therefore can be expected to continue to play a prominent role in influencing Canadian agriculture exports. The Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) manages agriculture and food related imports.

As for other jurisdictions, several sources are available for those wishing to export product to Japan. The Canadian Trade Commissioner Service (CTCS) provides a manual for Canadian businesses seeking export to China (The Canadian Trade Commission 2018); the CFIA: Manual of Procedures for Meat and Poultry Products describes the export requirements of Canadian meat to Japan (CFIA 2018c). The Asia Pacific Foundation of Canada and the Canadian Grain Commission provides summary statistics of this information annually (Canadian Grain Commission 2018a; Asia Pacific Foundation of Canada 2018).

Sustainability Standards

The Japanese Agricultural Standards (JAS) seal is the official seal of inspected and quality foods in Japan. A burgeoning and globalized middle class has led to a rise in organic food interest, and the Japan-Canada Organic Equivalency Arrangement (JCOEA) is an agreement whereby certain organic products from either country can be

labelled and sold as such in both countries (CFIA 2018g). Organic products outside the JCOEA may still have access to the market, but cannot carry the JAS logo.

However, to date Japanese sustainability initiatives have not been highly developed at the national level (Yamashita 2015), and policies remain defined by the post-war rice paddy set-aside program, which focuses on self-sufficiency and food security over environmental sustainability (Davis 2012). AAFC also compiled a report in 2013 on ethical food trends in Japan, and determined that the average consumer in Japan was not willing to pay more for ethically sourced, sustainable food products (AAFC 2013). This result is confirmed by the current situation in the seafood industry, which has limited interest in certification for sustainability (Swartz et al. 2017). As such, this information suggests that currently and in the near future market pressure from Japan towards sustainably sourced Canadian food imports will be limited.

2.4.4 European Union

The European Union (EU) was the fourth largest importer of Canadian agriculture and agri-food products in 2016 (EU 2017; AAFC 2016a). The EU is also a global leader in advocating sustainable agriculture practices and regulations. Canadian agricultural producers and trade agencies have lamented strict anti-genetic modification laws in the EU and the limits to export of Canadian canola (Globe and Mail 2015). The Canadian-European Union: Comprehensive Economic and Trade Agreement (CETA) will have significant influence for the Canadian agriculture-food industry which may influence production patterns in Canada (Government of Alberta 2017; Global Affairs Canada 2017).

Due to the complexity of regulations and recent changes, several sources are available for those wishing to export product to the EU. The Canadian Trade Commission Service (CTCS) provides a manual for Canadian businesses seeking export to the EU (CTCS 2018) and the CFIA: Manual of Procedures for Meat and Poultry Products (CFIA 2018b) describes the export requirements of Canadian meat to

the EU. The Canadian Grain Commission also provides summary statistics of this information annually (Canadian Grain Commission 2018a) for cereals and oilseeds.

Sustainability Standards

The Common Agricultural Policy (CAP) governs agricultural policy in Europe. Established in 1962, this policy was first created to develop food security and good prices for farmers, but has since evolved to encompass supply management practices (1970s and 1980s) and more recently the sustainability of agriculture from an environmental perspective (European Commission 2012b). The most recent revision in 2012 emphasises the sustainability of agriculture and ES recognition, such as water and nutrient retention, soil conservation, amenity and carbon storage (European Commission 2012a). Through this policy and various other social movements and schemes, European economic law has had a large influence on international voluntary regimes for sustainability (Partiti 2017).

Due to CETA, strong agri-environmental standards in the EU, and the scale of import to this economic block – not to mention the influence of their economic policy on global affairs – the EU can be expected to exert a sustainability influence on agricultural practices in Canada. However, while this is the greatest opportunity, it is also relatively small in terms of overall agricultural export. While there is some market access opportunity, possibly the greatest opportunity is that these EU trends are formative for agriculture in North America. As these trends influence sustainability initiatives in the USA, there will be additional trade opportunities.

2.4.5 Mexico

Mexico and Canada are close trading partners and members in NAFTA. The 2018 NAFTA negotiations have aligned relations between these two countries in solidarity against USA protectionism, and have improved political relations. Mexico is the fifth largest importer of Canadian agriculture and agri-food products.

The Mexican Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) is responsible for regulations regarding import of Canadian products to Mexico. The CFIA: Manual of Procedures for Meat and Poultry Products (CFIA 2018d) describes the export requirements of Canadian meat to the EU, while the Canadian Grain Commission also provides summary statistics of this information annually (Canadian Grain Commission 2018a) for cereals and oilseeds. Under the Canadian Grain Act, anyone wishing to sell grain to Mexico must receive written consent from the Canadian Grain Commission (Canadian Grain Commission 2018b)⁶.

Sustainability Standards

While there are multiple initiatives promoting sustainable agricultural practices in Mexico from the non-government sector, there is limited evidence of government support for sustainability standards, either mandatory or voluntary. In December 2017 there was a consultation in Mexico with the UN Forum on Sustainability Standards, but this consultation and workshop is currently ongoing. GRI reports that three organizations are certified in Mexico, and none are in the process of certification (Perez-Batres, Miller, and Pisani 2010). Due to the limited evidence among the Mexican consumers for ethically sourced foods and standards, Mexico is not expected to exert significant market pressure on sustainability initiatives in Canadian agriculture.

2.5 Discussion and Conclusion

Over the last ten years there has been remarkable growth in the number and scope of sustainability standards globally. Driven by a number of factors – such as increasing demand among consumers for ethically sourced products, rising concerns over climate change, and concerns over increasing human populations globally – markets are responding in a way that both mandatory (government mandated) and voluntary (market based incentives) are driving this movement.

⁶ This permission is required for all countries other than the United States of America.

The agriculture and agri-food sector globally is at the forefront of this movement, and has been shaped by national regulations such as the 1985 US Farm Bill and the Common Agricultural Policy of the EU, and international agreements such as the UN Forum on Voluntary Sustainability Standards (UNFSS). While there is a natural and historic ebb and flow of public concern for stewardship and long-term food production (Stubbs 2016), the current social, environmental and economic conditions globally are leading to an overall increase of these perspectives and legislation: difficult times led to the most dramatic learning curves in regards to failed and successful sustainable systems (Gold and Gates 2007).

Canada's major trading partners for agriculture and agri-food products are also moving on this global trend. The Canadian Trade Commission and Agriculture and Agri-food Canada have had reports commissioned to establish the demand for "ethical" agricultural products among many countries to explore the issues and opportunities of market access for Canadian products. This research is exploring at the same time that global free trade is both under pressure from the United States, while being defended by centrist globalization platforms internationally. For example, in the last year Canada has agreed to free-trade agreements with the EU (CETA), the Pacific Rim nations (CPTPP) and is re-negotiating NAFTA.

A review of the sustainability standards in the five largest importers of Canadian agri-food products highlights the trend in sustainable agriculture, but also strong regional differences: the EU is the most strident supporter of sustainability standards and therefore shows greatest promise for opportunities for marketing sustainably sourced Canadian products; the USA has strong existing legislation and recently adopted the ANSI/LEO 4000 standard, and Canadian engagement with this initiative may mean greater opportunities to access our largest export market, particularly in a time of protectionist government attitudes; Mexico has limited sustainability standards and therefore limited opportunity; and the Asian countries of Japan and China remain committed to food security – or quantity – over sustainable agricultural systems.

Furthermore, consumers in these countries have limited appetite for ethically sourced products, though this is slowly changing in the urban middle class.

Finally, while price premiums exist for certain niche markets – including organic food production and heavily traded crops such as coffee, tea and cocoa – staple food crop production, such as maize, rice and wheat, have been slower in the creation and adoption of standards (Tayleur et al. 2016). The currently slow adoption of sustainability standards in western Canadian crops, such as wheat and oilseeds, is consistent with this trend. However, as GRI reporting indicates, mandatory and voluntary sustainability standards are rapidly increasing globally (Bartels et al. 2016). As such, there is an opportunity for Canadian agricultural producers and industry groups to engage with this growing trend for market access, so as to not find themselves isolated in a changing global market.

2.6 Highlights

- Sustainability standards for the agriculture supply chain have rapidly increased in the last decade.
- While there are currently limited certifications for staple food crops, these are also increasing, and corporations are leading the efforts to enhance sustainability certification throughout the supply chain.
- Major global sustainability reporting organizations do not exist specifically for wetland conservation, but have emphasis on water quality and zero land conversion.
- SAI-FSA 2.0 and ISCC-Plus are two prominent certification standards that are accessible to the Canadian agriculture and agri-food sector.

- Canada's major trading partners for agriculture and agri-food are USA, China, Japan, EU and Mexico. Currently major negotiations on free trade, and CETA, CPTPP and NAFTA are all recently or currently being negotiated.
- The European Union is a relatively small market for Canadian agricultural exports, but exerts a disproportionate influence on the global sustainability trends. Therefore access to this market is important for Canadian agriculture, as it will simultaneously be a positive signal to the USA – our largest export market.
- The USA imports 51% of Canadian agricultural products, and has recently adopted the ANSI/LEO-4000 Standard for sustainability certification. This presents a goal for Canadian producers to meet for market access and an opportunity template for similar standards in Canada.
- In 2017 China joined the voluntary sustainability standards program of the UNSS. While little opportunity exists for Chinese market regulations to shift producer behaviour in Canada in the near future, rising interest in environmental issues and their impacts on food security are expected to increase in the future.
- The Japanese market has little appetite for sustainability standards, though organic food production is popular in major urban hubs and future opportunities will exist.
- Mexico has recently participated in UN workshops on sustainability standards, but currently does not have a national standard for sustainability certification. It should be expected to increase in the future.

- Corporations have traditionally exerted greater pressure on sustainability standards than national governments. However, as corporations respond to changing consumer preferences, governments often respond.
- The growing global trend for sustainability should be seen as a future market access opportunity for the Canadian agricultural industry and efforts should be made to increase certification approaches.

3.0 Canadian Trends in Agri-Sustainability Standards

3.1 Introduction

Mirroring the consumer trends across many developed nations, the Canadian public has asserted its support for ethically sourced and sustainable agriculture (McKay 2017; Sloan 2018). The continual social and environmental challenges facing the Canadian agriculture industry can represent an opportunity to meet demands from the public, corporate interests and investors who want to spend and invest in “ethical” environmental, social and governance issues. Such investment can often increase the success of financial portfolios if they align well with current societal objectives (Rohan 2014).

