llj Lakehead
LAW JOURNAL
Volume 6 Issue 2

Lakehead UNIVERSITY

LAKEHEAD LAW JOURNAL
EDITORIAL TEAM

Editor in Chief

Tenille E. Brown, Assistant Professor, Bora Laskin Faculty of Law

Guest Editors

Nadia Lambek, Assistant Professor, Western University Faculty of Law
Heather McLeod-Kilmurray, Professor, University of Ottawa Faculty of Law

Special Thanks

Thank you to Ella Carr, J.D., BLFL 2024
for her excellent work and contributions in putting this edition together.

Managing Editors

Hailey Hayes & Natasha Latina

Articles Editor

Melis Guzel

External Review Editor

Britney Argiro

General Editors

Karen Edwards Almandores
Mahdi Almusawi
Aaminah Amin
Ashley Bach
Alisha Bailey
Divya Bali
Jabari Barnes
Emilie Barrette
Alexandra Bayani
Kourtni Brown
David Chochla
Minahil Choudhary
Mansi Chugh
Cameron Crawford
Emma DuCharme
Jessica Dykes
Liam Fors
Carrick Galbrath
Alesha Garcha
Lovleen Goraya
Jessica Hayes
Amina Khan
Kyra Lewis
Owen Magny
Jesse Masterson
Renée Michaud
Ardyn Miller
Victoria Mohan
Marlene Nkombo
Madison Norman
Temi Obasanya
Katherine Orfali
Zahra Panju
Sanja Parma
Ryan Paul
Cara Persia
Mina Sehri
Isabella Szwender
Draydon Taylor
Tyler Thomson
Nidhi Verma
Idman Warsame
Guonian Xu

Acknowledgements

Layout Design: Sawyer Paul

Copyediting: Leanne Rancourt

INTRODUCTION: SPECIAL ISSUE

RECENTRING FOOD LAW AND POLICY: CONNECTING PEOPLE AND PLACE

Nadia Lambek and Heather McLeod-Kilmurray[*]

The challenges facing our food systems are largely well known. Our current models of production, harvesting, and consumption are causing major destruction to the environment, uprooting communities from their land and means of production, disrupting social relations, and dramatically changing diets for people across the globe as well as here in Canada.[1] It is equally clear that how we govern—specifically, the laws, policies, and regulations that shape our food system—and the ideologies about growth, development, efficiency, safety, and so on that underlie them create and enable these challenges.[2] Scholars and practitioners

---

[*] Nadia Lambek, Assistant Professor at Western University Faculty of Law; Heather McLeod-Kilmurray, Professor, Centre for Environmental Law and Global Sustainability (CELGS), University of Ottawa Faculty of Law. The authors offer their gratitude to Mariette Brennan, Charles Levkoe, and Sarah Berger Richardson, who all helped with the intellectual direction of the conference and contributed in various ways to the ideas and vocabulary that animate this text. They also offer their thanks to the editors of the *Lakehead Law Journal* for publishing this important collection (and for their patience), and to the Bora Laskin Faculty of Law for hosting the conference that inspired this issue.

1. For sources discussing the state of Canadian food systems, see e.g. Valerie Tarasuk, Tim Li & Andrée-Anne Fafard St-Germain, "Household Food Insecurity in Canada, 2021: Research to Identify Policy Options to Reduce Food Insecurity" (2022) PROOF, online (pdf): <https://proof.utoronto.ca/> [perma.cc/AHT3-3FHP] (on food insecurity); Human Rights Watch, "'My Fear Is Losing Everything': The Climate Crisis and First Nations' Right to Food in Canada" (21 October 2020), online (report): <https://www.hrw.org/report/2020/10/21/my-fear-losing-everything/climate-crisis-and-first-nations-right-food-canada> [perma.cc/NMW9-NY2T] (on food security and the state of food systems in the North) [Human Rights Watch]; Nadia Lambek, "Social Justice and the Food System" in Heather McLeod-Kilmurray, Angela Lee & Nathalie Chalifour, eds, *Food Law and Policy in Canada* (Toronto: Thomson Reuters, 2019) (on general challenges facing Canada's food system) [Lambek]; K Kerk, CZ Levkoe & R Roy, *Community Food System Report Card* (Ontario: Thunder Bay & Area Food Strategy, 2023), online: <https://foodsystemreportcard.ca/wp-content/uploads/2023/01/FSRC2022-B-JAN2023-WEB.pdf> [perma.cc/A5C2-HFJY] (on challenges facing Thunder Bay). For sources discussing the state of global food systems, see e.g. Walter Willet et al, "Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems" (2019) 393:10170 Lancet 447 [EAT-Lancet Commission]; International Panel of Experts on Sustainable Food Systems "Another Perfect Storm?" Special Report by IPES-Food (May 2022), online (pdf): <https://ipes-food.org/wp-content/uploads/2024/03/AnotherPerfectStorm.pdf> [perma.cc/K3LM-ZXD9] [IPES Food]; High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, "Food Security and Nutrition: Building a Global Narrative Towards 2030" (2020), online (pdf): Food and Agriculture Organization of the United Nations <https://openknowledge.fao.org/> [perma.cc/2WLX-A833] [HLPE].

2. Angela Lee, Heather McLeod-Kilmurray & Nathalie Chalifour, "Introduction: Food Law and Policy in Canada" in Heather McLeod-Kilmurray, Angela Lee, & Nathalie Chalifour, eds, *Food Law and Policy in Canada* (Toronto: Thomson Reuters, 2019) (discussing the role of food law and policy) [McLeod-Kilmurray et al]; Lambek, *supra* note 1 (discussing how Canada's food laws and policies often marginalize actors within the food system and create conditions of vulnerability); Fay Faraday, "Made in Canada: How the Law Constructs Migrant Workers' Insecurity" (September 2012) Metcalf Foundation, online (pdf): <https://metcalffoundation.com/wp-content/uploads/2012/09/Made-in-Canada-Full-Report.pdf> [perma.cc/S6PG-C9CB] (discussing the impact of Canada's laws on migrant agricultural workers) [Faraday]; Sarah

have demonstrated the need for diversified and resilient food production, harvesting, and consumption models that restore Earth's vitality, ensure economic viability for farmers and other food supply chain actors, and contribute to food systems that work for people and for the planet.[3] We also know that transitions to sustainable and equitable food systems need to be rooted in partnerships with Indigenous communities, ensure social and environmental justice, and enable democratic control and accountability.[4] The questions we now need to ask are, how do we get there? And what role can (and should) law and policy play in this transition?

In November 2023, a collection of legal academics, lawyers, scholars from other disciplines, municipal and public sector officials, community workers, activists, students, and others met in Thunder Bay, Ontario, to discuss these very questions. The conference—*Recentring Food Law and Policy: Connecting People and Place*—was co-organized by the Canadian Association for Food Law and Policy[5] and the Bora Laskin Faculty of Law. Our goal was to approach the questions differently than is commonly done. Often conversations around

---

Berger Richardson, "From Slow Food to Slow Meat: Slowing Line Speeds to Improve Worker Health and Animal Welfare in Canadian Abattoirs" (2021) 59:1 Alberta L Rev 99 (discussing the impact of food safety standards on workers' rights); Christiana Miewald, Sally Hodgson & Aleck Ostry, "Tracing the Unintended Consequences of Food Safety Regulations for Community Food Security and Sustainability: Small-Scale Meat Processing in British Columbia" (2015) 20:2 Local Env 237 (discussing the impact of food safety standards on farmers); Sarah Berger Richardson & Nadia Lambek, "Federalism and Fragmentation: Addressing the Possibilities of a Food Policy for Canada" (2018) 5:3 Can Food Stud 28 (discussing the challenges of food system governance caused by Canada's federal structure).

3. See e.g. Human Rights Watch, *supra* note 1; Faraday, *ibid*; EAT-Lancet Commission, *supra* note 1; IPES Food, *supra* note 1; HLPE, *supra* note 1.

4. On partnerships with Indigenous communities, see Human Rights Watch, *supra* note 1; Charles Levkoe et al, "The Indigenous Food Circle: Reconciliation and Resurgence through Food in Northwestern Ontario" (2019) 9:B J Agric, Food Sys, Community Devel 101; Michael A Robidoux & Courtney W Mason, eds, *A Land Not Forgotten: Indigenous Food Security and Land-Based Practices in Northern Ontario* (Winnipeg: University of Manitoba Press, 2017); Priscilla Settee & Shailesh Shukla, eds, *Indigenous Food Systems: Concepts, Cases, and Conversations* (Toronto: Canadian Scholars, 2020); Amanda Wilson et al, "Strengthening Sustainable Northern Food Systems" (2020) 7:3 Arctic 292. On democratic food systems, accountability, and food justice, see Nathan Bellinger & Michael Fakhri, "The Intersection between Food Sovereignty and Law" (2013) 28:2 Nat Resources & Env 45; Priscilla Claeys & Karine Peschard, "Transnational Agrarian Movements, Food Sovereignty, and Legal Mobilization" in Marie-Claire Foblets et al, eds, *The Oxford Handbook of Law and Anthropology* (Oxford: Oxford University Press, 2022); Priscilla Claeys & Nadia Lambek, "In Search of Better Options: Food Sovereignty, the Right to Food and Legal Tools for Transforming Food Systems" in Nadia CS Lambek et al, eds, *Rethinking Food Systems: Structural Challenges, New Strategies and the Law* (Dordrecht: Springer, 2014); Charles Levkoe & Amanda Wilson, "Policy Engagement as Prefiguration: Experiments in Food Policy Governance through the National Food Policy Dialogue in Canada" in Peter Andrée et al, eds, *Civil Society and Social Movements in Food System Governance* (London: Routledge, 2019); Charles Levkoe et al, "Civil Society Engagement in Food Systems Governance in Canada: Experiences, Gaps and Possibilities" (2023) 12:2 J Agric, Food Sys, Community Devel 267; Peter Andrée et al, eds, *Civil Society and Social Movements in Food System Governance* (London: Routledge, 2019).

5. The Canadian Association for Food Law and Policy (CAFLP) is a "network and community of lawyers, legal academics, law students and others working or studying in the broad field of food law and policy in Canada and abroad. Through conferences, continuing education, the production/sharing of resources and information, scholarship and collaborative research networks, the CAFLP stimulates dialogue, connects practice and the academy and vice versa, supports students, promotes awareness of food law and policy issues and advances the field and practice of food law and policy in Canada and abroad." See Canadian Association for Food Law and Policy, "About" (last accessed 5 December 2024), online: <https://foodlaw.ca/caflp/about> [perma.cc/DG6C-9ZEF].

food law and policy—and food system governance more broadly—happen in and focus on Canada's southern urban centres. While agriculture, fishing, or northern food insecurity might feature on the agenda, an integrated and comprehensive examination of the challenges and opportunities faced by northern, remote, rural, and Indigenous food systems is often missing. As we gathered at the Bora Laskin Faculty of Law, we aimed to centre the experiences of these regional food systems and the communities that depend on them while also exploring the interconnections between our local, regional, and national food systems.

The result was three days of intense conversation, collective learning, new connections, and, of course, this Special Issue of the *Lakehead Law Journal*.[6] The authors in this collection embody the conference theme, each offering reflections and analysis from a vantage point outside the "centre." While their focus (or "centre") is not uniformly rural, remote, northern, and Indigenous food systems, the authors each offer a new take on a well-travelled issue. Two of the papers centre voices not normally at the heart of policy making: new entrant farmers and Canada's culturally diverse communities. In doing so, they examine governance structures from the perspective of traditionally underrepresented food system actors and ask what sorts of laws and policies might be implemented to support these populations. The other two papers critique loci of power within food systems. Taking on industrial agriculture and the so-called promise of lab-produced meats, the authors argue for shifting toward more ecological and just forms of production and the need to have proper laws and policies in place to both enable this transition and hold actors accountable for their claims of sustainability. The authors each reflect in their own way on the constant drive for "innovation" in food systems and what may be lost when innovation focuses on technologies that have damaging impacts on the environment and concentrate power in the hands of a few actors.

We turn first to the papers that recentre new food systems actors. In "Putting Down Roots: Assessing New Entrant Programs for Dairy and Broiler Farmers in Ontario," Van Boekel explores challenges faced by new entrant farmers. These farmers are often the first in their families to farm in Canada or are returning to farming after generations away from the land. While a story is often told of an aging farmer population and dwindling numbers of family farmers, these new entrants are bucking the trend. They want to return to the land—or in Van Boekel's terms, "put down roots." They are often excited about exploring environmental approaches to agriculture and want to offer an alternative to the industrial agriculture model that is increasingly pervasive in Canada. And yet they face many challenges, some of which stem from current supply management schemes. Van Boekel argues that while supply management systems in Canada have many benefits, policy fixes in the form of new entrant programs are needed to ensure fair access and participation for these farmers. For Van Boekel, these new policy initiatives should allow farmers who lease rather than own their farmland to access animal quotas. He similarly argues for the leasing of quotas to new entrants. Van Boekel also proposes that supply management schemes should support new entrants who use alternative production approaches, such as organic, free range, and small-scale production (citing examples of new ideas such as the Artisanal or Specialty Breeds Chicken Programs). Allowing these new farmers access to supply management, Van Boekel argues, will ensure our

6. For those interested in learning more about the conference proceedings, a full program is available on the website of the Canadian Association for Food Law and Policy. See "Canadian Association for Food Law and Policy" (last accessed 5 December 2024), online: <https://foodlaw.ca/home2023> [perma.cc/DFY3-MG3P].

food system is not concentrated in the hands of a few actors with giant farms while increasing food system diversity and allowing for farmer renewal.

Sioufi Stansbury also seeks to place often-ignored food system actors at the centre of her analysis. In her article "Immigrant Communities in Canada and the Right to Culturally Appropriate Food" she tackles the under-researched topic of meeting the food needs of Canada's diverse populations and communities. She reminds us that the human right to food is about the right to adequate food, where adequacy is determined by a number of factors, including cultural preferences.[7] It is also the right to feed oneself and ones' community with dignity.[8] She clarifies that these ideas distinguish the right to food (and food sovereignty) from food security, the pervasive way in which hunger in Canada is discussed. Her paper highlights that Canada is in violation of its international obligations to respect, protect, facilitate, and provide the right to food. These violations are not only clear in the high rates of food insecurity in Canada but importantly in the failure of government to address questions of access to culturally appropriate food when developing policy solutions. For Sioufi Stansbury, the right to food cannot be realized unless diverse communities are centred in policymaking and the accessibility and availability of culturally appropriate food are taken into account. She discusses the distinction between culturally acceptable and culturally appropriate food and emphasizes that what is culturally appropriate is not static but "dynamic, shifting, and the subject of disagreements within cultural groups." Finally, she tackles the benefits of enabling local production and control of food systems and choices, juxtaposing them against the need to sometimes import culturally appropriate foods that cannot be produced in Canada. This paper highlights relationships: between people, food, and the environment; between physical and mental, spiritual, and emotional health; between food sovereignty and dignity; and between food systems and various justice goals.

As noted above, the other two papers in this Special Issue tackle approaches to food systems governance that prioritize scientific innovation and industrialization over what the authors see as more sustainable, equitable, and ethical approaches. Both papers see a distinct place for law and policy in ensuring these better approaches. Dylan and Brennan's article, "Regulating the 3D Printing of Meat: Animal Ethics, Environmental Benefits, and Human Health Issues in Canadian Law," discusses the effects of new technologies in the food system and the ethical and policy implications they bring to the forefront. The authors argue that while the 3D printing of meat has the potential to tackle many of the ills of industrial farming of animals, it must be adequately regulated. For the authors, this means applying the precautionary principle to ensure food security but also to ensure that the animal welfare, environmental, and human health promises of 3D-printed meat are actually achieved. Highlighting Canada's poor record on animal welfare laws, disturbing new ag-gag laws, and our failure to meet climate change obligations, the paper is a clear example of why law and policymaking must take a food systems approach to tackling the complex and intertwined challenges of just and sustainable food, including the risks of increased industrialization of our food systems.

---

7. "General Comment No 12 on the Right to Adequate Food," UNESC, 20th Sess, UN Doc E/C.12/1999/5 (1999) at para 7, online (pdf): <https://documents.un.org/doc/undoc/gen/g99/420/12/pdf/g9942012.pdf> [perma.cc/94GK-U9HY].

8. United Nations Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No 34, The Right to Adequate Food" (1 April 2010) at 9, online (pdf): <https://www.ohchr.org/Documents/Publications/FactSheet34en.pdf> [perma.cc/55RR-XWFY].

Tramhel seeks to decentre industrial agriculture as the only solution for feeding the planet in her paper "Policy Support for Agroecology in Canada: Lessons from the Global South." She begins with debates on what "sustainable" agriculture and food systems mean, from technological innovations for improving precision and efficiency to more ecocentric concepts and even systemic changes to consumption patterns and "low-growth levels of human development." She notes that the recent COPS of both the UN Biodiversity Convention and Climate Change Convention include the term "agroecological practices." She clarifies that "agroecology (AE) is defined as 'a holistic and integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system.'" She then proposes nine changes necessary to an "improved policy environment for AE in Canada." She supports each proposed change with a case study from the Global South: Tanzania, India, Cuba, Haiti, Ecuador, Costa Rica, the Philippines, El Salvador, and Columbia. In describing the case studies, she highlights enabling law and policy supports that facilitate the move to more agroecological production.

Together, these papers offer a rich set of arguments for how law and policy can address needed changes in our food systems, grounded in challenging the status quo by looking at a problem anew or from a different perspective. While each paper tackles different challenges, they reflect a number of commonalities, largely about the values that should underlie our food laws and policies. Van Boekel, Tramhel, and Dylan and Brennan all seek ways to enable and facilitate alternatives to large-scale production models, such as using law and policy to support newcomer farmers aiming to produce at smaller scales, to create enabling environments for agroecology, or to challenge the constant drive for big-science-based innovation as the means for addressing food system challenges through strict regulation. Two of the papers also look to alternative governance models, specifically food sovereignty as a means to address the challenges brought on by current food systems governance models. For Sioufi Stansbury, grounding a food system in food sovereignty would better ensure the accessibility and availability of culturally appropriate food. For Van Boekel, reorienting governance models toward food sovereignty would give farmers more opportunities to use alternative farming methods—something that would lead to greater diversity in what is produced, which in turn could support more availability of culturally appropriate food.

In addition to the individual contributions of the articles, this Special Issue also contributes to the emerging field of food law and policy in Canada. This new field of inquiry has been developing in Canada for just under a decade.[9] Just as Canada has governed the food system in silos, legal academics for many generations studied food systems through siloed lenses, looking at specific sectors in isolation. But today, a growing group of legal scholars and students are researching how law and policy shapes our food systems in a more systemic and interdisciplinary manner and offering students an opportunity to study food law and policy

---

9. On the development of food law and policy in Canada, see key collections of texts: McLeod-Kilmurray et al, *supra* note 2; Ottawa L Rev (2019) 50:1 (containing a number of papers presented at the second Canadian Association for Food Law and Policy conference). See also Canadian Association for Food Law and Policy (last accessed 5 December 2024), online (association website): <foodlaw.ca> [perma.cc/QXK8-VLWL]. On parallel developments in the United States, see Baylen J Linnekin & Emily M Broad Leib, "Food Law & Policy: The Fertile Field's Origins and First Decade" (2014) 2014:3 Wis L Rev 557; Emily M Broad Leib & Baylen J Linnekin, "Food Law & Policy: As Essential Part of Today's Legal Academy" (2017) 13:2 J Food L & Pol'y 228.

while in law school.[10] This Special Issue offers a new set of papers taking on this systemic approach. It helps pave the way for future developments in the field, and hopefully more just, equitable, and sustainable food systems in the future.

10. In recent years, food law and policy courses have been taught at the University of Ottawa Faculty of Law (in both the Common Law and French Civil Law programs), at McGill Faculty of Law, and at Western University Faculty of Law.

PUTTING DOWN ROOTS: ASSESSING NEW ENTRANT PROGRAMS FOR DAIRY AND BROILER FARMERS IN ONTARIO

Jacob Van Boekel[*]

CONTENTS

Abstract

Canadian farmers are aging. This paper argues that supply management, despite various existing new entrant programs, is a significant factor in the ongoing reduction of young people entering the agriculture industry. Rather than eliminate supply management, however, this paper offers a path for reform that would ensure more new entrant farmers while retaining supply management's supports for producers.

This paper begins with an examination of the economic and legal barriers to entry that are associated with supply management. It then compares and contrasts the new entrant programs of Ontario's dairy and broiler industries and outlines their limitations. The paper concludes by arguing that to further encourage new entry, policymakers should change and expand new entry programs to facilitate prospective farmers wishing to operate on leased lands, issue production quota that has fewer characteristics of absolute ownership, and expand new entrant programs to support entrants who implement alternative modes of production.

[*] Articling student, Nesbitt Coulter LLP. This article was initially submitted as a paper for Nadia Lambek's Food Law and Policy course with Western University's Faculty of Law. I would like to thank the anonymous reviewers for being so generous with their time and expertise in improving this paper. I would also like to especially thank Professor Lambek for her continued guidance inside and outside the classroom during my JD. Finally, thank you to the Bora Laskin Faculty of Law for hosting the 2023 Canadian Association for Food Law and Policy conference and to the *Lakehead Law Journal* for editing this special edition of the journal.

I INTRODUCTION

Canada's farmers are aging, and there is no clear path for the next generation to fill their boots. Some laws and policies designed to help current farmers can have adverse effects on those trying to enter the industry. One such policy is the supply management regime, also known as the quota system. Notwithstanding the critiques of supply management,[1] it is widely agreed by farmers and their organizations that supply management is generally a good policy that elevates and stabilizes farm incomes.[2] However, being a quota holder is a privilege that does not come cheap. In fact, the price of quota and farmland are often insurmountable financial barriers to entry for prospective farmers, effectively shutting them out of the industry altogether. Additionally, supply management systems can be inflexible in allowing alternative forms of production that fall outside the "conventional" modes of production. I will argue that for supply management to stop deterring new farmers, policies must change to allow for production on leased land, the leasing of quota to new entrants, and the expansion of programs that facilitate the entry of farmers who are implementing alternative modes of production.

This paper will focus on new entrant programs for two specific industries: dairy cattle and broiler chickens in Ontario. I will first outline the supply management regime and identify the structural and legal barriers new entrants face. I then consider whether supply management, on balance, is good for new entrants. Next, I will examine contemporary new entrant programs. I argue that these programs should permit and encourage land and quota leasing. There is a growing demand for organic, artisanal, and other alternative modes of production, and young farmers have demonstrated an interest in meeting these demands. I will therefore conclude with a survey of contemporary alternative production programs that appeal to new entrants and argue that the dairy industry should expand its programs using existing broiler programs as a model.

---

1. See e.g. Martha Findlay & Margarita Gres, "Supply Management: Problems, Politics and Possibilities" (2012) 5:19 School Public Pol'y 2 at 9, online (pdf): <https://www.policyschool.ca/wp-content/uploads/2016/03/supply-management-hall-findlay.pdf> [perma.cc/T3V4-AV9L] [Findley & Gres]; Robert Mysicka & Marty McKendry, "Beer, Butter, and Barristers: How Canadian Governments Put Cartels Before Consumers," Commentary No. 382 (2013) C.D. Howe Inst 1 at 11–13, online (pdf): <https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Commentary_382_0.pdf> [perma.cc/5PK5-4JWA] [Mysicka & McKendry]; Mark Milke, "Canada's Food Cartels versus Consumers" (2012) Fraser Forum 31 at 31 [Milke]; Jen Gerson, "The Dairy Lobby's Iron Grip on Canadian Political Leaders Is Frightening to Behold," *Maclean's* (30 August 2018) at 2, online: <https://macleans.ca/economy/the-dairy-lobbys-iron-grip-on-canadian-political-leaders-is-frightening-to-behold/> [perma.cc/J768-JTA9] [Gerson].

