Conflicting and Silent Voices:
How Sustainable Agricultural Narratives
Replace and Shape Policies in Ontario, Canada

Sari Ohsada
Queen’s School of Environmental Studies
ENSC 501 Independent Project Report

Supervised by
Dr. Marcus Taylor
Department of Global Development Studies

April 26, 2019
Table of Contents

Abstract................................................................................................................................. 2
Acknowledgements.................................................................................................................. 3
Glossary of Terms................................................................................................................... 4
Acronyms.................................................................................................................................. 5
Introduction............................................................................................................................... 6
Chapter 1: Narratives around sustainability in agriculture ...................................................... 8
  1.1. Brief history & conceptual debate on sustainability in policy ........................................ 8
  1.2. Defining sustainability in agricultural policy & its key narratives .............................. 9
      1.2.1. Growth narrative ................................................................................................... 9
      1.2.2. Production-Innovation narrative ........................................................................... 11
      1.2.3. Agroecological narrative ..................................................................................... 13
      1.2.4. Participatory narrative ......................................................................................... 14
  1.3. Summary of key narratives ......................................................................................... 15
Chapter 2: Assessing sustainability narratives in policies and programmes around field crop farming in Ontario, Canada .................................................. 17
  2.1 Background .................................................................................................................. 17
      2.1.1 Brief history of field crop farming in Ontario, Canada ........................................ 17
      2.1.2 Current situation .................................................................................................. 18
      2.1.3 Key challenges .................................................................................................... 19
      2.1.4 Key government policies & programmes .............................................................. 22
      2.1.5 Provincial farmer organizations .......................................................................... 28
  2.2 Research methodology .................................................................................................. 34
      2.2.1 Data analysis ........................................................................................................ 34
      2.2.2 Informant identification & recruitment ................................................................. 34
      2.2.3 Design of interview questions ............................................................................. 35
      2.2.4 Data collection ..................................................................................................... 36
      2.2.5 Limitations in methodology ................................................................................ 36
  2.3 Results & discussion ...................................................................................................... 37
      2.3.1 What is missing: a holistic and integrated sustainability policy for agriculture .......... 37
      2.3.2 Filling the gap: competing and contrasting narratives for sustainability .............. 39
      2.3.3 Structural dynamics: how are narratives constructed around sustainable agriculture in Ontario? .................................................. 43
      2.3.4 Consequences: What kind of policies get shaped by these narratives? ................. 44
      2.3.5 Silent voices: perspectives on the margins of sustainability policies ..................... 46
      2.3.5 The future of sustainable agriculture: a business-as-usual approach ...................... 47
Recommendations .................................................................................................................. 52
Conclusion ............................................................................................................................... 53
Bibliography .............................................................................................................................. 54
Abstract

Ontario’s agriculture and agri-food sector currently accounts for over one-quarter of all farms in Canada. However, the province does not have any official definition for sustainable agriculture, making it difficult if not impossible to address cumulative environmental challenges. Rather, Ontario has a piecemeal basket of agricultural policies, which encourage ineffective and unsustainable business-as-usual policies. As a result, multiple contrasting and competing visions are pushed by various stakeholders, most of whom favour larger conventional operations as opposed to smaller, more ecologically sound ones. Using Thompson et al. (2007)’s four types of sustainable agricultural narratives (Growth, Production-Innovation, Agroecology, and Participation), this paper will analyze what specific discourses take privilege over others, and how these discourses shape or maintain policies to their favour. In order to encourage an agricultural sector that is sustainable and equitable in the long run, Ontario must adopt a cohesive set of cumulative agricultural policies for its various eco-regions.

Keywords: field crops, narratives, sustainable agricultural policy, agriculture and agri-food system, cumulative environmental challenges, Ontario, Canada
Acknowledgements

I would like to express my deep gratitude to my supervisor, Dr. Marcus Taylor, for introducing this intriguing topic of sustainability narratives to me and for his patient guidance and providing me constructive feedback throughout the year. My undergrad thesis has been an amazing experience and I am very thankful not only for his academic support, but also for giving me the wonderful opportunity to travel to Guelph, Ontario, to conduct my interviews with key stakeholders.

Similar, profound gratitude goes to Dr. Susan Belyea, for her role as secondary examiner and giving me useful advice throughout my project. Her thoughtful guidance and insight have helped strengthen my research into a piece that is meaningful and timely.

I would also like to extend my sincere thanks to Jackie Druery and Morag Coyne for their help in finding sustainable agricultural policies in Ontario. They have spent countless number of hours assisting me navigate through the complexity of Ontario policy, and I am forever grateful for their time and support.

I am also deeply appreciative to Valerie Ashford, for helping me make sense of my own findings, and for giving me confidence in my written voice. Without her help, I would not have been able to make the connections that I have made in this paper.

Special mention goes to Naia Noyes West, Caroline James, Vivek Parekh, and Amanda Flores for their enthusiastic encouragement and providing me new perspectives on this important issue. I also wish to acknowledge Dr. Gary Van Loon and Dr. Geof Hall for providing me further knowledge on the state of Ontario’s sustainable agriculture, and Graeme Campbell for helping me navigate through multiple government sources.

Finally, but by no means least, I wish to thank my parents and sisters for their support and encouragement throughout my study. I dedicate this thesis to them for nurturing my passion for exploring various perspectives – both the dominant and the unheard – on our environment and development.

Sari Ohsada

April 26, 2019
Glossary of Terms

Agricultural NGO (non-governmental organization): synonymous to farm, this term refers to NGOs that primarily have a rural base, run by farmers themselves to improve farm business, affairs and community (McFadden, 1994, p. 6).

Agri-food: a Canadian adjective; relating to the commercial production of food by farming.

Agriculture & Agri-Food Sector: activities involved in primary agriculture and food processing, not including input and service suppliers, food distribution, and international trade.

Agronomy: the science of soil management and crop production.

Field crops: grains and oilseeds, dry field beans, and fodder crops including soybeans, corn for grain and winter wheat, the three largest types grown in Ontario (StatsCan, 2017).

Framing: the different ways of understanding or representing a social, technological or natural system and its relevant environment. Among other aspects, this includes the ways system elements are bounded, characterized and prioritized, and meanings and normative ideas attached to each (Leach, Scoones, & Stirling, 2010a).

Narratives: stories that define problems, elaborate on consequences, and outline solutions. They take a particular framing of a system, expressing suggestions to help produce or transform a pathway to reach their desired outcomes (Leach et al., 2010a).

Neoliberalism: an economic paradigm that replaces an import-substituting industrialization system, representing the economic ‘common sense’ of ending ‘excessive’ regulation, downsizing the state to its purported ‘proper role’ and ‘opening up’ the region to free trade and foreign investment (Oxford Bibliographies, 2012).

Normative ideas: the ‘big picture’ of what sustainability ought to look like, involving endpoints of what people should be striving for. They set the vision for policies to achieve specific goals.

Structure: arrangement of and relations between the parts or elements of something complex.
### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>4R</td>
<td>‘right source, right rate, right time, and right place’ fertilizer trademark</td>
</tr>
<tr>
<td>AAFC</td>
<td>Agriculture and Agri-Foods Canada</td>
</tr>
<tr>
<td>AEI</td>
<td>Agri-Environmental Indicator</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practices</td>
</tr>
<tr>
<td>CAP</td>
<td>Canadian Agricultural Partnership</td>
</tr>
<tr>
<td>CASI</td>
<td>Canadian Agri-Food Sustainability Initiative</td>
</tr>
<tr>
<td>COG</td>
<td>Canadian Organic Growers</td>
</tr>
<tr>
<td>CSA</td>
<td>Climate-smart agriculture</td>
</tr>
<tr>
<td>EFAO</td>
<td>Ecological Farmers Association of Ontario</td>
</tr>
<tr>
<td>EFP</td>
<td>Environmental Farm Plan</td>
</tr>
<tr>
<td>FLR</td>
<td>Farmer-Led Research</td>
</tr>
<tr>
<td>FSDS</td>
<td>Federal Sustainable Development Strategy</td>
</tr>
<tr>
<td>GF2</td>
<td>Growing Forward 2</td>
</tr>
<tr>
<td>GFO</td>
<td>Grain Farmers of Ontario</td>
</tr>
<tr>
<td>GGH</td>
<td>Greater Golden Horseshoe</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse gas</td>
</tr>
<tr>
<td>GMO</td>
<td>Genetically-modified organism</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>KTM</td>
<td>Kitchen Table Meetings</td>
</tr>
<tr>
<td>MMAH</td>
<td>Ontario Ministry of Municipal Affairs &amp; Housing</td>
</tr>
<tr>
<td>New Horizons</td>
<td>New Horizons Agricultural Soil Health and Conservation Strategy</td>
</tr>
<tr>
<td>NFU-O</td>
<td>National Farmers Union Ontario</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
</tr>
<tr>
<td>OCO</td>
<td>Organic Council of Ontario</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OSCIA</td>
<td>Ontario Soil and Crop Improvement Association</td>
</tr>
<tr>
<td>OFA</td>
<td>Ontario Federation of Agriculture</td>
</tr>
<tr>
<td>OMAFRA</td>
<td>Ontario Ministry of Agriculture, Food and Rural Affairs</td>
</tr>
<tr>
<td>PPS</td>
<td>Provincial Policy Statement</td>
</tr>
<tr>
<td>SAI Platform</td>
<td>Sustainable Agricultural Initiative Platform</td>
</tr>
<tr>
<td>StatsCan</td>
<td>Statistics Canada</td>
</tr>
</tbody>
</table>


Introduction

Negotiating pathways to sustainability through agriculture is one of the most challenging and polarizing areas of discussion in policy. Supporting a sustainable agricultural system to provide food and other resources is crucial for human existence and good livelihoods (Velten, Leventon, Jager, & Newig, 2015). However, agricultural systems worldwide face an array of complex, dynamic challenges including climate change, biodiversity loss, soil degradation, water pollution, deregulation and rural poverty, all of which have been contributed to by industrial agriculture as practiced over the last seven decades (Pretty, 2008; Velten et al., 2015).

Ontario field crops alone cover over 6 million acres of land, constituting 78.4% of the province’s cropland, the biggest three being soybeans, corn, and wheat (Statistics Canada [StatsCan], 2017). Field crops contribute to Ontario agricultural GDP of $39.5 billion and total agri-food exports of $14.9 billion (Ontario Ministry of Agriculture, Food and Rural Affairs [OMAFRA], 2018b). However, their production has led to numerous negative environmental outcomes such as soil degradation, immense greenhouse gas (GHG) emissions, and biodiversity loss (MacRae, 1991). While there has been extensive research on the effectiveness of sustainable agricultural policy and practice at meeting long-term sustainable outcomes in developing countries, there is a significant knowledge gap around current sustainability narratives in developed countries (Thompson et al., 2007, p. 1), especially in Canada, where sustainability efforts are often disjointed, precarious, and underfunded with minimal, if not restrictive, policy (Clark & Sumner, 2010; Isaac et al., 2018).