Despite these general trends, Canadian governments and corporations have not established this nation as leader in the global agricultural sustainability movement. Recent trends in Canada such as A&W sourcing only hormone free meat, the Canadian Roundtable on Sustainable Beef, and the Canadian Roundtable on Sustainable Crops are indications that a shift is occurring. Maintenance of social license⁷ within the public sphere is increasingly important to the Canadian agricultural industry. As such, this section explores the trend in environmental sustainability programs in Canada; narrows the focus to the loss of wetland ecosystems, and explores the opportunities arising from different agricultural perspectives: grain production, livestock production, food manufacturing and food retail. Discussions and conclusions are made and highlights are presented.

3.2 Background: Wetlands and Sustainability

The Canadian provinces of Manitoba, Saskatchewan and Alberta contain the unique Prairie Pothole Region (PPR), a wetland-rich habitat providing essential

⁷ Public appetite for the term social license varies between provinces: it was popular in Alberta but now is less popular among government agencies.

breeding ground for North America's waterfowl populations and many other bird species. They also provide a large array of ecosystem services, such as nutrient retention, flood and drought protection, and carbon sequestration.

However, since European settlement in the early 1800s, these wetlands have been drained at approximately 3% per decade (or 0.35% per year) (Dahl and Watmough 2007; Huang et al. 2011). When compared to other ecosystems, wetland loss has been so high for several reasons: 1) infrastructure development, 2) land conversion, 3) water withdrawal, 4) eutrophication and pollution, 5) overharvesting and overexploitation, and 6) introduction of invasive species (Galatowitsch 2016). From a global perspective, the continuous requirement for higher production to feed an increasing world population and the increasing cultivation of energy crops has exacerbated the local problem (Verhoeven and Setter 2010). Often multiple drivers cause wetland degradation, which can be local, regional or global in scope, making restoration of the trends that are causing wetland loss difficult to reverse, even if government and social support is strong (Galatowitsch 2016). Despite policy documents, legislation and increasing public awareness, in Prairie Canada these loss rates have shown no sign of abating over the last several decades.

Agricultural land conversion has been identified as the greatest source of wetland loss in the PPR, accounting for upwards of 80% of wetland loss in the PPR (PHJV 2008). The environmental impact of agriculture is largely influenced by the choice of production practices implemented by individual producers. Producer choices are driven by a range of factors including perceived costs and benefits to the individual, regulatory requirements, personal beliefs, and social pressures and norms (PHJV Context Document 2018).

As wetland loss in the PPR has been driven primarily by agricultural demands, this section will outline different components of the supply chain of food and linkages in their explicit and implicit contribution to wetland loss and possible opportunities for improvement and wetland conservation.

3.3 Supply Chain Response

3.3.1 Grain Industry

Grain production, including cereals and oilseeds, is a major component of the Canadian agriculture industry. It comprises a large part of our export market and also is consumed domestically. The major crops produced in terms of area are wheat (22 million acres), canola (22.8 million acres), corn (3.5 million acres), soybeans (3.1 million acres), barley (5.2 million acres) and oats (2.7 million acres) (Statistics Canada 2017). In terms of volume, Table 9 provides the production of the principal Canadian field crops in 2015 – 2017.

Table 9. The production of the principal Canadian field crops from 2013 – 2017. Source: Statistics Canada (2017).

Field Crop	2013 (thousands of tonnes)	2014 (thousands of tonnes)	2015 (thousands of tonnes)	2016 (thousands of tonnes)	2017 (thousands of tonnes)
All wheat	37,529.6	29,419.6	27,594.1	31,728.6	27,129.8
Canola	18,551.0	16,410.1	18,376.5	19,600.5	19,707.9
Barley	10,237.1	7,119.0	8,225.7	8,783.6	7,305.5
Oats	3,905.6	2,979.0	3,427.7	3,194.6	3,802.2
Flaxseed	730.7	872.5	942.3	588.0	501.2
Rye	222.9	217.5	225.5	415.0	326.0
Soybeans	5,358.9	6,048.6	6,459.1	6,552.1	8,321.1
Corn for grain	14,193.8	11,486.8	13,559.1	13,193.1	14,312.6
Tame hay	26,404.6	25,960.0	22,526.3	27,564.0	-

A trend evident in this production information is that the majority of these crops are major commercial crops. Unfortunately, based upon global percentages of these form of crops falling under any form of sustainability certification is very small: certification covers 1.1% of global croplands, and while nearly 10% of global production of heavily traded commodities such as coffee, cocoa, tea and palm oil are certified, staple crops such as wheat, rice and maize, have far lower coverage (Tayleur et al. 2016; Trejo 2015).

Organic food certification in Canada is similar to other export partner models described in the previous section. Under the Canadian Agricultural Products Act, the *Organic Products Regulations, 2009*, provide a basis for the Canadian Organic Regime, which is monitored and enforced by the CFIA (CFIA 2018f). The CIFA currently acknowledges 19 different certification bodies in Canada (see CFIA (2018f) for the comprehensive list). The Canadian Seed Institute and the Centre for Systems Integration (CSI) offers organic certification and seeds that meets requirement of the Canadian Organic Regime, the USA National Organic Program, EU Organic Regulation and the Japanese Agricultural Standard (Canadian Seed Institute 2018).

Other systems that loosely connect with sustainability standards include the 2011 National Voluntary Biosecurity Standard (and a resulting producer guide) for the grains and oilseeds industry in Canada (CFIA 2018h). The intent of this standard is to identify desired outcomes for limiting biosecurity concerns regarding plant pests. Many of the reasons for producers adopting these standards best management practices to limit their economic damages should such pests occur, and to limit the spread to neighbours. Another is the CFIA's 2012 Canadian Grain Sampling Program (CGSP), a voluntary initiative to attest that grain meets phytosanitary (plant) requirements designated by the National Plant Protection Organization (NPPO) (CFIA 2017). Companies and producers in Canada can collect and submit samples of seeds, grain and grain products for approval under the CGSP (CFIA 2017). This certification process is an example of voluntary participation in an international standards body to meet export requirement and provides a financial incentive for producers.

Canadian Roundtable for Sustainable Crops

The Canadian Roundtable for Sustainable Crops (CRSC) was formed in 2013 to collaborate on sustainable agriculture issues and market opportunities within the Canadian grain sector. Comprised of members and organizations across the value chain, CRSC defines itself as a “*national, industry-led forum engaging value chain stakeholders in assessing and responding to marketplace demands, and showcasing*

Canada's performance, in the area of agriculture sustainability" (CRSC 2018). It is a Canadian response to increasing concerns of social license and potential sustainability sourcing requirements from major food processors and retailers. While the formation of the CRSC is commendable and indicates the rising importance of sustainability standards, there is currently no assessment framework or certification standard associated with the initiative.

Canadian Field Print Initiative (CFPI)

To meet the increasing consumer and international demand for sustainability standards, industry organizations in Canada collaborated to create the CFPI in 2011 (Pulse Canada 2018; Serecon 2011), modelled on the Field to Market initiative in the USA. An interesting feature of this initiative is the CFPI calculator, which provides farmers a basic means to calculate and compare sustainability indicators like greenhouse gas emissions, energy use, soil erosion and land-use efficiency, on their farming operations (Pulse Canada 2018; Trémorin 2017). While there are currently no water or biodiversity components to this calculator, CFPI is planning to incorporate these components in the near future (Alberta Pulse Growers 2017)⁸.

Corporate groups have bought into the CFPI sustainability model. General Mills, one of the largest food companies, has identified sustainability and water scarcity as key responsibility areas (General Mills 2014), and currently requires producers who sell them oats in Canada to complete CFPI worksheets. CFPI members groups such as Paterson Grain, Richardson Pioneer and Farmers Edge facilitate this process.

Round Table on Responsible Soy (RTRS)

Although less relevant to wetland conservation in western Canada, the global RTRS has developed certification for global soy producers that has application for

⁸The four crop commissions in Alberta (wheat, barley, pulse and canola) created the Alberta Crops Sustainability Pilot Project in 2015 (E. K. Gowriluk 2015; E. Gowriluk 2015). Unfortunately no results of this pilot were found and therefore it is not included in this report.

Canada (RTRS 2018). As a participating country, Canada initiated roundtable discussions in 2013 between Canadian growers, retailers and industry partners and formalized a Canadian standard in 2014. Increased demand from EU retailers led to a certification pilot project in Ontario at the same time, which was successfully implemented, and met EU market access criteria and provided small price premiums for producers (RTRS 2018).

3.3.2 Livestock Industry

The red meat and livestock industry – which is comprised of beef, veal, pork, lamb, and less common meats such as goat, rabbit, horse, venison and bison – in Canada is a major component of the agriculture and agri-food industry. In 2015 there were annual shipments worth CAD\$19.4 billion and Canada has an international reputation for safe meat, enforced by the standards of the CFIA (AAFC 2017). The largest component is made up of the cattle industry, whose exports in 2015 were CAD\$2.23 billion (AAFC 2017). The USA is the major importer of nearly 71% of Canadian beef, while trade to China is increasing (AAFC 2017). Overall, the Canadian livestock industry has recognized the importance of sustainability and standards and has been taking steps to advance this agenda within their industry.

Certified Organic

As in the grain industry, for Canadian red meat to be labelled as organic it must fall under the national Canadian Organic Standard and be open to periodic inspection from the CFIA to ensure compliance (Canada Beef 2016). The main difference between conventional, natural and organic beef is the food that the animal eats, which needs to be 60% certified organic forage, and the animal cannot have any veterinary medication, such as antibiotics or hormones, though vaccinations and medications to reduce pain are permitted. There is no scientific evidence that grass-fed organic practices reduce harmful bacteria in the meat or leads to enhanced soil health, though these claims are often associated with organic beef production (Canada Beef 2016).

Beef Industry

The organization representing the cattle industry in Canada is the Canadian Cattleman's Association (CCA). The CCA asserts on their website that "*sustainability is comprised of the social, economic and environmental sustainability of the Canadian beef value chain*", and has linked to environmental stewardship, environmental sustainability, and activities that they do to support research and sustainable advancement of the Canada's beef industry (Canadian Cattlemen's Association 2018).

Through the CCA and the provincial organizations, the beef industry has been particularly proactive in sustainability initiatives as a direct response to consumer demand for ethical meat (Global News 2016a). This interest led to participation in the Global Roundtable for Sustainable Beef (GRSB 2018) and the resulting formation of the Canadian Roundtable for Sustainable Beef (CRSB) in 2013 (Jackson 2017). Various provincial organizations are also engaged with this initiative, such as the Alberta Beef Producers (ABP), who have been awarding an "Environmental Stewardship Award" to individual producers who promote and practice sustainable practices on their farms/ranches since 1992 (Alberta Beef Producers 2018). The ABP also have an ecosystem services working group.