2. The Canadian Federation of Agriculture, The National Farmers Union and The Christian Farmers Federation of Ontario all publicly state their support for supply management in Ontario. See e.g. Canadian Federation of Agriculture "CFA Supports Bill C-282" (8 February 2023), online: <https://www.cfa-fca.ca/2023/02/08/cfa-supports-bill-c-282/> [perma.cc/5LX7-77KT]; National Farmers Union "NFU submission to Senate committee on Bill C-282" (11 October 2024), online: <https://www.nfu.ca/policy/national-farmers-union-submission-to-senate-foreign-affairs-and-international-trade-committee-regarding-bill-c-282-an-act-to-amend-the-department-of-foreign-affairs-trade-and-development-act-supply/> [perma.cc/4MZJ-EYYD]; Christian Farmers Federation of Ontario "Bill Christian Farmers Federation of Ontario, "Bill C-282 Supply Management." (18 July 2023), online: <https://www.christianfarmers.org/issues/letters-submissions/bill-c-282-supply-management> [perma.cc/MZ8M-XEMR].

II INTRODUCTION TO THE SUPPLY MANAGEMENT REGIME

This paper will focus on only the Ontario dairy cattle and broiler chicken supply management boards. This is because they represent the largest supply-managed industries, measured by the number of farms, and there are sufficient differences between their respective supply management regimes for academic study. The Dairy Farmers of Ontario (DFO) and Chicken Farmers of Ontario (CFO) are the regulators of their respective industries and are given authority by their respective enabling legislation.[3]

Supply management was born out of the related issues of low farmer incomes, diminished market power, and severe market fluctuations. These interrelated problems led specific industries within Canadian agriculture to push for a legal regime to control output.[4] This resulted in the federal and provincial governments cooperating to form supply management systems for dairy cattle, broiler chickens, turkeys, eggs for human consumption, and eggs for hatching during the 1970s.[5] Each particular commodity has unique regulatory governing bodies that set their own policies. Supply management concerns a range of factors related to agricultural production, including local production and interprovincial and international trade, that necessitates shared powers between the federal and provincial governments.

It is critical to understand the general operation of the supply management system before considering specific new entrant policies. Contemporary writers in academia, news and politics, and supply management organizations themselves often describe supply management as consisting of three pillars: (1) control of domestic production, (2) control of market price, and (3) control of imports.[6] Domestic production is regulated by allocating farmers a production quota that they must meet and cannot exceed. This keeps the supply to processors constant. The allocations are determined by national and provincial market demand.[7] The farmgate market price of the commodities is controlled by the supply management board, which sets a minimum price that farmers receive from processors. This price minimum is based off the cost of production as assessed by provincial and federal government agencies in conversation

---

3. *Milk Act*, RSO 1990, c M.12; *Fees—Administration & Enforcement of Delegated Legislation,* O Reg 143/98, s 2(1); *Farm Products Marketing Act*, RSO 1990, c F.9; *Chickens—Plan*, RRO 1990, Reg 403, ss 4–6.

4. Bruce Muirhead & Hugh Campbell, "The Worlds of Dairy: Comparing Dairy Frameworks in Canada and New Zealand in Light of Future Shocks to Food Systems" in Reidar Almas & Hugh Campbell, eds, *Rethinking Agricultural Policy Regimes: Food Security, Climate Change and the Future Resilience of Global Agriculture*, vol 18 (Leeds: Emerald Group Publishing Limited, 2012) 147 at 149–53, DOI:<10.1108/S1057-1922(2012)0000018009> [Muirhead & Campbell].

5. Robert Fuller, Donald E Buckingham & Robert Scriven, *Agriculture Law in Canada*, 2nd ed (Toronto: LexisNexis Canada, 2019) at 178–87 [Fuller et al]; Andrew Schmitz, "Canadian Agricultural Programs and Policy in Transition" (2008) 56:4 Can J of Agric Econ 371 at 371, DOI: <10.1111/j.1744-7976.2008.00136.x> [Schmitz].

6. See Alan McIsaac, "The Case for Supply Management" (2008) 31:3 Can Parliamentary Rev 18 at 18, online (pdf): <www.revparl.ca/31/3/31n3_08e_McIsaac.pdf> [perma.cc/SDE5-HF7G] [McIsaac].

7. Schmitz, *supra* note 5 at 382.

with farmers and processors.[8] Finally, imports are restricted to prevent foreign products from undercutting the minimum price established for Canadian producers.[9]

Domestic production can be controlled by either national or provincial bodies. Dairy production is principally governed at the national level with the Canadian Dairy Commission through the Canadian Milk Supply Management Committee, which determines the total demand for dairy products and the fair price to be received by farmers. Members of the Canadian Dairy Commission are appointed by the federal Minister of Agriculture. The provincial share of production is then allocated to provincial bodies such as the DFO for administration.[10] The provincial agencies generally have more control over fluid milk, while milk for further processing is more strictly controlled at the national level.[11] The regulatory framework of broiler chicken production is representative of each supply-managed commodity except dairy cattle. These commodities are principally controlled by the various provincial bodies, such as the CFO, which determine provincial consumption and negotiate prices with Ontario producers.[12] The members who sit on the CFO board are elected by quota holders. The various provincial broiler boards then cooperate on extra-provincial issues such as trade through the national Chicken Farmers of Canada, which is again composed of elected members.[13] The Farm Products Council of Canada oversees this body and the other non-dairy national bodies.[14]

The supply management system controls domestic production by only permitting farmers who hold a quota allocation to produce for the market. In the dairy context, dairy farmers cannot ship any milk without first holding quota.[15] DFO operates a quota exchange to allow farmers to increase their quota holdings via public tender. When a dairy farmer privately sells quota to a buyer, a portion of the quota is not sold to the purchaser but is instead levied by DFO and placed on the quota exchange for any dairy farmer to purchase. The DFO exchange is not an open marketplace. Instead buyers in the DFO exchange purchase their quota through DFO directly by submitting tenders. The price of a quota allocation on the DFO exchange is capped well below the market rate, and farmers often bid the maximum price. When the demand for quota on the exchange exceeds the available supply, the amount of quota on the exchange is equally distributed to all tenderers. This leaves the net amount of provincial production unchanged. In practice, there is normally excess demand compared to supply, and dairy farmers regularly receive only 0.1 units of additional quota per month, or approximately

---

8. See Canadian Dairy Commission, "Process for the Annual Cost of Production Survey and Pricing Milk at the Farm Level," online (pdf): <www.cdc-ccl.ca/sites/default/files/2022-10/CoP%20Process%202022-10-13%20%28FINAL%29.pdf> [perma.cc/F73M-MNRL], which governs the farmgate price of milk and is illustrative of other supply managed industries.

9. Schmitz, *supra* note 5 at 372.

10. Halsbury's Laws of Canada (online), *Agriculture*, "Marketing Agricultural Products: Canadian Regulatory Framework: Agricultural Product Marketing Schemes" (V.3(3)) at HAG-188, "Supply Management" (2022 Reissue) [Halsbury's Laws of Canada].

11. Fuller et al, *supra* note 5 at 181–84.

12. *Ibid* at 180, 184, 186.

13. *Ibid* at 180, 186.

14. *Farm Products Agencies Act*, RSC 1985, c F-4, ss 6(1)(a)–(c), 6(2).

15. Dairy Farmers of Ontario, *Quota and Milk Transportation Policies* (Ontario: Dairy Farmers of Ontario, 2010) at part 1, s A 1(g), online (pdf): <https://new.milk.org/wp-content/uploads/2023/11/Quota-Policy-Book-2023_May_12r.pdf> [perma.cc/TK8U-KGX9] [DFO, *Quota Policies*].

one-tenth of a cow's worth of production.[16] This process effectively excludes new entrants, since DFO requires all farmers to hold a minimum of ten units.[17]

But for new entrant programs, the only option for a prospective dairy farmer would be to purchase an ongoing dairy farm. Purchasing quota directly from existing farmers often comes with severe competition from other existing farmers wanting to grow their operations beyond the 0.1 units per month, resulting in price pressures well beyond the capped price found on the exchange. To be competitive, purchasers get around the price cap by offering a premium on the value of the land the quota is tied to. In practice, this means a new entrant dairy farmer cannot purchase quota at the maximum exchange price of $24,000 per unit, but instead must compete with others on the open market.[18]

There is no published data on the premium paid for private quota sales in Ontario. In the open Alberta market, quota presently sells for approximately $50,000 per unit, which is over double the DFO exchange's maximum.[19] This value is likely a reasonable estimate of the true price of Ontario quota outside of the exchange. Additionally, the requisite ten units of quota would only let a farmer have about nine or ten head of cattle in production, but a more reasonable minimal estimate for business purposes is forty units.[20] As a result, a new dairy farmer in Ontario would expect to pay a minimum of $2,000,000 for quota alone to begin a conventional dairy farm.

The story is similar, but not identical, in the context of broilers. Here, farmers may not produce more than 300 chickens without holding quota.[21] Even at the highest farmgate minimum live price of $2.182 per kilogram for a 1 kilogram chicken, farmers are only expected to have a margin of $0.63 per kilogram of live chicken, which means producing 300 chickens is too little to earn a livelihood.[22] Therefore, aside from specified new entrant programs, those wanting to enter the chicken industry or expand their current operations must purchase new quota.

Chicken farmers can choose to purchase quota on an open exchange that is facilitated by CFO, where farmers are private buyers and sellers within the province. This is in contrast to the tender system used by DFO. Another different feature is that the price of quota in the CFO

---

16. Alex Cairns & Karl Meike, "Price Ceilings on Milk Production Quota Values: Future or Folly?" (2012) 60:1 Can J Agric Econ 93 at 108, n 22, DOI: <10.1111/j.1744-7976.2011.01233.x>.

17. DFO, *Quota Policies*, *supra* note 15 at part 1, s A 8(a).

18. *Ibid* at part 1, s D 1(i).

19. See e.g. Agriculture Canada, "Monthly Trade of Milk Quota by Province" (last modified 16 October 2024), online: <www.agriculture.canada.ca/en/sector/animal-industry/canadian-dairy-information-centre/statistics-market-information/farm-statistics/monthly-exchange-quota> [perma.cc/EKM3-4PDV].

20. Forty units is the minimum number of units that can be held for a new entrant under the New Entrant Quota Assistance Program, *infra* note 58 at 11–12.

21. Chicken Farmers of Ontario, "General Regulation No 2650-2021" (2021), s 2.02, online (pdf): <www.ontariochicken.ca/en/regulations/general-regulation/> [perma.cc/X9CL-4WPX].

22. Chicken Farmers of Ontario, "Historical Farm-Gate Minimum Live Prices by Weight Category—2022" (last accessed 3 December 2024), online: www.ontariochicken.ca/en/farmer-dashboard/resources/fgmlp-2a8cbc5236b77a7c28ad664851ca79ba/historical-farm-gate-minimum-live-prices/historical-farm-gate-minimum-live-prices-by-weight-category-–-2022/ [perma.cc/E4G8-KQEV]; Chicken Farmers of Ontario, "Historical Farm-Gate Minimum Live Prices" (last accessed 3 December 2024), online: www.ontariochicken.ca/en/farmer-dashboard/resources/fgmlp/historical-farm-gate-minimum-live-prices/ [perma.cc/659B-QNSM].

exchange is determined by the market; CFO is not directly involved. The buyer can produce the volume of chicken the seller is no longer able to produce, leaving the net production in the province unchanged.[23] Chicken farmers can also purchase an ongoing farming operation and effectively step into the shoes of the seller, again leaving the net provincial output unchanged.

The broiler supply management system requires farmers to maintain a minimum holding of quota. CFO requires all chicken farmers to have a minimum of 14,000 units.[24] The going rate of chicken quota in February 2023 was approximately $200 per unit, although this information is not made publicly available by CFO. Therefore, a young farmer looking to enter the broiler chicken industry would have to make a one-time, upfront payment of approximately $2,800,000 to purchase quota and acquire the right to sell chicken to the market.

These costs of acquiring quota ($2,800,000 for broiler farmers and $2,000,000 for dairy farmers) are in addition to other inputs, such as farmland. The average Ontario farm was valued at $17,143 per acre in 2022, but this amount increases over threefold for farms with above-average soil quality or those located near major urban centres.[25] If a prospective farmer wants to buy a reasonable 100 acres to start their chicken or dairy operation, they will thus need access to at least $3 or $4 million before constructing a barn, buying equipment, and paying other associated costs.[26]

III SHOULD ONTARIO HAVE SUPPLY MANAGEMENT AT ALL?

Supply management has been under fire from critics who argue that the entire system should be abolished. The arguments raised by these critics range from broad policy concerns facing the entire industry and all Canadian consumers to specific concerns for new entrants. Some of the most significant arguments raised by critics of the system point out that supply management is a legally imposed, court-backed cartel that controls the output of food, which artificially creates shortages and inflates prices for consumers.[27] This means that in the aggregate, Canadian consumers likely pay more for supply-managed products than they otherwise would, which especially harms lower-income consumers.[28] However, proponents of supply management are often quick to respond that Canadian supply-managed farmers do not

---

23. Chicken Farmers of Ontario, "Supply Management & History" (last accessed 02 December 2024), online: <www.ontariochicken.ca/en/supply-management-history-fba57fae60e995fa7fcc4d8e263f4475/> [perma.cc/HF4T-22HY].

24. Chicken Farmers of Ontario, "Quota Policy No 261-2022, Regulation" (2022), ss 8.04–8.06, online (pdf): <www.ontariochicken.ca/CFO/media/Assets/Regulation_Policy%20PDFs/261-2022-Quota-Policy.pdf?ext=.pdf> [perma.cc/6LMJ-DGA4] [CFO Quota Policy].

25. Statistics Canada, "Value per Acre of Farm Land and Buildings at July," Table 32-10-0047-01 (29 May 2024), DOI: <10.25318/3210004701-eng>.

26. Christie Young & Melissa Watkins, "New Farmers and Alternative Markets Within the Supply-Managed System" (2010) at 57, 61, online (pdf): <https://metcalffoundation.com/wp-content/uploads/2011/05/new-farmers-and-alternative-markets.pdf> [perma.cc/3BTD-KF8C] [Young & Watkins].

27. Findlay & Gres, *supra* note 1.

28. Mysicka & McKendry, *supra* note 1.

receive millions of dollars in subsidies and bailouts given to farmers in non-supply-managed systems such as the United States.[29]

To focus more pointedly on new entrants, those seeking to dismantle supply management argue that as a barrier to entry, supply management stifles competition and innovation, which means that innovators and new entrants are disincentivized from producing.[30] They argue that the favouritism displayed by politicians protects those already in the industry compared to those who are not.[31] On the face of this argument, it would appear that completely tearing down this legal barrier to entry would only serve to help new entrants, since they would only have to worry about natural barriers to entry such as high land prices. However, upon further study the best path forward for new entrants is still through supply management.

Quota and land prices are undoubtedly two major hurdles for those wanting to enter the chicken or dairy industries.[32] Prospective farmers, especially young people, have voiced their concern about the gatekeeping that results from these prohibitive costs to enter supply-managed industries. In Ontario, the National Farmers Union has pushed for changes to the supply management system to make it easier for new entrants.[33] Similarly in Quebec, Union Paysanne has called for reforms to supply management for young farmers, especially those looking to produce through non-conventional means.[34] More specifically, these groups seek policy reform that would decapitalize quota for the next generation of farmers, allow quota-exempt direct marketing, and have a generally more equitable redistribution of quota from retiring farmers to new entrants, among other reforms.

These arguments are well premised in the idea that Ontario ought to maintain some system of supply management to maintain the viability of farms. However, decapitalizing quota would likely cause serious issues since there has already been a great deal of investment in quota allocations as valuable property. For example, farmers may use their quota as security for other loans or intend on selling their quota to fund their retirement. Decapitalization would also create unfairness for those who have borrowed heavily to purchase quota and will have nothing to show for it upon its legally imposed devaluation.[35]

A 2018 academic study focusing exclusively on young farmers and prospective farmers, the first of its kind in Canada, asked respondents to rank what they perceived as their biggest

---

29. McIsaac, *supra* note 6.

30. Milke, *supra* note 1.

31. Gerson, *supra* note 1.

32. Attaining knowledge and skills is also a significant issue for new farmer entrants, but this issue is beyond the scope of this paper. For an introduction, see Michael Ekers et al, "Will Work for Food: Agricultural Interns, Apprentices, Volunteers and the Agrarian Question" (2016) 33:3 Agric & Hum Values 705 [Ekers et al].

33. Cathy Holtslander, "Strengthening Supply Management: Defending Canadian Control of our Market Space and Advancing Food Sovereignty," Discussion Paper (Saskatoon: National Farmers Union, 2016) at 6, online (pdf): <www.nfu.ca/wp-content/uploads/2019/10/Strengthening-Supply-Management.pdf> [perma.cc/Z4G8-AUXK] [Holtslander].

34. Benoit Girouard, "Towards Supply Management 2.0 in Canada," Discussion Paper (Quebec: Union Paysanne, 2014) at 2, online (pdf): <archives.unionpaysanne.com/publications/Toward-Supply-Management-2-0-in-Canada.pdf> [perma.cc/7YSN-D9MA].

35. Halsbury's Laws of Canada, *supra* note 10 at HAG-89 "Price Pooling Program"; Fuller et al, *supra* note 5 at 181.

barriers to entry and what they believed to be the most successful agricultural programs.[36] Survey respondents overwhelmingly indicated that their largest obstacles were land prices and an inability to access enough capital to pay for other start-up costs, such as quota.[37] Respondents identified supply management as their least favourite program.[38] These hurdles have kept young people from being able to start their own farms and are undoubtedly a major reason the average Canadian farmer is 55 years of age.[39]

The most convincing reason that supply management helps young farmers is farmer retention. Approximately one-half of new farms in Canada do not remain in business for more than five years.[40] This is a significant yet often overlooked reality of farming in Canada. Given this rate of entry and quick exit, conversations about new entrants must also consider the viability of a new farm operation. It is significant that the trend of entry and quick exit does not hold true for supply-managed industries. For example, new dairy farmers in Canada only have a 2 per cent chance of exiting in the first five years of business.[41] This means that once a new entrant in a supply-managed industry is able to break down the barriers of entry and hold quota, they are much more secure than their non-supply-managed peers. Improving farmer retention has significant benefits for individuals beyond new farmers, such as by improving the sustainability of rural communities and fostering economic growth.

It should be noted that the failure rate of supply-managed and non-supply-managed farms may not be perfectly comparable. The excessive costs of being a new entrant in a supply-managed industry means that those farms are more likely to be larger and more capital intensive and therefore are statistically less likely to fail.[42] In addition, prospective farm businesses under the supply management regime benefit from lenders appreciating the income stability and farmgate price minimums enabled by supply management and therefore being more likely to advance funds to a supply-managed farmer.[43] Further, lenders will assess the viability of a farm business when a new entrant approaches them for financing to purchase quota, and for those farmers who are able to use new entrant programs, quota boards only select applicants who can present an adequate business plan.[44] This means that only new entrants with demonstrably viable business plans will be able to enter the industry. While new entrants in non-supply-managed industries undoubtably face similar pressures from lenders and other third parties, all of the variables between supply-managed and non-supply-managed new entrants have yet to be studied. Given the vast difference in failure rates between supply-

---

36. Julia LaForge et al, "New Farmers and Food Policies in Canada" (2018) 5:3 Can Food Stud 128 at 128, DOI: <10.15353/cfs-rcea.v5i3.288> [LaForge et al].

37. *Ibid* at 131.

38. *Ibid* at 137.

39. Hongyu Chen et al, "Dynamics of Farm Entry and Exit in Canada" (2022) 51 Agric & Resource Econ Rev 86 at 86, DOI: <10.1017/age.2021.22> [Chen et al].

40. *Ibid* at 87–90.

41. *Ibid* at 96.

42. *Ibid* at 97.

43. Halsbury's Laws of Canada, "Marketing Agricultural Products," *supra* note 10 at HAG-89, "Price Pooling Program"; Fuller et al, *supra* note 5 at 181.

44. Chicken Farmers of Ontario, "New Entrant Chicken Farmer Policy No 267-2024, Regulation" (2024), s 6.02, online: <www.ontariochicken.ca/en/policies/new-chicken-farmers-entrant-policy/> [perma.cc/SH7N-BSRK]; DFO, *Quota Policies*, *supra* note 15 at part 1, s F 14–19.

managed and non-supply-managed new entrants, this topic is certainly worthy of consideration and further research.

The benefits of supply management are advocated by farmer organizations. The National Farmers Union, despite being more likely to represent younger and smaller farmers who are the most affected by both the legal and natural barriers to entry, calls for supply management to remain in place, albeit with certain reforms.[45] The National Farmers Union argues that the three pillars of supply management (production, price, and import restrictions) are necessary to keep farmer income stable and sufficient to remain in business. These stable and sufficient incomes are likely important drivers in keeping new entrant farmers in business where their non-supply-managed peers will be more likely to fail. Supply management can also help new farmers plan their business around the fixed prices they will receive for their products.

Many international farmers who are not in a supply management system also recognize the benefits of supply management and call for the implementation of similar policies in their own jurisdictions. The most relevant comparison is the United States, where the deregulated market has become infamous for production gluts and export dumping, meaning farmers must be heavily subsidized to remain in business while exporting their products for below the cost of production.[46] The deregulated American market is now also facing high levels of concentration that exclude new entrants.[47] Certain farm groups, such as the Wisconsin Farmers Union's Dairy Together or the Disparity to Parity food movement, seek the implementation of a program based on Canadian supply management (which they call "growth management") with important reforms, such as easier access for new entrants.[48] Other jurisdictions that are now feeling the effects of withdrawing from a system of supply management similarly have seen new entrants barred from agriculture because of rapid concentration.[49] This is another reason why new entrants would be better off with a properly regulated system.

Supply management thus has a vital role to play in keeping Canadian farms—especially newly established and smaller farms—in business. This paper has also shown that farmers in both Canada and abroad desire supply management. Supply management should therefore not be eliminated in its entirety, but policy changes clearly need to be made to help new entrants get into the industry to benefit from the economic security of holding quota.

---

45. Holtslander, *supra* note 33; National Farmers Union, "Supply Management" (last accessed 19 November 2024), online: <www.nfu.ca/campaigns/supply-management/> [perma.cc/QK8E-48FF].

46. See Food & Water Watch, "The Economic Cost of Food Monopolies: The Dirty Dairy Racket" (January 2023), online (pdf): <www.foodandwaterwatch.org/wp-content/uploads/2023/01/RPT2_2301_EconomicCostofDairy-WEB.pdf> [perma.cc/P6KQ-CTNJ] [Food & Water Watch].

47. *Ibid* at 5–6.

48. Karen Hansen-Kuhn, "Reshaping Supply Management in the US: Looking North and South for Inspiration" (26 April 2021) online: <www.iatp.org/reshaping-supply-management-us> [https://perma.cc/8M4G-KL64]; Food & Water Watch, *supra* note 46 at 19.