This research examines the various narratives embedded in or in the margins of sustainable agricultural policies and programmes in Ontario, Canada. It asks: How are narratives constructed around sustainable agriculture in Ontario? What kind of policies get shaped by these
narratives? From this examination, this paper reveals that Ontario has a piecemeal basket of agricultural policies that encourage ineffective and unsustainable business-as-usual practices. In order to encourage an agricultural sector that is sustainable in the long run, Ontario must adopt a cohesive set of cumulative agricultural policies for its various eco-regions.

Using Thompson et al. (2007)’s four types of sustainable agricultural narratives (Growth, Production-Innovation, Agroecology, and Participation), this paper will analyze what specific discourses take privilege over others, and how these discourses shape or maintain policies to their favour. At stake is whether Ontario’s policies and programmes are serving all field crop farmers in Ontario, rather than only expressing the voices of certain constituencies. While other agricultural aspects such as livestock farming, energy, and nutrition are important for agriculture sustainability in Ontario, my research will focus exclusively on the analysis of existing policies and programmes covering field crop farming for field crop producers based on government, non-government, and academic sources. This will highlight how societal discourse constructs policy, and how policy in return constructs society.
Chapter 1: Narratives around sustainability in agriculture

1.1. Brief history & conceptual debate on sustainability in policy

The term sustainability was first coined in an environmental context by Hans Carl von Carlowitz, a German forester who prescribed in his 1712 text *Syvicultura Oeconomica* how forests should be managed and supported in the long-term (Leach, Scoones, & Stirling, 2010b). It only became more prevalent after the third wave of the environmental movement in the 1980’s (Olive, 2015), debating the ‘limits to growth’ and how development fit into the question of Earth’s finite resources (Leach et al., 2010b). This eventually led to the classic modern definition of sustainable development, from the 1987 ‘Our Common Future’ report commissioned by former prime minister of Norway, Gro Brundtland, stating, “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 43).

The term sustainability has multiple, contested meanings, resulting in redundant ineffectiveness of contemporary sustainability policies (Leach et al., 2010b; Velten et al., 2015). While there is significant political strength in its all-encompassing definition, scholars continually critique sustainable development and, more broadly, sustainability for having vague and incomplete perceptions of the environment, poverty, economic growth, and participation (Daly, 1996; Leach, Scoones, & Stirling, 2010c; Velten et al., 2015). Many modern-day sustainability policies support technological advancements to enhance productivity without damaging the environment (Pretty, 2008; UNEP, 2008). However, a growing body of literature expresses how these policies fail to address the complexity, diversity, and uncertainty of dynamic systems (Leach et al., 2010c; Pretty et al., 2010; Velten et al., 2015). They instead favour mainstream approaches to sustainability, based on short-term results and narrowly defined
indicators (IPES-Food, 2016). Therefore, a cumulative understanding of sustainability that envisions its multiple pathways is crucial to emerge beyond these margins.

1.2. Defining sustainability in agricultural policy & its key narratives

Agriculture is a highly contested area of debate, involving multiple stakeholders with contrasting and competing views, who wish to shape sustainable agricultural policy in their favour. The most powerful voices come from industrial agriculture advocates who rely on their structural advantages of upfront investments, equipment, training, networks and retail relationships (IPES-Food, 2016). However, sustainable agriculture requires the voices and responsibility of all stakeholders, including farmers, consumers, agri-food businesses and politicians (Pretty, 2002). Understanding the different narratives is critical to examine what specific discourses take privilege over others, and how these discourses accrue power to dominant actors who support the status quo of industrial agriculture (Erjavec & Erjavec, 2015). According to Thompson et al. (2007), there are four distinct types of narratives (Growth, Production-Innovation, Agroecology, and Participation) which express these contrasting and competing views. Thompson et al. (2007) portray how the dominant Growth and Production-Innovation views still reign over much of the world’s sustainable agricultural policies, prompting the emergence of marginal Agroecological and Participatory narratives, as outlined below.

1.2.1. Growth narrative

The Growth narrative is an influential approach to sustainable agriculture that dominates much of the world’s large-scale agrarian landscapes. It was one of the driving forces behind “Green Revolution” in the 1950s, during which monoculture-fields, intensive chemical
inputs, and high volumes of water were used to increase crop-yields (Olive, 2015). This modernized form of agriculture is believed to be a sustainable way for societies to transition out of poverty, putting profitability of the individual farm as the central pillar for agricultural change (Lipton, 2005). As proponents of this narrative see agriculture as an ‘engine of economic growth,’ they understand sustainability as protecting and enhancing farming as a livelihood and business while meeting the rising global demands. For international institutions such as the Organisation for Economic Co-operation and Development (OECD) and World Bank (WB), shifting the ‘old’, backward, subsistence-based agrarian economy into one that is modern, mechanized, and market-oriented is necessary for sustainable agriculture in both the Global North and Global South (OECD, 2006; World Bank, 2005). As justified by the International Food Policy Research Institute, “raising productivity and output of small farmers would not only increase their incomes and food security, but also stimulate the rest of the economy and contribute to the broad-based food security and poverty alleviation” (Lipton, 2005, p. v). In other words, the individual farm needs to be able to meet certain production standards and gain sufficient profit to be deemed sustainable, also contributing to the wider societal economic needs and demands. To best meet these needs, the Growth narrative pressures farmers and agricultural sectors worldwide to participate in the global, free-market, capitalist economy to provide adequate amounts of grains and oilseeds for direct consumption as well as other uses, such as livestock feed and biofuel (Weis, 2015). This way, the farming sector can “sustain” themselves from the challenges of hunger and poverty as well as inflationary pressures and political uprisings (Lewis, 1954). However, various environmental issues, including those associated with pest and weed control, water depletion and toxicity, came to the forefront of the discussion.
around sustainable agriculture (Thompson et al., 2007). As a result, other narratives around sustainable agriculture emerged.

1.2.2. Production-Innovation narrative

The Production-Innovation narrative emerged in response to the environmental tensions caused by Growth-driven agriculture (Thompson et al., 2007, p. 19). Unlike Growth, Production-Innovation incorporates environmental considerations within its vision for sustainable agriculture, justifying that farms can be both environmentally and economically efficient through ‘smart’, resource management approaches, such as climate-smart agriculture (CSA). The concept of climate-smart was first mentioned in the World Bank’s World Development Report 2010: development and climate change, used to encourage policies in any governing sphere to facilitate the ‘triple-win’ between production intensification, environmental adaptation, and mitigation of climatic challenges (World Bank, 2009). It combines climate change, agriculture and development with the goal of reducing climate vulnerability and financing a transition to low-carbon growth (Food and Agriculture Organization [FAO], 2010; World Bank, 2009). Production-Innovation paves the pathway for newer, more technologically modern strategies for sustainable agriculture, such as precision technology and biotechnology, to improve upon the shortcomings of the previous Growth narrative (Tittonell, 2014). Areas of focus for this narrative includes carbon capture practices, hybrid seeds, livestock productivity, and high-efficiency/low energy use irrigation programs (World Bank, 2009). Likewise, pro-technology advocates heavily push for ‘sustainable intensification’ to achieve high-yield agriculture while not compromising the flow of environmental services (Tittonell, 2014).
proponents argue that better technologies drive yields forward, therein feeding a growing population without encroaching on already ecologically-sensitive lands.

However, in a much similar vein, Production-Innovation carries the same fundamental attributes to Growth in terms of farm profitability, short-term technological fixes, and strong corporate influence. Similarly rooted in Malthusian views, Production-Innovation has a reductionist tendency towards addressing environmental problems, offering strategies which are only limited to field-level technologies and practices. This approach simplifies sustainable agricultural challenges to external climatic events and demographic pressures, ignoring socioeconomic and political implications (Taylor, 2018). With the existing support from governments in developed countries, whose visions are often already intertwined with large corporations and the economically-promising modernization approach, the discussion around sustainable agriculture beyond the farm remains limited and exclusionary. Major corporations including PepsiCo, Monsanto, Syngenta, and Walmart have formed working groups to discuss CSA and related topics (World Business Council for Sustainable Development, 2015), excluding groups such as La Via Campesina, an NGO whose goal includes having greater policy space to discuss about broader social-political dimensions of sustainable agriculture beyond the production level (Via Campesina, 2015). Other proponents of this narrative include major international institutions such as the World Bank and IMF that often have the greatest influence on global agricultural policies and programmes (Thompson et al., 2007). Both Growth and Production-Innovation narratives entrench much of the discussion around sustainable agriculture at the international and corporate ranks, giving no room for negotiation and debate beyond conventional practices and their contentious and conflicting agendas (IPES-Food, 2016). Only
farms that engage with these large corporations are able to benefit the most from this approach through their privileged access to credit, land, and irrigation (Taylor & Rioux, 2017).

1.2.3. Agroecological narrative

In response to these productivist narratives, the Agroecological narrative promotes holistic strategies within and beyond the individual farm and rural economy framing to enhance the ecological interconnectivity between farms and their broader, surrounding landscapes. It encourages farms to increase its biological diversity through intercropping, plant nutrient recycling, and reducing external chemical inputs while being guided by “an understanding of the [larger] structure and function of natural ecosystems” (Douglass Warner, 2007). Agroecological measures includes water conservation, minimal tillage, and crop and livestock integration, which help harness the strengths of existing biological processes while promoting a vision of “farming with nature [emphasis added]” (Thompson et al., 2007, p. 32). There are different forms of agroecology which may involve organic matter (manure, compost, soil biotic activity), natural biological enemies to regulate pests, and crop rotations, crop covers and agroforestry, (Altieri, 2002; Carrol, Vandermeer, & Rosset, 1990; Uphoff et al., 2006). Farms that adopt the Agroecological narrative are often smaller but resource-efficient and labour-intensive operations with higher productivity per unit area and greater diversity and integration compared to large-scale production farms (Thompson et al., 2007). As emphasized by Rickerl & Francis (2004), this perspective broadens sustainable agriculture from “the physical structuring of the field, the farm, the landscape, [to] the region”, fully aware that sustainability not only means implementing on-farm changes but applying more broadly across diverse, interacting landscapes (p. ix).
Beyond ecological diversification, Agroecology also addresses the socioeconomic and political dimensions of agriculture. Different groups of people including academics, politicians, producers, and social movement actors promote principles such as systems thinking, resilience, social justice, and indigenous technical knowledge (Howes & Chambers, 1979; IPES-Food, 2018; Isaac et al., 2018). In contrast to commercialized agriculture, Agroecology critiques reductionism and other scientific perspectives whose core assumption holds that production efficiencies – leading to sustainability – can be gained through specialization, simplification, and concentration (Douglass Warner, 2007). It acknowledges the prevailing settler colonial and industrial model of agricultural production (Isaac et al., 2018) and offers adaptive structures and functions which takes a broader landscape approach beyond the farm level rather than conventional focuses of genetics, agronomy, and profitability which narrow their view to only at the farm-level and rural economy (Thompson et al., 2007).