CRSB Certified Sustainable Beef

The CRSB launched a Certified Sustainable Beef Framework in 2017 based upon the National Beef Sustainability and Assessment and Strategy with the objective of driving the advancement of beef sustainability in Canada (CRSB 2018). The guiding principles of this standard are: Credible, Effective Valuable, Economically Viable, and Aligned (with the five principles of sustainable beef described in the GRSB) (CRSB 2017). Industry partners, producers, manufacturers and retailers and consumers have been part of this process throughout. According to the CRSB website, this is the first

certification system for sustainable beef in the world⁹ and is very rigorous. McDonald's was instrumental in the development of this system.

Pork and Lamb Industry

The Canadian Pork Council has a manual for reducing environmental impacts on farms (Canadian Pork Council 2005) and Manitoba Pork is currently updating their 2011 document "Embracing a Sustainable Future" (Manitoba Pork 2011). However, this industry is not currently pursuing any form of sustainability standard aside from organic certification. There is currently a Sheep Value Chain Roundtable, but the emphasis is currently on the production of high quality meat and sheep products (AAFC 2018b). As the lamb and sheep industry in Canada markets nearly all of its product to domestic consumers (AAFC 2018b), international pressure to develop sustainability standards is limited, though organic certification is provided under the Canadian Organic Standard.

3.3.3 Food Processing Sector

Canadian manufacturers and food processors are under pressure to remain competitive in a globalized and trade oriented world. In 2013, the George Morris Centre explored the trends of these standards, concluding that despite certain current limitations they would play a large role in the future of Canadian agriculture (Schmidt, Mussell, and Sweetland 2013). Food manufacturing companies in Canada are aligning with these trends. In 2017 Maple Leaf Foods splashed across the headlines that they want to be "the most sustainable protein company on earth" (Food in Canada 2017).

The Canadian government has identified sustainable manufacturing as a means to promote such a competitive advantage, through minimizing production wastes and adopting environmental technologies (Government of Canada 2018b). AAFC periodically summarizes trends and emerging opportunities for the food processing

⁹ South America has certified "Bird Friendly Beef" to access markets in the EU, but this certification process deals with the specific issue of bird conservation and not sustainability in general (Birdlife International 2017).

industry. This information is compiled in a report Emerging Innovation: Trends and Opportunities (AAFC 2018a). One of the driving factors in the processing industry is marketplace pressures, which include sustainability, assurance standards and traceability (Figure 2).

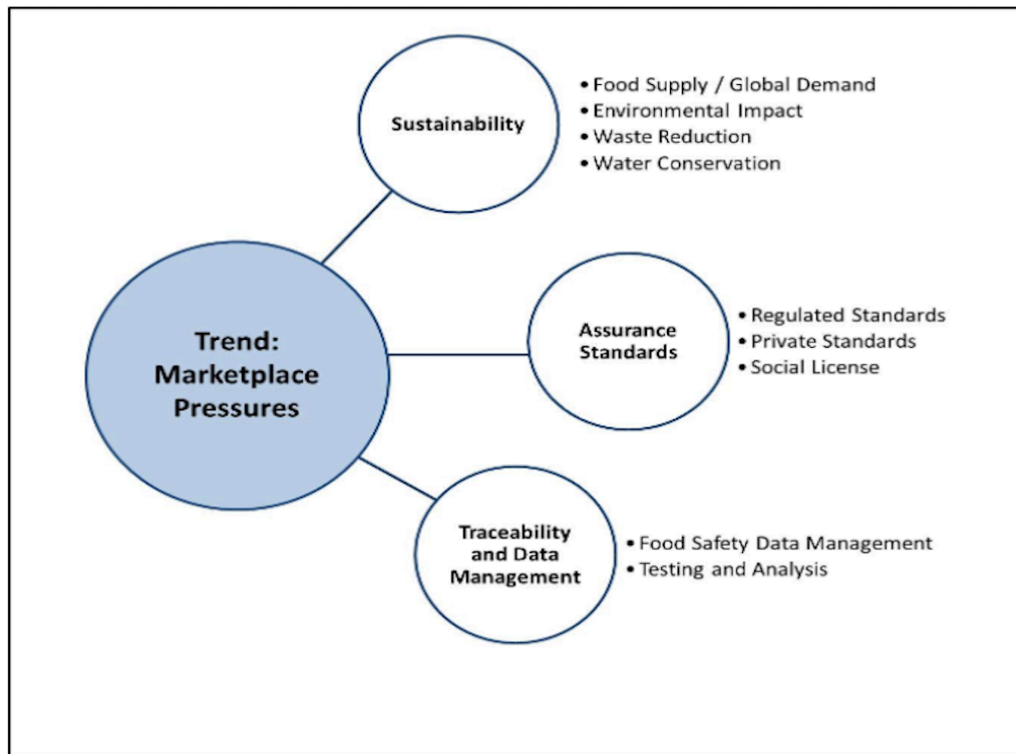


Figure 2. Marketplace pressures for food supply in Canada. Source: AAFC (2018a).

3.3.4 Food Retail Sector

The food retail sector is heavily involved in marketing sustainably sourced foods. In an article in 2017 from the Food Marketing Institute, it is suggested that sustainability standards in food marketing are the “way of the future” for food retail (Food Marketing Institute 2017). The retail council of Canada has aligned with sustainability practices (Retail Council of Canada 2018) and been participants on the CRSB, CRSC and the

RTRS. Increasing labeling on products in grocery stores and restaurants, a signal of coming increasing consumer demands for certification and standards.

3.4 Discussion and Conclusion

The information provided in this section shows clear indication that agri-sustainability is of value to Canadian consumers and is increasing in importance throughout the supply chain. However, with the exception of sustainability certification in the beef industry and working groups or “roundtables” among industry groups, most producers themselves remain beholden to a productivist mindset of agriculture, where the quantity of food produced is more important than the way it is produced. As these farmers and producers are the most connected to the land – and wetlands – this remains a significant barrier to promoting ecological and social benefits and protection of wetland ecosystems.

The delay of sustainability standards in the Canadian grain industry is perhaps most significant in terms of wetland conservation, as draining wetlands for crop production is more common than for the livestock industry. The delay in this industry should not be unexpected due to the highly competitive nature of Canadian major grains products, such as wheat and oilseeds. These products are nearly perfectly competitive with the global market, where there are millions of producers globally providing the same product and therefore farmers are price-takers. Wheat is also a food staple, and as highlighted by Tayleur et al. (2016), staple crops are globally one of the least responsive to sustainability standards and certification.

However, while producers are less engaged, there are indications of shifts in the industry groups representing these producers. Certifications on beef production with the Canadian Cattle Commission, and exploration for grain certification in the Canadian Roundtable on Sustainable Grains, and other initiatives such as Field Print and the Canadian Pulse Council’s attentiveness to sustainability are becoming more common. A cross industry example is the “Coalition for Offset Solutions”, a group of agriculture and

industry partners created in 2017 with the mandate of *“framing and advancing the role of bio-based systems as a necessary bridge in the transition from fossil fuels and their emissions to a low-carbon energy economy – by mitigating those unavoidable emissions for the foreseeable future through measureable, effective bio based sequestration”* (Viresco Solutions Inc. 2017). While there is a lag between these stakeholder discussions and actionable certification – and even longer before wetlands can be directly conserved – it should be considered a step towards conservation.

Unfortunately, while many rules exist in these initiatives regarding land conversion, which includes wetland protection, wetland specific messaging is limited and no programs for “wetland certified” agricultural products exist. Further, no national market penalties for producers that choose to drain wetlands in Canada at the current time.

3.5 Highlights

- The global roundtables on sustainability have led to the creation of Canadian roundtables, such as the CRSC, the CRSB and the Canadian version of the RTRS.
- The ISCC-Plus system is active for Canadian producers to access the EU biofuels market, and explicitly prohibits wetland conversion.
- The Canadian crop and grain sector has been slow in implementing national strategies for sustainability, and currently no certification process exists. However, the CRSC has restarted in January 2018 and the CFPI is an innovative approach.
- The Canadian beef industry has been pro-active in the sustainability discussion, and has moved swiftly through the CRSB to develop the Certified Sustainable Beef Framework in 2017, the first global standard of this kind.

- There also are no programs in Canada that financially penalize agricultural producers for draining wetlands, even if such action is illegal under government frameworks.
- The consensus within agriculture industry groups is that the increasing role of sustainability standards for Canadian agriculture will be about market access opportunity, not price premiums.

4.0 Agri-Sustainability Initiatives and Extensions

4.1 Introduction

Over the last two decades several major sustainability schemes for agriculture have been strategized, piloted and implemented across North America. The 2015 USA Farm Bill advanced previous iterations of agricultural sustainability in the USA, while in Canada the 2003 Federal-Provincial-Territorial Framework Agreement on Agricultural and Agri-Food Policy (AFP) highlighted five components of importance: business risk management, environment, food safety and quality, science and innovation, and renewal (AAFC 2003). A major objective under the environment component was to reduce agricultural risks to water, soils and the atmosphere through environmental best management practices (Bassett 2013).

The impact of these agri-sustainability standards to wetland conservation is implicit in the systems they promote. That is, the leading standards organizations such as ISCC-Plus and SAI-FSA all prohibit converting valuable ecosystems into agricultural production, and explicitly mention wetlands as one such ecosystem to conserve. Unfortunately, while the ES provided by wetlands are often a component of these programs, wetland conservation is not the ultimate goal of any of these standards or certifications.

An important aspect when reviewing these initiatives is the metric used to measure success. The USDA asserts that any such evaluation approach should 1) analyze trends for agri-sustainability indicators; 2) establish a baseline to measure future improvements; 3) create and enable multi-stakeholder discussion groups; 4) advance outcome and science based approaches; and 5) provide broad context for local efforts and extension (USDA 2014). An Alberta-based consulting firm created an evaluation approach for these schemes based upon their applicability (relevance for specific products or markets), accessibility (how easily they can be used by producers) and reliability (how scientifically robust they are) (Pelletier 2015).

In this Section several major sustainability initiatives in Canada and the USA are reviewed, including where possible a general description of their strengths, weaknesses, adoption and enforcement. These initiatives include: the Field to Market Initiative (USA), the Environmental Farm Plan (EFP), the Alternative Land Use Program (ALUS), the Canadian Field Print Initiative (FPI). While these programs are not an exhaustive list, they are important programs identified consultation with agricultural producers in Canada.