49. Muirhead & Campbell, *supra* note 4 at 161.

IV CONTEMPORARY NEW ENTRANT PROGRAMS: DAIRY

Most Canadian supply management boards, including DFO and CFO, have recognized that the legal structure of the quota system has made it difficult for new entrants. Thus, both DFO and CFO have implemented new entrant programs to support those interested in starting a dairy or chicken farm in Ontario. This paper will outline and assess the current approaches DFO and CFO have taken for conventional new entrants.

DFO has two different programs aimed at helping new entrants begin conventional dairy production. The New Producer Program (NPP) gives new entrants an opportunity to purchase quota on the exchange without competing with established dairy farms.[50] As described above, the small amount of dairy quota available on the exchange is equally distributed each month to all those who tender bids, so new entrants cannot attain the requisite minimum quota holding.[51] From its inception in 2009 until June 1, 2021, new entrants under the NPP were assigned a month where they would have priority to purchase between 10 and 35 units of quota on the exchange, thus giving new entrants a path to production outside of buying out an existing farm.[52] DFO would assign each successful applicant their own month in a long queue. This program helped new entrants by partially reducing their upfront quota costs. It did not, however, help farmers in acquiring the land they need to raise their livestock.

The NPP had serious flaws. New entrants were required to purchase all their quota, upfront, at DFO's capped price. This is a major hurdle since it would cost a new entrant between $240,000 and $840,000, depending on herd size.[53] New entrants had to have their own farm, either owned or rented, within six months of purchasing their quota, thus adding a further cost to new entrants who did not already own their own farm, a barn with equipment, and cattle.[54] As a result, those who could not access enough capital for market rate quota and land could not use this program at all.

Further, new entrants were restricted because there was not enough quota available on the exchange each month for a new entrant to purchase the minimum amount of quota, even with their priority status.[55] Although DFO has not published this information, farmers have reported being in the queue for decades before reaching the month they are assigned to buy quota.[56] The NPP has now stopped taking applications but will continue to operate for those already accepted into the program. DFO has accounted for the issue of the lack of supply on the quota exchange. Beginning in January 2024, instead of giving a new entrant priority status

---

50. DFO, *Quota Policies*, *supra* note 15 at part 1, s G 1- G 2.

51. Fuller et al, *supra* note 5 at 178–87; Schmitz, *supra* note 5 at 371.

52. DFO, *Quota Policies*, *supra* note 15 at part 1, s G 1(s), G 2(a).

53. See discussion in Section II of this paper.

54. DFO, *Quota Policies*, *supra* note 15 at part 1, s G 1(x).

55. *Ibid* at part 1, s G 1(u)–(w).

56. Frances Anderson, "New Entrant Program Is Open through October: The NEQAP Program Has Helped Give a Start to 88 Producers over the Past Decade," *Ontario Farmer* (18 August 2020) A8, online: <www.proquest.com/docview/2435082556?parentSessionId=wQHQVZpXatKtRl19M6P7t4SB3GBCdM9lsBxEj5Z18q0%3D&pq-origsite=primo&accountid=15115> [perma.cc/5YBH-VMHQ] [Anderson, "New Entrant Program"].

every month, there will be a single new entrant with priority status for a four-month period.[57] This makes it more likely a new entrant will have access to sufficient quota on the exchange for their priority period. This policy change has decreased the number of new entrants who could benefit from the NPP each year from twelve down to four. There does not appear to be any relief in sight for new entrants on the NPP waiting list who do not expect to be farming for decades.

The shuttering of NPP applications has left DFO with only one program that presently accepts applications for new entrants to begin dairy farming in Ontario. The New Entrant Quota Assistance Program (NEQAP) operates to help new entrants acquire quota without the same upfront costs of purchasing an ongoing dairy farm or the full value of quota on the exchange as is the case under the NPP.[58] Those accepted to NEQAP must purchase between twenty and thirty quota units, and DFO will then grant the new entrant an additional twenty units.[59] The new entrant is given the same priority on the exchange as was outlined in the NPP.[60] The NEQAP new entrant can use the purchased and granted quota for ten years before DFO begins to take back the granted quota at a rate of 0.1 units per month.[61] New entrants will then have to purchase replacement quota to make use of the cows, barn, and equipment they acquired to ship milk using the initial granted quota. Part of the application requires applicants to indicate where they intend to operate their farm. While the applicant does not need to own the farm or have secured a lease at the time of making the application, the applicant does need to have either a beneficial freehold or leasehold interest in the land they will milk on.[62] Therefore, new entrants must either already own or be in a position to purchase a new farm, or have the expected cash flow to afford a lease on a farm when they submit an application, and they must be able to prove their financial viability to the panel who selects new entrants into the NEQAP.

V CONTEMPORARY NEW ENTRANT PROGRAMS: BROILERS

CFO operates a program that is substantially similar to NEQAP. The New Chicken Farmers Entrant Policy (NCFEP) is designed to help new farmers enter the industry with the help of CFO.[63] Those accepted under the NCFEP must purchase a minimum of 4,000 units of quota, and CFO will then grant 10,000 units on a temporary basis.[64] The temporarily granted quota is then taken back at a rate of 30 per cent on year five, another 30 per cent on year ten,

---

57. Dairy Farmers of Ontario, "Annual Report 2022" at 15, online (pdf): <https://new.milk.org/wp-content/uploads/2023/11/2022-Dairy-Farmers-of-Ontario-Annual-Report.pdf> [perma.cc/J462-ENU9].

58. Dairy Farmers of Ontario, "New Entrant Quota Assistance Program" (28 November 2023), online: <https://new.milk.org> [perma.cc/W7HT-M48S].

59. DFO, *Quota Policies*, *supra* note 15 at part 1, s F 23, 25.

60. *Ibid* at part 1, s F 20.

61. *Ibid* at part 1, s F 31.

62. *Ibid* at part 1, ss A 1(c), B 8(a)-(c), C 5.1 - 5.2.

63. CFO, NCFEP, *supra* note 44, ss 1.01, 2.03(a), 3.01(a), 3.01(c).

64. *Ibid*, s 6.01(c).

and the final 40 per cent on year fifteen.[65] The new entrant must purchase replacement quota to keep themselves at the 14,000-unit limit.[66] It is noteworthy that a successful applicant must be the beneficial owner of a farm suitable for chicken production.[67] No chicken farmer, new entrant or otherwise, may produce on rented lands or facilities.[68]

The dairy NEQAP and broiler NCFEP are currently the best options for prospective new entrant farmers who want to pursue conventional modes of production in their respective industries. NEQAP has helped new entrants shrink their upfront cost of acquiring quota by 40 to 50 per cent when compared to a new entrant under the NPP and helps reduce costs even more for new dairy entrants without any DFO help. The NCFEP has reduced the upfront quota cost to a new broiler entrant by 70 per cent when compared to a new entrant who purchases their own quota in full. These are undoubtedly positive steps for new entrants in Ontario, but new entrants still face challenges.

VI PROPOSED REFORMS FOR CONVENTIONAL PRODUCTION

It is clear that change is needed within Ontario's supply management regime to encourage entry into the various supply-managed industries. One such change would be to encourage the leasing of farmland where farmers raise their supply-managed livestock. As noted previously, CFO requires farmers to be the beneficial owner of the lands they raise their chickens on, and new entrant dairy farmers must disclose their potential landlord, if applicable, during a NEQAP or NPP application.[69] Each program offered by DFO and CFO prefers land ownership. Even with the price of quota aside, simply owning farmland in Ontario is an expensive endeavour, especially for young farmers and those who do not come from a farming background and can typically rely on assistance from older generations.[70] Accommodating tenant farmers would allow more potential new entrants to enter the industry.

Allowing broiler and dairy farmers to produce on rented land would provide other benefits to new entrants. By working on rented lands, all farmers, including those in supply-managed commodities, reduce their overall debt load during the critical (and inherently risky) first years. Agricultural economists Laurie Baker and Paul Thomassin studied long-term leasing of farmland and showed that farms operating on leased lands could be more financially viable than those purchased using mortgages.[71] Baker and Thomassin found that the younger the farm business was and the less help it received from older generations of farmers, the more favourable leasing was for the farm business.[72] Their study also noted that some new entrants

---

65. *Ibid*, ss 9.02 (a)–(c).

66. *Ibid*, s 6.01(d).

67. *Ibid*, s 6.01(b).

68. CFO Quota Policy, *supra* note 24, ss 4.07, 6.0.

69. DFO, *Quota Policies*, *supra* note 15 at part 1, ss A1(c), B8, C5.1–5.2; CFO Quota Policy, *supra* note 24, ss 4.07, 6.01.

70. LaForge et al, *supra* note 36 at 134–135.

71. Laurie Baker & Paul Thomassin, "Financing New Farm Entrants: The Long-Term Leasing Option" (1991) 39:2 Can J Agric Econ 255, DOI: <10.1111/j.1744-7976.1991.tb03571.x>.

72. *Ibid* at 258–259, 262.

would only survive a farm debt crisis like Canada experienced in the 1980s by choosing to lease rather than buy their farms.[73] It is important to note that other capital-intensive industries outside of a supply management regime, including other types of farming, can serve as successful examples of businesses operating on leased lands.

Representatives of certain quota boards have spoken publicly about the fact that new entrant programs are designed to avoid leasing.[74] One argument against leasing is the decreased predictability of production, a key component of supply management. This is possible because holding quota not only gives a farmer the right to produce, but it also comes with a concurrent *obligation* to produce or face a fine. There could be cause for concern if a farmer loses their leasehold interest in a property and is unable to continue production. However, this argument can be mitigated since these board representatives have already noted the substantial number of suitable empty barns across the province that could be used for production.[75] There is also an existing system of short-term foster farms that can raise chickens on behalf of a farmer who is unable to do so, thus demonstrating CFO's ability to show some flexibility in production when necessary.[76] This practice could be leveraged to ensure production levels remain constant despite frictional interruptions to production. Additionally, Canada's supply management regime has not been immune to the globalization of the food system, with the recent Canada-United States-Mexico-Agreement deal allowing increased imports of US dairy products. Also, Canada does engage in a lower amount of dairy exports.[77] Each of these aspects could be coordinated to account for a risk to short-term unpredictability of supply that would have long-term benefits to new entrants.

The DFO quota exchange consistently shows that demand for quota exceeds supply.[78] The inflated prices of broiler quota also suggest that there is ample demand for quota in the market. Therefore, it is probable that if a particular farmer cannot secure a lease renewal and must sell their quota, another farmer elsewhere in the province will be willing to quickly buy their quota and keep the supply relatively constant with minimal lag time. Additionally, the quota boards have to constantly monitor provincial supply and demand and accordingly adjust quota allotments. Finally, it should be remembered that new entrant farms are generally smaller. This works to further decrease the chances of a material impact on the provincial supply resulting from a farmer failing to secure a lease. The Ontario supply management system is demonstrably accustomed to some risks of supply and is well equipped to deal with the short-term risks that may accompany land leasing.

Supply management boards should accept land leasing as a viable option for farmers. Leasing should not be seen as something less than land ownership. The best characterization of the substantial equivalency between the two is to consider the property rights that are attached

---

73. *Ibid* at 256, 262.

74. Frances Anderson, "DFO Tries Again to Formulate Plan to Encourage New Dairy Entrants; There Are Several Other Provincial Models on Which to Base the Ontario Program," *Ontario Farmer* (15 May 2007) at 1–2. [Anderson, "DFO Tries Again"].

75. *Ibid*.

76. CFO Quota Policy, *supra* note 24, s 7.

77. Ljiljana Biukovic, "The First Challenge to Canada's Supply Management System under CUSMA: Tweaking the Supply Management System One Dispute at a Time" (November 2022) Can YB Int'l L 59 at 341–364, DOI: <10.1017/cyl.2022.16>; Food & Water Watch *supra*, note 46 at 18.

78. Refer to the discussion in Section II of this article.

to the owner compared to the lessee of farmland. Farmers who rent their land can contract to being entitled to the full benefit and use of the land for a given term. This can include rights of occupancy, the security of tenure for the occupant, and the ability to control and benefit from the use or improvement of the land. Outside of DFO and CFO regulations and preferences, there would be no legal barrier for a farmer to undertake a dairy or broiler operation on rented land that the same farmer would not face on land they purchased. CFO has already begun to allow some production on rented lands with the temporary allowance in the Specialty Breeds Program.[79] CFO could use this as a basis for expanding chicken production on rented lands. It is commonplace for businesses in other industries to lease rather than own their place of business where they are still able to successfully deliver consistent goods and services to their customers. Dairy and broiler farmers should also have this option.

A second improvement that should be made to the supply management regime is the leasing of quota for new entrants. The present approach as seen by NEQAP and NCFEP require new entrants to buy a significant amount of quota upfront and then pay for the rest later. This poses similar problems as farmland ownership in terms of being a major financial hurdle. Instead, supply management boards should offer an option for new entrants to rent quota so they can benefit from the cash flow of the farm business without the impediment to entry of upfront costs or the risks associated with high debt loads.

CFO does not have to look far for inspiration on quota leasing. The Artisanal Chicken Program grants farmers a licence to produce for a single year with a licencing fee for each chicken they produce rather than quota.[80] This system is a possible model for production by new entrants. Although only a single year before renewal is likely too short for ideal business planning, it is a CFO requirement for smaller markets such as the Artisanal Chicken Program.[81] The Egg Farmers of Ontario also have a program of leasing quota to producers that is ancillary to regular quota ownership.[82] Egg producers are sometimes able to rent quota from the quota board to account for short-term demand increases or to accommodate larger-than-expected flocks.[83] This program was amended by the Egg Farmers of Ontario to better suit the needs of new entrants, who would benefit from decreased start-up costs that come with quota leasing. If conventional farmers or farmers in alternative production programs could lease quota for several years at a time, they would be able to enjoy all the benefits of quota ownership without the upfront costs. This would allow the farms to have positive cash flow earlier in their operations and possibly save for future purchases of quota or farmland.

The British Columbia dairy supply management board tried to reduce the burden on new entrants by granting farmers free quota and not having it be taken back by the supply management board, as is the case for NEQAP and NCFEP. However, this policy drastically

---

79. See full discussion in Section VII of this article.

80. Chicken Farmers of Ontario, "Artisanal Chicken Policy Regulation No 268-2024" (2024), s 8.03, online (pdf): <www.ontariochicken.ca/en/policies/artisanal-chicken-policy/> [perma.cc/8ZEY-DW6U] [CFO "Artisanal Chicken Policy"].

81. *Ibid*, s 5.01(f).

82. Egg Farmers of Ontario, "Layer Leasing Program (LLP)" (2023), online (pdf): <https://www.getcracking.ca> [perma.cc/FE9X-VRCY].

83. Egg Farmers of Ontario, "Special Layer Lease Policy" (2020) at 1, online (pdf): <https://www.getcracking.ca> [perma.cc/QBJ4-J9PK].

failed, as new entrants were selling their farms and the granted quota as a windfall.[84] This program did not result in the creation of many new farms. Quota leasing has an advantage over the granting system because a quota board, such as the DFO, could put restrictions on the assignment of quota leases to other farmers without the approval of the quota board. This would prevent the farmer from selling the quota as their own or being able to transfer a right to produce for a limited time under a lease or licence agreement. This would achieve the goals of facilitating new entry without the associated risk of quota earmarked for new entrants being transferred to established farmers.

Allowing new entrants to lease quota would eliminate the associated need to finance the upfront purchase of quota. The courts have been unclear about the proprietary rights associated with agricultural production quotas, which has led to a complex system of directions and agreements between farmers, lenders, and supply management boards to give effect to quota as security for loans.[85] Allowing new entrants to lease their quota and the resulting decapitalization of this asset would eliminate the need for new entrants to borrow the upfront cost of the quota and therefore avoid the risk and complications arising from secured lending for purchasing quota all the while benefiting new entrants.

Establishing a program of leasing quota would have the potential to introduce instability to the production of supply-managed commodities. On the one hand, the ability to pay rent is likely less of a risk than an inability to make mortgage payments under the existing system. However, on the other hand, if farmers do not have an ownership interest in their quota, they would be more likely to stop producing with little or no notice to the supply management board. This issue could be mitigated by adequate conditions being placed on the quota lease by the board, such as defined terms and requisite notice periods. Otherwise, the same factors that would allow for the market as a whole to be responsive to changes in production levels (as discussed above in the context of land rent) would be applicable as well.[86]

The administration of a quota-leasing program for new entrants would also not be burdensome on supply management boards to operate. The farmgate price of supply-managed goods is already centrally regulated based on the cost of production across the industry.[87] Supply management boards could consider the farmgate price and adjust the rental fee for new entrants accordingly. This way, new entrants can be assured their new business will turn a profit so the cash flow can be used to pay down other debts or expand the business. Similarly, the amount of quota to be distributed under a new entrant leasing program could begin by matching the amount already offered to new entrants by way of a grant. Finally, supply management boards would benefit more from a lease than the current system of grants because the boards would receive payment from the outset of the agreement that can be used to offset the costs of the program. This is unlike the present system, which is funded through an assessment on quota transactions like a sales tax.

---

84. Anderson, "DFO Tries Again," *supra* note 74.

85. *Saulnier (Receiver of) v Saulnier*, 2008 SCC 58.

86. See the discussion in Sections IV and V of this article.

87. See full discussion in Section II of this article.

VII ALTERNATIVE PRODUCTION PROGRAMS

As previously mentioned, there has been an increase in market demand for food produced through alternative means to "conventional" production. This includes organic, free range, and small-scale production, among others. Young farmers are more likely to adopt these alternative modes of production.[88] If the Canadian food system is ever going to increase the proportion of food produced through non-conventional means, it is imperative to help young farmers enter the industry. Many prospective farmers can only envision beginning a farm using these alternative means. For this reason, supply management must be accommodating.

The major avenues for new entrants into the Ontario dairy and broiler industries, the NEQAP and NCFEP, are designed for conventional producers rather than alternative producers. The NEQAP's minimum of forty units, being four times greater than the DFO minimum quota holding, is likely to be too large of an operation for those involved in alternative forms of production to undertake.[89] Alternative producers who do not want to have this level of production scale or intensity are left with no other options for assistance to entry.[90] Likewise, the NCFEP minimum of 14,000 units would require any new entrant to adopt an industrial model of agriculture to accommodate the approximately 84,000 chickens a new entrant would be obligated to produce with the granted quota every year.[91] This would be far too large of an operation for alternative chicken producers who often rely on self-marketing, free range rotating pasturing, and other forms of alternative production. While these smaller operations will not benefit from the economies of scale of conventional operations, their economic viability is a business decision rather than a regulatory concern. In recognition of this, certain supply management boards have created special programs to allow new entrants to produce using alternative methods.

DFO and CFO have diverged in their responses to meeting the need for new alternative entrants. CFO has created several innovative programs to create a path for new entrants who wish to produce using alternative means to fill market demand. The Artisanal Chicken Program allows for the production of 600–3,000 chickens per year to targeted markets such as a specific restaurant or a farmers' market.[92] Approved artisanal producers receive a licence to produce a prescribed amount of chicken for one year.[93] Those already holding licences are prioritized for the following year's licence grants.[94] The artisanal producer does not need to hold quota since they have this CFO licence to produce. Artisanal producers must pay a licence fee based on the number of chickens they are eligible to produce, and they pay similar levies as conventional quota holders to support CFO.[95]

---

88. Korb Hoppe, "Understanding US Farm Exits," Economics Research Report No 1 (2006) at 2, online (pdf): <https://www.ers.usda.gov/webdocs/publications/45555/17621_err21_1_.pdf?v=2467.9> [perma.cc/63DU-7EUW].

89. *DFO Quota Policies*, *supra* note 15, at part 1, s A 8(a)–(d).

90. Marj Benson, "Law as Imagination & Inspiration: What Time Is It Now?" in Donald E Buckingham & Ken Norman, eds, *Law, Agriculture and the Farm Crisis* (Saskatoon: Purich Publishing, 1992) 21 at 23.

91. CFO, NCFEP, *supra* note 44, s 6.01(c).

92. CFO "Artisanal Chicken Policy," *supra* note 80, s 6.01.

93. *Ibid*, s 7.0.

94. *Ibid*, s 8.04.

95. *Ibid*, ss 8.03, 9.03.

Another program, the Local Niche Chicken Markets program, bridges the gap between the artisanal program and conventional chicken production. While the most a farmer can produce under the artisanal program is 3,000 chickens per year and the minimum a conventional quota holding farmer can produce is 14,000 units (approximately 84,000 chickens per year), the niche markets program allows for the production of 1,000–10,000 quota units (approximately 6,000–60,000 chickens per year).[96] The purpose of this program is for producers to meet the needs of certain defined markets, such as selling to a geographic market or delivering a particular product that is not available elsewhere. It is noteworthy that these producers must purchase and hold quota to produce under this program. Those producing under this program must meet the same health and safety, animal welfare, and other minimum standards applicable to other broiler producers.[97]

The artisanal and niche markets programs are viable options for alternative modes of chicken production and can be especially useful for farmers near major urban centres where there is greater demand within niche markets and better infrastructure for processing small-scale chicken flocks.[98] Both of these programs result in decreased upfront costs to producers through either the lowering or elimination of minimum quota units. However, these programs require farmers to acquire their own farms and barns for production without assistance from the program.[99] They cannot operate on rented land. This represents a high initial cost for farmers who only want to produce a small amount of chicken and who, in the case of the artisanal program, are only guaranteed a right to produce for a single year.

CFO has developed a further program to meet specific market needs. The Ontario Specialty Breeds Chicken program targets "ethnic markets" in the Greater Toronto Area where there is a strong demand for silkie and Asian yellow hair chickens, which are both traditional Asian breeds.[100] Successful applicants to this program are given an allotment outlining how much speciality breeds chicken they can produce. The amount of this allotment is determined at the discretion of CFO.[101] One of the key considerations of CFO when deciding whether to grant an allotment is the overarching goal of helping new entrants begin chicken farming.[102] However, unlike conventional quotas, specialty breed allotment holders cannot transfer their allotment.[103] Much like all other CFO programs, specialty breeds farmers must operate land they own, but there is a one-year grace period where these farmers can operate on rented land.[104]

---

96. Chicken Farmers of Ontario, "Local Niche Chicken Markets Policy Regulation No 215-2015" (2015), s 6, online (pdf): <www.ontariochicken.ca/en/policies/local-niche-chicken-markets-policy/> [https://perma.cc/LD4G-DC89].

97. *Ibid*, s 6.03.

98. Chen et al, *supra* note 39 at 94–95.

99. CFO Quota Policy, *supra* note 24, ss 4.07, 6.01.

100. Chicken Farmers of Ontario, "Specialty Breeds Chicken Program" (last accessed 18 November 2024), online: <www.specialtybreeds.ca/Home.aspx> [perma.cc/L6CR-29C8].

101. Chicken Farmers of Ontario, "Regulation No 265-2023: Specialty Breeds Chicken Policy" (08 August 2023), ss 4.03, 4.08, 7.01, 7.09, online (pdf): <www.ontariochicken.ca/en/policies/specialty-breeds-chicken-policy/> [perma.cc/FAH7-546U].

102. *Ibid*, s 1.0(2).

103. *Ibid,* s 7.02.

104. *Ibid*, s 5.06.