1.2.4. Participatory narrative

The Participatory narrative, similar to Agroecology, frames farmers as central participants in agricultural research and development, adapting to their specific local environments and their needs through inclusive collaboration with scientists and other stakeholders (Thompson et al., 2007, p. 38). It addresses the failings of technology transfers, which treat farmers as passive recipients lacking the knowledge, tools and resources, and alternatively support them as active, knowledgeable, and creative partners through meaningful and genuine participation (Chambers, Thrupp, & Pacey, 1989). Techniques promoted through this narrative include conducting grassroots assessment and diagnosis, experimenting with technology options, and building on local knowledge and partnerships (Collinson, 2000).
In addition to these principles, this narrative also confronts structural obstacles that hinder less powerful voices in sustainable agricultural policymaking. Such obstacles include gender roles and power dynamics, institutional arrangements, and property rights and land tenure (Otsuka & Place, 2002; Thompson, 2006; Toulmin & Gueyé, 2003). In doing so, it supports local voices and organizations, often overshadowed by external support agencies and private companies which often “undermine the legitimacy of the very organizations they wish to strengthen” (Bebbington & Thompson, 2004, p. 3). This aspect closely parallels with Agroecology through its emphasis on including marginalized farmers’ perspectives and expanding the discussion on sustainable agriculture beyond farm-level production (Thompson et al., 2007). Agroecology specifically embraces a participatory ethos through agroecological partnerships which “mark the entry of agricultural organizations into extension activities” (Douglass Warner, 2007, p. 100) and “organize participants to create synergistic benefits from social learning interactions” (p. 124). These two narratives go hand in hand, as partnership leaders are crucial for facilitating and spreading agroecological knowledge, instrumental when dealing with the broader dynamics, governance, and perceptions of local participants, administrators, policy elites, and external support agents across multiple scales (Bebbington & Thompson, 2004; Blaikie, 2006; Scoones, Thompson, & Chambers, 1994).

1.3. **Summary of key narratives**

Approaches to sustainability in agriculture remain complex and contested, with different visions of what sustainable agriculture looks like and the means to get there. While the more dominant Production-Innovation and Growth narratives have been highly influential of the global agri-food policy with support from industry and international organizations, the
alternative Agroecological and Participatory narratives reveal the shortcomings of the dominant sustainable agricultural regime and demand for greater democratic collaboration, co-inquiry and co-management, and people-centred action in diverse forms (Thompson et al., 2007). They each represent different pathways towards sustainability based on different units with some overlap, as shown in Table 1 below.

**Table 1: Summary of sustainable agricultural narratives**

<table>
<thead>
<tr>
<th>Scale of Sustainability</th>
<th>Growth</th>
<th>Production-Innovation</th>
<th>Agroecological</th>
<th>Participatory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normative Values</strong></td>
<td>- The rural economy - Farm profitability - Intensification via synthetic inputs</td>
<td>- The farm - Farm profitability - Advancing technology to lessen on-farm environmental impacts</td>
<td>- The agro-ecosystem - ‘Farming with nature’ - Systems thinking, biodiversity, resilience, and social justice</td>
<td>- The community - Farmers as central research participants - Including marginalized voices</td>
</tr>
<tr>
<td><strong>Vision for Sustainability</strong></td>
<td>- Addressing world hunger and poverty - Full participation in global, free-market economies</td>
<td>- Addressing world hunger and poverty without compromising the environment - Full participation in global, free-market economies</td>
<td>- Circular, self-sustaining - Addressing questions of power, inequality and access</td>
<td>- Fair, inclusive involvement of all farmers with support from scientists and other stakeholders</td>
</tr>
<tr>
<td><strong>Type of Political Environment it Thrives in</strong></td>
<td>- Global, free-market capitalist economies</td>
<td>- Global, free-market capitalist economies</td>
<td>- Regulatory governments with protective trade tariffs</td>
<td>- Regulatory governments with protective trade tariffs</td>
</tr>
<tr>
<td><strong>Main Beneficiaries</strong></td>
<td>- Large-scale, industrial, technology-reliant farms - Foreign-based transnationals</td>
<td>- Large-scale, industrial, technology-reliant farms - Foreign-based transnationals</td>
<td>- Small-scale, diverse family farms - Interdisciplinary academics, politicians, social movement actors</td>
<td>- Small-scale, diverse family farms - Interdisciplinary academics, politicians, social movement actors</td>
</tr>
</tbody>
</table>

(Qualman, 2011; Thompson et al., 2007)
Chapter 2: Assessing sustainability narratives in policies and programmes around field crop farming in Ontario, Canada

2.1 Background

2.1.1 Brief history of field crop farming in Ontario, Canada

Understanding different pathways towards sustainable agriculture is crucial in the light of dynamic global agri-food systems in regions where agriculture has been thriving for millennia, such as Ontario, Canada. The Algonquian and Iroquois linguistic groups of First Nations were one of the first peoples who farmed using traditional methods in much of the territory known as Ontario today (Trigger & Day, 1994). Though each group was distinct, they governed the land with ecological and cultural understandings which included cultivating the soil for subsistence and trade with other nations as well as fishing, hunting, and gathering (Royal Commission on Aboriginal People, 2006). Many First Nations farmed along the Southern Ontario forest belts, to grow their staple crops of corn, kidney beans, and squashes in an integrated companion cropping system (Trigger, 1994). This polycrop system provided the soil not only nutritional basics, but also fortification to the soil’s ecological infrastructure, enabling intricate and resilient crop growth (Trigger, 1994). However, upon European arrival and settlement, the indigenous landscape of Ontario drastically altered into an economically-driven “wholesale landscape”, changing the province’s fundamental social-environmental interactions (Fridman, 2014). While settlers shared seeds with indigenous populations including wheat, barley, rye and oats (Jones, 1946), new seeds along with foreign viruses and animals were brought from Europe, altering the ecology of indigenous bio-cultural regions and the social processes of trade and religion (Crosby, 1986).

In 1867, after Confederation and a colonial history of land appropriation, Ontario had a total of 172,258 farms and 16.2 million acres of farmland with oats and wheat dominating most
of its field crops (StatsCan, 2017). Since then, technological advancements, such as improved machinery and equipment, as well as settler practices, skills and knowledges, contributed to the province’s agricultural transformation, gradually shaping “values of farming as a way of life to farming as a business [emphasis added]” (Devlin, 2004). This transition, underpinned by a productivist, economically-driven agenda, converted Ontario agricultural society to one heavily based on Eurocentric science (Devlin, 2004). Within the short span of 60 years between 1921 and 1981, the number of farm acres owned by larger farms increased from 5.2 to 8.8 million acres, consolidating farms to massive scales averaging at 181 acres – almost double the size of farms back in 1891 (StatsCan, 2009). Alongside the enlargement of individual farms, they also began to specialize by commodity type, growing fewer types of crops through efficient, mechanized means. The Ontario agrarian landscape became visibly more technology-oriented as the number of total tractors increased from 7000 to 19,000 between 1921 and 1931 (StatsCan, 2009). By 1981, approximately 68% of farms applied commercial fertilizer while 17% of them also applied insecticides or fungicides (StatsCan, 1992). Quite clearly, these operational and chemical transformations pushed Ontario’s field crop sector to become more efficient, minimizing labour and maximizing production (Devlin, 2004).

2.1.2 Current situation

Ontario’s agriculture and agri-food sector currently accounts for over one-quarter of all farms in Canada, covering 12.3 million acres of farmland (StatsCan, 2017) and contributing a GDP of $39.5 billion and total annual agri-food export of $14.9 billion (OMAFRA, 2018b). Approximately 57.3% (7.07 million acres) of the province’s farmland grow field crops, with the largest three being soybeans, corn for grain, and winter wheat (OMAFRA, 2016b; StatsCan,
Most Ontario field crop operations are concentrated in the southern and western regions of the province, along with dairy, hog, and horticultural farms, making Ontario agriculture a stratified landscape (Clark & Sumner, 2010). As a net exporter of food, Ontario field crop farming has significantly contributed towards the national production increase of major grains and oilseeds, which drastically increased by about 57% between 1991 and 2013, while total farmland area has changed very little (Clearwater, Martin, & Hoppe, 2016).

Strong trends of industrial farm growth are evident across Ontario, favouring larger-size conventional operations as opposed to smaller, more ecologically-sound ones. Between 1996 to 2016, while total aggregate production increased, the total number farms in Ontario decreased from 67,520 to 49,600 with farm operators reduced from 96,940 to 70,470 (StatsCan, 2017). Additionally, 22% farms identified themselves as incorporated in 2016, up from 16.8% in 2011 (StatsCan, 2017). On the other hand, the percentage of farms producing organic products remain minimal, slightly increasing from 1.5% in 2011 to 1.7% (StatsCan, 2017).

### 2.1.3 Key challenges

**Soil degradation** is a key environmental challenge in Ontario causing loss of soil health due to various factors including poor tilling and cropping practices, extreme weather events, and changing climates (Ritter, 2012), one described by the Standing Senate Committee on Agriculture, Fisheries and Forestry as “the most serious agricultural crisis in its history unless action is taken quickly” (Sparrow, 1984). Approximately 82% of Ontario’s agricultural soils are losing soil organic carbon, while 62% of Ontario’s farmland is categorized as having “unsustainable erosion risk” (OMAFRA, 2018c, pp. 10–11). In the past, soil erosion management has costed Ontario between $68 to $192 million annually (McFadden, 1994, p. 10).
Widespread evidence shows that industrialized agriculture is one of the leading causes of soil degradation (Isaac et al., 2018). In response to this issue, numerous Ontario agricultural NGOs mention the term soil health in their mandates, however, only few have done effective action (McFadden, 1994).

**Synthetic inputs pollution from fertilizers and pesticides** is a major contributor to the toxification of Ontario farmlands and beyond (Stonehouse, 2004). Toxins from these inputs mainly spreads through agricultural run-off, which is the principle cause of nonpoint source pollution in Ontario (Ribaudo, 1992). Over-application of inputs can cause excess nitrogen and chemical residues into the Great Lakes, causing extensive eutrophication and water contamination affecting aquatic and human health (MacRae, 1991). In addition, water monitoring capacities in Ontario, much like the rest of Canada, remain limited, unable to detect or accurately quantify these toxins, increasing the vulnerability of aquatic and human health (MacRae, Martin, Juhasz, & Langer, 2014).