We then discuss the potential impact of these initiatives should they be implemented in the Canadian PPR, and how these initiatives may interact with existing provincial wetland legislation. This Section is informed by literature from scientific databases, grey literature, and personal communication with professionals within the sustainability standards industry.

4.2 Overview of Initiatives

4.2.1 Field to Market: The Alliance for Sustainable Agriculture (USA)

Field to Market, the Alliance for Sustainable Agriculture, is an American initiative that was established in 2006, and is part of the international ISEAL Alliance. Field to Market brings together stakeholders from across the supply chain: producer organizations, agribusinesses and food retail companies; as well as conservation groups, university researchers and public sector partners to “measure and advance the sustainability of food, fibre and fuel production in the USA” (Field to Market 2017).

This initiative follows a strict process of stakeholder engagement and participation. It is based upon scientific monitoring of outcomes, evidenced by their bi-annual report on measuring the outcomes of environmental and socio-economic indicators for on-farm agricultural production in the USA (Field to Market: The Alliance for Sustainable Agriculture 2016). A strength of this initiative is the Field Print Calculator Service, which is a free online tool where producers can input specific information about

their crops (currently limited to corn, cotton, rice, wheat, potatoes and soybeans) and receive information about how different management choices impact their sustainability (Field to Market 2017). As this initiative remains in early stages of formation, limited information exists on the adoption and impact. However, it has been deemed innovative enough that it was used as the model for the Canadian Field Print Initiative.

4.2.2 Certified Humane (USA)

According to their website, Humane Farm Animal Care (HFAC) is “the leading non-profit certification organization dedicated to improving the lives of farm animals in food production from birth through slaughter” (Certified Humane 2018). This organization rose to prominence in Canada in 2016 when Earl’s in Canada decided to choose sustainability sourcing through this company, “Certified Humane”, rather than Canadian beef producers. Unfortunately, limited information exists on the adoption and impact of this initiative at a broad scale.

4.2.3 Environmental Farm Plan (EFP) (Canada)

A premier sustainability initiative for agriculture in Canada is the Environmental Farm Plan (EFP). Adopted and adapted in Canada from the US Farm System program (Atari et al. 2009) in the 1990s, the EFP is a voluntary, “whole farm” assessment tool (AEFP 2017). It was developed for three primary reasons: to provide information on Beneficial Management Practices (BMPs), help producers identify environmental risks on their farm, and provide a means of funding BMP adoption. There is a written assessment of environmental risks on individual farms, such as potential sources of water contamination, pesticide drift or soil erosion (Statistics Canada 2013) and an action plan that describes BMPs – any farm management practice that is designed to reduce or eliminate and environmental risk.

Provincial and territorial governments currently administer EFPs in Canada. The first EFP was piloted in Ontario in 1993 and the Atlantic Provinces established their own

variations shortly afterwards (Table 6). Quebec established their own EFP in 1997 and the Prairie Provinces and British Columbia followed in the early 2000s. Territorial governments did not adopt EFPs until more recently due to the limited presence of the agriculture industry in these northern regions.

Consultations began in 2016 for a National EFP that would harmonize, but not replace, the provincial and territorial programs (NEFP 2017). This National EFP is designed specifically for consumers that wish to source products from multiple Canadian regions, and has the initiative has received positive reviews from the Canadian Federation of Agriculture as a means to demonstrate to consumers that farmers are doing the “right thing” and obtain/retain the public trust, or “social license”, in agriculture (Canadian Cattlemen 2016). Numerous agricultural organizations from the government, industry and non-governmental sectors were involved in creating this program (NEFP 2017).

Strength of the EFP lies in its combination of “top-down” needs assessments through grassroots consultations with farmers. By evaluating individual farmer operations and perspectives, measures can then be strategized and implemented that are specifically designed for individual operations. Individual provinces have their own unique variations on the EFP, each with their own advantages. Ontario is known for the Sustainable Farm and Food Plan (Robinson 2006b; Robinson 2006a) which has been extensively reviewed (Morrison and FitzGibbon 2014). Quebec has a unique on-farm verification component; PEI has an online delivery format; and BC has an EFP brand. Nova Scotia has a an effective program (Yiridoe et al. 2010; NSEFP 2017), as does Alberta.

According to the Saskatchewan government, the most effective tool to identify, remediate and prevent environmental impacts has been the EFP. In 2006, an AAFC study revealed that 90% of farms in Canada with an EFP reported having implemented at least one of the BMPs identified in their action plans (Bassett 2013). The advantages of the EFP for producers is: (i) minimize the environmental impacts of farming

operations and show that environmental sustainability is a key component of agricultural practice in Saskatchewan; (ii) make Saskatchewan-grown commodities more marketable to environmentally conscious consumers around the world; (iii) potentially increase production efficiencies and profitability; and (iv) demonstrate due diligence as part of business risk program (Saskatchewan Agriculture and Food 2005). It is also the mechanism for Saskatchewan producers to access funds for the Canada-Saskatchewan Farm Stewardship Program.

A weakness of the program is limited compliance and reference. According to the PCAB, only 45% of EFP participants had reviewed their farm plan following its creation, many farmers have completed EFP binders “simply sitting on their shelf” (PCAB 2010). This result is disappointing, and could be addressed by incorporating the PCAB recommendation to review the plan every five years with producers to address uncompleted actions and identify priority areas for the future (PCAB 2010). Further, the program has had limited uptake nationally, partially due to the voluntary nature of the EFP. In 2011, only 35% of Canadian farms has a formal EFP, 2% indicated they were in the development process and 60% did not have an EFP (Statistics Canada 2013).

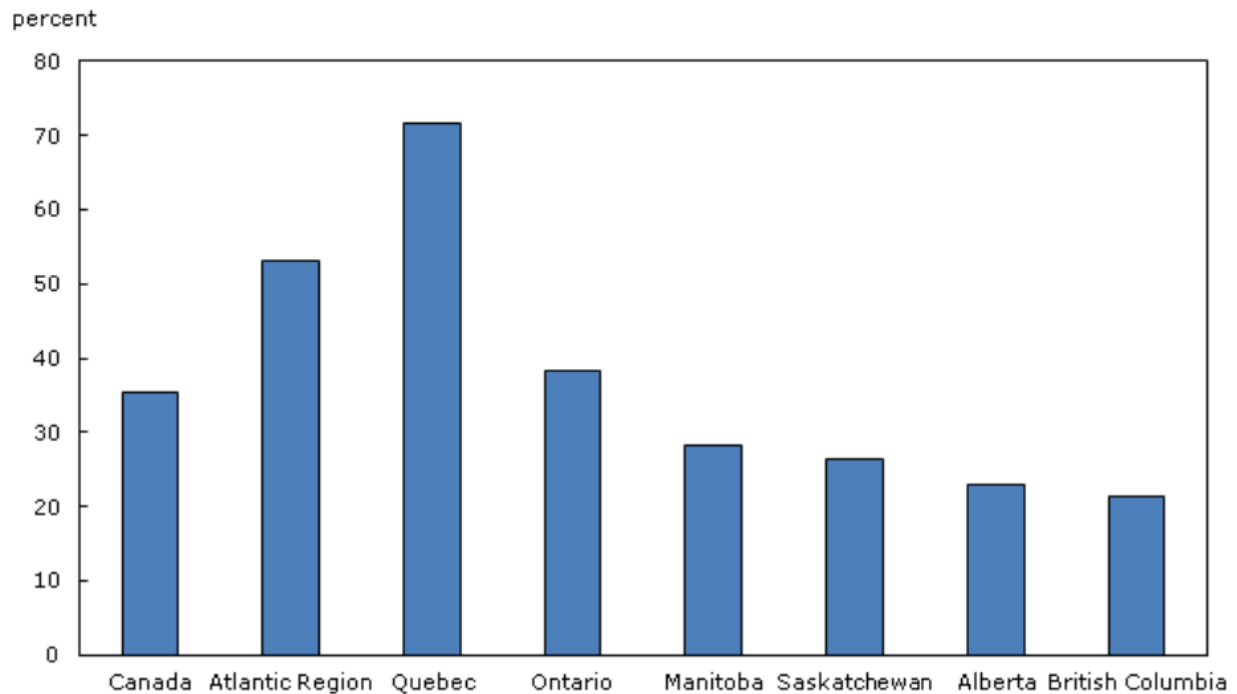


Figure 3. Farms with an Environmental Farm Plan (EFP) in Canada by province and region in 2011. Source: Statistics Canada (2013).

The primary reason cited by agricultural producers for not participating in the program were economic pressures: producers are unwilling to commit to a program that may require them to forego profits for environmental reasons (PCAB 2010). Quebec has the highest enrolment of nearly 70%, because of provincial marketing requirements. Lack of time is another reason for producers not completing this action plan. Despite the value being evident for participation, the daily pressures of farming mean it is not an immediate concern to most producers, and therefore not acted upon (Yiridoe 2000; Bell 2013; Smithers and Furman 2003; Banack and Hvenegaard 2010).

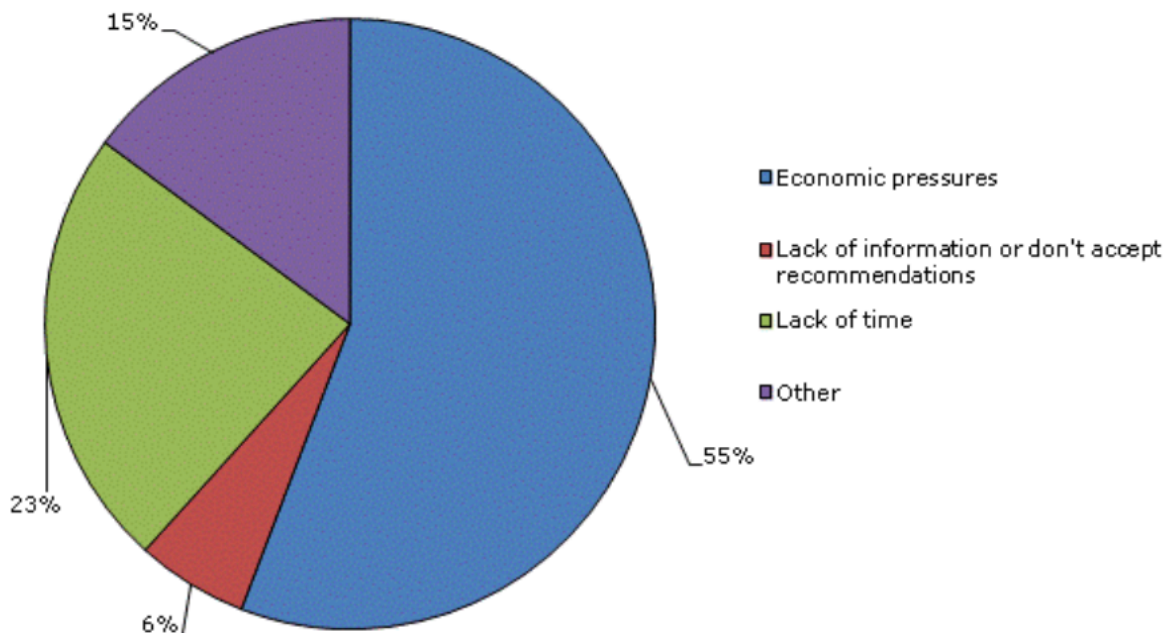


Figure 4. Main reasons for not implementing beneficial management practices on farms in Canada, 2011. Source: Statistics Canada (2013).