These CFO programs are a step in the right direction in terms of helping prospective farmers to produce using the methods of their choosing; however, the programs are not perfect. The artisanal and speciality breeds programs only guarantee producers an annual allotment rather than a lifetime right to produce, like conventional quota holders get. It is inequitable to hold artisanal and specialty breeds farmers to this lower standard of certainty for their flocks. This harms farmers since they cannot take advantage of long-term business planning strategies, but it also harms consumers who are not guaranteed a supply of culturally appropriate food or food that is grown in a way that is acceptable to them. CFO should either implement longer-term allotments beyond a single year or consider leasing quota that may only be used for specific methods of production at longer terms.

In the dairy context, DFO does not presently have programs for alternative modes of production that are well suited for new entrants. While DFO does have opportunities for alternative production through grass-fed or organic milk programs, neither of these programs make it easier for a new farmer to enter the industry and begin using alternative modes of production—they are merely options for those already in the industry or for new entrants who will apply through conventional programs.[105] The purpose of these programs is to fill demands from processors and were not created with new entrants in mind.[106] They are not designed for smaller-scale production, direct marketing, or other factors that could be better suited for new entrants.

Unlike the context of CFO's programs, where there are stated objectives to attract new entrants and those who have no prior connection to supply management are favoured for selection, DFO makes no distinction between who can enter these alternative production programs. DFO has at least set aside one NEQAP applicant per year in the whole province to start organic dairy farming.[107] However, the designation for only one single new entrant pursuing alternative modes of production for the entire province is more representative of DFO's preference for conventional dairy production than a commitment to new alternative entrants. It should be noted that DFO did have an Artisan Dairy Program to serve small-scale markets, but this program was only available for processors, not farmers, and has since been cancelled.

DFO should follow in the footsteps of CFO in designing its own alternative producer programs. A legal regime, such as supply management, should not categorically prohibit certain farmers from choosing their own methods of production. Regulators should instead equitably govern farmers who choose different methods of production. Removing the existing barriers to entry that exist for alternative production in a measured manner that protects the integrity of the supply management system can help more willing farmers enter the industry. Social ideas such as food sovereignty and specific cultural requirements of food may be more likely to be achieved by alternative and smaller-scale modes of dairy production.[108] Finally, smaller-scale production can be a gateway to conventional production for new entrants who cannot access the requisite capital to begin dairy farming under the NEQAP. If DFO can expand its

---

105. Young & Watkins, *supra* note 26 at 30–34.

106. Dairy Farmers of Ontario, "Grass-Fed Milk Standard" (6 August 2021), online (pdf): <new.milk.org/wp-content/uploads/2023/11/Grass-Fed-standard-latest-August-5-2021-1> [perma.cc/7D7R-G3XX].

107. Anderson, "New Entrant Program," *supra* note 56 at A.8.

108. Holtslander, *supra* note 33 at 18.

new entrants aid to those wanting to produce through alternative methods, the Ontario dairy industry will better serve both consumers and producers.

DFO could facilitate alternative modes of production by eliminating the minimum quota holding and creating a minimal quota exemption, as is the case with CFO. The NEQAP should be amended to at least allow a new dairy farmer to hold the minimum quota holding, not the current system that requires new entrants to hold four times the regulatory minimum. Half of Canadian farmers already work off the farm, so DFO should permit small-scale dairy production for those who want to farm and work another job and not mandate new entrants to have so many head of cattle that they must devote their entire working day to the farm.[109] Issues regarding costs of administration and operations such as picking up milk from small farms should be negotiated between interested parties rather than unilaterally taken off the table by DFO.

Food sovereignty is gaining momentum as a social movement in Canada.[110] The current policies requiring new entrant farmers to conform to conventional production only serves to encourage centralization and the movement of production away from isolated areas that already struggle with local food sovereignty. Similarly, small consumer markets for culturally significant dairy products like certain varieties of cheese may be unable to find culturally suitable products if they fall out of the mainstream. Allowing small farmers to produce in the manner they want will alleviate some of these concerns. Success was found in the broiler context for the production of chicken for consumers who wanted to purchase chicken raised and processed with traditionally Chinese or Portuguese methods. This could be accomplished for dairy by adopting programs similar to the CFO artisanal, niche markets, or specialty breeds programs.

DFO can change its policies to help new alternative entrants by allowing those who would otherwise be unable to enter the industry because of financial constraints. Younger and new entrant farmers need to increase the profit margin of their operations to make up for the smaller scale of production. DFO should allow new alternative entrants to milk fewer cows than is currently mandated and encourage value-added activities like cheese making such that new farmers are more likely to have a successful business. "Raw" or unpasteurized milk has been proposed as one such option, but this has not been accepted by the courts out of health and safety concerns.[111] Nevertheless, DFO has other options that new farmers could safely explore, such as farmgate sale and agritourism. New entrants who are unable or unwilling to produce on a conventional scale should be permitted to run their business how they want without undue barriers to entry.

---

109. Ekers et al, *supra* note 32 at 711.

110. Food Secure Canada, *Resetting the Table: A People's Food Policy for Canada* (2015) at 9, online (pdf): <https://foodsecurecanada.org/wordpress/wp-content/uploads/2023/06/2015-FSC-22Resetting-the-Table-A-peoples-food-policy22.pdf> [perma.cc/LH3G-BZ4K].

111. *R v Schmidt*, 2014 ONCA 188.

VIII CONCLUSION

In this paper I have argued that the supply management regime should encourage production on leased land, allow for the leasing of quota to new entrants, and expand programs that facilitate the entry of farms that implement alternative modes of production. The supply management regime was created to protect the Canadian family farm, but without helping newcomers enter the industry, supply management is destined to protect only those granted quota and their heirs. Supply management is a strong, time-tested policy choice that works in the Canadian agricultural landscape, but it requires incremental changes to ensure viable and sustainable farms, to diversify niche production possibilities, and to encourage new and intergenerational entrants to fill the ever-changing needs of Canadians for milk, eggs, chicken, and turkey meat. Such policy initiatives, some of which have been pointed out in this paper, are not difficult to imagine, but they will require a new sense of flexibility for policymakers managing Canada's supply management systems.

IMMIGRANT COMMUNITIES IN CANADA AND THE RIGHT TO CULTURALLY APPROPRIATE FOOD

Tasha Sioufi Stansbury[*]

CONTENTS

Abstract

The significance of culturally appropriate food has been largely missing from recent conversations around the human right to food. Although loosely recognized as an element of the right to food, culturally appropriate food is not clearly defined in law; it is therefore largely treated as a negative obligation, where any food that does not directly violate cultural values is seen as sufficient to fulfil this element. As a country that positions itself as welcoming to immigrants and refugees, Canada has both an interest and an obligation in fulfilling the right to culturally appropriate food for these communities. Despite this, culturally appropriate food is neither clearly nor adequately addressed by existing legal mechanisms, either in Canada or internationally. However, I propose that a clear definition in law is neither entirely possible nor strictly necessary in the pursuit of the positive achievement of the right to culturally appropriate food for immigrant communities. In support of my argument, this paper explores different conceptualizations of cultural foods, influenced by the inherently and eternally shifting nature of culture itself, and proposes a shift in focus from food security to food sovereignty to adequately address the cultural food needs of immigrants and

[*] PhD Student, University of Ottawa, Faculty of Law

refugees in Canada. After an introductory section, section II will outline several definitions essential to this discussion: the human right to food, food security, and food sovereignty. Section III will explore different ways that culturally appropriate food has been conceptualized, particularly within discussions of food security and food sovereignty. Section IV discusses cultural food security and some of the barriers faced for its achievement by immigrants and refugees in Canada. Finally, section V discusses further opportunities for research on the impact of local food production and food sovereignty toward the achievement of the right to culturally appropriate food.

I INTRODUCTION

It is well established that access to cultural foods has a positive effect on the physical health and emotional well-being of immigrants and refugees.[1] However, the significance of culturally appropriate food has been largely missing from recent conversations around the human right to food. Although loosely recognized as an element of the right to food, culturally appropriate food is not clearly defined in law; it is therefore largely treated as a negative obligation, where any food that does not directly violate cultural values is seen as sufficient to fulfil this element.

As a country that positions itself as welcoming to immigrants and refugees, Canada has both an interest and an obligation in fulfilling the right to culturally appropriate food for these communities. Indeed, the federal government has previously demonstrated investment in the integration of immigrants and refugees, such as through the publication of the *Syrian Outcomes Report* in 2019, which provides an overview of integration outcomes for Syrian refugees resettled in Canada in 2015 and 2016.[2] The report acknowledges that some Syrian refugees struggled with food insecurity, reliance on food banks, and the high cost of "food typical to their home country."[3] It also notes that the struggles experienced by Syrian refugees are not unique and are in fact "common difficulties faced by recent newcomers in general, particularly resettled refugees who are facing vulnerable situations."[4]

Despite this, culturally appropriate food, although important for the well-being of immigrants and refugees, is neither clearly nor adequately addressed by existing legal mechanisms, either in Canada or internationally. However, I propose that a clear definition in law is neither entirely possible nor strictly necessary in the pursuit of the positive achievement of the right to culturally appropriate food for immigrant communities. In support of my argument, this paper explores different conceptualizations of cultural foods (influenced by the inherently and eternally shifting nature of culture itself) and proposes a shift in focus from

---

1. See e.g. Sarah Elsahat et al, "The Relationship between Diet/Nutrition and the Mental Health of Immigrants in Western Societies through a Holistic Bio-Psycho-Socio-Cultural Lens: A Scoping Review" (2023) 183 Appetite 1 at 5, online (pdf): <https://doi.org/10.1016/j.appet.2023.106463> [Elsahat]; Aravinda Berggen-Clausen et al, "Food environment interactions after migration: A scoping review on low- and middle-income country immigrants in high-income countries" (2022) 25:1 Pub Health Nut 136, online: <https://doi.org/10.1017/S1368980021003943>.

2. Immigration, Refugees and Citizenship Canada, *Syrian outcomes report* (June 2019), online: <https://www.canada.ca/en/immigration-refugees-citizenship/corporate/reports-statistics/evaluations/syrian-outcomes-report-2019.html> [perma.cc/84G7-4QVK].

3. *Ibid* at 11.

4. *Ibid* at 16.

food security to food sovereignty to adequately address the cultural food needs of immigrants and refugees in Canada.

The first section of this paper will outline several definitions essential to this discussion: the human right to food, food security, and food sovereignty. The second section will explore different ways that culturally appropriate food has been conceptualized, particularly within discussions of food security and food sovereignty. The third section discusses cultural food security and some of the barriers faced for its achievement by immigrants and refugees in Canada. Finally, the fourth section discusses further opportunities for research on the impact of local food production and food sovereignty toward the achievement of the right to culturally appropriate food.

II SITUATING THE RIGHT TO CULTURALLY APPROPRIATE FOOD

A. The Human Right to Food

The human right to food was first formally recognized in international human rights law in the *Universal Declaration of Human Rights* (UDHR) in 1948.[5] Article 25 of the UDHR states that "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services." Since then, the human right to food has been codified in many bodies of international human rights law, several of which are binding on Canada, including the *International Covenant on Economic, Social and Cultural Rights* (ICESCR),[6] the *Convention on the Rights of Persons with Disabilities* (CRPD),[7] and the *Convention on the Rights of the Child* (CRC).[8]

The ICESCR, ratified in Canada in 1976,[9] recognizes "the right of everyone to adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions" in article 11(1). Similarly, article 28(1) of the CRPD, ratified by Canada in 2010,[10] recognizes "the right of persons with disabilities to an adequate standard of living for themselves and their families, including adequate food, clothing and housing, and to the continuous improvement of living conditions." The CRC, ratified in Canada in 1991,[11] addresses food under article 24 on the right of the child to "the enjoyment of the highest attainable standard of health and to facilities for the treatment

---

5. *Universal Declaration of Human Rights,* UNGA, 3rd Sess, UN Doc A/810 (1948) GA Res 217 A (III), art 25 [UDHR].

6. *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, 993 UNTS 13 art 11 (entered into force 3 January 1976, in accordance with art 27) [ICESCR].

7. *Convention on the Rights of Persons with Disabilities*, 13 December 2006, 2515 UNTS 3 art 28 (entered into force 3 May 2008, in accordance with art 45(1)) [CRPD].

8. *Convention on the Rights of the Child*, 20 November 1989, 1577 UNTS 3 art 24.2(c) (entered into force 2 September 1990, in accordance with art 49) [CRC].

9. ICESCR, supra note 6 at 1.

10. CRPD, *supra* note 7.

11. CRC, *supra* note 8.

of illness and rehabilitation of health," declaring that in the pursuit of the full implementation of this right, state parties must take appropriate measures to "combat disease and malnutrition, including within the framework of primary health care, through, inter alia, … the provision of adequate nutritious foods and clean drinking-water."[12]

While the Convention on the Elimination of Discrimination Against Women (CEDAW), ratified by Canada in 1981,[13] has no general article protecting the right to food, its preamble indicates a concern "that in situations of poverty women have the least access to food, health, education, training and opportunities for employment and other needs." Article 12(2) of CEDAW also contains a clause obligating state parties to ensure that pregnant and lactating women have access to "adequate nutrition."

Despite its presence in international law dating back to 1948, the human right to food was not clearly defined by the UN until 1999, when the Committee on Economic, Social and Cultural rights issued General Comment No. 12 on article 11 of the ICESCR.[14] Paragraph 6 of this comment provides the overarching definition that is still largely used in human rights law today:

> The right to adequate food is realized when every man, woman and child, alone or in community with others, have physical and economic access at all times to adequate food or means for its procurement.

The committee additionally notes that "the right to adequate food shall therefore not be interpreted in a narrow or restrictive sense which equates it with a minimum package of calories, proteins and other specific nutrients."[15]

Building on this definition, the Office of the High Commissioner for Human Rights (OHCHR) released a fact sheet on the right to adequate food in 2010.[16] The fact sheet emphasizes three aspects of the right to food: availability, accessibility, and adequacy.[17] *Availability* refers to the production of food and its availability for sale in markets and stores. *Accessibility* refers to individuals' economic and physical ability to procure food. This means that individuals should have grocery stores within a reasonable distance of their homes, as well as the infrastructure such as public transit to reach them. It also means that everyone should have the economic means with which to purchase food at those stores without compromising their other basic needs like healthcare or housing costs. *Adequacy* refers to the necessity of meeting dietary requirements, as well as safety and cultural acceptability of food.

---

12. *Ibid*, art 24(2)(c).

13. *Convention on the Elimination of All Forms of Discrimination Against Women*, 18 December 1979, 1249 UNTS 13 (entered into force 3 September 1981, in accordance with article 27(1)) [CEDAW].

14. "General Comment No 12 on the Right to Adequate Food," UNESC, 20th Sess, UN Doc E/C.12/1999/5 (1999) Annex agenda item 7, online (pdf): <https://documents.un.org/doc/undoc/gen/g99/420/12/pdf/g9942012.pdf> [perma.cc/94GK-U9HY].

15. *Ibid* at para 6.

16. United Nations Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No. 34, The Right to Adequate Food" (01 April 2010), online (pdf): <https://www.ohchr.org/Documents/Publications/FactSheet34en.pdf> [perma.cc/55RR-XWFY] [UN Fact Sheet].

17. *Ibid* at 2.

In building the definition of the right to food, the fact sheet cites definitions from other UN bodies, including General Comment No 12, as quoted above, and the Special Rapporteur on the Right to Food, which has defined the right to food as follows:

> The right to have regular, permanent and free access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental, individual and collective, fulfilling and dignified life free of fear.[18]

The OHCHR emphasizes that the right to food is an inclusive right, extending beyond the minimum caloric and nutritional content required for physical survival. Instead, the right to food should be understood as a right to "all nutritional elements that a person needs to live a healthy and active life, and to the means to access them."[19]

Significantly, the right to food does not necessarily entail the right to be fed. Primarily, the right to food means the right to "feed oneself in dignity."[20] In terms of a government guaranteeing and protecting that right, therefore, the actual requirement from the state is largely limited to providing an environment that enables people to produce or purchase food, including access to land and seeds or money and access to the market. However, the state must also provide food for those unable to feed themselves within their own means. This creates two layers of obligation on the state for the fulfilment of the right to food: first, to proactively create an environment in which as many people as possible are able to feed themselves, and second, to directly feed individuals who, despite the enabling environment and due to circumstances beyond their control, are still unable to enjoy the right to adequate food.[21]

Notably, the human right to food does not exist in Canadian law. Despite multiple and ongoing efforts by right-to-food advocates, including the UN Special Rapporteur on the right to food,[22] calls to legislate the right to food have been blatantly dismissed by the Canadian government.[23] As explained above, Canada has ratified several international obligations that

---

18. *Ibid* at 2, citing "The Right to Food—Report by the Special Rapporteur," UNCHR, 57th Sess, UN Doc E/CN.4/2001/53 (2001) CHR Annex Item 10 of the provisional agenda at 2, online (pdf): <https://documents.un.org/doc/undoc/gen/g01/110/35/pdf/g0111035.pdf> [perma.cc/T9ZD-MZKH].

19. UN Fact Sheet, *supra* note 16 at 2.

20. *Ibid* at 3.

21. *Ibid* at 19.

22. *Report of the Special Rapporteur on the Right to Food, Olivier de Schutter*, UNHRCOR, 22nd Sess, UN Doc A/HRC/22/50 (2012) Add 1, online (pdf): <https://www.ohchr.org/sites/default/files/Documents/HRBodies/HRCouncil/RegularSession/Session22/AHRC2250Add.1_English.PDF> [perma.cc/E8H8-G5WS].

23. Nadia Lambek, "Social Justice and the Food System" in Heather McLeod-Kilmurray, Angela Lee, & Nathalie Chalifour, eds, *Food Law and Policy in Canada* (Toronto: Thomson Reuters, 2019) 325 at 326 [Lambek].

recognize the right to food; therefore, by not legislating the right to food, Canada is in breach of its legal obligations.[24]

B. Food Security

Food security has a slightly different definition in law than the right to food, although they are interrelated. In comparing the two, the OHCHR states that food security is "a precondition for the full enjoyment of the right to food," while the right to food "provides entitlements to individuals to access to adequate food and to the resources that are necessary for the sustainable enjoyment of food security."[25]

The Food and Agriculture Organization of the United Nations (FAO) identifies four main dimensions of food security: availability, accessibility, utilization, and stability.[26] *Availability* and *accessibility* are similar to their corresponding definitions under the elements of the right to food.[27] *Utilization* is comparable to *adequacy* under the right to food, although utilization focuses more on the dietary requirements element, focusing on nutritional quality and status rather than cultural elements. *Stability* is the main differing element, as it considers the consistency with which the other three dimensions are attainable. This means that if someone's food intake is uncertain or inadequate even only sometimes, food security has not been attained. Since the right to food is achieved when every person has access to adequate food regularly, permanently, and at all times, according to the definitions above, we can interpret stability as the element that transforms the achievement of food security into the fulfilment of the right to food.[28]

Canada's National Food Policy does not include a definition of food security.[29] However, in order to interpret household food security data retrieved from the Canadian Community Health Survey (CCHS), the federal government developed a guide on determining food security

---

24. Despite this clear breach of international obligations, there is evidence in Canada's track record to suggest that the recognition of the right to food at the domestic level would not necessarily result in its fulfilment. See, for example, the comparison to the human right to housing in Tasha Stansbury, "A Roof over Our Stomachs: The Right to Housing in Canada and Its Implications for the Right to Food" (2021) Centre for Law and the Environment, Working Paper No. 3/2021, online (pdf): <https://allard.ubc.ca/sites/default/files/2021-07/2021%2003%20Stansbury%20Housing%20and%20Food_0.pdf> [perma.cc/KSV5-AAFC].

25. UN Fact Sheet, *supra* note 16 at 4–5.

26. UN Food and Agriculture Organization, "Food Security" (2006) Policy Brief at 1, online (pdf): <https://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf> [perma.cc/HC92-VVZB].

27. *Ibid*. The FAO's definition of *availability* is the "availability in sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid)." Likewise, *access* is defined as "access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet."

28. *Ibid*. Food stability as defined by the FAO: "To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security."

29. Agriculture and Agri-Food Canada, "Food Policy for Canada: Everyone at the Table" (2019), online (pdf): <https://agriculture.canada.ca/sites/default/files/legacy/pack/pdf/fpc_20190614-en.pdf> [perma.cc/5XXQ-S6RC] [Canada Food Policy].

status.[30] This guide defines "food secure" households as having "access, at all times throughout the previous year, to enough food for an active, healthy life for all household members." Arguably, this can be interpreted to incorporate all four elements of the FAO definition. It notably also omits the cultural aspect of *adequacy* per the OHCHR definition. The CCHS is conducted every two years, but per the guide definition above the element of *stability* is measured only in single-year increments. Data collected via the CCHS may therefore be insufficient to make any accurate assessment of the fulfilment of the right to food in Canada, especially since the survey is anonymous and specific households are not tracked over time for longitudinal patterns.[31]

C. Food Sovereignty

The term "food sovereignty" was coined by La Via Campesina at the World Food Summit in 1996.[32] Founded in 1993, La Via Campesina is an international peasant farmers' organization and global food sovereignty network, currently formed by 180 organizations in 81 countries.[33] The following definition was adopted in the *Declaration of Nyéléni* at the 2007 World Forum for Food Sovereignty:

> Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.[34]

This definition has remained largely intact since 2007 and continues to be widely cited by food sovereignty advocates.[35] Food sovereignty has been recognized as a human right in the *United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas* (UNDROP); article 15.4 states:

> Peasants and other people working in rural areas have the right to determine their own food and agriculture systems, recognized by many States and

---

30. Government of Canada, "Determining Food Security Status" (2020), online: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs/household-food-insecurity-canada-overview/determining-food-security-status-food-nutrition-surveillance-health-canada.html> [perma.cc/N5AV-59JT].

31. Statistics Canada, "Canadian Community Health Survey (CCHS)" (2007), online: <https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&Id=3359> [perma.cc/9FFA-G8FQ].

32. La Via Campesina, "Food Sovereignty, A Manifesto for the Future of Our Planet" (13 October 2021), online: <https://viacampesina.org/en/food-sovereignty-a-manifesto-for-the-future-of-our-planet-la-via-campesina> [perma.cc/4NL5-FYAA] [La Via Campesina, Food Sovereignty].

33. La Via Campesina "About La Via Campesina" (2024), online: <https://viacampesina.org> [perma.cc/EJ53-4BF4].

34. *Declaration of Nyéléni* (Conference report delivered at Nyéléni Village, Sélingué, Mali, 2007) [unpublished] at para 3, online (pdf): <https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf> [perma.cc/CKB8-K4WF] [Declaration of Nyéléni].

35. See e.g. Food Secure Canada, "What Is Food Sovereignty" (last accessed 12 November 2024), online: <https://www2.foodsecurecanada.org/who-we-are/what-food-sovereignty> [perma.cc/5UHY-TMXV]; Seed Change, "Food Sovereignty" (last accessed 12 November 2024), online: ≤https://weseedchange.org/food-sovereignty/> [perma.cc/NH52-2U3D]; International Planning Committee for Food Sovereignty, "About Us" (last accessed 12 November 12, 2024), online: <https://www.foodsovereignty.org/about/ />[perma.cc/9RZ3-CRQW] . See also Lambek, *supra* note 23 at 344.