**Climate change** is one of the most significant challenges impacting Canada and the world’s agricultural production and farming communities (P. D. Smith et al., 2007; UNEP, 2008). Although there is little consensus between government, industry, and citizens on its impacts on Canadian agriculture, various regions in Canada are expected to experience warmer temperatures and increased evapotranspiration rates, resulting in longer frost-free seasons and moisture deficits (Wall, Smit, & Wandel, 2004). In Ontario, climate change models estimate temperatures to increase between 2.5 °C to 3.7 °C by 2050, resulting in warmer seasons with longer growing seasons (Climate Ontario, 2011). Regions closer to the Great Lakes may experience wetter summers however, and the majority of Ontario will expect frequent extreme weather events such as heat waves, intense rain, hailstorms, and prolonged droughts (Andresen, Alagarswamy, Stead,

Conventional, mass-produced cash-crop agriculture in Ontario also contributes to climatic change given its immense greenhouse gas (GHG) emissions. Field crops such as grains and oilseeds are one of the most export-focused commodities in the province, relying on fossil fuel transportation over long distances (Qualman, Akram-Lodhi, Desmarais, & Srinivasan, 2018). Large proportions of these field crops grown are used for indirect consumption such as livestock operations, adding to the enormous wastage of land, water, and energy resources (Weis, 2015). Field crop production contribute to the feeds of cattle, hogs, and poultry, which emit potent GHGs including methane into the air, intensifying climatic change. It begins the chain of subsequent emissions released through processing, transportation, consumption, and disposal, creating an unsustainable climate (Clearwater et al., 2016).

The province’s dominant monocultural agricultural system also leads to biodiversity loss. This trend is evident across Ontario as farms are becoming specialized to one or a few commodities and increasingly larger through the consolidation of smaller farms (Friedmann, 2011; StatsCan, 2017). The intensification and synthetic inputs involved in these industrial farms often cultivate the same crop on the same plot of land, circumventing the ecological cycles of soil nutrition and eliminating natural pests and biodiversity (Taylor & Rioux, 2017). While alternative crops such as oilseeds and pulses are grown in industrial farms towards the effort of diversification (Clearwater et al., 2016), this shift is largely based on the direction of markets and meeting calorie demands, reducing biological diversity needed for direct consumption and ecological health (Friedmann, 2011; Weis, 2015).
Urbanization is another significant challenge, increasing competition between agricultural and non-agricultural land-users, especially in Southern Ontario where one of the country’s most fertile soil and conducive climate for farming is situated (Fridman, 2014). As it is no coincidence that settlements thrive where food grows best, field crop farms are often under threat of the rising land costs (Qualman & Tait, 2004), housing demand (Fridman, 2014) and property rights perspectives (Macpherson, 1978). In addition, ecologically-sensitive and farm-benefitting lands such as woodlands and wetlands have significantly decreased over the years due to the powerful interests of urbanization (StatsCan, 2017). Such land-use conflicts often have direct implications for how the land is farmed, creating distinct social and ecological consequences.

2.1.4 Key government policies & programmes

Currently, there is no official definition for sustainable agriculture in both national and provincial policies and programmes, making the analysis of the concept quite difficult. A comprehensive conceptual framework is lacking for the most critical policies, programmes, and regulations fundamental in supporting sustainable agriculture in Canada (MacRae, Hill, Henning, & Bentley, 1990; Stonehouse, 2004). There also has been few multi-disciplinary studies done on Canada’s current state on alternative farming methods, such as agroecology (Isaac et al., 2018). Given the lack of coherent, holistic discussions around sustainable agriculture, having a clear and concrete definition and policies on sustainable agriculture is crucial for Ontario field crop farmers to incorporate farming practices in more ecological and socioeconomically-sensitive ways. Regardless of these observations, however, national and provincial governments have implemented some key policies and programmes related to sustainable agriculture as described
below. These initiatives are one of the few areas of discussion and action being made to envision a more sustainable agricultural sector for Ontario field crop farmers and other stakeholders.

2.1.4.1 National

The Federal Sustainable Development Act (S. C. 2008, c. 33) is a key national legislation requiring the “development and implementation of a Federal Sustainable Development Strategy (FSDS) and the development of goals and targets with respect to sustainable development in Canada” (Government of Canada, 2008). However, this Act does not mention words related to “agri-” (Government of Canada, 2008), making its relationship to agriculture very unclear, similar to much of the global dialogue around sustainable agriculture (MacRae et al., 1990). Under this Act, Environment and Climate Change Canada (ECCC) outlines the current 2016 – 2019 FSDS and draft 2019 – 2022 FSDS which encompass sustainable agriculture under their respective sections titled Sustainable Food (Government of Canada, 2017, 2019). These documents describe the federal government’s intention to “conduct targeted research,” “achieve a score of 71 [out of 100] or higher for the Index of Agri-Environmental Sustainability by 2030,” and “provide cost-shared funding to provinces and territories” to address the challenges facing sustainable agriculture (Government of Canada, 2017, 2019).

In coordination of these federal strategies, Agriculture and Agri-Foods Canada (AAFC), the federal department responsible for delivering of agriculture-related policies and programmes, mirrors these goals and plan of actions in its own 2017 – 2020 Departmental Sustainable Development Agricultural Strategy (AAFC, 2017). To deliver this strategy, the department provides cost-shared funding to federal, provincial, and territorial governments
through the Canadian Agricultural Partnership (CAP) programme (in continuation of the Growing Forward 2 [GF2] programme) which is a five-year policy framework between 2018 and 2023 that invests $3 billion to help the sector “grow trade, advance innovation while maintaining and strengthening public confidence in the food system, and increase its diversity” (AAFC, 2016, 2018a, 2018b). To measure progress, AAFC has also published their latest Agri-Environmental Indicator Report (2016) assessing the environmental sustainability of Canadian agriculture based on their agri-environmental indicators (AEIs).

The Standing Committee of Agriculture and Agri-Food from the House of Commons and the Standing Senate Committee on Agriculture and Forestry have published the Next Agricultural Policy Framework (2017) and Innovation in Agriculture: The Key to Feeding a Growing Population (2014), respectively, to also share federal-level discussions held around major Canadian agricultural issues. These documents include testimonies from large corporations and commodity groups regarding these issues. They also each provide a list of recommendations in which neither mention nor address the negative outcomes of industrial agriculture, aside from their short sections on Climate Change (AGRI, 2017; The Standing Senate Committee on Agriculture and Forestry, 2014)

2.1.4.2 Provincial

The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) is the primary governmental body that frames and addresses the needs and challenges of Ontario’s sustainable agriculture (OMAFRA, 2016a). Established in 1994, it provides technical education, outreach, and advisory services for Ontario producers and farm businesses over various topics including business management, biosecurity, farm succession planning, food safety and
environment (OMAFRA, 2019b). As the Ministry does not have their own definition of sustainable agriculture, their policies instead use the definition set by the **Sustainable Agricultural Initiative (SAI) platform** as “the efficient production of safe, high-quality agricultural product, in a way that protects the natural environment, the social and economic conditions of the farmers, their employees and local communities, and safeguards the health and welfare of all farmed species” (Betts, 2015). The SAI Platform is a global food and drink value chain initiative established by Nestlé, Unilever, and Danone as an avenue of corporate social responsibility (SAI Platform, 2002), underscoring many OMAFRA sustainability policies and programmes, as outlined below.

**Farms Forever (2016)** is OMAFRA’s latest holistic policy on agri-food that outlines four objectives focused on (1) “preserving the productive capacity of agricultural land close to major urban centres”, (2) “supporting local food”, (3) strengthening Ontario’s agri-food sector [economically]” and (4) support for new and beginning farmers (OMAFRA, 2017b). This policy, however, is no longer active due to the change in provincial government. The current government is still deciding on its overall policy direction as of December 2018 (Uliana, personal communication, Dec 10, 2018), leaving no concrete approach to sustainable agriculture. Despite this lack of sustainable agriculture policy though, OMAFRA continues to offer voluntary sustainability programmes for farmers of all commodities.

The **Environmental Farm Plan (EFP)** is OMAFRA’s key sustainability programme funded through the CAP providing farmers a voluntary, confidential self-assessment tool to improve their farm’s environmental impacts through awareness-building and creating a farm-specific EFP. Established in 1993, technical experts from OMAFRA and the Ontario Soil and
Crop Improvement Association (OSCIA)\(^1\) assist participating farmers to provide knowledge to farmers on preventative measures, management strategies, and remedial options to farm more sustainably (OSCIA, 2019b). To complete an EFP, farmers are required to attend a two-day OSCIA workshop then evaluate their own farms’ environmental impact, selecting up to 23 topics that apply to their farms or meet their interests, ranging from Soil & Site Evaluation to Water Efficiency to Field Crop Management (see Table 2) (OMAFRA, 2018b). Using an online portal, farmers are tasked to rate components between 1 to 4, being Poor to Best for each selected topic.

Under the topic of Field Crop Management, for example, farmers evaluate their farm practices based on their use of perennial forages, cover crops, and pedigreed seeds\(^2\) with assistance from on-farm visits and support materials (i.e. EFP workbooks, reference manuals and factsheets) (OMAFRA, 2013).

After completing the EFP, farmers have a list of Best Management Practices (BMPs) derived from their own customized on-farm assessment and action plan detailing on-farm practices required to improve their low-scoring topics (OMAFRA, 2018a). BMPs are a set of

<table>
<thead>
<tr>
<th>Table 2: Ontario EFP topics (4(^{th}) ed. 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Soil &amp; Site Evaluation</td>
</tr>
<tr>
<td>2. Water Wells</td>
</tr>
<tr>
<td>3. Pesticide Handling &amp; Storage</td>
</tr>
<tr>
<td>4. Fertilizer Handling &amp; Storage</td>
</tr>
<tr>
<td>5. Storage of Petroleum Products</td>
</tr>
<tr>
<td>6. Disposal of Farm Wastes</td>
</tr>
<tr>
<td>7. Treatment of Household Wastewater</td>
</tr>
<tr>
<td>8. On-Farm Storage, Treatment and Management of Manure &amp; Prescribed Materials</td>
</tr>
<tr>
<td>9. Disposal of Livestock Mortalities</td>
</tr>
<tr>
<td>10. Storage &amp; Feeding of Ensilage</td>
</tr>
<tr>
<td>11. Milking Centre Washwater</td>
</tr>
<tr>
<td>12. Nuisances &amp; Normal Farm Practices</td>
</tr>
<tr>
<td>13. Water Efficiency</td>
</tr>
<tr>
<td>14. Energy Efficiency</td>
</tr>
<tr>
<td>15. Soil Management</td>
</tr>
<tr>
<td>16. Managing Nutrients in Growing Crops</td>
</tr>
<tr>
<td>17. Use and Management of Manure &amp; Other Organic and/or Prescribed Materials</td>
</tr>
<tr>
<td>18. Horticultural Production</td>
</tr>
<tr>
<td>19. Field Crop Management</td>
</tr>
<tr>
<td>20. Pest Management</td>
</tr>
<tr>
<td>21. Stream, Ditch, &amp; Floodplain Management</td>
</tr>
<tr>
<td>22. Wetlands &amp; Wildlife Ponds</td>
</tr>
<tr>
<td>23. Woodlands &amp; Wildlife</td>
</tr>
</tbody>
</table>

(OMAFRA, 2018b)

\(^1\) an Ontario-based agricultural NGO and programme deliverer of the EFP

\(^2\) Seeds derived from crops granted with Breeder, Select, Foundation, Registered or Certified crop status by the Canadian Seeds Growers’ Association (OMAFRA, 2013)
farm practices, technologies, and decision-making tools created by the ministry that promotes them as “environmentally sustainable” and “award-winning series of innovative publications” designed by a “team of farmers, researchers, extension staff and agribusiness professionals” (OMAFRA, 2016c, 2018a). The goal of BMPs is to guide farmers improve their “environmental protection, agricultural productivity, fiscal responsibility, and field-proven efficacy” (OMAFRA, 2016c).