The Farm Stewardship Program (FSP) is a complementary initiative to the EFPs described in the Federal-Provincial-Territorial Framework Agreement on Agricultural and Agri-Food Policy (AAFC 2003). As with the EFP, each provincial government has a variation of this program. In Saskatchewan, the FSP is funded by the provincial government, and is designed to provide financial assistance to Saskatchewan farmers that are willing and able to implement beneficial management practices on their property (FSP 2017; AAFC 2003). The program is currently concluding its third five-year term (2013-2018), with previous terms operating in 2003-2008 and 2008-2013. According to Bassett (2013), concerns among farmers were that after the EFP workshops, it was difficult to gain access to additional information or training. Further, some practices available in the CSFSP involve complicated procedures, requiring pre-approval and expert guidance. Unfortunately, limited information exists on the adoption and impact of this initiative.

4.2.4 Canadian Field Print Initiative (Canada)

As presented in the previous Section, the CFPI arose from discussions in 2009 between industry groups that wanted to have sustainability metrics for agricultural crops in Canada (Canadian Field Print Initiative 2017). The project is funded from 2013 – 2018 by AAFC, and managed by CFPI and CRSC. The initiative has three major components: the Canadian Field Print Calculator (Serecon), Sustainability Indicator Development (Serecon), and a Fertilizer Management Survey (Stratus Research) (Trémorin 2014). The CFPI has been relatively successful since inception. In 2013 the pilot projects started, and in 2014 there were 400 growers of canola, spring wheat, peas participating in western Canada; and 250 growers of corn and soybeans participating in Eastern Canada (Trémorin 2014). While the impact on sustainability has been somewhat limited due to the relatively low adoption and limited time period, it has provided a means for stakeholders to learn about sustainability performance of Canadian crops. It has also been a source of information on tools and support programs for sustainability requirements (Trémorin 2017).

Trémorin (2014) identified potential strengths and weakness of the CFPI, which include 1) provides a method to measure on-farm environmental impacts linked to market demands, regulatory pressures for measurement and improvement; 2) large datasets capture sustainability indicators that can be accessed for consumers; 3) the calculator is user-friendly and not burdensome; and 4) it is outcomes focussed and science based. The weaknesses identified were that metrics for biodiversity and water quality were slow in development, and that no clear model for sustainable financing for the project exists past 2018 (Trémorin 2014). Another weakness is that there is no accounting within this system for “non-crop” acres like wetlands, which have the highest value from a habitat perspective.

4.2.5 Sustainable Farm and Food Initiative (Canada)

The Sustainable Farm and Food Initiative (SFFI) is a collaborative project of the Ontario farm organization and food and beverage processors. Their mission is to improve sustainability across the entire agri-food industry and ensure confidence in the consistency, ethics and quality of Canadian agri-food products (SFFI 2017). In addition to the early development in Ontario, SFFI is advocating for a Canadian Agri-Food Sustainability Platform. Although this program is still in very early stages of development, strength of the program is the emphasis on a pre-competitive data-sharing platform. While there is buy-in from the consultations, there is currently no program for producers to engage and it currently operates as a industry communication tool. However, a pilot project in Ontario is being designed in 2018 (SFFI 2017), and from these results a discussion on a national and international scope will be explored. As the SFFI is currently in the conceptual stages and has no measurable impacts to date (SFFI 2017).

4.3 Comparative Review for Extension

This section provides a review of the potential impacts of the initiatives described above within the existing provincial legislative frameworks for wetland conservation, and considers opportunities for implementation and/or expansion of these sustainability initiatives in Saskatchewan, Alberta and Manitoba.

4.3.1 Alberta

The Alberta government formally legislated a wetland policy in 2013 after a comprehensive consultative process (Government of Alberta 2013). Prior to this legislation, wetland conservation was recognized in several ways: the interim policy Wetland Management in the Settled Areas of Alberta: an Interim Policy (AWRC 1993), the Water Act (GOA 2000), and the Water for Life Strategy (GOA 2003; GOA 2007; GOA 2009). The new policy relies upon permits for wetland drainage and mandatory mitigation (Government of Alberta 2016). While there is general support for the policy,

implementation and enforcement procedures are challenging and continue to evolve (Timoney 2015; Weber et al. 2017; Clare and Creed 2014; Clare and Krogman 2013; Dore 2015). As such, market access opportunities will resonate with Alberta producers.

As in the other Prairie Provinces, several of the Canadian-based initiatives described earlier have potential to complement the legislative structure in Alberta. Relevant programs such as the CRSB, CRSC, ISPP-Plus, the EFP / FSP and CFPI are already operating in the province. The Alberta Beef Producers are already strongly in support of sustainability initiatives, and if wetland conservation were linked with the new CRSB then there are great possibilities for wetland conservation. Similarly, commonality could be found with the CRSC.

Further, Alberta has the Agri-Environmental Partnership of Alberta (AEPA), a forum for the cropping and livestock sectors and the provincial government to discuss environmental issues. AEPA is “in place to ensure that agri-environmental policies are balanced, support sustainable industry growth, and increase social acceptance” (Alberta Wheat Commission 2018). Further, AEPA states that they “*recognize the increasingly important role of sustainability standards in the international marketplace. Buyers are commonly sourcing commodities based on sustainability certification standards and subsequently, and they feel adhering to these standards is becoming more imperative at the farm level to stay competitive in the marketplace long-term*”. Due to this belief, the four crop commissions in Alberta (wheat, barley, pulse and canola) have started the Alberta Crops Sustainability Pilot Project. They based this pilot upon the standards of SAI, ISCC and Unilever’s Sustainable Agriculture Code (E. K. Gowriluk 2015; E. Gowriluk 2015).

4.3.2 Saskatchewan

Saskatchewan developed and adopted a wetland policy in 1995, to *encourage sustainable management of wetlands and to restore or rehabilitate degraded wetland areas* (Government of Saskatchewan 1995). Formed in consultation with

representatives from the existing government bodies at the time¹⁰ and in consultation with the general public, this policy provided a foundation for wetland conservation in the province and is currently managed within the Water Security Agency (WSA). In the WSA's Strategic Plan for 2013-14 (SWSA 2013), wetlands are mentioned twice in the goals: (i) initiate work on a new provincial wetland policy and (ii) continue to work with the Prairie Habitat Joint Venture (PHJV) to conserve wetlands in the province. In addition, the 2015 Agricultural Water Management Strategy seeks to achieve a balance between the benefits of drainage¹¹ and the resultant damage from flooding (SWSA 2017a). Although the need to initiate an effective provincial drainage policy in the province is important, and the WSA seems to recognize that the current policy is ineffective, wetlands continue to be lost with severe consequences on agriculture, infrastructure and habitat in the province. Change has become so necessary that, in 2011, the Saskatchewan Association of Rural Municipalities (SARM) passed a resolution to lobby the provincial government to enforce provincial drainage legislation¹².

Several of the Canadian-based initiatives described above have potential to complement the legislative structure in Saskatchewan. Relevant programs such as the CRSB, CRSC, ISPP-Plus, the EFP / FSP and CFPI are already operating in the province. However, several environmental programs have had limited success in Saskatchewan: the EFP and FSP have an adoption rate of 26%, lower than the national average. Of particular interest is the implications of the CFPI and the impact of an extension of the SFFI of Ontario, which is currently exploring options to expand to a national platform (SFFI 2017).

¹⁰ Saskatchewan Wetland Conservation Corporation, Saskatchewan Agriculture and Food, Saskatchewan Environment and Resource Management, Saskatchewan Municipal Government and Sask Water.

¹¹ Drained wetlands provide more arable agricultural land.

¹² A drainage moratorium has been implemented in the Quill Lakes Basin (SWSA 2017b).

4.3.2 Manitoba

Manitoba's version of a wetland policy, the Sustainable Watersheds Act, was adopted in late 2017. It is a blend of government regulation and incentives for the agriculture industry to protect wetlands. Bill 7 is currently being discussed in the Manitoba legislature, which claims that money from the federal carbon tax will be used to restore wetlands in the province. As Manitoba shares many of the same characteristics as Saskatchewan and Alberta in the adoption of environmental initiatives, programs like the National EFP and SFFI could be aligned within the objectives of the 2015 Agricultural Water Management Strategy and lead to greater wetland conservation in the province.

4.4 Conclusion

A number of sustainability initiatives exist in the USA and Canada to meet the demand for sustainable food products. Each of these organizations has a specific organizational objective, which causes limited or non-existent implementation in certain regions or industries. Further, despite the opportunities presented from the Round Table discussions, there is not currently a national sustainability standard platform in Canada. However, the National EFP and the Canadian Agri-Food Sustainability Platform are currently being advocated as a positive move in this direction.

While innovative and interesting initiatives are rising in response to consumer and international demand for sustainability, unfortunately this messaging is not clear to many farm families. As such, there is limited uptake and support among the general agricultural farm populations for these programs and BMP adoption. Industry led initiatives are increasing however, and the probability of programs initiated by these groups based upon market access opportunity will likely be an acceptable argument for producers, far greater than enforcement from government agencies responsible for environmental conservation of wetlands.

4.5 Highlights

- Canada has several agricultural sustainability initiatives, which tend to be government supported and specific to certain geographic regions.
- There is limited discussion of wetland conservation within these programs, though wetland conservation is promoted under habitat and water protection schemes.
- There are currently no national sustainability standard platforms for agri-foods in Canada. However, a National EFP is coming and SFFI is advocating for a Canadian Agri-Food Sustainability Platform. Other initiatives like CFPI are excellent and promoting these concepts in a user-friendly manner.
- Opportunities for regional initiatives, like SFFI, to expand to western Canada exist and should be emphasized by government and corporate interests.