> regions as the right to food sovereignty. This includes the right to participate in decision-making processes on food and agriculture policy and the right to healthy and adequate food produced through ecologically sound and sustainable methods that respect their cultures.[36]

Both Canadian and international governance bodies have also acknowledged food sovereignty as a goal related to the right to food. For example, an FAO and UN Permanent Forum of Indigenous Issues joint brief on the right to food and Indigenous peoples explains that the right to food is a legal right with available remedies in the case of violations, while food sovereignty is a political concept with no legal recognition.[37] Agriculture and Agri-Food Canada's National Pathways initiative, aimed at creating more resilient food systems, identifies Indigenous food sovereignty among the initiatives to be supported.[38]

Despite the above examples, food sovereignty advocacy and action remain largely at the grassroots and community levels, although its influence has grown. Food sovereignty is not mentioned in Canada's Food Policy[39] and has not been identified by the government as a priority outside of initiatives supporting Indigenous peoples. At the international level, actors including La Via Campesina have remained consistent in their advocacy for food sovereignty at global governance institutions, with several victories; food sovereignty has received the endorsement of several UN special rapporteurs and, as noted above, was explicitly included in UNDROP.[40]

III THE RIGHT TO CULTURALLY APPROPRIATE FOOD

The way that the concept of food sovereignty fundamentally shifts the way we look at food systems, as well as the idea of food security, has been discussed at length in food justice and food law literature.[41] Similarly, the way that culturally appropriate food is discussed also shifts between the contexts of food security and food sovereignty.

One major defining feature or difference between the two of these is that food sovereignty challenges conventions of food security by insisting that culture is a part of food systems. Culture is, therefore, an inherent part of food sovereignty. But conversations about food security and the right to food have also begun to include culture. So, what is the difference that remains?

---

36. *Declaration on the Rights of Peasants and Other People Working in Rural Areas*, UNHRC 39th Sess, UN Doc A/HRC/RES/39/12 (2018) HRC Res 39/12, art 15.4 [UNDROP].

37. FAO and UN Permanent Forum of Indigenous Issues, "Joint Brief: The Right to Food and Indigenous Peoples" (2008) at 3, online (pdf): <https://www.un.org/esa/socdev/unpfii/documents/Right_to_food.pdf> [perma.cc/XN7Y-WSZC].

38. Agriculture and Agri-Food Canada, "Canada's National Pathways Document" (2023), online: <https://agriculture.canada.ca/en/department/initiatives/canadas-national-pathways/national-pathways-document> [perma.cc/X4D9-8BGX].

39. Canada Food Policy, *supra* note 29.

40. La Via Campesina, Food Sovereignty, *supra* note 32.

41. See e.g. Lambek, *supra* note 23; Navé Wald & Douglas P Hill, "'Rescaling' Alternative Food Systems: From Food Security to Food Sovereignty" (2016) 33:1 Agric & Human Values 203; Megan Carney, "'Food Security' and 'Food Sovereignty': What Frameworks Are Best Suited for Social Equity in Food Systems?" (2012) 2:2 J Agric, Food Sys & Community Dev 71.

Until recently, there was little acknowledgement from the FAO of the role of culture in food security. The 1996 *Rome Declaration on World Food Security*, emerging from the FAO-led World Food Summit, states that food security includes "food preferences for an active and healthy life."[42] This aspect is still included in definitions of food security.[43] As noted by Sampson and Wills, food preferences are distinct from food culture, since food preferences are individual while culture is collective.[44] However, in 2019 the FAO, along with the World Health Organization (WHO), published a piece entitled "Sustainable Healthy Diets: Guiding Principles," which makes an explicit reference to the relationship between culture and food.[45] This piece is framed through the lens of food security, mainly the factors of health and sustainability. It talks about culture slightly differently than sources such as the *Declaration of Nyéleni*; it refers to "culturally acceptable" food, only referring to "culturally appropriate" food when quoting other sources.[46] This term, "culturally acceptable" food, is also present in the OHCHR fact sheet on the right to food.[47]

This reflects a larger pattern on the treatment of culture in relation to food; sources that focus on food security, in my observation, often talk about culturally *acceptable* food,[48] while sources that focus on food sovereignty tend to discuss culturally *appropriate* food.[49] While there is no clearly defined difference between the two, I propose that there is a fundamental difference in the way that these two terms are applied and understood.

Even based solely on the definition of the words themselves, "acceptable" seems to indicate a bare minimum. The implication of "acceptable" food is that there is nothing outright offensive or *un*acceptable in the food. For example, a Muslim person receives a dish of food, and every item on that dish meets Halal standards. But "acceptability" does not seem to imply anything beyond that; it is simply the lowest threshold required to get a person fed in a

---

42. FAO, *Rome Declaration on World Food Security and World Food Summit Plan of Action*, 13 November 1996, FAO(063)/F688, art 1.

43. See e.g. World Bank, "What Is Food Security?" (2023), online: <https://www.worldbank.org/en/topic/agriculture/brief/food-security-update/what-is-food-security> [perma.cc/8VSP-C7MJ]; World Vision, "The Basics of Food Security (and How It's Tied to Everything)" (18 October 2023), online: <https://www.worldvision.ca/stories/food/the-basics-of-food-security> [perma.cc/HXF7-A8KA].

44. Devon Sampson & Chelsea Wills, "Culturally Appropriate Food: Researching Cultural Aspects of Food Sovereignty" (Conference Paper No 20 delivered at Food Sovereignty: A Critical Dialogue International Conference, Yale University, 14-15 September 2013) J Peasant Stud 1 at 2, online (pdf): <https://macmillan.yale.edu/sites/default/files/files/foodsovereignty/pprs/20_SampsonWills_2013.pdf> [perma.cc/38PT-FWS4] [Sampson & Wills].

45. FAO & WHO, "Sustainable Healthy Diets—Guiding Principles" (2019) at 25, online (pdf): <https://iris.who.int/bitstream/handle/10665/329409/9789241516648-eng.pdf?sequence=1> [perma.cc/ZQF9-G3UU].

46. *Ibid* at 7, 9.

47. UN Fact Sheet, *supra* note 16 at 3.

48. *Ibid*; see also Michael W Hamm & Anne C Bellows, "Community Food Security and Nutrition Educators" (2003) 35:1 J Nutrition Education & Behavior 37 at 37; Dietitians of Canada, "Dietitians of Canada Position Statement on Household Food Insecurity in Canada" (2024) at 1, online (pdf): <https://www.dietitians.ca/DietitiansOfCanada/media/Images/DC-Household-Food-Insecurity-Position-Statement_2024_ENG.pdf> [perma.cc/K3TH-9JRH]; Toronto Metropolitan University Centre for Studies in Food Security, "Terms of Reference" (last accessed 12 November 2024), online: <https://www.torontomu.ca/foodsecurity/about/> [perma.cc/V53J-HHAA].

49. See e.g. La Via Campesina, Food Sovereignty, *supra* note 32; Declaration of Nyéléni, *supra* note 34; UNDROP, *supra* note 36.

way that does not violate their cultural values. Indeed, the UN fact sheet identifies culturally acceptable food as food that is *not* associated with a religious or cultural taboo or not *in*consistent with a person's eating habits.[50]

On the other hand, I suggest that culturally "appropriate" food implies an intentional and positive adherence to cultural norms as well as standards that is of a quality that one would normally expect and enjoy in that culture, keeping in mind other cultural factors (e.g., foods that are associated with certain times of the year). It seems to suggest putting more value into the cultural aspects of food, rather than treating them as dietary restrictions.

A. What Makes Food Culturally Appropriate?

Ensuring food is culturally appropriate would require attention to factors such as food diversity and foods that are prepared in an appropriate cultural framework. Stelfox and Newbold suggest that culturally appropriate foods could include "religiously acceptable foods" based on ingredients or preparation methods, like Halal or Kosher foods, or vegetables commonly used in traditional cultural cuisines, including cassava, okra, or eggplants.[51] The latter category could also be interpreted to include grains and spices, like teff or sumac. Stelfox and Newbold carried out interviews with refugees and immigrants in Ontario, Manitoba, and British Columbia and found that food that is fresh and high quality is also considered cultural food—even an essential part of cultural food. Immigrants and refugees said that the overall quality or taste of fresh foods that are available or affordable in Canada is lacking. People reported not being able to enjoy their cultural foods because the ingredients available in Canada do not taste like anything or do not have flavours as strong as the ingredients in their home countries.

Stelfox and Newbold argue that the element of being fresh and high quality is not as significant compared to other barriers to eating healthy or cultural food, such as affordability.[52] On this point, I cannot find myself able to agree. It is well established, even in Stelfox and Newbold's own argument, that maintaining cultural foods is a key part of maintaining mental and physical health for migrants; food is a key part of remaining connected to culture when, in many cases, almost everything else has been taken away.[53] However, if the quality of cultural foods available in Canada is so low that people do not actually enjoy eating it, how might the role of that food in terms of maintaining a connection to culture change? And, subsequently, what does that mean for the mental and physical health aspects that rely on maintaining cultural foods? I argue that while the freshness and quality of cultural foods could be considered a secondary barrier to accessing culturally appropriate food—that is, one needs to

---

50. UN Fact Sheet, *supra* note 16 at 3.

51. Katherine B Stelfox & K Bruce Newbold, "Securing Culturally Appropriate Food for Refugee Women in Canada: Opportunities for Research" in K Bruce Newbold & Kathi Wilson, eds, *A Research Agenda for Migration and Health* (Cheltenham: Edward Elgar Publishing, 2019) 107 at 109 [Stelfox & Newbold].

52. *Ibid* at 110.

53. *Ibid* at 111; see also Jessica Kwik, "Traditional Food Knowledge: A Case Study of an Immigrant Canadian 'Foodscape'" (2008) 36:1 Env J 59; Elsahat, *supra* note 1; Aravinda Berggen-Clausen et al, "Food Environment Interactions after Migration: A Scoping Review on Low- and Middle-Income Country Immigrants in High-Income Countries" (2022) 25:1 Pub Health Nutr 136, online: <https://doi.org/10.1017/S1368980021003943>.

first have physical access to the food before its quality becomes a relevant concern—that does not reduce the importance of quality.

B. (Re)Defining "Culture"

Sampson and Wills complicate the subject of culturally appropriate food by presenting culture, and food and farming culture specifically, as dynamic, shifting, and the subject of disagreements within cultural groups:

> The food we eat and the way we eat it are the result of the opportunities and constraints of what is available, in both materials and labor; the desires, tastes, the traditions of food; and the uneasy politics of access and privilege. . . . Changing economies put certain foods in or out of reach, changing weather brings crops or it doesn't. Culture, as unstable and as consequential as economies or weather, defines what good food is, and what food is fit for a guest.[54]

They point out that, generally, the "political and economic aspects of food [are treated] as complex, changing, contested, and interrelated"; they then argue that the cultural aspects are also related and interact with the political and economic aspects.[55] For example, desirable food can become an undesirable mark of poverty and then become desirable again depending on changes in sociopolitical access. Perhaps the most obvious example of this change in Canada is lobster, which was available on the Pacific shore in such abundance that Mi'kmaq peoples historically used it as fertilizer and fish bait.[56] Historically, lobster was a poor man's food, considered to be extremely low value because of its prevalence.[57] Canning processes were introduced in the Maritimes in the 1800s, allowing easy shipping inland. After increasing in both price and popularity after World War I, fresh lobster became a tourist attraction for people travelling along the east coast, and it became known as a delicacy.

Sampson and Wills problematize this conceptualization of culture as static, even in discussions of food sovereignty.[58] Food sovereignty places a heavy emphasis on culture, in terms of respecting local cultures in the pursuit of food sovereignty projects or strengthening cultural practices as a way of resisting the neoliberal treatment of food as a commodity; however, there is little, if any, treatment of culture as shifting.

To illustrate their thesis, Sampson and Wills conducted a research project in the Yucatán region of Mexico. They connected with six recent high school graduates, and over the course of several weeks taught them photography skills and had them capture moments they felt shaped their idea of their own culture. Their goal through this photography project was to illustrate

---

54. Sampson & Wills, *supra* note 44 at 1.

55. *Ibid* at 2.

56. Ehud Spanier et al, "A Concise Review of Lobster Utilization by Worldwide Human Populations from Prehistory to the Modern Era" (2015) 72:1 ICES J Marine Sci i7 at i15.

57. Gabby Peyton, "Classic Canadian Dishes: The Lobster Roll" (last accessed 12 November 2024), online (blog): <https://canadianfoodfocus.org/canadian-food-stories/classic-canadian-dishes-the-lobster-roll/> [perma.cc/QF32-4E6Y].

58. Sampson & Wills, *supra* note 44 at 5.

the process by which cultural values are established.[59] One student, Leonor, wanted to focus on food. She took pictures of her mother and aunt cooking and her family eating. She was encouraged not just to document how food is made but also to take photos that challenge the way women's knowledge and work remains relatively invisible. In one series, she took a picture of each step of her mother making tortillas by hand, and it ended up being 22 photos.[60] Leonor surprised herself with how intricate the process was, even though she watched her mother do it every day and often helped her.

The authors note that "handmade tortillas may be the perfect symbol of food sovereignty in rural Yucatán"; they are regionally loved, superior in taste, and more satisfying than store-bought tortillas, but they come at the cost of women's labour.[61] In addition to current gendered divisions of labour, the insistence on making tortillas by hand has sexist historical implications. In the early twentieth century, men protested the development of electric mills, because by having access to them, women would not have to spend all their time grinding corn; men thought that women having extra time on their hands, combined with getting out of the house to walk to the mill, would result in promiscuity.[62] Even now, since the process of making tortillas by hand is so time-consuming, many advocates for traditional foods who also work as farmers rely to some extent on Maseca (machine-made) tortillas. In this way, the authors argue, "it would be simplistic to say that handmade tortillas are a material representation of food sovereignty while Maseca tortillas are not."[63]

Handmade tortillas, therefore, are both a symbol of tradition and culture but can also be seen as a symbol of problematic ideas that were previously held. They also operate as an effective illustration of how culture, economy, and food—including food products, but also methods of food production—shift in relation to one another.

In another illustration of how culture shifts over time and contexts, the authors point to another photo by Leonor titled, "My Family Eating Lunch. My cousins came from Candelaria, Quinana Roo, and we shared food with them that day."[64] The photo depicts Leonor's family members sitting at a table, sharing plates of food and eating with their hands using tortillas, as well as a bottle of Pepsi and a Pepsi-branded plastic jug on the table.

At the end of the research project, the students' photos were displayed in an art exhibit. Several people viewing the photos expressed that they saw the Pepsi in this photo as a sign of the declining integrity or inauthenticity of what they thought Indigenous foods should be. One tourist even approached Leonor to lecture her about the health risks of Pepsi because of its sugar content.[65] But to Leonor, the Pepsi was a sign of a special event with family that came to visit from out of town and an indication of her mother and aunt's choice and control over the menu. Her job as the photographer, as she told the tourist who approached her, was to capture

59. *Ibid* at 1.

60. *Ibid* at 6.

61. *Ibid* at 7.

62. *Ibid* at 7–8.

63. *Ibid* at 7.

64. *Ibid* at 9.

65. *Ibid* at 8.

the moment as she experienced it and saw it—not to manipulate it by removing the Pepsi bottle for the photo.[66]

In this case, the Pepsi exists in a larger context than just what is or is not "authentic" Indigenous food. This is complicated, of course, by the fact that Pepsi is a multinational corporation with deep economic and political power in Mexico, illustrating another way in which cultures, politics, and economies interact. However, people's experience of culture is not static and is affected by outside influences. Sampson and Wills explain that "what is appropriate to eat is always defined in a context of power, and almost always, unequal power."[67] Within the context of just this one photo, this conceptualization can be applied to the gendered responsibilities of food preparation, to a child having little choice in the menu, to the relationship between Pepsi (the company) and the people of Mexico, and to the interaction between the Indigenous student and the tourist who thinks they know better.

IV CULTURAL FOOD SECURITY

In 2008, based on the four elements of food security (availability, accessibility, utilization, and sustainability), Elaine Power developed the idea of cultural food security in the context of Indigenous peoples in Canada. She says that food obtained from traditional food systems is key to cultural identity, health, and survival, and that "cultural food security" should therefore be considered as another layer of food security for Indigenous peoples.[68]

Within the concept of cultural food security, there are unique considerations for each of the first three elements of food security. For *availability*, Power considers that the environmental contamination of traditional foods and the impact of climate change affect the supply and safety of traditional foods. For *accessibility*, she points out that food security can be impacted by access to country food as well as market food. For *utilization*, she argues that traditional and country food is more nutrient dense and nutritious than market food and is an important part of many Indigenous peoples' diets.

In defining cultural food security, therefore, Power takes into consideration both traditional and market foods, once again complicating the idea of food security. Power also discusses the spiritual and symbolic significance of traditional foods and how they are central to personal identities and the maintenance of cultures.

Almost 10 years later, Moffat, Mohammed, and Newbold developed the concept of cultural food security in the context of migration. They say that "with migration, foodways may change, but conserving them as much as possible may be a vital component in maintaining one's identity as an immigrant in a new setting."[69] The authors study those same pillars of food security—access, availability, and utilization—and use them to investigate immigrants' challenges with obtaining and eating nutritious and culturally appropriate food.

---

66. *Ibid* at 9.

67. *Ibid* at 10.

68. Elaine Power, "Conceptualizing Food Security for Aboriginal People in Canada" (2008) 99:2 Can J Pub Health 95 at 96.

69. Tina Moffat, Charlene Mohammed & K Bruce Newbold, "Cultural Dimensions of Food Insecurity among Immigrants and Refugees" (2017) 76:1 Hum Org 15 at 15 [Moffat, Mohammed & Newbold].

Many of those challenges, the authors explain, can be cyclical: New immigrants tend to be lower income and have difficulty accessing food, which is exacerbated by the need to obtain culturally desired food and adapt to the North American food system.[70] This can result in household food insecurity, loss of identity and well-being, poor nutritional status, and poor mental health, which in return contributes to difficulties securing better employment.[71]

A. Immigrants, Refugees, and Cultural Food Security in Canada

Immigrants in Canada have higher rates of household food insecurity than non-immigrants (19.7 versus 12.1 per cent).[72] Of all categories of immigrants, refugees, which make up around 17 per cent of Canada's foreign-born population as of 2022,[73] are the most vulnerable to both food insecurity and poorer health status.[74] These vulnerabilities are directly interrelated, as each exacerbates the other, which can have a cyclical effect.[75] The health status of immigrants also declines as they adjust to a Western lifestyle. As Stelfox and Newbold explain, immigrants are considered healthier than native-born Canadians on arrival, but eventually decline—a phenomenon referred to as the "healthy immigrant effect."[76] Refugees are more likely to both arrive in poorer health and to decline in health status compared to other immigrants.[77] For example, refugee women who formerly lived in refugee camps are likely to arrive with nutritional deficiencies, particularly in vitamin A, vitamin C, and iron, often to the point of anemia.[78]

Interestingly, but perhaps unsurprisingly, it has also been shown that a maintained connection to cultural foods slows or helps avoid this decline, since immigrants' traditional diets, which is usually low in processed foods, is healthier than the typical Canadian diet.[79] However, income and affordability are the biggest barriers to getting culturally appropriate, high-quality, fresh food.[80] Therefore, when compared to refugees, business or family-sponsored immigrants are more likely to have access to community connections, transportation, and financial means, which can facilitate access to cultural foods. Refugees are therefore

---

70. *Ibid* at 16–17.

71. *Ibid* at 17.

72. *Ibid* at 15.

73. Statista, "Refugees in Canada—Statistics & Facts" (10 July 2024), online: <https://www.statista.com/topics/2897/refugees-in-canada/#topicOverview> [perma.cc/DM9M-FM5Y].

74. Moffat, Mohammed & Newbold, *supra* note 69 at 15.

75. Stelfox & Newbold, *supra* note 51 at 109

76. *Ibid*.

77. Bruce Newbold, "The Short-Term Health of Canada's New Immigrant Arrivals: Evidence from LSIC" (2008) 14:3 Ethnicity & Health 315 at 315, 322, 327, 331.

78. Stelfox & Newbold, *supra* note 51 at 115.

79. Diana Tarraf, Dia Sanou & Isabelle Giroux, "Immigration and Food Insecurity: The Canadian Experience—A Literature Review" in Ingrid Muenstermann, ed, *People's Movements in the 21st Century—Risks, Challenges and Benefits* (InTech, 2017) 37 at 46, online (pdf): <intechopen.com/chapters/53486#> [perma.cc/3LE2-XYMV].

80. Stelfox & Newbold, *supra* note 51 at 110.

"particularly vulnerable to decreased cultural food consumption, given the significant barriers to affordability and accessibility of these foods."[81]

The journey of refugees, then, poses particular challenges to the way cultural food is accessed and consumed before, during, and after migration. In this way, access to culturally appropriate food is directly related to refugee flows, as well as the integration and well-being of refugees after resettlement.

B. Availability and Accessibility of Ingredients

Even if high-quality, fresh, cultural foods were affordable, there is also the issue of availability of specialty stores for culture-specific ingredients that are not available in most grocery stores. The issue of accessibility of cultural ingredients has been discussed in relation to the development of food media.

Cultural food bloggers and recipe developers have struggled with the issue of substitute ingredients, as well as the creation of content around lesser-known recipes. The popularization and accessibility of lesser-known cultural recipes comes with the complicated question of whether to include substitute ingredients as part of that recipe. Dan Q Dao tackles this question in his discussion of cultural appropriateness and misrepresentation in recipes, both by white and non-white recipe developers.[82] Proponents of the use of substitute ingredients, such as Vietnamese cookbook author Andrea Nguyen, hope that listing ingredients that are familiar and easy to find, especially for white audiences, will increase those audiences' willingness to try new recipes. On the other hand, creators may want to share their culture in the most genuine way they can, encouraging people to put in the effort to find cultural ingredients as much as possible. Dao cites Yvette Leeper-Bueno, the owner of a Mediterranean restaurant in Harlem, who says that "it's important to document and share these recipes and techniques as they are and as they have been done … to be given a watered-down recipe is to devalue the people who take pride in this recipe."[83]

There can be a tension, therefore, between making food that is culturally authentic versus food that is either culturally appropriative or what I'll call "culturally approximate," where certain ingredients—often key ingredients in cultural recipes—are difficult to find or expensive. This interacts with the ability to share cultural knowledge with other community groups and impacts the mental health and well-being of migrants, since the lower quality of some ingredients sold in Canada can impact migrants' enthusiasm for and connection with their own cultural foods.

C. Food Deserts and Food Swamps

It generally costs more to maintain a healthy diet in Canada; less healthy food options are more accessible to people on a lower income. Refugees tend to settle in urban centres, in lower socioeconomic areas.[84] Although urban centres generally increase the variety of accessible

---

81. *Ibid* at 109.

82. Dan Q Dao, "During Food Media's Time Of Reckoning, Let's Not Forget The Recipes" delish (17 December 2020) online: <https://www.delish.com/> [https://perma.cc/E2CT-RAFM].

83. *Ibid*.

84. Stelfox & Newbold, *supra* note 51 at 110.

foods, many of the lower-income urban areas where refugees end up living are described as "food deserts," where nutritious food is not readily available nearby. However, the problem is not only lack of availability of nutritious food—it is also the ample availability of low-nutrition food, which further reduces people's motivation to go out of their way to get higher-quality foods. These are referred to as "food swamps," which can and often do co-exist with food deserts. Low-nutrition "swamps" lead to "increased consumption of processed, high fat and sugar food" in refugee communities, putting them at higher "risk for diet-related illnesses."[85]

Stelfox and Newbold cite studies that have looked at the actual distance refugees living in lower socioeconomic areas in Canada have to travel to get ingredients or components for cultural dishes. These studies have found that cultural ingredients might be located several kilometres away or only in one particular area of a city. Refugees with a car have an easier time, but reliance on public transportation both increases travel time and decreases the amount of food that can be transported at one time.