OMAFRA along with select farmer organizations provide some incentives for farmers to complete an EFP which include gaining access to federally and provincially-funded cost-shared programmes, checking their farm for regulation compliance, and being recognized for programme completion (P. Smith et al., 2012). In 2010, all farmers in Ontario participating in the EFP have invested on average $53,592 while receiving cost-shared funding of $16,008 from provincial and federal governments per farm (P. Smith et al., 2012). Nonetheless, the EFP achieves inconsistent participation across the province as almost 40% of ‘starters’ in Ontario have chosen to not complete their EFP (Smithers & Furman, 2003). A national survey in 2011 also indicates that 54% of producers perceive economic pressures to be a main reason for not implementing BMPs set out in the EFP action plan (Clearwater et al., 2016).

Another keystone sustainability initiative by OMAFRA include the New Horizons Agricultural Soil Health and Conservation Strategy (2018) (New Horizons), a framework on soil health research and action for 2018 to 2030, developed in collaboration of several major Ontario farmer organizations under OMAFRA’s facilitation. New Horizons focuses on the four themes of Soil Management, Soil Data & Mapping, Soil Evaluation & Monitoring, and Soil Knowledge & Innovation’ with the vision of building “healthy agricultural soils [to] contribute to a vibrant agricultural sector, productive economy, sustainable environment and thriving
Some objectives include “support[ing] soil BMPs continuous improvement and adoption [by farmers]”, “diversify[ing] crop rotations (in annual cropping systems)”, “moderniz[ing] Ontario’s soil maps and inventory”, and “tracking soil health at a regional scale by conservation authorities” (OMAFRA, 2018c, pp. 6–7). Despite being one of the first forms of collaboration between a wider array of farmer organizations in Ontario, however, details of its implementation have not been outlined (OMAFRA, 2018c, p. 8).

In addition to these key policies and programmes, OMAFRA collaborates in interdepartmental policies such as Ontario Ministry of Municipal Affairs & Housing (MMAH)’s four provincial land use plans (Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan and Growth Plan for the Greater Golden Horseshoe [GGH]). These four key policies are implemented to “protect the natural environment and determine where and how growth should be accommodated in the region” (MMAH, 2017b) which include agriculture (MMAH, 2017a, 2017d, 2017c; Niagara Escarpment Commission, 2017). They are designed to establish a land-use planning framework for the GGH that supports a thriving economy, a clean and healthy environment and social equity” (MMAH, 2017a). These land use plans build on the Provincial Policy Statement (PPS) (2014) under the Planning Act (R.S.O. 1990, c. P.13) which “protects prime agricultural areas for long-term agricultural use, and supports a thriving agricultural industry and rural economy by permitting a range of different uses on agricultural land” (OMAFRA, 2014).

2.1.5 Provincial farmer organizations

Provincial farmer organizations are critical to the discussion of sustainable agricultural policy for their role in public policy creation and change (McFadden, 1994, p. 28). Provincial
farmer organizations, based on McFadden’s (1994) definition of “agricultural NGOs”, are organizations that have a rural base, run by active or past farmers to improve farm business, affairs, and community. They are different from business organizations (i.e. manufacturers of farm machinery), national NGOs (i.e. Soil Conservation Canada), quasi-governmental organizations (i.e. marketing boards), and academic and professional research organizations (i.e. University of Guelph, Canadian Institute of Agrologists) (McFadden, 1994, p. 6). Like any NGO, these organizations widely vary in geographic and member size, institutional capacity, financial resources, and objectives which are factors that often correlate with level of policy influence (Pross, 1986, pp. 121–122). While some organization are focused on lobbying on behalf of their farmer members and promoting their common interests to farmers and non-farmers, others are less focused on policy and rather concentrated on building farmer solidarity, providing informal on and off-farm support, and sharing knowledge between farmers and non-farmers (McFadden, 1994, p. 27). Below are brief descriptions of key provincial farmer organizations in Ontario and their policies, programmes and activities along with its summary in Table 3.

The **Ontario Federation of Agriculture (OFA)** is the province’s largest general farm organization totalling a membership of over 38,000 family farm businesses (OFA, 2019b), with permanent staff and organizational capacity to frequently collaborate with government at local, provincial and federal levels (McFadden, 1994, p. 105). Established in 1936, OFA is a cash-crop farmer organization represented across numerous counties in Ontario, covering all commodities, and pushing their mission, “Farms and Food Forever” (OFA, 2018a). Supported by a robust organizational structure of a Board of Directors, Policy Advisory Council, and Member Service Representatives, the OFA provides up-to-date **fact sheets, policy letters, and various services**
and programmes for their members including corporate discounts, workshops and conferences (OFA, 2019a). The organization is known for its strong voice advocating on behalf of its members and the agriculture industry on various issues covered by all levels of government and participates in the Canadian Agri-Food Sustainability Initiative (CASI), a national program founded by leading Ontario food and beverage companies, and SAI Platform (2015; 2002). Their key values include protecting farm businesses, increasing rural access to internet and natural gas, and supporting voluntary, incentive-based programmes instead of strict, penalty-based regulations (OFA, 2018a).

The Grain Farmers of Ontario (GFO) is another large cash-crop farmer organization that focuses on Ontario grain and oilseed farmers with 28,000 members (GFO, 2018a). Established in 2004 through a merger of the Ontario Corn Producers’ Association, Ontario Soybean Growers, and the Ontario Wheat Producers’ Marketing Board, GFO focuses on advancing research in four priority areas of Agronomy & Production, Weed Disease & Insect Pests, Crop Utilization and Crop Quality, and Breeding & Genetics as well as validating precision-agricultural technology (GFO, 2018b). Their key sustainability programmes include the Canadian Field Print Initiative (CFPI), a performance indicator tool designed by commodity associations, industries, and end-use companies for farmers based on two measurements of resource impact and efficiency (Serecon Inc., 2016, p. i). They also promote the 4R Nutrient Stewardship Strategy in collaboration global fertilizer industries based on the four principles of applying nutrients at “the right source, at the right rate, at the right time, and in the right place” and SAI Platform’s Farm Sustainability Assessment tool to their farmer members (GFO, 2019b).
The **Ontario Soil and Crop Improvement Association (OSCIA)** is the program deliverer of OMAFRA’s **EFP programme** with the vision statement of “actively seeking, testing and adopting optimal farm production and stewardship practices,” and mission to “facilitate responsible economic management of soil, water, air and crops through development and communication of innovative farming practices” (OSCIA, 2019a). It also facilitates other government-funded cost-shared programmes such as the **Farmland Health Check-Up**, offering farmers the opportunity to work with a Ontario Certified Crop Advisor (CCA) or a Professional Agrologist (P. Ag) to assess their farm’s soil health and water quality (OSCIA, 2018). OSCIA distinguishes itself as “a unique non-profit” with “grassroots membership” (OSCIA, 2015), despite its role as a facilitator for some of OMAFRA’s sustainability programmes. Led by “leaders in producer education, local association development, program delivery and consumer outreach”, OSCIA has strong horizontal outreach across over 50 local county and district branches in Ontario across all agricultural commodities (McFadden, 1994; OSCIA, 2019a). However, the organization cannot function independently due its reliance on government funding (McFadden, 1994, p. 175), resulting the general farmer public to view its close relationship with OMAFRA with “great suspicion” (McFadden, 1994, p. 194).

The **National Farmers Union of Ontario (NFU-O)** is a non-profit advocacy group of family farmers and an affiliate of the nation-wide NFU focusing on provincial agricultural matters (NFU, 1997). Established in 1969, it pursues their mission of “Strong communities. Sound policies. Sustainable farms” by organizing various projects including hosting **annual conventions** for farmers, providing **resources for farmers and non-farmers**, and hosting **Kitchen Table Meetings (KTMs) on Climate Change** for “sustainable farmers and food system allies” (NFU-O, 2019). It is one of the few provincial farmer organizations that provides
a policy on sustainable agriculture encompassing economic viability, social justice, and ecological health (NFU, 1997). Its understanding of sustainability is not about meeting food demands for the world’s population growth, but rather a fairer and more equitable distribution system for food that addresses hunger and poverty that prevail in Canada and beyond (NFU, 2019a). It also pushes policy campaigns at both provincial and national levels on topics such as agroecology, climate change, farmland ownership, food sovereignty, and stopping genetically-modified (GM) seeds (NFU, 2019c).