5.0 Standards, Violations and Access

5.1 Introduction

An essential aspect of sustainability standards is that consumers have complete confidence in their certification. If a consumer is paying a premium for an environmental sustainability, then there must be appropriate frameworks to ensure reliability and complete transparency along the supply chain. Violations of such standards are typically met with severe economic, social and legal ramifications, depending on the type of standard. For example, if they are mandatory standards enforced by government agencies, there are legal implications for non-compliance. Alternatively, if standards are voluntary, then financial and social implications arise from consumers through market mechanisms, such as loss in market share or inability to sell product. In both cases, the impact on consumer confidence is integral.

This Section will provide a summary description of the differences between mandatory and voluntary standards, and then explore violations that have occurred within these frameworks. Finally, we will look at the possible growth of standards in prairie commodities, such as wheat and canola, and explore the potential benefits of complying with standards and the potential costs of violating them.

5.2 Implementation of Standards

The title of the periodically produced GRI Report: Carrots and Sticks (Bartels et al. 2016) highlights the different approaches to standards. These market-oriented incentives either provide a stick (mandatory) or carrot (voluntary) to the various players along the supply chain. A summary of the differences is presented by (Todorova 2011) and expanded by Menzies (2015).

5.2.1 Voluntary Standards

According to (Todorova 2011) CSR is foundationally a voluntary initiative. She states that *“it begins where the law ends and is entirely motivated by the desire to remain competitiveness and maximize the effectiveness of management and company resources. It is not dictated by laws, but rather by the requirements of society and consumers. Its effectiveness is precisely because it is voluntary”* (Todorova 2011). From this perspective, the only penalty for violating standards is that players along the supply chain they will not have the same market access as their competitors.

Voluntary standards appeal to the independent and business-oriented nature of many agricultural producers, and have been driven by globalization and a dissatisfaction with conventional agricultural practices in Europe (Salmon 2002). The European approach has influenced the global movement of sustainability standards, resulting in the significant growth in reporting over the last decade (Bartels et al. 2016), and the Food and Agricultural Organization (FAO) believes that they will also become more prevalent in coming years (FAO 2017c).

A limitation of voluntary standards is that very few producers are engaging with the system globally. With the exception of certain niche products that are demanded in wealthy developed countries, there currently is limited incentive for conventional agricultural producers to access these systems, particularly in western Canada. As the current status of standards in Canada remains in a formative stage, mainstream producers are not presented with a clear message of the opportunities for engagement. From a consumer perspective, there remains uncertainty around the verification process, leading to a lack of confidence in labelling and marketing. An important step in voluntary standards for certification is reliability for producers and clearer messaging for conventional farmers. It can be expected that as the Canadian Roundtables become more mainstream, these messages will become more clear.

5.2.2 Mandatory Standards

Regarding mandatory sustainability standards, Todorova (2011) suggests that they could be formalized into a legal framework to increase uptake and ensure compliance. However, she suggests that the process of this legal approach should be an “initiative of the business itself” (Todorova 2011). The author maintains that the most efficient approach to creating such laws is if it comes directly from the companies, as they are the individuals and groups that have the most detailed understanding of sustainability reporting and influence within the supply chain.

The concept of mandatory standards is very similar to regulation from legislative processes. A remaining challenge is that the agricultural sector in western Canada are opposed to government regulation of this form, and due to political influence and physical geography, it is difficult to enforce regulation. For example, while the AWP makes drainage illegal, the agriculture sector continues to be the primary violator (Government of Alberta 2016). With the advance of satellite and drone technology for monitoring, this task can be expected to become easier over time.

5.3 Challenges of Certification

An essential component of sustainability standards is certification. Certification is the verification process to evaluate an organization’s compliance with a standard, which often includes a traceability process for certified products to be sold along the supply chain, typically resulting in a labelling process for consumer identification. While a simple concept in principle, the implementation of certification processes has proved very challenging. Since the inception of standards in the 1980s, the UK government is finding the measurement of the impacts of this process is sporadic and questionable (UK Government 2017).

There are a number of reasons for this situation. First, certification is very complex and spans a wide range of issues over large geographic locations. The gap

between producers' reality and what is required by certification is simply too large for most agricultural producers, who lack the technical and financial resources to bridge this gap (de Freitas 2017). Second, there is often a lack of transparency in terms of business reporting and environmental tracking. Although certification claims to enhance business opportunities and profitability, there is increasing evidence that the costs of implementation are not borne out in the business plan for companies. As such, a common critique is that sustainability certification is a form of "greenwashing" for many companies – creating an environmental image that is not borne out in reality (Siano et al. 2017). Third, certification poses a risk for brand reputations. The common practice of using third parties for certification makes it difficult for corporate brands to ensure compliance. For example, the UK retailer Marks and Spencers has stopped selling Fairtrade brands, because there was a perceived lack of accountability in the supply and lack of confidence in the third party certifier. If the certifier is found corrupt or incompetent, there is significant financial risk to the company. Finally, certification simply adds an additional level of cost to companies that are already operating in highly competitive markets.

Due to these concerns, some companies are moving towards in-house supply chain traceability. Such an approach has the advantage of 1) creating a link in the whole supply chain of a company. Second, there is flexibility regarding the level of transparency deemed appropriate for a specific company. For example, a company can choose different levels of certification depending on the calculated risk of the country or product: if the product is originating in a low risk country, companies do not need to have as strict of standards to meet business needs. As such, the analogy of a railroad track is used: traceability is the track, while the rail cars are the transparency standards for monitoring. Finally, there are often lower costs and risk involved when a company handles this process internally. To meet these concerns, most sustainability schemes for grain production use mass balance approaches, with end using purchasing credits from verified growers, but the end product is the comingled to reduce handling costs.

5.4 Violations

Much of the global literature on sustainability indicates that such standards arise in *response* to violations of environmental or human rights. Unfortunately, many organizations have sought to take advantage of the price-premiums of certified agricultural products while not comply with auditing practices. In 2012 the National Post reported that organic food certification in Canada was “little more than an extortion racket” (National Post 2012). Violations such as this have an influence on both the producer and consumer confidence.

No examples of producer violations were found that prevented sale of products due to certain negative environmental practices, such as wetland drainage. The primary impact on producers from non-compliance and violations is decreased marketing opportunities. The impact on consumers is cynicism and the decision to purchase elsewhere. This consumer response is part of the reason traceability is gaining traction, as companies realize the financial risk of third party certification.

5.5 Conclusion

Both voluntary and mandatory certification standards are necessary to meet sustainability standards. They work in tandem to ensure producer uptake and provide consumer confidence. Compliance with agri-sustainability standards is essential in order for the benefits of certification to be realized. While voluntary standards are attractive to many agricultural producers due the lack of mandatory regulation, there are currently limited opportunities within conventional agriculture in western Canada. Expansion of the number and scope of these sustainability standards is important for the future benefit of both producers and consumers.

5.6 Highlights

- Canada's limited sustainability standards initiatives are predominantly voluntary, and not mandatory.
- Certification for standards has been challenged because of problems in the third party verification process, which has negatively influenced public confidence and therefore profitability for companies.
- There is a growing trend towards traceability within supply chains over third-party certification.
- No examples were found of producers being unable to sell their product due to conversion of natural wetlands. However, auditors from ISCC-Plus could determine non-compliance and prevent sales from individual producers.

6.0 Lessons and Engagement Opportunities

6.1 Introduction

The future of sustainability in standards in agriculture and agri-food production relies on the various stakeholders within the food system. While the previous sections have shown much of the actions of government, there are multiple overlaps with the corporate and non-government sectors. Much of the challenge in promoting environmental sustainability within a supply chain is in aligning the various interests of stakeholders. If this alignment can be done in a collaborative manner, that shows environmental, social and economic benefits for producers all the way to consumers, then sustainability initiatives are successful. Unfortunately this collaboration has not always been the case, but there are lessons and can be learned from the various perspectives.

Corporate engagement with sustainability standards has had a significant influence on the global state of standards and certification. Even preliminary research on sustainability standards shows information on the role of corporations like Unilever, Unilever, Nestle and DANONE. Though much maligned segments of the global environmental movement, these corporate giants were drivers in the development of the SAI-FSA Framework (SAI 2018), the “gold-standard” in agri-sustainability certification today. In Canada, corporations like McDonald’s, General Mills and Wal-Mart have shown remarkable market agility, and through engagement with the GRSB, and have changed the market landscape for beef producers in Canada (McDonald’s 2017). The pressure these companies can exert on industry groups, producers and government is tremendous.

Environmental non-governmental organizations (ENGOs) have driven international sustainability standards from a completely different, but no less powerful, perspective. These ENGOs are often created to address specific environmental issues, and their inclusion within the Roundtable discussions has been essential to enhance the

profile of specific concerns, such as deforestation (World Wildlife Fund), protected areas (Nature Conservancy) and water and wetland conservation (Ducks Unlimited). The diversity and specific focus of these NGO's has been an asset and a contrasting voice to the messages of industry groups and corporations.

With this understanding collaborative value and differing perspectives, this section will explore several case studies from recent Canadian corporate experiences: A&W, McDonald's and Earls. Then several ENGOs that are that are currently advocating for agri-sustainability in the Canadian context will be presented. Third, we will outline current and project trends in public opinion. Finally, future opportunities for ENGO and corporate engagement with market access and certification for wetland conservation will be considered.

6.2 Canadian Case Studies of Corporate Engagement

Corporations have been a major driving of agri-sustainability certification as part of CSR programs. Large international corporations like Unilever have committed to agricultural sustainability codes (Unilever 2010), McDonald's and Coca Cola. Several Canadian experiences highlight the lessons and opportunities from corporate engagement within this section.

6.2.1 A&W: "Better Beef"

A&W is a Canadian leader in marketing and sale of sustainably sourced beef. Under their much acclaimed – and critiqued – "Better Beef" campaign of 2013, this iconic Canadian company decided to only source beef that is free from growth hormones and steroids (A&W 2018). Their decision was based upon a projected environmental and moral responsibility for sustainability – and because there was consumer demand for this project. Their beef, and now poultry products, are completely sourced from farms that practice more agri-sustainability practices.