Additionally, an increasing number of immigrants and refugees in Canada are settling outside of urban centres, especially as the role of rural communities in private refugee sponsorship grows.[86] Multiple Canadian studies have found that lack of access (or transportation) to cultural foods and resources is among the main challenges in rural refugee resettlement.[87] Some rural communities have used creative methods to address this challenge, such as having local grocery stores order specific food items.[88] As is the case with immigrants living in urban centres, having access to a vehicle helps alleviate these challenges; but this is simply not a reality for many immigrants, especially those who have recently arrived to Canada.

The challenge of food procurement is also gendered, as women generally take on the roles of feeding their families, doing grocery shopping, and so on, even if they work outside the home.[89] Refugee women use food as a way to keep their families connected with their culture, which can be challenging, especially since children tend to adjust to new lifestyles more quickly. Many refugee women expressed concern that their children prefer Western food and worry that their children will become disconnected from their culture or grow up to be less healthy.[90] These concerns become more pressing when considered in the context of food deserts, food swamps, and resettlement in rural areas.

---

85. *Ibid* at 111.

86. Stacey Haugen & Lars K Häalstrom, "Sponsorship in Rural and Small Communities" (2022) Refugee Hub, Knowledge Brief at 5, online (pdf): <https://refugeehub.ca/wp-content/uploads/2022/04/Sponsorship-in-Rural-and-Small-Communities.pdf> [perma.cc/2TWU-BJ8J].

87. Stacey Haugen, "'We Feel Like We're Home': The Resettlement and Integration of Syrian Refugees in Smaller and Rural Canadian Communities" (2019) 35:2 Refuge 53 at 55, online (pdf): <https://www.erudit.org/en/journals/refuge/2019-v35-n2-refuge04887/1064819ar.pdf> [perma.cc/2BQU-AGVY] [Haugen]; see also Rural Development Institute, "Immigration in 5 Rural Manitoba Communities with a Focus on Refugees: Case Studies" (2016) Community Report, online (pdf): <https://www.brandonu.ca/rdi/files/2016/09/Immigration-in-5-Rural-Manitoba-Communities-with-a-Focus-on-Refugees-Case-Studies-August-2016.pdf> [perma.cc/XCF5-9YVM].

88. Haugen, *ibid* at 58.

89. Stelfox & Newbold, *supra* note 51 at 111.

90. *Ibid* at 112.

V LOCAL FOOD AND FOOD SOVEREIGNTY: RESEARCH OPPORTUNITIES

Stelfox and Newbold propose a number of ways to conduct further research on cultural food security. One of these proposed methods is through the study of the production of food at the local level, using the lens and goal of food sovereignty as a guide.

As noted earlier, cultural foods have not typically been included in discussions of food security; a shift away from food security and toward food sovereignty could be one way to bridge that gap. However, there is a small but significant difference between cultural food security and food sovereignty that could affect how this research is conducted. Food sovereignty emphasizes a peoples' right to define their own food system and to have a food system that is sustainable; this includes the ability of communities to grow their own food, if they wish to do so. This translates also to cultural food security in the context of Indigenous peoples, where the connection to land and advocacy for sovereignty is inherent in access to country foods. In the context of migration, however, food sovereignty is not necessarily implied within cultural food security. In this context, cultural food security can, by definition, be achieved through access alone, rather than through sovereignty over food systems.

However, too much of an emphasis on access alone implies a heavy reliance on imported foods. This creates a challenge in terms of the regulation of Canada's trade priorities as well as ensuring equitable distribution of imported foods to immigrant communities, especially considering the diversity of Canada's population. Despite being a major point of pride in Canadian identity, multiculturalism, perhaps ironically, may ultimately pose a challenge to equitable access to cultural foods.[91] Every cultural group has different priorities, concerns, and needs when it comes to food security or cultural food security. Additionally, we must consider Sampson and Wills' argument that cultures—and what is important to cultural communities—are constantly shifting.[92] Therefore, in terms of the development of policy and trade priorities, it may be difficult to formulate one all-encompassing approach to incorporate all those concerns and priorities.

Local or community farming—and a priority shift from food security to food sovereignty—is one way to address this issue.[93] Refugees have identified growing their own food, including traditional foods, as a way of saving money and passing on knowledge to their children. By giving refugees access to land, community gardening has also been found to give refugees a sense of security, as well as "[promote] cultural identity and well-being, [facilitate] a sense of community togetherness, and [provide] opportunities to share produce and nutritional knowledge."[94] Local food production, therefore, is positively correlated to one being in control over or sovereign in their right to food that is healthy and culturally appropriate.

Even though Canada has a significantly different climate than many countries that refugees come from, it also benefits from having several different types of biomes, meaning that many varieties of crops can be grown within Canada's borders. Stelfox and Newbold recommend that more research be done as to which cultural foods can be grown in prospective countries

---

91. *Ibid* at 113.

92. Sampson & Wills, *supra* note 44 at 3.

93. Stelfox & Newbold, *supra* note 51 at 113.

94. *Ibid* at 114.

to better support community gardening programs for migrants and refugees; and research should be done to determine how local food initiatives are adapted to shorter growing seasons, different climates, and so on. This type of research could also support the establishment of trade priorities in a potential shift to more localized food systems.

There are several examples of these types of initiatives already in play across Canada. In Ottawa, for example, a local food organization called Just Food provides an acre of land for Karen refugees.[95] Originally from the mountainous regions of Thailand and Burma, Karen refugees use this land to grow food for their communities, including several of their traditional crops, using traditional farming methods. Although the growing seasons are different, Karen Elders have found ways to adapt to the Canadian climate while maintaining traditional farming practices. They also have opportunities to pass on their knowledge to youth in their community and share it with Canadian farmers.

Other examples include Bao Bao Farm in Perth, Ontario, which combines the promotion of ecological and cultural diversity by growing vegetables typically found in countries in Asia using biointensive methods.[96] In Vancouver, the Hua Foundation runs the Choi Box program, which partners with Asian farmers in the Metro Vancouver area to create and deliver culturally relevant produce boxes.[97] In Fraser Valley, British Columbia, the Kara-Kata Africa Village Project promotes African cultural foods, supports African farmers, and runs a farm for experimental growth of crops that are typically grown in Africa.[98] These existing projects should be supported in terms of both research and financial viability, and new opportunities should be created for refugees and migrants who are interested in beginning similar projects.

Beyond Stelfox and Newbold's suggestions, there is also room for more research on the potential role of food sovereignty in law and policy. As noted in Section II, both Canadian and international governance bodies have acknowledged food sovereignty as a goal related to the right to food, and it has received formal (albeit limited) recognition in international law. These acknowledgements by governing bodies could be helpful in advancing the argument that the fulfilment of the right to food in fact requires the presence of food sovereignty, rather than the inverse, which is the current limit of their relationship. This would necessarily involve increasing the minimum standards for the fulfilment of the right to food, perhaps

---

95. Just Food, "Community Partner Projects" (last accessed 12 November 2024), online: <https://justfood.ca/just-food-farm/> [https://perma.cc/L586-VYTR].

96. Bao Bao Farm, "About" (last accessed 12 November 2024), online: <https://baobaofarm.ca/pages/about> [perma.cc/27N2-DFX7].

97. Joyce Liao, "What Is the Choi Box?" (last accessed 12 November 2024), online: <https://choibox.huafoundation.org/> [perma.cc/QSN8-CXZD].

98. Kara-Kata Afrobeat Society of Canada, "Kara-Kata Africa Village Project—Fraser Valley, BC, Canada" (last accessed 12 November 2024) online: <https://karakataafrobeatsociety.ca/african-village-retreat/about/> [perma.cc/XBZ7-ULG5].

by adding *autonomy* to the existing factors of availability, accessibility, and adequacy.[99] The requirement of cultural appropriateness would consequently be "folded in" through the inclusion of food sovereignty principles, and food sovereignty would move beyond its current status as a "political concept" into the realm of legal principles on the right to food. However, raising standards may be unlikely while the right to food as it currently exists remains largely unfulfilled around the world.[100]

Alternatively, increased support for food sovereignty initiatives and adoption of its principles at governance levels would also inherently lead to an increased rate of fulfilment of the right to food. In this way, even if legal standards are not formally adjusted, food sovereignty still has a clear role to play in the policy landscape. Framing food sovereignty as a viable method to achieve existing goals related to the right to food, rather than "moving the goalposts" as suggested above, may be more practical in terms of persuading governing bodies to take action. Advocacy for access to cultural foods in Canada can also be framed as supportive of other existing government goals, such as the resettlement and integration of immigrants, and may therefore also achieve some success through this route.

VI CONCLUSION

The topic of access to culturally appropriate food is understudied in the field of food law, perhaps understandably so. It is a complex issue, hard to define or pinpoint exactly, with factors that constantly shift over time. It is affected by relationships between individuals, communities, governments, and beyond. Moreover, its treatment in international law has thus far been largely focused on negative obligations rather than positive duties to fulfil or provide.

Access to culturally appropriate food can have a significant positive impact on migrant communities' physical and emotional health and can help them adjust to new lives in new countries. However, financial and physical barriers impede migrants' ability to access cultural foods. Imported cultural foods, especially lesser-known foods and ingredients, are scarce, limited to certain (mostly urban) areas, and are of lower quality than may be necessary to meet the requirements of cultural appropriateness.

Local food production, guided by principles of food sovereignty, may be one solution to many of these challenges. Many immigrants and refugees have farming experience and an interest in growing food for their communities, but they lack opportunities to do so, such

---

99. This is distinct from Toronto Metropolitan University Centre for Studies in Food Security's "5 As" framework on food security (availability, accessibility, adequacy, acceptability, and agency). While the 5As framework is useful for challenging established elements of food security, it falls short of calling for full autonomy in food systems, adopting a similar negative-obligation definition of "acceptability" in terms of cultural foods and defining "agency" as "the policies and processes that enable the achievement of food security." See Toronto Metropolitan University Centre for Studies in Food Security, "Terms of Reference" (last accessed 12 November 2024), online: <https://www.torontomu.ca/foodsecurity/about/> [perma.cc/MV94-4ADF].

100. According to the Human Rights Measurement Initiative, informed by data from the University of Connecticut's Social and Economic Rights Fulfillment Index, only 10 out of 136 countries surveyed achieved fulfilment of the right to food as of 2021. See Human Rights Measurement Initiative, "Right to Food" (last modified 2024), online: <https://rightstracker.org/metric/food> [perma.cc/HAR3-HYXM]. For updated global hunger rates, see "Global Hunger Index" (last modified 2024), online: <https://www.globalhungerindex.org/>.

as access to land. Therefore, immigrant communities should be supported in initiatives to grow cultural foods locally. In this way, cultural food security can be achieved while reducing reliance on imported foods, and cultural practices as well as the quality of produce can be preserved. Local communities can also benefit from access to diverse foods and the sharing of cultural knowledge. Further research should be conducted on the viability of cultural crops in Canada and other countries welcoming immigrants and refugees to facilitate these initiatives as efficiently as possible. Increased research and advocacy on the role of food sovereignty in food law and policy would also help support cultural food initiatives.

REGULATING THE 3D PRINTING OF MEAT: ANIMAL ETHICS, ENVIRONMENTAL BENEFITS, AND HUMAN HEALTH ISSUES IN CANADIAN LAW

Daniel W. Dylan[*] *and Mariette Brennan*[**]

CONTENTS

[*] Associate Professor, Bora Laskin Faculty of Law, Lakehead University, Thunder Bay, Ontario, Canada. This paper was presented at the Canadian Association for Food Law and Policy Conference, 2023.

[**] Associate Professor, Bora Laskin Faculty of Law, Lakehead University, Thunder Bay, Ontario, Canada. This paper was presented at the Canadian Association for Food Law and Policy Conference, 2023.

Abstract

The fates of animals, human health, and the environment are entwined. The prevalence of COVID-19 and other zoonoses has only made such a reality more evident. Animal advocates and environmentalists have long called for reductions—if not the elimination—of industrial agriculture to stem the tide of animal abuse and environmental degradation. Similarly, health advocates have called for major changes to the typical Western diet, which is heavily reliant on animal protein, to improve overall health. The novel use of 3D printing to create animal proteins may be the catalyst to change these advocates seek. 3D printing of animal protein would remove the cruelty component animals suffer in the industrial agriculture context and perhaps make the consumption of animal protein healthier and more sustainable. But this new technology is fraught with concerns: costs may be exorbitant, food security is uncertain, and the regulation of these products must be addressed. This paper seeks to address some of these regulatory issues.

I INTRODUCTION

The fates of and relationships among non-human animals (animals), human health, and the environment are invariably entwined. The prevalence of zoonoses, including COVID-19 and other coronaviruses, which affect animals and humans alike, has only made such a reality in the Anthropocene era more evident. There is no question that there will be another zoonoses-induced pandemic; there are currently hundreds of coronaviruses and other zoonoses being tracked by the World Health Organization.[1] Instead, the question is merely *when* it will occur, and can anything be done to mitigate the consequences that will inevitably follow?[2] COVID-19 has laid bare for the general public the problems of industrial agriculture (and other animal consumption issues) and its impact on and contribution to zoonoses, with one claim putting the expected number of spillover events at four times and human mortality at twelve times the rate of COVID-19 by 2050.[3]

Problems associated with industrial agriculture existed long before the COVID-19 pandemic. Animal advocates, environmentalists, and epidemiologists have, for decades, been calling for drastic reductions—if not the elimination—of industrial agriculture (or "factory farms") to stem the tide of continued animal abuse, cruelty, harm, and suffering; environmental degradation; and increased threats to human health.[4] Similarly, human health advocates have called for major changes to (if all not altogether the elimination of) the typical Western diet—which is heavily reliant on animal protein, dairy, and animal by-products—as a way to improve

1. See World Health Organization, "Epidemic and Pandemic-Prone Diseases" (2024), online: <https://www.emro.who.int/entity/pandemic-epidemic-diseases/index.html> [perma.cc/SS8X-XWYK].

2. See e.g. Jennifer B Nuzzo & Lawreince O Gostin, "The First 2 Years of COVID-19: Lessons to Improve Preparedness for the Next Pandemic" (2022) 327:3 JAMA 217–218.

3. See Amanda Jean Meadows et al, "Historical Trends Demonstrate a Pattern of Increasingly Frequent and Severe Spillover Events of High-Consequence Zoonotic Viruses" (2023) 8:11 BMJ Global Health 1 at 3.

4. See e.g. Rob Wallace, *Big Farms Make Big Flu: Dispatches on Influenza, Agribusiness, and the Nature of Science* (New York: Monthly Review Press, 2016).

overall human health and to extend life expectancy.[5] Advancements in technology may finally be offering a solution to these complex problems, but they are not panaceas and they are not without problems of their own.[6]

Different from laboratory-cultivated meat, the use of novel 3D printing[7]—a complex process using computer technology and "ink" made from animal cells—to create animal proteins or "meat" may, however, catalyze the changes these advocates seek. Although initially generated from animal deoxyribonucleic acid (DNA), like laboratory-cultivated meat, 3D printing of animal protein might minimize the harm, cruelty, and abuse animals suffer in the industrial agriculture context; reduce the threat of zoonoses-induced pandemics; and perhaps make the consumption of animal protein healthier and more sustainable for humans and the planet. 3D printing might be described as a "promissory narrative," because it encapsulates and articulates the potential of novel technology and outlines the benefits it may offer to individuals, society, the environment, and the economy.[8] This new technology is, however, fraught with concerns: costs are exorbitant, food security is uncertain around the world, intellectual property concerns emerge, and the regulation of these products is unsettled and needs to be addressed.[9] Despite these concerns, this possibility offers a chance to save animals, humans, and the planet and is one that we explore in this article through the perspectives of animal ethics, environmental law, and human health law. In section II we explain our theoretical framework. In Section III we discuss the basics of 3D printing technology, and in section IV we address some of the practical problems that 3D printing may solve. Finally, in section V we identify and review the regulation of 3D printing technology.

II THE THEORETICAL FRAMEWORK

A. Animal Ethics and Moral Consideration

Animal ethics exist on a wide spectrum. Simply stated, the spectrum begins with animal welfare advocacy at one pole and ends with animal personhood and legal rights at the other. In the context of this article, we fall somewhere in the middle by adopting American philosopher Tom Regan's notion that animals have inherent value and exist as "subjects of a life."[10] Stated differently, animals are *sentient*: They can feel and have an interest in avoiding harm and in seeking pleasure—just like humans. Largely because of this sentience, it is morally

---

5. See DI Givens, "Review: Dairy Foods, Red Meat and Processed Meat in the Diet: Implications for Health at Key Life Stages" (2018) 12:8 Animal 1709 at 1717; DI Givens, "Milk and Meat in Our Diet: Good or Bad for Health?" (2010) 4:12 Animal 1941 at 1952. See generally Eleni Linos & Walter Willett, "Meat, Dairy, and Breast Cancer: Do We Have an Answer?" (2009) 90:3 Am J of Clinical Nutrition 455.

6. See Sergiy Smetana et al, "Meat Alternatives: Life Cycle Assessment of Most Known Meat Substitutes" (2015) 20:9 Int'l J Life Cycle Assess 1254 [Smetana et al].

7. See generally Jian-Yuan Lee et al, "Fundamentals and Applications of 3D Printing for Novel Materials" (2017) 7 Applied Materials Today 120; See Zhenbin Liu et al, "3D Printing: Printing Precision and Application in Food Sector" (2017) 69 Trends Food Sci & Tech at 83.

8. Deborah Lupton & Bethaney Turner, "Food of the Future? Consumer Responses to the Idea of 3D-Printed Meat and Insect-Based Foods" (2018) 26:4 Food and Foodways 269 at 270 [Lupton & Turner].

9. See e.g. Jasper L Tran, "3D-Printed Food" (2016) 17:2 Minn JL Sci & Tech 855 [Tran]. See also Jasper L Tran, "The Law and 3D Printing" (2015) 31:4 John Marshall J Info Tech & Privacy L 505.

10. Tom Regan, *The Case for Animal Rights* (Berkeley: University of California Press, 1983).

inconsistent to argue that humans deserve moral consideration in the form of legal (and human) rights because of sentience and to argue that animals cannot enjoy the same or similar consideration simply because they are non-human. Such an inconsistency is a classic example of speciesism, which is insidious because it mirrors the racism, sexism, homophobia, ableism, and other forms of prejudice and discrimination extant in Canadian society.[11] Thus, again, while we do not take a position on the sometimes-viewed-as-extreme argument that animals are entitled to personhood and legal rights, we do acknowledge and recognize that animals are more than merely moveable property and deserve *greater* moral consideration than they have historically and modernly been accorded by Canadian society. Altogether, the kind of moral consideration we give to humans in our society is the kind of moral consideration we give to animals in this article. Our approach is therefore more closely akin to Indigenous notions of the comity of all living beings, including the totality of the environment, and the concept of "One Health" than it is to Western notions of animals as resources and the property of the human species. The "One Health" approach is a conceptual one that emphasizes the interdependence of humans, animals, and ecosystems.[12] "One Health" seeks to promote broad cross-disciplinary research, collaboration, and communication to expansively deal with complex health issues, such as infectious diseases, antimicrobial resistance, food safety, and environmental degradation.[13] In brief, we adopt the position that animals have inherent value, and in giving them moral consideration they deserve, as much as possible, to be free from harm, cruelty, suffering, and abuse in our interconnected world. As a result, as a form of greater moral consideration we explore whether the novel 3D printing of meat may lessen the harm, cruelty, suffering, and abuse animals currently endure in Canada and internationally (even if the goal is to eventually grant them legal personhood and rights).

B. The Precautionary Principle

We also root our discussion in the well-known precautionary principle in environmental and human health law as the technology being scrutinized here is novel in that it is still developing. In its most basic form, the precautionary principle holds that any substance or activity posing a threat or harm to the environment and its inhabitants is to be prevented from realizing that threat, even if scientific proof linking that particular substance or activity to that environmental threat(s) and harm is lacking.[14] The UN *World Charter for Nature*[15]—for which

---

11. See Gary L Francione, "Animals—Property or Persons?" (2004) Rutgers University School of Law–Newark, Working Paper No 21 at 30, online: <https://law.bepress.com/rutgersnewarklwps/art21> [perma.cc/C4RP-VVY4].

12. World Health Organization, "One Health" (23 October 2023), online: <https://www.who.int/news-room/fact-sheets/detail/one-health> [http://perma.cc/95DX-JKEN].

13. *Ibid*. See also Elina Horefti, "The Importance of the One Health Concept in Combating Zoonoses" (2023) 12:8 Pathogens 1 at 1; Jakob Zinsstag et al, "Advancing One Human–Animal–Environment Health for Global Health Security: What Does the Evidence Say?" (2023) 401:10376 Lancet 591 at 592.

14. *114957 Canada Ltée (Spraytech, Société d'arrosage) v Hudson (Town)*, 2001 SCC 40 at paras 31–32. See also James Cameron & Juli Abouchar, "The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment" (1991) 14:1 BC Int'l & Comp L Rev 1 at 2 [Cameron & Abouchar].

15. *World Charter for Nature*, 28 October 1982, UN A/RES/37/7 (entered into force 9 November 1982), online: <https://digitallibrary.un.org/record/39295> [*World Charter for Nature*].

Canada voted in favour[16]—enshrines this principle by declaring that "[a]ctivities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should not proceed."[17] The precautionary principle, as we understand it here, therefore acts a *guiding* principle that encourages decision makers to consider potential harmful effects of those substances and activities before engaging with or undertaking them.[18]

We do not, however, take a specific position on the precautionary principle itself (of which there are several contentious ones to take) other than the use of 3D printing technology is novel and that from a risk-management perspective proceeding *with caution* is better than proceeding without caution. Such an approach is not uncommon in the environmental and human health context.[19] For example, in a long-running trade dispute at the World Trade Organization, the European Union banned the importation of hormone-treated beef (shown to have cancer-related and other negative impacts on human health) produced in the United States and Canada on the basis of the precautionary principle.[20] If the use of hormones in animal husbandry is a source of concern, then artificially produced meat (and other food for human consumption) is likely to be one as well, both domestically and abroad, among legal authorities and consumers alike. Thus, recognizing and acknowledging that the precautionary principle has been the subject of controversy, we still nonetheless suggest it as an appropriate framework through which to consider some of the legal issues involved in the 3D printing of meat because of the largely unknown risks such technology may currently present to animal, environmental, and human health.[21]

III THE BASICS OF 3D PRINTING TECHNOLOGY

3D printing of meat and cultivated meat are similar but invoke different technologies. Both are manufactured or artificially produced meat based on cells derived from real animals. Both represent opportunities to decrease land, water, and energy use; reduce greenhouse gas emissions (GHG); lessen environmental pollution; potentially improve the health and safety of human diets; and promote animal welfare,[22] but to what extent remains unclear in the relative infancy of 3D printing technology. While we focus primarily on the 3D printing of meat, it is impossible to adequately discuss one without the other. We first briefly discuss cultivated

16. UNGA, 37th Sess, UN Doc A/37/PV.48 (1982) at 843 (voting record), online: <https://digitallibrary.un.org/record/755004?ln=en&v=pdf> [perma.cc/Q49Y-3XMA].