The Ecological Farmer’s Association of Ontario (EFAO) is an educational non-profit organization “run by farmers, for farmers” (EFAO, 2016) with a mission to “support farmers to build resilient ecological farms and grow a strong knowledge-sharing community” (EFAO, 2018a). Established in 1979, EFAO focuses on providing in-person ecological farming training and support to help farmers “make a better living growing real food” while improving “soils, crops, livestock, and the environment” as opposed to lobbying for policy changes (EFAO, 2018b). Their goals include “create[ing] a community of farmers” and “develop[ing] programs on ecological agricultural methods” through courses, seminars, and farm tours (EFAO, 2016). In 2016, they started a Farmer-Led Research (FLR) programme for farmers to lead their own research, decide their own priorities, and learn how to design, execute, and disseminate their results (EFAO, 2018b). Though not central to its key initiatives, EFAO also provides occasional policy stances on trade and economic agreements, genetically-modified organisms (GMOs), and pollinator issues in collaboration with the Organic Council of Ontario (OCO) and Canadian Organic Growers (COG) (EFAO, 2019a). It also participates in committees including the Soil and Health Conservation Working Group (New Horizons), New & Young Farmers and Genetics Engineering Issues Committees (EFAO, 2017).
<table>
<thead>
<tr>
<th>Membership size</th>
<th>OFA</th>
<th>GFO</th>
<th>OSCIA</th>
<th>NFU-O</th>
<th>EFAO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38,000</td>
<td>28,000</td>
<td>4,000</td>
<td>n/a³</td>
<td>485 (family farms, associates, businesses &amp; non-profits)</td>
</tr>
<tr>
<td></td>
<td>(family farm businesses)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year of Establishment</td>
<td>1936</td>
<td>2004</td>
<td>1939</td>
<td>1969</td>
<td>1979</td>
</tr>
<tr>
<td>Key Objectives for Sustainable Agriculture</td>
<td>- Protect farm business</td>
<td>- Increase productivity per acre</td>
<td>- Promote BMPs &amp; innovative farming practices</td>
<td>- Promote economic viability, ecological soundness, &amp; consumer connections</td>
<td>- Create community of ecological farmers</td>
</tr>
<tr>
<td></td>
<td>- Increase rural access to internet &amp; natural gas</td>
<td>- Pursue research (i.e. breeding and genetics)</td>
<td>- Increase EFP participation</td>
<td>- Campaign for a more equitable agricultural and agri-food system</td>
<td>- Share knowledge on ecological farming methods</td>
</tr>
<tr>
<td></td>
<td>- Support voluntary, incentive-based programmes</td>
<td>- Validate precision agriculture technologies</td>
<td>-</td>
<td>-</td>
<td>- Encourage farmers to lead their own research</td>
</tr>
<tr>
<td>Key Initiatives</td>
<td>- CASI SAI Platform</td>
<td>- CASI SAI Platform</td>
<td>- EFP &amp; BMPs SAI Platform</td>
<td>- National Policy Campaigns</td>
<td>- Courses, seminars, farm tours</td>
</tr>
<tr>
<td></td>
<td>- 4R Nutrient Stewardship Strategy</td>
<td>- 4R Nutrient Stewardship Strategy</td>
<td>- Farmland Health Check-Up</td>
<td>- KTM Annual conventions</td>
<td>- KTM FLR</td>
</tr>
<tr>
<td>Main Beneficiaries</td>
<td>- Conventional farmers</td>
<td>- Conventional grain growers</td>
<td>- All farmers</td>
<td>- Non-corporate family farms</td>
<td>- Ecological producers, new famers, &amp; conventional farmers</td>
</tr>
<tr>
<td></td>
<td>- Cash-crop farm businesses</td>
<td>- Cash-crop farm businesses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Partners</td>
<td>- OSCIA Commodity associations, industries, &amp; end-use companies</td>
<td>- OSCIA Commodity associations, industries, &amp; end-use companies</td>
<td>- OMAFRA OFA GFO</td>
<td>EFAO</td>
<td>- NFU-O OCO COG</td>
</tr>
<tr>
<td></td>
<td>(EFAO, 2018a; GFO, 2018a; NFU, 2019a; OFA, 2018a; OSCIA, 2019a)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

³ Public document on total membership size unavailable as of April 26th, 2019.
2.2 Research methodology

2.2.1 Data analysis

This research examines the various narratives embedded in or in the margins of current sustainable agricultural policies and programmes primarily authored by OMAFRA and other government bodies outlined in Chapter 2.1.4 as well provincial farmer organizations described in Chapter 2.1.5. Using Thompson et al. (2007)’s four types of sustainable agricultural narratives (Growth, Production-Innovation, Agroecology, and Participation) outlined in Chapter 1.2, this paper will analyze what specific discourses take privilege over others, and how these discourses shape or maintain policies to their favour (Erjavec & Erjavec, 2015). As supplementary information, this paper also incorporates interview quotes to provide a deeper, more nuanced understanding of the overarching sustainability trends in Ontario agriculture.

2.2.2 Informant identification & recruitment

The informants involved in this study are ministry workers from OMAFRA and representatives from provincial farmer organizations. During recruitment, I directly identified the appropriate informants by searching through public internet listings, emailing and phoning relevant offices, and snowball sampling through my interaction with informants. Each prospective informant received a recruitment email, a letter of information, and a consent form. Among the sixteen people contacted, seven responded and consented to participating. The final list of informants are three ministry workers from OMAFRA and a representative each from OFA, GFO, OSCIA, and NFU-O (see Table 4). Notable absences are other large, conventional provincial farmer organizations such as the Christian Farmers Federation of Ontario and smaller,
more ecologically-focused ones such as the EFAO. To respect the anonymity of informants, their names are replaced by descriptions of their position titles as agreed on the consent form.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Position Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMAFRA</td>
<td>Environmental and Land Use Policy Advisor</td>
</tr>
<tr>
<td></td>
<td>Environmental Management Program Analyst</td>
</tr>
<tr>
<td></td>
<td>Soil Management Specialist (Field Crops)</td>
</tr>
<tr>
<td>OFA</td>
<td>Senior Farm Policy Analyst</td>
</tr>
<tr>
<td>GFO</td>
<td>Market Development Manager</td>
</tr>
<tr>
<td>OSCIA</td>
<td>Environmental Programs Coordinator</td>
</tr>
<tr>
<td>NFU-O</td>
<td>President &amp; Active Farmer</td>
</tr>
</tbody>
</table>

### 2.2.3 Design of interview questions

With approval from the Queen’s General Research Ethics Board, I adopted a semi-structured list of interview questions that sought to elaborate the following key elements of sustainable agricultural policies and programmes for field crops:

1. The role of the informant’s organization in shaping sustainable agricultural policies and programmes in Ontario;

2. The organization’s most significant concerns regarding the province’s environmental challenges;

3. The policy measures in place or planned to address these challenges;

4. How the organization conceptualizes and prioritizes between farm profitability and sustainability;

5. How the organization envisions Ontario’s future in agricultural sustainability by 2030; and

6. How collaborating with other Ontario agricultural stakeholders aid or constrain provincial policymaking around sustainable agriculture.

These questions related to the expertise of the informants and asked for clarifications of existing policies and programmes.
2.2.4 Data collection

Interviews with informants took place in one-on-one settings in-person or on the phone. In-person interviews took place at offices of OMAFRA and farmer organizations in Guelph, Ontario in February 2019. Although each interview followed a list of pre-set questions, all informants were invited to elaborate upon their responses. The interviews lasted from 30 to 45 minutes and were audio-recorded and later transcribed.

2.2.5 Limitations in methodology

Because most of my informants come from government offices and large provincial farmer organizations, my research may not capture other existing sustainability narratives such as those from smaller local and regional agricultural NGOs and individual field crop farmers who are not associated to any organizations. These missing voices most likely support alternative narratives given that they have the least power to influence sustainable agricultural policies. To alleviate this gap, EFAO’s policies and programmes are included as a source to represent the voices for ecological farmers in the province.

In addition, my positionality as a young, single, non-farmer, Japanese-Canadian woman may limit my understanding. I recognize that my interpretation of these systems and embedded goals, values, and actors are based on my epistemological and ontological positions. With regards to this, I have paid particular attention to power relations throughout my process of appraisal in my research (Leach et al., 2010b). Upon discussion with informants, I ensured to clarify my positionality by explaining that my research would not directly result in changing policies or programmes, but to conduct an initial appraisal to explore the various narratives of Ontario’s sustainable agricultural policies and programmes around field crops.
2.3 Results & discussion

2.3.1 What is missing: a holistic and integrated sustainability policy for agriculture

Ontario’s current government policies and programs on sustainable agriculture do enable some individual farmers to adopt more ecologically sound practices. However, OMAFRA does not have any holistic or integrated sustainability policy to address cumulative landscape challenges. Cumulative issues like climate change, soil degradation, and pollution – outlined in Chapter 2.1.4 – cannot be addresses using fragmented policies and narrowly-focused on-farm programmes such as Farms Forever, EFP, and New Horizons. These methods are focused on individual farm efficiency and production (yield etc.), and are voluntary, resulting in low uptake for those who cannot afford shifting to more ecological practices.

Similarly, MMAH’s land use plans also avoid fundamental ecological issues that stem from the conventional agricultural system. Both the Growth Plan and the Greenbelt Plan only recommended municipalities and farmers implement BMPs, without addressing broader food system and sustainability issues (Greenbelt Plan 3.2.5.7, Growth Plan 4.2.4.4). These compartmentalized measures fail to connect agriculture to the broader landscape, creating an ineffective governance system of piecemeal policies and programmes that lead to systematic negative environmental outcomes and vulnerabilities.

Neither national or provincial policies and programmes contain an official definition for sustainable agriculture, leaving an ambiguous vision of sustainability for the agricultural and agri-food sector. The current 2016 – 2019 FSDS and draft 2019 – 2022 FSDS set sustainable food as a national goal involving the agricultural sector; however, the specific means of achieving this goal are unclear. Pre-existing federal mechanisms, such as the AEIs and organics standardization, do not define sustainable agriculture nor do they challenge the current industry-
favouring policy paradigm as they are primarily based on surface level data and short-term economic outputs. This trend is similar in provincial policies and programmes such as the **Ontario Climate Change Action Plan 2016-2020**, which only discusses sustainable agriculture in the context of soil carbon storage and agricultural facility retrofits without truly defining what sustainable agriculture entails. As the Action Plan evaluates total provincial GHG emissions of agriculture (6%) separately from transportation (35%) and industry (28%) (Government of Ontario, 2016), the discussion around agricultural impact on climate change is left peripheral and disconnected. As a result, there is no real policy for Ontario farmers and other stakeholders to discuss how the agricultural and agri-food sector can contribute to sustainability and minimize negative environmental impacts beyond farm-level changes.

Additionally, the term sustainability is missing or lacking in OMAFRA’s key policies, revealing how sustainability is not a central priority in the ministry’s future directions. OMAFRA’s most recently available **2017-2018 mandate** explicitly states five specific priorities, four of which target economic prosperity and only one mentioning sustainability (OMAFRA, 2017a). Its previous **Farms Forever (2016)** policy also outlines four objectives but does not include sustainability (OMAFRA, 2016a). The follow-up **Summary of the Farms Forever Discussion (2017)**, which incorporated public feedback from “a broad range of stakeholder organizations and Indigenous people” and “15 electronic submissions,” includes ‘sustain-’ twice, although only in the context of food security and farm-level practices business, not ecological impacts beyond the farm (OMAFRA, 2017b). These documents limit the possibility for Ontario field crop farmers to explore what it means to implement sustainable agriculture on their farms.

Since the ministry most responsible for the province’s agriculture is not addressing sustainable agriculture nor meaningfully incorporating the term sustainability in its policies and
programmes, stakeholders rely on other sustainability policies and programmes provided by other ministries and agricultural NGOs. Many informants, including those from OMAFRA, referred to non-OMAFRA documents including MMAH’s **Planning Act** and the industry-led **SAI Platform** when they were asked about their organization’s role in shaping sustainable agricultural policy and practices in Ontario. Many of them also expressed that they are not experts on sustainable agricultural policy and were rather confused or troubled by the large scope of the term. Informants from the Ministry confirmed that they do not have an official definition of sustainable agriculture, while those from the farmer organizations provided their own organizational definitions. These mixed responses suggest that there is no single policy addressing cumulative sustainable agriculture in Ontario, but instead many fragmented policies and interests, resulting in confusion, unaccountability, and inaction. Instead, key players within the agriculture and agri-food sector, such as provincial farmer organizations, are left with the role of expressing their narratives to promote their understanding on sustainability.