When this decision was made in 2013, there was a severe backlash from the Canadian cattle and beef industry. The industry had several concerns: 1) that by using the term “better” there was an implicit critique of the safety of Canadian beef that DID use hormones; and 2) because of non-Canadian sourcing of beef products to meet their demand, as A&W assert that there is not enough hormone-free beef in Canada. However, despite opposition – most recently by previous Saskatchewan premier Brad Wall (Global News 2017) – the company has continued this marketing to maintain high “standards”. While questions remain about the sustainability – growth hormones require fewer cattle, resources (water and grain) and time to produce a similar carcass (BCRC 2018) – A&W made a business decision that elevated the conversation around the sustainable production of beef to a level that had not previously existed in the Canadian beef industry. They also have seen significant increases in financial profitability due to this decision (Blair 2015). Participating in both the Global and Canadian Roundtables on Sustainable Beef, they continue to be a significant voice in the conversation.

6.2.2 McDonald’s: “Not Without Canadian Farmers”

McDonald’s is a global corporate leader in sustainability sourcing of food products. The timeline for their engagement with the beef industry is recent, swift and impressive: in 2010 they convened the first global conference on beef sustainability; in 2012 they co-founded the Global Roundtable for Sustainable Beef with Wal-Mart, JBS, Cargill and World Wildlife Fund (WWF); in 2014 they published the guiding principles for global beef sustainability and committed to purchasing verified sustainable beef; and in 2016 they purchased their verified sustainable beef from a Canadian supply chain pilot project (McDonald’s 2017). According to the 2017 McDonald’s Beef Sustainability Report, by 2020 they commit to increase sustainability of beef in their ten top beef sourcing countries by 1) accelerate industry progress in sustainability, 2) share knowledge and tools with local farmers, 3) promote flagship farmers that are leading in best management practices, 4) pioneer new practices, such as the McDonald’s Progressive Farm Partnerships, and 5) Preserve Forests in regions with areas of

identified risks of deforestation (McDonald's 2017). These actions show that McDonald's has become a powerful advocate of sustainability practices, undoubtedly responding to changing consumer demands for more ethically sourced products.

An example of McDonald's marketing strategy is the 2015 "Not Without Canadian Farmers" campaign, which specifically supports and formally thanks Canadian farmers for their support in their business model (Rance 2015; Canada Beef 2015). While A&W took a more firm approach is only sourcing sustainable beef in their stores, McDonald's tried a more cautious approach in partnership with Canadian beef producers. This collaborative approach worked for the company, as McDonald's has received support from the Canadian agriculture industry for their sustainability initiatives and they did not experience the negative publicity like A&W.

At the current time McDonald's sustainability strategy does not have a specific priority area for wetland conservation – though wetlands are part of their land conversion messaging. However, forest conservation has been singled out as a priority (McDonald's 2017). There may be an opportunity for wetland conservation groups to engage with McDonald's to place wetland conservation as a priority due to their importance in the Canadian agricultural landscape and suite of ES they provide.

6.2.3 Earls: "Certified Humane"

Sustainability is also an important issue to the Canadian based restaurant Earls (Earls 2018). In 2016, after several years of research, the Vancouver-based chain decided to source "Certified Humane" (Certified Humane 2018) beef for their stores. While this action was influenced by consumer demand and a desire for sustainability, it also meant that Canadian beef was no longer on the menu – arguably because there simply was not enough certified beef in Canada to supply their demand. Media outlets across Canada ran headlines that Earls, an iconic Canadian company, was sourcing its beef from the USA because the Canadian beef industry could not supply enough sustainably sourced beef to supply its demand. The Canadian beef industry was

incensed. Protests were held across Canada and Earls quickly reversed its position (Globe and Mail 2016).

However, this reversal of policy did not mean that Earls abandoned their commitment to sustainability. While their website and strategies now place the importance of Canadian beef first, their second commitment remains to serving hormone free beef in their restaurants (Earls 2018), and they have also engaged with the Canadian Roundtable on Sustainable Beef in an effort to increase production of sustainable Canadian beef that they can sell in their restaurants. While they could not outpace the market like A&W, nor have the size and clout of MacDonald's, they are an impressive example of corporations adapting sustainability standards, and both responding to consumer preferences and shaping them.

6.3 Trends in Public Opinion

We have asserted the importance of public opinion in the shaping of sustainability and certification standards throughout this research report. A summary understanding of these trends is useful in identifying future trajectories. In Canada, demands for sustainability started gaining momentum in the 1990s (Macfarlane 2002; Nitkin and Brooks 1998) and several sources capture these trends over time. In 2010 the AAFC International Markets Bureau assessed the trends and consumer attitudes towards sustainability and asserted sustainability and ethical food production would be a significant part of food demand in Canada in the future (AAFC 2010). In 2012, a similar report highlighted social conscious consumer trends in relation to Fairtrade across Canada (Agriculture and Agri-Food Canada 2012). In 2017, Ipsos Reid provides a summary of consumption trends in Canada, and indicated that one of the upcoming areas of importance among consumers is: *Edible Ethics and Emerging Food Movements including Food Waste Sustainable Packaging, Organic Explosion, Responsible Farming, Vegetarianism, Healthy Eating/Drinking Index Indicator and Clean Labeling* (Ipsos 2017). The overwhelming message from these summary statistical reports is that the Canadian consumer will increasingly demand information

regarding the sustainability and ethical production of the foods they eat – regardless of how those terms are defined. And they are willing to pay for it.

6.4 Canadian Case Studies of ENGO Engagement

ENGOS are important advocates for environmental conservation and for the development of global voluntary sustainability standards. In the context of Roundtables for Sustainability, the Beef, Crop and Soy groups all had ENGO groups as part of their organizational structure. Due to this influence, Ruyschaert and Salles (2016) evaluated the strategies and effectiveness of conservation ENGOS in the development of certification standards in the Roundtable on Sustainable Palm Oil (RSPO) in the tropics. According to Ruyschaert and Salles (2016), conservation ENGOS can be divided into four categories based on the approach to achieving conservation goals:

- 1) Collaborative: seek to change the system from within by providing scientific research-based information, by holding strategic positions and by creating rules
- 2) Opponent: remain outside the RSPO while using it as a platform for public campaigns
- 3) Opportunistic: focus on conserving geographical areas by adopting either collaborative or opponent strategies to reach their goals
- 4) Sceptic: supports communities to secure local land rights.

In this example, the formal institutionalisation the RSPO prevented the individual ENGOS from reaching their goals, because: 1) individual ENGOS cannot easily change their engagement strategy; 2) ENGOS using different engagement strategies (opponent or sceptic) are unable to collaborate; and 3) sceptic ENGOS are structurally excluded from the RSPO. The authors conclude that ENGOS would be more effective in reaching their goals either by focussing on their initial conservation objectives or by strategically collaborating with each other outside the structures of the RSPO (Ruyschaert and Salles 2016). This case study has applications for the role of ENGOS in the

development of sustainability standards for Canada, as are highlighted in the case studies that follow.

6.4.1 World Wildlife Fund Canada (WWF-Canada)

WWF as a global organization dedicated to the conservation of natural ecosystems and biodiversity, and typically operates in collaborative fashion. WWF was a founding partner in the Global Roundtable for Sustainable Beef (GRSB 2018), a member of the global Round Table for Responsible Soy (RTRS) and are highlighted in McDonald's Beef Sustainability Report (2017) as partners in the protection of forests for their strategy (McDonald's 2017). In the USA, the WWF was integral in the design and adoption of the Field to Print Initiative.

The mission of WWF-Canada is to “protect the future of nature”, specifically by reversing the decline of freshwater ecosystems, marine ecosystems, promote a vibrant future for the Arctic, and create resilient communities that enhance nature (WWF 2018). WWF-Canada has been integral in the formation of the CRSB, and holds one of the two seats from ENGO's on the governing committee. However, WWF-Canada does not participate in the CRSC.

6.4.2 Nature Conservancy Canada (NCC)

Nature Conservancy Canada (NCC) is one of Canada's premier ENGOs and with the mandate of conserving natural areas and biodiversity across Canada (NCC 2018). A core operating value of NCC is “conservation through collaboration and cooperation” (NCC 2018) and they have been integral in land conservation across Canada and the PPR. In terms of certification for sustainability, NCC was an integral contributor to the Roundtable on Sustainable Beef and positively engage with the agriculture industry, particularly around grassland conservation (NCC 2017). Although originally a partner with the CRSC, NCC has recently stepped of this initiative, leaving DUC as the only ENGO representative.

6.4.3 Ducks Unlimited Canada (DUC)

DUC is an influential ENGO in Canada and North America (Anielski, Thompson, and Wilson 2014). With a mandate for wetland and waterfowl conservation, DUC operates in a collaborative manner with government and agriculture industry groups to stop wetland drainage across Canada (DUC 2018). While DUC is not directly involved in sustainability standards or certification for either wetlands or agriculture products, DUC is a member of the CRSB and CRSC and recognizes the value of these initiatives. Currently DUC is the sole ENGO representative on the CRSC (CRSC 2018).

6.4.4 McConnell Foundation

The McConnell Foundation is private Canadian foundation started in 1940 that operates with a collaborative approach to develop and apply innovative approaches to social, cultural economic and environmental challenges (McConnell Foundation 2018). They operate primarily through granting, investing and capacity building with stakeholders and have a rich history within Canada. While not specifically an ENGO, the Foundation takes a collaborative and more academic approach to innovation and change on environmental and agricultural issues.

In 2011 the McConnell Foundation launched the Sustainable Food Systems Initiative, with the aim to “affecting systemic change by building food systems that create vibrant local economies, ensure environmental sustainability and contribute to health and wellbeing for all people” (McConnell Foundation 2018). Their approach is collaborative, and they functions as a strategic learning partner for investor engagement; and as a convenor, to bring stakeholders together to understand systemic change; and to fund research and academic publications. Although the McConnell Foundation is well respected and work collaboratively to influence and promote change for sustainable agriculture in Canada, the academic nature of their work limits opportunities for engagement with much of the agriculture sector.

6.4.5 Food Secure Canada

Food Secure Canada is an alliance of organizations started in 2001 working to advance food security and food sovereignty in Canada. The organization was started as a network for food security that incorporates representatives from civil society and networks from every province and territory of Canada. They are organizationally driven by three goals: zero hunger, healthy and safe food, and sustainable food systems (Food Secure Canada 2018). Food Secure Canada operates within the “Collaborative” category described by Ruyschaert and Salles (2016) and brings together various organizations to collaboratively reflect and make recommendations.

6.5 Discussion and Conclusion

ENGO and corporate interests are both integral stakeholders in the movement for agricultural sustainability standards and certification in Canada. The information in the previous section provides several Canadian examples of how the corporate and ENGO sectors have responded to sustainability certification in Canada. It is clear that corporations are integrally connected to changing consumer preferences, and have a powerful platform to influence industry groups and producers to implement sustainability practices. It is equally clear that ENGO groups that advocate a particular environmental issue can work with corporate interests to influence collaborative discussions on sustainability standards.