17. *World Charter for Nature*, *supra* note 15 at 18.

18. Cameron & Abouchar, *supra* note 14 at 2.

19. See e.g. Owen McIntyre & Thomas Mosedale, "The Precautionary Principle as a Norm of Customary International Law" (1997) 9:2 J Envtl L 221.

20. See Michael Balter, "Scientific Cross-Claims Fly in Continuing Beef War" (1999) 284:5419 Sci 1453 at 1453. See also Janet Rosenbaum, "A Case Study of the Application of the Precautionary Principle in US-EEC Trade of Beef from Hormone-Treated Cattle" (1999), online: <https://ideas.repec.org/p/osf/socarx/xrj96.html> [perma.cc/QT4P-NCGZ].

21. See Kenneth Foster, Paolo Vecchia & Michael Repacholi, "Science and the Precautionary Principle" (2000) 288:5468 Sci 979 [Foster et al].

22. Xudong Guo et al, "3D Bioprinting of Cultured Meat: A Promising Avenue of Meat Production" (2023) 17:7 Food & Bioprocess Tech 1659 at 1661 [Guo].

meat and then discuss the 3D printing of meat. It is also useful to note that the global 3D printing market, generally, "is expected to expand to $230–550 billion USD by the end of 2025,"[23] "the global protein analog market is expected to reach $7.5 billion USD around the year 2025,"[24] and that the global market for lab-grown meats is the fastest growing segment in the food industry and is expected to reach $140 billion by 2030.[25] Another scholar put it slightly differently: "[I]n a near future unconventional protein sources are likely to represent an increasing competitive alternative for inferior meat cuts and processed meats made from meat by-products."[26]

A. Cultivated Meat

Cultivated meat (also known as lab-cultured or cell-based meat), which cultivates animal cells in a laboratory setting, emerged prior to the 3D printing of meat as an alternative to industrialized meat.[27] Simply described, the typical method involves first isolating and cultivating animal cells, preparing the culture medium, constructing the cell-bearing scaffold, and then maturing the cells in a bioreactor.[28] Cultivated meat holds the potential to replace 35 per cent of global meat consumption by 2040, with major production focusing on beef, chicken, pork, and seafood.[29] The commercialization of cultivated meat has, however, experienced three major obstacles to success: (1) consumer expectations have not been satisfied as cultivated meat does not resemble the structure, texture, colour, flavour, or nutrition of conventional meat; (2) even with price variations as low as $66.40 per gram, it is too expensive for most consumers compared to conventional meat; and (3) the ecological sustainability of the technology is contentious and thus debatable.[30] Despite or perhaps because of these persisting challenges, the 3D printing of meat has emerged as a more viable alternative to conventional meat production.[31]

---

23. Karna Ramachandraiah, "Potential Development of Sustainable 3D-Printed Meat Analogues: A Review" (2021) 13:2 Sustainability 1 at 2 [Ramachandraiah].

24. *Ibid*.

25. Deepi Harish, "Is 3D-Printed Meat the Next Big Thing? (And How It Really Tastes)" (4 February 2022), online: <https://www.foodnetwork.ca/article/3D-printed-meat-taste> [perma.cc/7G8L-ZB62].

26. Arianna Dick, Bhesh Bhandari & Sangeeta Prakash, "3D Printing of Meat" (2019) 153 Meat Sci 35 at 35 [Dick et al].

27. Guo, *supra* note 22.

28. *Ibid* at 1662.

29. *Ibid* at 1660. The production of "exotic meats," such as horse and mouse, has been explored.

30. Guo, *supra* note 22.

31. *Ibid*.

B. 3D Printing

Three-dimensional or "3D printing" is a type of fused deposition modelling (FDM), a major type of additive manufacturing.[32] 3D printing generally is achieved either by extrusion, inkjet printing, binder jetting, or bioprinting.[33] Fruit, pasta, chocolate, cookies, lollipops, and chewing gum can all be 3D printed.[34] In other applications, food that is not found in nature and personally nutritionalized foods can also be printed.[35] Lipton et al published the first study of the 3D printing of meat in 2010,[36] but very few additional studies on the 3D printing of fibrous materials such as meat and seafood have been published since then.[37] As it pertains to the 3D printing of food, there are different methods of 3D printing.[38] As Lipton put it several years later in 2017: "There is no one technology that is 3D printing . . . [the technology] is a family of additive manufacturing technologies that tend to involve solidifying powders, liquids or slurries, [and each] technique has its own technical challenges and applicability to food."[39]

Food can be 3D printed from a combination of powder and liquid or from cultured cells. Similar to cultivated meat, in that it begins with cells from real animals, 3D printed meat of the kind we are discussing here (i.e., 3D bioprinting) is printed from cultured cells (and this technique has also been used to produce tissue and organs when human cells are used).[40] Typically, the 3D printing of meat is achieved through an extrusion process where meat fibres or meat paste are extruded from a nozzle to create layered 3D structures.[41] The process basically involves generating freeform structures by introducing a prototype into computer-aided design software, which is then converted into a readable file by a slicing software application and is then recognized and processed by 3D printers to render the output as meat.[42] In one of the leading articles on this subject, the authors described the technology as involving

---

32. Ramachandraiah, *supra* note 23 at 2. There are already restaurants that use 3D printing technology (though not animal protein) to make foods; the idea of 3D printing animal proteins from home has been discussed as a possibility. Nonetheless, our paper will limit the discussion to mass production of 3D printed meat for wholesale distribution.

33. Ramachandraiah, *supra* note 23 at 2.

34. See e.g. Tran, *supra* note 9 at 858–859. See also Jackie Wattles, "Researchers 3D Printed This Cheesecake" (21 March 2023), online: <https://www.cnn.com/2023/03/21/world/3D-printed-food-cheesecake-scn/index.html> [perma.cc/5ZTY-YZYQ].

35. See e.g. Tran, *supra* note 9 at 858.

36. See Jeffrey Lipton et al "Multi-Material Food Printing with Complex Internal Structure Suitable for Conventional Post-Processing," paper delivered at the Annual International Solid Freeform Fabrication Symposium, Austin, Texas, October 2010.

37. Dick et al, *supra* note 26 at 36-37. See also Antonietta Baiano, "3D Printed Foods: A Comprehensive Review on Technologies, Nutritional Value, Safety, Consumer Attitude, Regulatory Framework, and Economic and Sustainability Issues" (2022) 38:5 Food Rev Int'l 986 [Baiano].

38. Fernanda C Godoi, Sangeeta Prakash & Bhesh R Bhandari, "3D Printing Technologies Applied for Food Design: Status and Prospects" (2016) 179 J Food Engineering 44 at 45.

39. Jeffrey Lipton, "Printable Food: The Technology and Its Application in Human Health" (2017) 44 SciDirect 198 at 199 [Lipton].

40. Kristen Rogers, "When We'll Be Able to 3D-Print Organs and Who Will Be Able to Afford Them" (10 March 2023), online: <www.cnn.com/2022/06/10/health/3D-printed-organs-bioprinting-life-itself-wellness-scn/index.html> [perma.cc/S667-BKC8].

41. Ramachandraiah, *supra* note 23 at 2-3.

42. Ramachandraiah, *ibid* at 2.

"a layer-by-layer deposition with predetermined thickness to create complex three-dimensional objects from different materials used as 'inks,' using strictly the necessary amount of material to consolidate the shape of the printed object."[43]

Unlike cultivated meat, however, 3D printing uses 3D model data along with gastronomic technology to fabricate various structures and complex geometries of food with specific shapes, colours, flavours, textures, and nutrition.[44] Because of its sophistication, the 3D printing of meat can produce customized meat for large-scale production.[45] Furthermore, according to some, unlike cultivated meat, 3D printed meat holds the potential to better satisfy consumer demand in terms of quality, yield, affordability, and ecological sustainability.[46]

IV THE PRACTICAL PROBLEMS THAT 3D PRINTING MAY SOLVE

Below we have identified some of most significant problems that the 3D printing of meat may lessen or even, in limited aspects, eliminate. We also note that while these problems and some of their related issues may stand alone, they also overlap and are, for the most part, invariably intertwined. Our discussion of these problems aims to show how even in the infancy of this novel technology, the quality of life for both animals and humans might be improved overall. Such an assertion is not without commonality among the academy, as "3D printed food technologies . . . have thus far been positioned as offering solutions to the 'wicked futures' of climate change, food insecurity, poor nutrition, and environmental degradation, as well as to the mistreatment of and killing of animals for food."[47]

A. Rising Animal Consumption

Animal Justice, one of Canada's preeminent animal advocacy organizations, sourcing data from Agriculture Canada and Agri-Foods Canada, reported that in 2022 "841 million land animals were killed for food in Canada, making it the highest year on record since [Animal Justice] began analyzing government slaughter statistics."[48] In total, 767,847,756 meat chickens, 23,773,792 egg-laying hens and breeding chickens, 21,542,608 pigs, 19,234,269 turkeys, 4,577,813 ducks and geese, 3,446,282 adult cows (dairy & meat), 497,101 sheep and lambs, and 187,959 calves were killed in Canadian food production activities in 2022.[49] Each of these numbers went up in 2023 with nearly 859 million land animals killed for food, "making it the deadliest year on record since Animal Justice began analyzing government

---

43. Dick et al, *supra* note 26 at 36.

44. Guo, *supra* note 22 at 1664; Ramachandraiah, *supra* note 23 at 2.

45. Guo, *ibid* at 1664.

46. *Ibid*.

47. Lupton & Turner, *supra* note 8 at 271.

48. Animal Justice noted that as a result of disruptions caused by COVID-19, the number of slaughtered animals decreased during the pandemic: see Animal Justice, "Canada Slaughtered 841 Million Animals in 2022" (15 February 2023), online (blog): <animaljustice.ca/blog/2022-canada-slaughter-statistics> [perma.cc/D9K7-H6D8] [Animal Justice].

49. *Ibid*.

slaughter statistics [in 2015]."[50] In fact, with an exception for the restrictions precipitated by the COVID-19 pandemic in 2020, these numbers have steady increased each year since 2015.[51]

Problematically, such numbers do *not* paint an entirely accurate portrait of the total number of *all* animals killed for food each year in Canada. The figures above only account for land animals who were slaughtered and entered the food supply and do *not* account for animals who died on farms or during transport, including male chicks ground up alive as "waste" at hatcheries.[52] Even though billions of them are killed each year in Canada, making the true number of animals killed for food even more difficult to determine, fishes, lobsters, crabs, and clams are excluded from these statistics because the government "measure[s] their lives by weight, not as individuals."[53] Additionally, the federal government fails to provide data on how many horses are slaughtered in Canada for meat each year, leaving the last known number to be 54,000 horses in 2016.[54] The Observatory of Economic Complexity suggests that Canada was among the top ten horse-meat exporting countries in the world in 2021.[55]

Looking at the cattle/beef industry—which is the most problematic in terms of GHG emissions because of its intensive natural resource use[56]—the Government of Canada reported that as of July 1, 2023, Canadian farmers held an estimated 12.2 million cattle and calves on their farms.[57] In 2019, Canada was reported to be the world's eleventh largest producer of meat and dairy.[58] Obviously, meat and dairy production is big business and speaks with a powerful political voice in Canada.[59]

Such animals involved in meat and dairy "production" are, however, *property* in law, and from that perspective they are "correctly" measured in numbers and weight like other commodities, rather than from a position that grants them moral consideration as sentient beings who have inherent value and an interest in being alive—as individuals. Stated differently, these animals are merely "produced" so that they can be *killed* for human consumption, an altogether discomforting proposition. Unsurprisingly, Voiceless, an Australian organization advocating for social, political, legal, and institutional reform so that animals have legal rights

---

50. Shannon Nickerson, "Canada Killed a Record 859 Million Land Animals for Food in 2023" (6 June 2024), online (blog): <https://animaljustice.ca/blog/859-million-animals-slaughtered-2023> [perma.cc/9K2R-KACJ].

51. *Ibid*.

52. Animal Justice, *supra* note 48.

53. *Ibid*.

54. *Ibid*.

55. Observatory of Economic Complexity, "Which Countries Export Horse Meat?" (2021), online: <https://oec.world/en/visualize/tree_map/hs92/export/show/all/10205/2021/> [perma.cc/LRN9-VY84].

56. Ramachandraiah, *supra* note 23 at 1.

57. Statistics Canada, "Livestock Estimates, July 1, 2023" (23 August 2023), news release, online: <https://www150.statcan.gc.ca/n1/daily-quotidien/230823/dq230823D-eng.htm?indid=3212-1&indgeo=0> [perma.cc/KV4T-R429].

58. Hannah Ritchie, Pablo Rosado & Max Roserl, "Meat and Dairy Production" (last modified December 2023), online: <https://ourworldindata.org/meat-production> [perma.cc/VCX9-ZK9R] (see beef production data); see also Sarah J Pogue et al "Beef Productions and Ecosystem Services in Canada's Prairie Provinces" (2018) 166 Agric Sys 152.

59. See Dimitrije Protic et al, "COVID-19's Economic Impact on the Canadian Meat Processing Industry" (14 July 2020), online (blog): <https://medium.com/economicsforbusiness/covid-19s-economic-impact-on-the-canadian-meat-processing-industry-6b51203a6cff> [/perma.cc/GXJ2-GNMH].

and may flourish on their own terms,[60] ranked Canada as thirty-ninth in the world among fifty countries in its "Animal Cruelty Index" for its feeble laws respecting the production, consumption, and sanctioning of animal cruelty.[61] Animal Justice has also said that "Canada continues to have some of the worst animal protection laws in the western world."[62]

Beyond the staggering numbers just provided, and perhaps more importantly, many of these animals suffer incredible abuse, harm, cruelty, and suffering before ultimately being killed for food. Much of this violence and death is kept well hidden from public view.[63] Animal advocates and animal activists have gone to great lengths—some even dying and others going to prison—to expose this violence.[64] For various reasons, including regulatory capture, Parliament and provincial legislatures seem to not only turn a blind eye to this violence, but to enact legislation with severe penalties (known as "ag-gag" laws) designed to prevent this violence from being exposed by advocates and activists.[65]

Under the guise of increased "animal welfare promotion," the federal government also invests in the meat and dairy industries by providing money to better track livestock inventories, rather than investing in measures designed to improve the conditions and circumstances under which animals are killed.[66] Leaving aside these thorny political concerns, the process of "producing meat" in laboratories through cell cultivation and 3D printing could potentially serve to reduce not only these staggering kill numbers but also the abuse, harm, cruelty, and suffering—the violence—these animals endure by making it largely *unnecessary*. But ending the violence against animals and perhaps obviating the promulgation of "ag-gag laws"[67] are not the only problem that 3D printing might alleviate—anthropogenic environmental degradation and destruction might be curbed too.

---

60. Voiceless, "About Us" (last accessed 17 November 2024), online: <https://voiceless.org.au/about-us/> [perma.cc/K2GE-5LXH].

61. Voiceless, "The Voiceless Animal Cruelty Index" (2020), online: <vaci.voiceless.org.au/> [perma.cc/UDR5-M2L6].

62. Holly Lake, "Righting Canada's Wronged Animals" (10 September 2021), online: <https://nationalmagazine.ca/en-ca/articles/law/in-depth/2021/righting-canada-s-wronged-animals> [perma.cc/NPW3-TVBN].

63. See generally Amy J Fitzgerald, "A Social History of the Slaughterhouse: From Inception to Contemporary Implications" (2010) 17:1 Hum Ecology Rev 58.

64. See Bobby Hristova & Christine Rankin, "Activist Killed after Being Struck by Vehicle during Burlington Pig Plant Protest" (19 June 2020), online: <https://www.cbc.ca/news/canada/hamilton/pedestrian-dead-pig-protest-burlington-1.5619144> [perma.cc/FFM9-N7ZL]. See also *CBC News*, "Animal Rights Activists Sentenced to Time in Jail for 2019 Protest at BC Hog Farm" (13 October 2022), online: <https://www.cbc.ca/news/canada/british-columbia/b-c-animal-rights-activists-get-jail-time-1.6614762> [perma.cc/43LS-DXGE].

65. See Bill C-275, *An Act to amend the Health of Animals Act (biosecurity on farms)*, 1st Sess, 44th Parl, 2022 (passed first reading 30 May 2022, passed second reading 21 June 2023, passed third reading 29 November 2023; consideration in committee in the Senate as of June 2024), online: <https://www.parl.ca/DocumentViewer/en/44-1/bill/C-275/first-reading> [perma.cc/U664-PLAK].

66. Agriculture and Agri-Food Canada, News Release, "Government of Canada invests in improving animal welfare" (08 August 2022) online: <https://www.canada.ca/en/agriculture-agri-food/news/2022/08/government-of-canada-invests-in-improving-animal-welfare.html#> [perma.cc/F6JF-B5C3].

67. See generally Katie Sykes & Sam Skinner, "Fake Laws: How Ag-Gag Undermines the Rule of Law in Canada" (2022) 28:2 Animal L 229.

B. Anthropogenic Environmental Degradation and Destruction

While the killing of land animals in Canada for human consumption (i.e., food) itself presents moral and legal issues, ending that violence against animals would also prove beneficial for environmental reasons. It is no secret that climate change is one of the greatest issues facing modernity and that anthropogenic GHG emissions are one of the most significant contributors to climate change (manifested by increases in temperature and the frequency of droughts, rainfall intensity, flooding, and other severe weather events).[68] By reducing GHGs, it is thought, the destruction of Earth, its climate, and its atmosphere can be forestalled. For example, in March 2022 the federal government released its *2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a Strong Economy* (the Plan).[69] The Plan acknowledged that the "evidence is clear: we are facing a joint climate and biodiversity crisis."[70] Through a variety of ways, the Plan seeks to reduce GHGs in Canada by better regulating emissions and investing in new technologies. The 3D printing of meat speaks to these goals.

Industrial agriculture is a significant contributor to GHGs because of the methane gas[71] the animals produce and because of other contaminants and pollutants (such as metals and pesticides) standard industrial agricultural practices and activities release into soils, rivers, lakes, and the atmosphere.[72] Raising animals strictly for human consumption is far more land and resource intensive and emits far more GHGs than growing plant-based foods for human consumption.[73] This in turn causes further environmental degradation through wildlife habitat destruction and deforestation.[74] The Canadian government has recognized that "currently the majority of emissions come from biological sources, such as *livestock production* (enteric fermentation), the application of synthetic nitrogen fertilizers, manure management, and on-farm fuel use."[75] Thus, based on simple mathematics or logic, if industrial agriculture and the amount of animals raised for slaughter (and then slaughtered) were to be reduced, then naturally the amount of GHGs from the agriculture sector would also be reduced and so too would anthropogenic environmental degradation and destruction. There is no way to avoid these very simple fact-based realities.

---

68. Foster et al, *supra* note 21.

69. Prime Minister of Canada Justin Trudeau, Press Release, "Delivering clean air and a strong economy for Canadians" (29 March 2022) online: <www.pm.gc.ca/en/news/news-releases/2022/03/29/delivering-clean-air-and-strong-economy-canadians> [perma.cc/H8CS-CKFA].

70. Environment and Climate Change Canada, *2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a Strong Economy* (2022) at 142, online (pdf): <https://publications.gc.ca/collections/collection_2022/eccc/En4-460-2022-eng.pdf> [perma.cc/93R7-KKKM] [Environment and Climate Change Canada].

71. *Ibid* at 30: "Methane is a potent greenhouse gas [and once] released into the atmosphere . . . has 86 times the warming power of carbon dioxide over a 20-year period."

72. See generally Navius Research, *Part I: Animal-Sourced Food Consumption and Canada's Emissions Targets: Report Prepared for World Animal Protection Canada* (World Animal Protection, 2022).

73. *Ibid*.

74. Wolfgang Brozek & Christof Falkenberg, "Industrial Animal Farming and Zoonotic Risk: COVID-19 as a Gateway to Sustainable Change? A Scoping Study" (2021) 13:16 Sustainability 1 at 2 [Brozek & Falkenberg]; see also United Nations Environment Programme and International Livestock Research Institute, *Preventing the Next Pandemic: Zoonotic Diseases and How to Break the Chain of Transmission* (Kenya: United Nations Environment Programme, 2020) at 15–17, 29, 34, 55, 57, 68 [UNEP].

75. Environment and Climate Change Canada, *supra* note 70 at 59 [emphasis added].

The Plan goes on to recognize that "[d]emand for more environmentally-responsible and sustainable foods is increasing, as consumers around the globe are keen to know more about the food they purchase . . . thus [a]ctions taken on climate mitigation will help the Canadian brand stand out in a highly competitive global marketplace" and that "[n]ature-based solutions and alternative farming practices offer a large potential to reduce emissions in the agriculture sector, while providing additional co-benefits."[76] The Plan is largely silent on those co-benefits, however. While this omission is noticeable, an even more egregious omission is the Plan's failure to discuss—let alone contemplate—*reduced* livestock agriculture (and thus enteric fermentation) as a way to achieve the country's lowered GHG emissions goals, focusing instead on tree planting, grassland and wetland protection, improved forest management, using wood to store carbon, improving agricultural land use management, and reducing forest fires as carbon capture mitigation measures.[77] This is a stark omission given that, for example, industrial agriculture accounted for an estimated 10–12 per cent of total global anthropogenic GHG emissions[78] and in 2023 may account for as much as 40 per cent of all GHG emissions worldwide.[79]

Given, however, that the Plan seeks to reduce Canada's GHG emissions to net zero by 2050 (reducing emissions to the point that carbon emissions produced can be negated through carbon capture technologies),[80] a goal that it enshrined in the *Canadian Net-Zero Emissions Accountability Act*,[81] then reducing the amount of animals bred in industrial agricultural activities ought, naturally, to be pursued. An independent study prepared by the Canadian Climate Institute revealed, however, that while the Plan is credible and sets Canada on the path to mitigating climate disaster,[82] it is not calibrated to reach that goal.[83] Using three different animal consumption models and accounting for increased emissions from plant-based agriculture, another study conducted by World Animal Protection and Navius Research showed that Canada could close that gap if 35 per cent less meat and dairy was consumed by 2030 and 50 per cent less by 2050.[84] The 3D printing of meat naturally lends itself conceptually, if not

---

76. Environment and Climate Change Canada, *ibid* at 60.

77. See generally Environment and Climate Change Canada, *ibid*.

78. Intergovernmental Panel on Climate Change, *Climate Change 2007*: *Mitigation, Contribution of Working Group III to the Fourth Assessment Report of the IPCC* (Cambridge: Cambridge University Press, 2007) 497. See also Brenda B Lin et al, "Effects of Industrial Agriculture on Climate Change and the Mitigation Potential of Small-Scale Agro-Ecological Farms" (2011) CABI Rev 1 at 2.

79. Jake Young, "What Should Health Professions Students Know about Industrial Agriculture and Disease?" (2023) 25:4 Am J Ethics 264 at 265 [Young]; see generally Francesco N Tubiello et al, "Greenhouse Gas Emissions from Food Systems: Building the Evidence Base" (2021) 16:6 Envtl Research Letter 5007, online (pdf): <https://iopscience.iop.org/article/10.1088/1748-9326/ac018e> [perma.cc/P4KU-9QR2].