**2.3.2 Filling the gap: competing and contrasting narratives for sustainability**

**2.3.2.1 Growth and Production-Innovation agricultural policies and programmes**

Across the discourse of Ministry workers and farmer organizations, the most dominant normative ideas emerging around sustainable agriculture express the importance of farm profitability, technological advancement, and neoliberal governance, reflecting the Growth and Production-Innovation narratives discussed in Chapter 1.2.1 and 1.2.2.

**Farm profitability** refers to a farm operation’s economic viability under the influence of true-factor markets (Uphoff, 2007). It is often mentioned by farmers, and a key outcome in OMAFRA policies and programmes, which use productivist language to motivate sustainable
initiatives. Conventional, cash-crop farmer organizations lobby for farm profitability, as they can only envision sustainability only when farm profitability is not compromised.

- “profitability and sustainability go together” (OMAFRA, 2018c, p. 24).
- “to be sustainable, a farm must be economically viable” (Betts, 2015).
- “farmers are business people and farm profitability and viability are prerequisites. Existing legislation and regulations already address these matters” (OFA, 2018c).
- “develop, defend, and promote an innovative sustainable business environment” (GFO, 2016, p. 5).
- “target[ing] our research, innovation, and knowledge transfer initiatives to enhance our farmer-members’ profitability” (GFO, 2016, p. 5).
- “responsible economic management of soil, water, air and crops” (OSCIA, 2019a).
- “If you can’t financially make [sustainability] pay, why would you do it? Profit is not a dirty word” (OFA informant).

**Technological advancement** envisions a future where all producers would be technologically-knowledgeable with access to internet and cellular service (CASI, 2015, pp. 14–15). Conventional cash-crop farmer organizations also express this as necessary for sustainable agriculture to meet global commercial food demands. CASI sees advancing precision technology, crop genetics, and renewable fuels as prerequisites for the sector’s sustainability (CASI, 2015). GFO seeks to advance research on plant efficiency, nutrient economics, and high-yielding, high-quality crops (GFO, 2018b), stating:

- “Sustainability is becoming an important selling point, not only with a socially-conscious public, but with a growing number of end-users around the world” (GFO, 2017).
- “If we’re going to be able to feed 9 billion people by 2050, we’re going have to rely on technology to be able to do that” (GFO informant).
- “soil economy”, “carbon currency,” “the dollars that drive the system”, and “keep[ing] plants from going on welfare” (Brown, 2019).
Neoliberal governance involves shifting decision-making powers towards industry and non-governmental stakeholders through deregulation. It is favourable particularly for industrial agriculture proponents and demanded by conventional cash-crop farmer organizations as it promotes free trade, foreign investment, and high returns of capital to agri-corporations. OFA recommends the Ontario government exempt all on-farm fuels from carbon pricing policies to lessen farmer competitiveness in domestic and international markets (OFA, 2018b).

- “There are currently no replacements for fossil fuels in agricultural production, and major efficiencies in fuel use have already been achieved” (OFA, 2018b).
- “[Neonicotinoids are an] important tool that farmers have now lost” (GFO informant).
- “[regulations] limits opportunities that farmers have available to them” (GFO informant).

2.3.2.2 Normative ideas from alternative narratives

In contrast to the productivist vision of sustainability, normative ideas pushing for a more holistic, ecologically-sound form of sustainable agriculture expresses the importance of agroecology, supporting local economies, and inclusive participation, as discussed in Chapter 1.2.3 and 1.2.4.

The Agroecological narrative is not supported by the ministry-run EFP programme. However, EFAO expresses it well through their official values, including:

- “create a community of farmers, from beginner to advanced, to share training, knowledge and experience” (EFAO, 2016, p. 1).
- “develop and provide programs on ecological agricultural methods, such as soil tillage, green manures, cover crops, composting” (EFAO, 2016, p. 1).
- Increase the knowledge of “ecological agriculture via courses, seminars, farm tours, meetings, newsletters, and other educational materials” (EFAO, 2016, p. 1).
- Provide alternative programming that is “comprehensive and holistic, focusing not on a single BMP or management strategy but rather a suite of solutions that incorporate the whole farm” (EFAO, 2019b).
Supporting local economies refers to strengthening domestic markets and shorter commodity chains as opposed to promoting export agriculture with disconnect between farmers and consumers. It aims to enable farmers without affluence and industrial support, to have a good livelihood while mitigating environmental, socioeconomic, and political challenges. It supports local food sovereignty and emphasizes the harmonization needed between economic, ecological, and social values in agricultural policies.

- “envison an Ontario where profitable, ecological farms are the foundation of our food system, and where agriculture protects our resources, increases biodiversity, mitigates climate change, and fosters healthy, vibrant communities (EFAO, 2017, p. 2).

- “values farmers and what they grow; rebuilds relationships between food producers and those who eat; reclaims local decision making about food production and environmental protection; and strengthens connections between people and the land” (NFU, 2019b).

- Values “economic viability, ecological soundness, direct connections to consumers” (NFU, 1997).

Inclusive participation emphasizes the value of supporting genuine participation of all stakeholders, including farmers, consumers, and researchers. It advocates for the right of all farmers – especially non-corporate – to participate in policies affecting the food system. NFU has campaigned to increase inclusive participation in Supply Management and Farmland Ownership (NFU, 2019c), and advocates for the right of all farmers – especially non-corporate – to participate in policies affecting the food system (NFU, 2019a). They see sustainability not as meeting the food needs for the world’s population growth, but rather a fairer and more equitable distribution system for food that address the hunger and poverty prevalent in much of Canada (NFU, 2019a). EFAO encourages farmers to self-lead their own research on their farms with collaborative support from scientists, sharing their results with the membership and beyond project design and data analysis (EFAO, 2018b). They work with “existing ecological producers,
new farmers, and conventional farmers” (EFAO, 2016, p. 1), engaging in partnerships “when mutually beneficial” (p. 2).

2.3.3 Structural dynamics: how are narratives constructed around sustainable agriculture in Ontario?

Farmer organizations with Growth and Production-Innovation normative values tend to develop political, intellectual, and economic alliances with agri-businesses, resulting in a mutual reinforcement of an industrial, profit-driven approach to sustainable agriculture. These alliances lock-in an unsustainable industrial agricultural system, by involving only a “limited number of actors, reinforcing their economic and political power…” (IPES-Food, 2016). OFA and GFO are some of the many collaborators in CASI, which create a vision for Ontario food and beverage companies that streamlines farm profitability with the façade of sustainability (Wilton Consulting Group, 2017). OFA and GFO informants both recommended CASI as a further resource when asked about their organization’s current sustainability initiatives, demonstrating how their sustainability initiatives are limited within concentrations of corporate power and how they can easily ignore negative externalities that harm the broader environment.

Given the economic power of these alliances, government bodies are more likely to adopt their Growth-centric ideas around sustainability, as sufficient public input. This results in weak sustainable agricultural policies that fail to address the fundamental problem of industrial agriculture and its negative outcomes and vulnerabilities. While OMAFRA and AAFC’s involvement in the CASI Steering Committee is only classified as “Observer” (Wilton Consulting Group, 2017), informants from the Ministry notably referred to these programmes when asked to define sustainable agriculture. Their values are plainly reflected in the Canadian Food Inspection Agency’s Agricultural Growth Act (Bill C-18), “The Act will… Reduce red
tape and regulatory burden on producers… [and] Align Canada with its international trading partners and expand global market opportunities’’ (2015).

In addition, this concentration of power creates path dependency by providing financial support to research projects that benefit only the industrial agricultural system.

Table 5: Comparing research funding received by GFO and EFAO

<table>
<thead>
<tr>
<th>GFO</th>
<th>EFAO</th>
</tr>
</thead>
<tbody>
<tr>
<td>$590,454 from CAP to support research in agricultural science in 2019 (GFO, 2019c).</td>
<td>$75,000 from the Ontario Trillium Foundation for their FLR programme in 2016 and $281,680 in 2019 (EFAO, 2018b).</td>
</tr>
<tr>
<td></td>
<td>$343,500 “agri*” projects that support biodiversity, agroecosystem management, or agroecological functioning (10 total)</td>
</tr>
<tr>
<td></td>
<td>$15,256,500 All other projects involving “agri*” in title or keywords (433 total)</td>
</tr>
</tbody>
</table>

GFO’s research directly supports the government’s current programmes and values such as testing, evaluation, and development of biotechnology to improve OMAFRA’s Integrated Pest Management (IPM) and EFP programmes (GFO, 2019a). In 2016-17, only a small portion of agricultural funding supported programmes focused on biodiversity, agroecosystem management, or agroecological functioning (p. 9) (see Figure 1). Once farmers and other stakeholders begin relying on this structure, it is hard to break away from large-scale industrial agriculture and transition to more holistic, agroecological farming systems.

2.3.4 Consequences: What kind of policies get shaped by these narratives?

Unclear, fragmented and universalist policies with poor foresight result from this neoliberal structure of policymaking and ministry-farmer organization relationships. Although the PPS mentions that “Long-term economic prosperity should be supported by… promoting the
sustainability of agri-food and agri-product businesses by protecting agricultural resources”, it does not mention any specific means or words with “sustain-” under Agriculture (Section 2.3) (Government of Ontario, 2014, p. 24). Without specifying what is meant by sustainability in agriculture and incorporating place-based knowledge in meaningful ways, policies may not induce the necessary action needed to address the challenges of sustainability in agriculture.

The inability for policy processes to be more inclusive to alternative narratives on sustainable agriculture results in weak policies that are not adaptive to the complexity and dynamics of contemporary agriculture. Cash-crop farmer organizations and their affiliates describe those who criticize and question them as “anti-agriculture,” “anti-modern,” and “activists” creating a language of distrust and contention between Ontario field crop farmers. CASI expresses quite straightforwardly, “The problem is compounded by activist groups – often with good media skills – who have a negative view on modern agricultural and portray a vision of farming based on an idealistic image of earlier “simpler” times” (CASI, 2015, p. 17). GFO also mentions the need to reiterate its own narrative; as one informant said, “we haven’t done a great job telling our story to consumers, and as a result, consumers sometimes can come up with these images or thoughts of what farmers really are, and what they’re doing.” This divergent language limits the possibility of envisioning multiple pathways towards sustainability.

As a result of the highly compartmentalized, narrowly focused industrial agricultural system which continues to govern the priorities of politics, business, research, and education, marginalized actors are forced to carry the burden of supporting their own narratives through self-run policies and programmes. NFU-O hosts annual conventions around growing sustainable communities, distributes resources for farmer and diverse non-farmer audiences, and collaborates with the national NFU office to campaign on agroecology, trade agreements, food sovereignty,
and stopping GM seeds (NFU, 1997, 2019c). As the informant from NFU-O comments, “there’s been a major decrease in the role of government and extension agencies offering technical and knowledge-based supports to farms around soil and crop health, seed development, and plant breeding… I don’t find evidence where they have come out and shown to benefit at our level.”