What insights to these previous examples provide for ENGOs seeking wetland conservation in Canada? Most of the ENGO organizations described in this document operate within the “Collaborative” and “Opportunistic” categories described by Ruyschaert and Salles (2016). That is, they seek to change the system from within by providing scientific research-based information and engaging in collaborative discussion. As such, these organizations have good reputations among government officials and policy makers and have influenced initiatives such as the CRSB, CRSC and other innovative programs.

An important future consideration for these ENGOs is balancing how much of the “carrot” and how much of the “stick” to use in efforts to promote wetland conservation in Canada, specifically with regards to limiting agricultural drainage of wetlands. Governments are typically cautious about pushing against the powerful agricultural lobby, and therefore ENGO’s could have a role in being more forceful with government and the agriculture industry. The extent to which this option is pursued is debatable, but should always be in the mind of ENGOs that may find themselves directed more by collaboration than meeting their organizational objectives.

A possible area for engagement is to link with other ENGOs across the spectrum of approaches beyond the major Roundtable discussion, which while positive, remains limited¹³. Are there opportunities to engage with more combative or sceptic organizations to promote sustainability standards? As Ruyschaert and Salles (2016) assert, organizations with these mission are structurally removed from the Roundtables, and therefore there may be a role for collaborative engagement within the ENGO community.

As both ENGO and corporations understand the public demand for sustainability, the combination of corporate and ENGO stakeholders can be a powerful tool for sustainability standards. As such, another opportunity may exist for more direct forms of engagement between ENGOs and corporations. Sustainability statements from McDonald’s, Wal-Mart, General Mills, Unilever and many others indicate that the current level of standards is only the start of a large-scale shift (McDonald’s 2017; Unilever 2010). For example, WWF has advocated for forest protection within the CRSB and with McDonald’s – could organizations like DUC follow this model and promote specific certification for wetlands?

¹³ While WWF-Canada, NCC and DUC were all engaged with the CRSB, only DUC is part of the CRSC.

6.6 Highlights

- Sustainability statements from McDonald's, Wal-Mart, Genera Mills, Unilever and many others indicate that the current level of standards is only the start of a large-scale shift.
- The corporate sector has a significant role in the establishment of sustainability standards and certification in Canada, such as the CRSB and CRSC.
- Different marketing strategies have been employed by corporations to address sustainability: A&W emphasized hormone free beef over local producers; MacDonal'd's emphasized the importance of local producers and environmental sustainability; while Earls paired environmental sustainability and local engagement after pushback from public for international sourcing.
- The ENGO sector typically operates within four operational strategies: collaborative, opponent, opportunistic or sceptic. All four strategies have their advantages, although collaborative approaches often have the greatest long-term impact. This collaboration includes government and industry groups, as well as with other ENGOs.
- ENGOs have a responsibility to push government to be more accountable to protecting wetlands and creating or enforcing policies.
- Ongoing evaluation of the impact of wetland conservation should focus on the appropriate strategies to employ within specific contexts – industry sectors, government jurisdictions, etc., which may shift in different jurisdictions and based upon public perception and stakeholder needs.

7.0 Conclusion

7.1 Summary

Increased environmental awareness and changing trends in consumer preferences are driving a shift towards sustainability in global agricultural production. This research report explored the current state and future opportunities for market access that exist for sustainability standards and certification. We suggest the increasing demand for sustainably produced products creates a unique opportunity for agricultural producers in the Prairie Pothole Region (PPR) of western Canada to meet sustainable sourcing standards for the food commodities while complying with provincial legislation on wetlands.

In Section 2, the current state of agriculture sustainability standards in a global context is presented. Since the 1980s there has been an increase in sustainability reporting, driven by public and private demand from corporations within the agri-food industry. Staple crops, such as wheat, rice and maize currently are limited in certification. This result is not positive for wetland conservation, as these crops are major factors of land conversion. Several international organizations have rose to meet this need, including the UN Global Compact, Global Reporting Initiative and Fairtrade. Despite their scope, none of these organizations deal specifically with wetland conservation. Three standards organizations rose from the midst as key players in certifying farmers and providing market based incentives for no land conversion: the ISCC-Plus, the SAI FSA Platform and Unilever's Code of Agricultural Practice. While these international bodies prohibit land conversion, and explicitly state wetlands as a component feature, they do not prioritize wetland conservation over other ecosystem conservation.

As the Canadian agriculture industry is heavily export oriented, sustainability trends in five major trade partners are also presented in Section 2: USA, China, Japan, EU and Mexico. Sustainability standards in the EU and USA are more advanced than in

Canada, and therefore an opportunity exists to learn from these initiatives and access the markets that such certification provides. While sustainability reporting is growing in nations like China, Japan and Mexico, the predominant attitude within these countries is productivity for food security, and these countries currently present limited opportunity to influence Canadian production practices and sustainability standards in the near future.

Trends in the Canadian sustainability context are presented in Section 3. This information suggests that Canada currently lags in sustainability standards and certification relative to EU and USA counterparts, but in the last five years has made an effort to address this limitation, most prominently through the Canadian Roundtable on Sustainable Beef and the Canadian Roundtable on Sustainable Crops. The Sustainably Certified Canadian Beef framework, released in December 2017, promises to be a global leader in such certification. The Canadian crop sector remains slow to adopt such sustainability approaches, and after a several year hiatus is back to the Roundtable Discussion in January 2018. While the Alberta Sustainable Certified Crop pilot is an example of early stages in this process, no action has occurred from this 2015 pilot study.

Environmental initiatives in the Canadian agriculture sector are presented in Section 4, including the Environmental Farm Plan (EFP) and the Canadian Field Print Initiative. Opportunities for Canadian producers to engage with ISCC-Plus are reiterated in this context. Engagement with these initiatives are a signal that Canadian agriculture is responding to consumer demands, but they remain in the formative stage, do not directly address wetland loss and in their current form present no clear market based incentives for producers to enlist. In addition, lack of mandatory sustainability frameworks means that no penalties currently exist for non-compliance and wetland drainage.

In Section 5, the violations of non-compliance and the merits of voluntary and mandatory standards are presented. While mandatory standards are evident in Canada, they exist only in the form of government wetland legislation, and there is limited

compliance from agricultural producers and limited enforcement. Voluntary standards are much more attractive from a marketing perspective, but a lack of substantial financial incentives and market access opportunities means there is currently limited engagement from Canadian agriculture producers.

Finally, in Section 6 opportunities for engagement from both a corporate and ENGO perspective are explored. After arguing that the major global sustainability initiatives have been driven from the corporate sector, the Canadian case studies of A&W, McDonald's and Earls are presented in order to consider the individual marketing approaches towards sustainability as driven by consumer demand. ENGO engagement in the sustainability movement is then presented, and the varying roles that ENGOs can play in the sustainability movement are considered using several Canadian examples. Finally, several opportunities for continued ENGO engagement with government and public sector sustainability initiatives are explored. We conclude that ongoing research into market access and certification initiatives – specifically for wetland conservation – is an opportunity for the agricultural sector to engage with consumer trends and maintain social license to operate.

7.2 Future Trends and Concerns

The information presented in this research report indicates that sustainability standards and certification for agriculture is a market-based opportunity for the conservation of natural ecosystems. Unfortunately, a few issues remain.

First, the certification effort is time consuming and exhaustive for both an industry and individual consumers. The effort required to go into certification industry are massive and difficult to implement. Compliance is also difficult to enforce, as travelling to individual farms internationally to audit is difficult. Further, the general public consumer is often unaware of the process of certification and transparency is lacking. For example, in the case of Fairtrade coffee, the premiums are paid to the farming

cooperative, and not the individual farmers. As such, there is nothing to stop the cooperative from taking the money and no way to penalize these actions.

A second issue relates to the “carrots and sticks” identified by Bartels et al. (2016). In Canada there are currently not enough carrots (incentives) to attract producer participation in sustainability schemes. Industry organizations are beginning to speak the language of sustainability, but individual farmers in western Canada see little benefit from participation. ISCC-Plus payments only occur when soy or canola is sold into the European market, and the compensation is small.

Alternatively, the stick is either not present or rarely used in Canada. For staple crop producers in western Canada, there is no stick or mandatory regulation for sustainability practices on farm. Or if it is present, as in the case of provincial government wetland regulation, it is not enforced due to the powerful influence the agriculture industry has over government. And there are no penalties for marketing wheat from a drained wetland ecosystem.

7.3 Future Opportunities

While there are currently limited opportunities for wetland conservation through sustainability certification in Canada, there is evidence that this trend is shifting, and voluntary or mandatory standards will become more common in Canada in the next decade. As such, organizations involved in wetland conservation have an opportunity to engage with these initiatives. From an economics and business perspective, there are several areas of future engagement that may present opportunities for wetland conservation. These include:

i) Wetland Certification. Explore corporate and agriculture industry appetite for “wetland certified” labelling of crops. As wetlands encompass a larger suite of ES than any other ecosystem, there may be opportunities to engage companies like McDonald’s, Wal-Mart or Unilever for such an initiative that could be linked with Sustainable Roundtable Initiatives.

ii) Destination of Canadian Grains. Track the export of Canadian grains by researching the major companies that use Canadian grains in their production processes. This information would highlight the influence that food manufacturers have on sustainability standards.

iii) Technological Creativity. Explore the use of remote soil sensors and drones as a tool to monitoring wetland conservation and measure crop production outputs. Remote sensors can ensure compliance with regulations in a fast and efficient manner and also

iv) Mandatory Standards and Certification. Promote increased mandatory certification as part of provincial government regulatory process for crop production. Such mandatory certification may not be currently popular due to agriculture influence with government, but could be framed within the similar market access narratives as voluntary approaches.

v) Traceability Shift. Explore opportunities to participate in traceability approaches for sustainability among corporate business.

vi) Insurance and Disaster Payments. Conduct further research into how crop insurance and extreme weather disaster payments can be employed as incentives for participation in sustainability certification for wetland conservation.

vii) Human Health Impacts. Increase understanding and research on the human health impacts of wetland conservation and crops from these areas.

Wetlands are one of the most productive ecosystems on the planet in terms of economic, social and environmental terms. Exploring innovative ways to frame their conservation and prompt private and public sector engagement in their conservation is essential to stop current wetland loss and degradation. Each of the approaches described above can influence the agriculture industry to promote wetland conservation as an economically viable and socially acceptable means to produce food for a growing world.

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