2.3.5 Silent voices: perspectives on the margins of sustainability policies

Field crop farmers who are not part of or actively involved in farmer organizations represent one of the most silent voices within the province. There is a continuously evolving network of over 1100 agricultural NGOs in Ontario alone that most current researchers know little to nothing about (McFadden, 1994, p. 72), and incorporating the everyday farmers’ views in the province’s vision for sustainability can be challenging. Even though OMAFRA and large, provincial farmer organization representatives provide substantial insight about sustainable agriculture and claim that they represent the voices of their farmer members, they certainly do not constitute the entirety of all farmer voices across Ontario.

In addition, important voices unmentioned in current Ontario sustainable agricultural policy and provincial farmer organization mandates are those who do not fit in the iconic “family farm,” such as non-white individuals and communities that have been pushed out of their traditional ways of farming. Laforge et al. (2018) describe how, “For many new farmers, the neoliberalization and corporatization of Canadian farms has challenged their ability to enter agriculture.” Deregulation has been followed been loss of government support through funding, supply management, and marketing boards, leading to rural depopulation and consolidation of farmland (Laforge et al., 2018). Accounting for the struggles of non-white people and new Canadians in entering the farming industry is a prerequisite for sustainability movements to
encourage new and young people to farming, reconnect consumers to their food sources, re-populate rural areas, and thus re-invigorate the affluence of small farmers.

Indigenous traditional knowledge and other knowledge systems are also excluded from the province-level conservation around sustainable agricultural policies and programmes. These knowledges emphasize place-based interrelationships between human and ecological systems and are open to the fluidity of social and environmental dynamics in both settler and Indigenous communities (Nelson, Levkoe, & Kakegamic, 2018). Rather than facilitating public-government dialogue to produce universalist, “best practices” policies and programmes, a much more comprehensive, contextualized understanding towards distinct experiences and patterns within agricultural and food systems is crucial to achieve inclusivity and resiliency.

2.3.5 The future of sustainable agriculture: a business-as-usual approach

As a result of these limitations, broader questions and discussions around climate vulnerability, improved regulatory structures, and system-wide thinking ultimately remain unanswered and unaddressed, demonstrating a business-as-usual approach. This is evident through AAFC’s most recent Agri-Environmental Indicator Report (2016) which fails to critically assess the dominant conventional agricultural system and instead relies on narrowly defined indicators and short-term and compartmentalized thinking when discussing key challenges facing Ontario agriculture.

Soil degradation, for example, is largely attributed to erosion due to poor farmland management and described to be fixable through no-till or conservation tillage and other physical methods (p. 21). However, it does not mention how monocultural cropping plays a significant factor in soil degradation, leaving the question of industrial agriculture unproblematized. Rather,
it discusses new farm implements such as air seeders, information technology, genetic engineering and precision farming which would help “shift the emphasis in agriculture away from physical labour to activities based on more knowledge and skills” (p. 21).

AAFC also acknowledges synthetic inputs pollution and its consequences of eutrophication, pathogens, and water quality reduction (p. 111). However, it frames these chemical pollutions as an economic issue, concerned that “the loss of nitrogen and phosphorus to the broader ecosystem represents an economic loss to producers” (p. 111).

Climate change is not prioritized in the Report, being one of the last “driving forces” mentioned with a low tone of urgency, “climate is naturally variable and agricultural systems have evolved to cope with modest variations in conditions… adapting to weather is something farmers have always done” (p. 22). AAFC confidently states that “technologies and administrative tools” have “led farmers, the agri-food industry and government to build awareness, resilience and adaptive capacity… ready for the future” (p. 23).

Similarly, AAFC acknowledges the need to decrease GHG emissions produced from agriculture, but instead of addressing the country’s dominant fossil-fuel dependent industrial agricultural system, it simply cannot envision improvement in GHG reduction as they state “due to the expected growth in the population and the rising demand for food, reducing total agricultural GHG emissions may be unrealistic in the short term” (p. 212). Instead, it frames the issue as a matter of Growth and efficiency, stating that “producers could improve their resource-use efficiency and reduce their GHG emissions per unit of production with appropriate management practices” (p. 212). This solution does not address how much total GHG emissions are being released into the air by calculating it as a matter of emission produced per product. With “continuing growth in sustainability reporting by corporations as more and more
corporations commit to using sustainably produced agricultural products – including Walmart, General Mills, Unilever and others” (p. 213), the discussion around GHG emissions is kept in the hands of corporations, leaving no opportunity to address the fundamental problem of industrial agricultural system itself.

**Biodiversity loss** is also not prioritized as AAFC cannot envision any possible trade-offs to mitigate this issue. It clearly states that “biologically diverse agroecosystems tend to be healthy, resilient and productive, providing a strong foundation for sustainable agriculture… however, farming is a business driven by markets and commodity prices which can make it challenging to balance high productivity with the long-term health of the agro-ecosystem as a whole” (p. 73). Although one of their main objectives is to “provide a stable or improved level of habitat capacity, thus avoiding further significant habitat degradation… maintaining this stability may not be possible as demand for food and conflicting land-uses pressures evolve” (p. 73).

Finally, competition for other land-uses such as housing needs driven by urbanization is not mentioned anywhere in the Report. This shows that challenges and opportunities for change in agriculture are only discussed amongst those directly involved in agriculture, narrowing the possibility for holistic discussions and creative solutions. It also causes problems for small non-industrial farmers as they are less able to maintain their operations and livelihoods in the face of urbanizing forces, than are industrial farms, that have more affluence.

In addition, the Standing Committee on Agriculture and Agri-Food from the House of Commons in their latest “Next Agricultural Policy Framework” Report (2017) discuss climate change last and separately from markets, trade, research, science, innovation, value-added, and business risk (AGRI, 2017). They claim the agriculture and agri-food sector has made
“significant progress” in reducing its environmental impact through “efficient use of inputs… careful use of fuel, and the incorporation of BMPs, such as minimum and zero tillage” (p. 25).

This reveals how negative outcomes of industrial agriculture have been omitted from their agenda in order to continue their flow of affairs normally. Out of their 18 recommendations, only 2 address the environment and neither challenge the conventional commodity chain or its implications on the environment as well as farmer income and equity:

“Recommendation 12: The Committee recommends that the Government, in cooperation with the agriculture and agri-food sector, analyze the environmental and economic costs and benefits of environmental practices at various stages of the agri-food production chain” (p. 31).

“Recommendation 13: The Committee recommends that the next policy framework includes a component for implementing environmental practices at various stages of the agri-food production chain, including measures to address climate change and deal with its effects and measures to help the sector adapt to the environmental regulations landscape in conjunction with the provinces and territories” (p. 32).

These measures are the outcome of the dominant narratives locking down on high input output farming that rely heavily on the industrial agricultural system. This leaves the future of Ontario and much of Canada’s sustainable agriculture bleak in the era of climate change and its dynamic, and complex challenges.

There is little emphasis on sustainability as challenging the current conventional agricultural paradigm involves deconstructing the economic and political power that lie within industrial agriculture. Key powerful players that rely on the Growth and Production-Innovation narratives include crop breeders, synthetic input manufacturers, grain traders, and supermarket retailers (IPES-Food, 2016). These dominant actors reinforce the status quo of industrial agriculture by narrowing sustainability problems as on-farm issues, providing solutions through
voluntary-based programmes, lobbying policymakers to pass market-friendly policies, and co-opting alternative narratives within the mainstream by promoting ideas of “grassroots membership” (OSCIA, 2015), “integrated pest management” (OMAFRA, 2019a), and “integrated systems approaches” (GFO, 2018b). As Reid et al. (2007) expresses, “in the Canadian agricultural sector, climate change has yet to become a high priority item, and there is little evidence of serious steps being taken to facilitate adaptation” (p. 610). Therefore, a fundamentally different model of agriculture is crucial in order to overcome the vicious cycles of the dominant agricultural system and to let alternative narratives emerge beyond the margins to make sustainable agriculture happen (IPES-Food, 2016). Some key recommendations are listed below as avenues of future action and research.
Recommendations

*Increase inclusive collaboration*

OMAFRA and other agriculture-related ministries and institutions should allocate more funding and be more receptive towards smaller farmer organizations (i.e. grassroots NGOs, small local groups, etc.) with alternative narratives on sustainability to broaden discussions and areas of research beyond the Growth and Production-Innovation framing. Funding should also facilitate regular meetings between various farmer organizations and non-member farmers to collaborate on sustainable agriculture ideas, initiatives, challenges, and successes at least once a year.

*Address structural privileges*

Government or third-party research groups, independent from the Ontario agricultural sector, should reassess ministry-farmer organization relationships to clarify the roles of responsibility between specific stakeholders. This assessment could also explore the possibility of establishing long-term, cross-party, inter-ministerial working groups around agricultural and agri-food systems to develop holistic policies and programmes at multiple levels.

*Redesign sustainability policies & programmes*

Using a more inclusive structure for farmers and farmer organizations, OMAFRA and other agriculture-related ministries and institutions should facilitate the reassessment and restructuring of current “sustainable agriculture” policies and programmes, such as reinvesting in an educational tool to replace the EFP. This would allow multiple pathways towards sustainability to be heard and discussed at the policymaking table, which is much needed across the province at various scales.
Conclusion

Ontario has a piecemeal basket of agricultural policies that encourage ineffective and unsustainable business-as-usual practices. In order to develop an agricultural sector that is sustainable in the long run, Ontario must adopt a cohesive set of cumulative agricultural policies for its eco-regions.

Positive transformations in forms of new thinking and policies are key to sustainable agriculture (Pretty, 2002). More holistic, integrative policies that address beyond the conventional notion of risk can help stakeholders envision different strategies to address the dynamic nature of climate change and other pressing environmental challenges. A new science for sustainability could be formed by joining together non-equilibrium perspectives from natural sciences, social sciences, and other ways of knowing (Leach et al., 2010b). With greater structural analysis, dialogue, and leadership opportunities for diverse groups of stakeholders, fairer decision-making processes and reflexive institutional frameworks and governance systems can be shaped (Leach et al., 2010b).

Future avenues of research include investigating how multiple pathways towards sustainability can be better captured in sustainable agricultural policies and programmes in Ontario and beyond. Both the environmental and policy landscapes of sustainable agriculture are complex and ever-evolving, and generating long-term solutions to deconstruct business-as-usual economic and political power relationships as well as paving a more inclusive and holistic vision for sustainability is crucial. That way, Ontario can achieve a sustainability that benefits everyone, including the environment and resources, involved.
Bibliography


http://www.omafra.gov.on.ca/english/engineer/facts/12-053.htm
The Standing Senate Committee on Agriculture and Forestry. (2014). *Innovation in Agriculture: The Key to Feeding a Growing Population*. Ottawa, ON.