80. Environment and Climate Change Canada, *supra* note 70 at 6.

81. *Canadian Net-Zero Emissions Accountability Act*, SC 2021, c 22.

82. Dave Sawyer et al, "Independent Assessment: 2030 Emissions Reduction Plan" (April 2022) at 2, 4, online (pdf): <https://climateinstitute.ca/wp-content/uploads/2022/04/ERP-Volume-2-FINAL.pdf> [perma.cc/A3GP-FRFN].

83. *Ibid* at 11.

84. Hanna Hett, "Eating Less Meat Could Help Canada Achieve Its Climate Goals" (23 August 2022), online: <https://www.nationalobserver.com/2022/08/23/news/eating-less-meat-could-help-canada-achieve-climate-goals> [perma.cc/9RV6-9KTD]; Foster et al, *supra* note 21.

entirely practically, to helping achieve these goals and more.[85] But that is not to say that the 3D printing of meat is without environmental concerns.[86]

Furthermore, the federal government referred to its own Agricultural Clean Technology Program (ACTP) in the Plan, which is a "$165.7 million fund that aims to create an enabling environment for the development and adoption of clean technologies that reduce emissions and enhance competitiveness [by prioritizing] energy and energy efficiency, precision agriculture and bioeconomy technologies."[87] The ACTP, in its "Research and Innovation" stream, contemplates supporting "pre-market innovation, including research, development, demonstration and commercialization activities, to develop transformative clean technologies and enable the expansion of current technologies, in 3 priority areas: green energy and energy efficiency; precision agriculture; and bioeconomy."[88] Activities eligible for funding under the ACTP include applied research and development of clean technologies, piloting and evaluating clean technologies, demonstration and knowledge and technology transfer activities, commercializing and scaling up clean technologies, and other activities that support the research and innovation stream as determined by the program.[89] The 3D printing of meat might be considered a clean technology or a form of precision agriculture that could satisfy any or all of these criteria. Thus, the 3D printing of meat, if economically efficient and sufficiently regulated to address some of the concerns we address in this article, might not only reduce the amount of livestock contributing to GHG emissions but also reduce the abuse, cruelty, harm, and suffering these animals endure. The 3D printing of meat is also well poised for further scientific research funding under the federal government's ACTP program. As Lipton warned, however, "3D food printing is a field dominated by secretive corporate research projects, sponsored research and startups [who] tend to publish their work less frequently and provide few technical details to maintain competitive advantage. This may enable capitalization of innovation, but slows its pace."[90] The nature of resistance that the meat and dairy lobby is likely to impart is also a concern in the development and deployment of 3D printing technology.

C. Health Concerns

There are a number of health concerns related to industrial agriculture, not all of which can be examined in detail here. While antimicrobial resistance, the effects of soil and water contamination and pollution on human health, and environmental health injustice (environmental racism) are all important considerations in the discussion we have undertaken

85. See Grace Hussain, "Reducing Meat Consumption by a Third Could Offset Almost All Global Airline Emission" (3 November 2023), online: <sentientmedia.org/reducing-meat-consumption-airline-emissions> [perma.cc/G9CB-PHD6].

86. Smetana et al, *supra* note 6.

87. Environment and Climate Change Canada, *supra* note 70 at 61.

88. Government of Canada, "Agricultural Clean Technology Program: Research and Innovation Stream: Step 1. What This Program Offers" (last modified 03 October 2022), online: <https://agriculture.canada.ca/en/programs/agricultural-clean-technology-research-innovation-stream> [perma.cc/PYU8-5YG5].

89. *Ibid.*

90. Lipton, *supra* note 39 at 199–200.

in this article, we touch on these only briefly and leave them for detailed discussion elsewhere.[91] Instead, we focus primarily on zoonoses-induced pandemics and human nutritional health as health concerns that 3D printing might alleviate.

1. Zoonoses-Induced Pandemics

The COVID-19 pandemic, which ranged from approximately late 2019 to 2021, was perhaps the most significant global event of the twenty-first century thus far.[92] Despite not being able to reach a firm consensus on COVID-19's origins, most epidemiologists and scientists agree that the COVID-19 pandemic was induced by a zoonotic disease(s).[93] Zoonotic diseases—or more simply zoonoses—are pathogens that are easily transmitted and retransmitted across various species, regardless of whether they are human or non-human. This interspecies transmission is what makes zoonoses so dangerous to animal and human health.[94] Each subsequent transmission may cause the pathogen to mutate, thus making vaccines extremely difficult to develop and deploy in the face of a raging worldwide pandemic.[95] The Centers for Disease Control and Prevention (CDC) in the United States, for example, estimates "that more than 6 out of every 10 known infectious diseases in people can be spread from animals, and 3 out of every 4 new or emerging infectious diseases in people come from animals."[96] Zoonoses are all around us.

Of course, COVID-19 is not the planet's first exposure to zoonoses in recent history (nor even in the last two centuries for that matter). The worldwide 2002–2004 SARS outbreak,[97] the

---

91. See Young, *supra* note 79 at 265; see also Leo Horrigan, Robert S Lawrence & Polly Walker, "How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture" (2002) 110:5 Envtl Health Persp 445. See also Ellen K Silbergeld, Jay Graham & Lance B Price, "Industrial Food Animal Production, Antimicrobial Resistance, and Human Health" (2008) 29 Ann Rev of Pub Health 151 at 152.

92. Globally, as of October 2023, there were 6,960,783 deaths from COVID-19. See World Health Organization "WHO COVID-19 Dashboard," online: <data.who.int/dashboards/covid19/cases?n=c> **[perma.cc/W632-5RQZ].**

93. Annah Lake Zhu et al, "The Politicization of COVID-19 Origin Stories: Insights from a Cross-Sectional Survey in China" (2023) 13(2) Societies 1 at 15; Alessandra Borsetti et al, "The Unresolved Question on COVID-19 Virus Origin: The Three Cards Game?" (2021) 94:4 J Med Virol 1257 at 1258.

94. Gustavo Fermin, "Host Range, Host—Virus Interactions, and Virus Transmission" (2018) Viruses 101 at 127–28. See also Daniel T Haydon et al, "Identifying Reservoirs of Infection: A Conceptual and Practical Challenge" (2002) 8:12 Emerging Infectious Diseases 1468 at 1472; RW Ashford, "When Is a Reservoir Not a Reservoir?" (2003) Emerging Infectious Diseases 1495; M V Palmer, "*Mycobacterium bovis*: Characteristics of Wildlife Reservoir Hosts" (2013) 60:1 Transboundary and Emerging Diseases 1.

95. University of California at Berkeley, "The Deep Evolutionary History of the New Coronavirus" (April 2020), online: <evolution.berkeley.edu/evo-news/the-deep-evolutionary-history-of-the-new-coronavirus/> [perma.cc/7SND-KEPE].

96. Centers for Disease Control, "Zoonotic Diseases" (29 February 2024), online: <www.cdc.gov/one-health/about/about-zoonotic-diseases.html?CDC_AAref_Val> [perma.cc/RD7M-K7K6].

97. James D Cherry, "The Chronology of the 2002–2003 SARS Mini Pandemic" (2004) 5:4 PubMed Central 262.

worldwide 2009 swine flu epidemic,[98] and the worldwide 2015–2016 zika virus epidemic[99] are all good examples of previous zoonotic events. Innumerably more zoonoses-induced outbreaks, epidemics, and pandemics occurred and continue to occur at local, regional, and continental levels.[100] Furthermore, while so-called "wet markets" or live animal markets and the highly lucrative illegal trade in wildlife contributes to zoonotic transmissions,[101] a recent report from the United Nations prepared and reviewed by numerous experts warned that the "frequency of pathogenic microorganisms jumping from other animals to people is increasing due to unsustainable human activities. Pandemics such as the COVID-19 outbreak are a *predictable and predicted outcome of how people source and grow food, trade and consume animals, and alter environments*."[102]

It comes as no surprise then that industrial agriculture activities are harbingers of zoonoses, and given the prevalence of cattle and other livestock-breeding operations in Canada, the threats posed to human health are indeed real ones.[103] The overcrowding of animals; the use and overuse of antibiotics in animals; and the unimaginably cruel, abusive, and stressful conditions in which the animals are held all serve to exacerbate the risk of viral, pathogenic, and bacterial transmissions among the animals held captive and among the humans who work in these factory farms.[104] Some persons have even curtailed or even eliminated their consumption of meat and dairy in the interests of *other* humans.[105]

Reducing the number of animals slaughtered for human consumption would not only lessen the total GHG emissions discussed earlier, but it might also mitigate the potential for larger-scale zoonoses transmissions at these industrial agriculture livestock operations or

---

98. See Krista J Howden et al, "An Investigation into Human Pandemic Influenza Virus (H1N1) 2009 on an Alberta Swine Farm" (2009) 50:11 PubMed Central 1153; Joanne Embree, "Pandemic 2009 (A)H1N1 Influenza (Swine Flu)—The Manitoba Experience" (2010) 88 Biochemry & Cell Bio 589; Donald Tremblay et al, "Emergence of a New Swine H3N2 and Pandemic (H1N1) 2009 Influenza A Virus Reassortant in Two Canadian Animal Populations, Mink and Swine" (2011) 49:12 PubMed Central 4386.

99. Joanne Tataryn et al, "Travel-Related Zika Virus Cases in Canada: October 2015–June 2017" (2018) 44:1 Can Communicable Disease Rep 18; Pia K Muchaal, "Zika Virus: Where to from Here?" (2018) 44:1 Can Communicable Disease Rep 27.

100. World Health Organization, "Zoonoses" (29 July 2020), online: <https://www.who.int/news-room/fact-sheets/detail/zoonoses> [perma.cc/29A7-8K7L].

101. Marcos A Bezerra-Santos et al, "Illegal Wildlife Trade: A Gateway to Zoonotic Infectious Diseases" (2021) 37:3 Trends in Parasitology 181 at 181; James M Hassell et al, "Urbanization and Disease Emergence: Dynamics at the Wildlife–Livestock–Human Interface" (2017) 32:1 Trends in Ecology & Evolution 55 at 55; Eric Wikramanayake et al, "Evaluating Wildlife Markets for Pandemic Disease Risk" (2021) 5:7 Lancet Planetary Health 400 at 400.

102. UNEP, *supra* note 74 at 7 [emphasis added]. See also Ann Linder et al, *Animal Markets and Zoonotic Disease in the United States* (Cambridge: Brooks McCormick JR Animal Law and Policy Program, 2023), online (pdf): <https://animal.law.harvard.edu/wp-content/uploads/Animal-Markets-and-Zoonotic-Disease-in-the-United-States.pdf> [perma.cc/6BV6-R7ET].

103. See generally François Meurens et al, "Animal Board Invited Review: Risks of Zoonotic Disease Emergence at the Interface of Wildlife and Livestock Systems" (2021) 15:6 Animal 100241; see Nicholas H Ogden & Philippe Gachon, "Climate Change and Infectious Diseases: What Can We Expect?" (2019) 45:4 Can Communicable Disease Rep 76 at 78.

104. Brozek & Falkenberg, *supra* note 74, at 2, 13.

105. Steven Ammerman & Monica L Smith, "Vegetarianism in the Pandemic Era: Using Digital Media to Assess the Cultural Politics of Meat Avoidance during COVID-19" (2023) 4 Digital Geo and Soc at 1.

factory farms. Furthermore, while such a reduction is a reward in itself, any such reduction in consumption could be counterbalanced by the 3D printing of meat, which is likely to be safer than current industrial agriculture practices. The 3D printing of meat therefore holds potential to stave off environmental threats. It may also offer certain nutritional benefits to human health.

2. Human Nutritional Health

Not only would reduced consumption of meat and dairy assist in the reduction of GHGs and lessen the potential for zoonoses outbreaks, epidemics, and pandemics, it would also improve human health overall. The overconsumption of red meat (in particular) and dairy have been shown to have negative effects on human health.[106] Nutritional science increasingly encourages Canadians to reduce—if not eliminate—meat and dairy consumption by adopting a plant-based diet and seeking out alternative sources of protein and calcium (such as soy, spinach, oat-milk products, and even insect protein).[107] Furthermore, notwithstanding personal preferences, some people may not be able to consume regular foods because of age, disability, or allergies, and 3D printing of other foods, not just meat, enables automated customized food products to be produced for them.[108] A 3D printed food option may provide suitable alternatives to the status quo and have a transformative effect on human health.[109] It might also assist those in developing countries who may struggle to achieve an adequately nutritional diet.

V THE REGULATION OF 3D PRINTING TECHNOLOGY

Several major regulatory issues will need to be addressed prior to the large-scale production and sale of 3D printed meats in the Canadian market. 3D printed meat and cultivated meats are at a crossroads. While 3D printed meat is still in its nascent state and therefore product regulation is underdeveloped, lab-cultivated meat is further along the regulatory pathway. Both the United States and Singapore have regulatory provisions in place that allow for the

---

106. Susanne Stoll-Kleemann & Tim O'Riordan, "The Sustainability Challenges of Our Meat and Dairy Diets" (2015) 57:3 Env't 34 at 43; see also Xiao Gu et al, "Red Meat Intake and Risk of Type 2 Diabetes in a Prospective Cohort Study of United States Females and Males" (2023) 118:6 Am J of Clinical Nutrition 1153.

107. See generally Hrvoje Fabek et al, "An Examination of Contributions of Animal- and Plant-Based Dietary Patterns on the Nutrient Quality of Diets of Adult Canadians" (2021) 46:8 App Physiology, Nutrition, and Metabolism 877 at 878.

108. Baiano, *supra* note 37 at 198; Lupton & Turner, *supra* note 8 at 270.

109. Baiano, *ibid* at 994.

sale of lab-cultivated meats.[110] Other countries have taken a different approach. Recently, Italy has passed a law banning the sale and import of lab-cultivated meats, and France has now introduced a similar bill.[111] In January 2024, Italy, France, and Austria brought the matter before the EU Council of Ministers and EU agriculture ministers.[112] Controversy around these products is not surprising; similar battles have been waged in the past when science and food products have collided. For example, when genetically modified foods were introduced, public backlash against the products were significant.[113]

Using the precautionary principle, it is important that regulatory responses are carefully thought out. While there are a multitude of regulatory issues that need to be addressed prior to 3D printed meat being approved for sale, this section focuses on the post-manufacturing aspects of regulation;[114] specifically, issues surrounding the safety assessment, labelling, and marketing of 3D printed meat. Our arguments will serve to highlight emerging areas in need of regulatory consideration and will examine how laws and regulations have been developed and implemented in other areas of emerging food technologies, including areas related to genetically modified foods and cultivated meat products and the potential application and relevance to 3D printing technology.

---

110. It should be noted that while the US Department of Agriculture has approved the sale of lab-grown meats, some individual states have tried to ban the sale of the products within their jurisdiction. See for instance Florida, which attempted to pass a law banning "cultivated meats." The definition of cultivated meats included was broad enough to include a prohibition on 3D-printed meats. See US, Senate Bill 586, *An act relating to cultivated meat*, Florida, 2024. The bill died in the Agriculture Committee (8 March 2024) (a companion bill on an unrelated subject matter passed), online: <https://www.myfloridahouse.gov/Sections/Bills/billsdetail.aspx?BillId=79230&> [perma.cc/MQV6-5NG6]; "Arizona Bills Aim to Ban Cell-Based Meat; Restrict Labeling of Meat Alternatives as 'Meat,'" *Food Safety Magazine* (16 January 2024), online: <https://www.food-safety.com/articles/9171-arizona-bills-aim-to-ban-cell-based-meat-restrict-labeling-of-meat-alternatives-as-meat> [perma.cc/3NTP-W9EQ].

111. Italy has stated that the law prohibiting cell-cultivated meats protects the nation's food heritage and was thus a necessary step. See Paul Kirby, "Italy Bans Lab-Grown Meat in Nod to Farmers" (17 November 2023), online: <www.bbc.com/news/world-europe-67448116> [perma.cc/5UX9-2DRQ]. See also European Food Agency, "Cultivated Meat, Law Proposal to Ban It in France" (12 November 2023), online: <www.efanews.eu/en/item/36576-cultivated-meat-law-proposal-to-ban-it-in-france.html> [perma.cc/XD9H-ZWKY].

112. See Gerardo Fortuna, "Coalition Puts Fake Meat on Ministers' Menu, and Sinks in Teeth" (19 January 2024), online: <www.euronews.com/my-europe/2024/01/19/coalition-puts-fake-meat-on-ministers-menu-and-sinks-in-teeth> [perma.cc/H493-CG2X].

113. Annie Gasparro, "The GMO Fight Ripples Food Chain: Facing Pressure, More Firms Are Jettisoning GMOs from Their Foods" (7 August 2014), online: https://www.wsj.com/articles/the-gmo-fight-ripples-down-the-food-chain-1407465378. See also Stefaan Blancke, "Why People Oppose GMOs Even though Science Says They Are Safe" (18 August 2015), online: <https://www.scientificamerican.com/article/why-people-oppose-gmos-even-though-science-says-they-are-safe/> [perma.cc/9N3Q-AGZH?type=image].

114. There are already restaurants that use 3D printing technology (though not animal protein) to make foods; the idea of 3D printing animal proteins from home has been discussed as a possibility. Nonetheless, our paper will limit the discussion to mass production of 3D printed meat for wholesale distribution. See Eustacia Huen, "3D Food Printing: Is It Ready for Luxury Dining?" (31 July 2015), online: <https://www.forbes.com/sites/eustaciahuen/2015/07/31/3D-food-printing-is-it-ready-for-luxury-dining/?sh=4a73D4051236> [perma.cc/MV3N-PAE2]; Gareth Rubin, "How Do You Like Your Beef…old-Style Cow or 3D-Printed?" (10 November 2019), online: <https://www.theguardian.com/technology/2019/nov/10/3D-printed-meat-european-restaurant-menus-environment> [perma.cc/SWG2-QQ56] [Rubin].

A. Production and Safety

The regulation of food products in Canada is complex and involves federal, provincial, and municipal governments. Several different departments and agencies are responsible for overseeing and enforcing legislation related to food safety.[115] As of writing, Canada has not adopted new regulations for lab-cultivated or cultured-cell meats, which might be similarly applied to the process involving the 3D printing of meat. The question therefore is whether 3D printed animal proteins will fit into the current regulatory framework (that does not include special regulations for lab-cultivated meats) or whether new regulations will need to be developed for this innovative technology.

The *Food and Drugs Act*[116] and its associated regulations is the primary piece of legislation responsible for regulating food safety in Canada. Food is broadly defined as "any article manufactured, sold or represented for use as food or drink for human beings, chewing gum, and any ingredient that may be mixed with food for any purpose whatever."[117] Given the broad definition of food, animal proteins that are designed for human consumption, even if using a new technology to produce them, would fall into this category. Because 3D printed animal proteins would be defined as food, how these products would be approved and made available to the public would need to be addressed. Recent innovations in food and food technology, including "vegetarian meats" and genetically modified foods (GM foods), may provide some guidance on how 3D printed meat may be regulated. Should Canada choose not to adopt specific regulations for 3D printed meat, the current regulatory system to approve foods for consumption is still broad enough to capture 3D printed animal proteins; however, as shown below, without amendments there are significant areas of uncertainty that exist in the current regulatory system. It would be prudent to address these prior to the introduction of 3D printed meat to the Canadian market.

In Canada, any "novel" food is subject to Health Canada approval. A "novel" food can include both new foods, meaning a food that has not traditionally been consumed as a safe food product, "a food that has been manufactured, prepared, preserved or packaged by a process that: (i) has not been previously applied to that food, and (ii) causes the food to undergo a major change," or a "food that is derived from a plant, animal or microorganism that has been genetically modified."[118] 3D printed foods, like lab-cultivated meats, would likely fall into this definition because of their novel manufacturing process.[119]

In Canada, novel foods are subject to a safety evaluation prior to the food being made available for sale or consumption. Manufacturers are required to submit an application package to Health Canada's Food Directorate that provides evidence on the safety and

---

115. This paper will not delve into the minutia of food regulation in Canada. For more information on the various government agencies and legislation, please see Canadian Institute of Food Safety, "Who's Responsible for Food Safety in Canada?" (4 November 2021), online (blog): <https://blog.foodsafety.ca/whos-responsible-food-safety-canada> [perma.cc/KFR2-AJTD].

116. RSC 1985, c F-27.

117. *Ibid*, s 2.

118. *Food and Drugs Regulations*, CRC c 870 at B.28.001 (2024) [*Food and Drugs Regulations*].

119. In February 2024, Health Canada used the novel food regulations to approve the "first animal-free milk protein"; see Laura Brehaut, "First Animal-Free Milk Protein Approved for Sale in Canada" (10 February 2024), online: <nationalpost.com/news/canada/first-animal-free-milk-protein-approved-for-sale-in-canada> [perma.cc/8D6F-FYBB].

suitability of the food product.[120] Health Canada has produced guidelines on how to assess novel foods derived from plants and microorganisms; as of January 2024, Health Canada is still developing specific guidelines for the safety assessment of novel foods derived from animals.[121] 3D printed animal protein, as well as lab-cultivated meats, will fall under these yet to be released guidelines. Although the exact safety assessment requirements are unknown, based on those currently in place for novel foods derived from plants and microorganisms, safety assessments for novel foods derived from animal protein will likely consider similar concerns, notably toxicology, nutrition, microbial safety, dietary exposures, and allergens, amongst others.[122] Environmental impact assessment is not currently part of the considerations on whether to approve novel foods; however, guidelines on this are under development and this should be an important consideration when examining 3D printed meats and lab-cultivated meats.[123] Only once a product has been determined to be safe for human consumption can the product be made available to the public. It should be noted that this process is not without criticism. As Angela Lee points out, "[t]he decision is generally based on the information provided by the petitioner, with little to no independent testing, and little to no opportunities for participation by other stakeholders or the general public."[124]

Given the potential rapid global expansion of 3D printed meat technology, and in light of the precautionary principle, safety of the food product should be at the forefront of concerns. While Health Canada's approval process would require an examination of key safety concerns, ensuring a robust and rigid review process will be critical to public confidence in these products. As mentioned, regulations are currently being developed, and how these key safety concerns are assessed will be important.

B. Legal Name of the Output

Perhaps the most contentious area emerging that is associated with cultivated meats, and which would equally apply to 3D printed meats, involves the labelling and marketing of these new meat products. Naming, labelling, and marketing has always been a contentious issue when novel foods try to break into long-standing traditional markets, such as the meat or

---

120. Accordingly, "[t]he safety criteria for the assessment of novel foods outlined in the current document were derived from internationally established scientific principles and guidelines developed through the work of the Organization for Economic Cooperation and Development (OECD), Food and Agriculture Organisation (FAO), World Health Organisation (WHO) and the Codex Alimentarius Commission." Health Canada Food Directorate, "Guidelines for the Safety Assessment of Novel Foods" (updated July 2022), online: <https://www.canada.ca/en/health-canada/services/food-nutrition/legislation-guidelines/guidance-documents/guidelines-safety-assessment-novel-foods-2006.html> [perma.cc/ZE7E-KMTK] [Health Canada].

121. *Ibid*, s 4.3.

122. *Ibid*, s 2.2.

123. *Ibid* at s 3.1. Some studies have indicated that cultivated meat may require more energy use than traditional meat manufacturing (these same concerns have not been expressed for 3D printed meat). See e.g. Jordan Wiklund, "Study: Lab-Grown Meat Potentially Worse for Environment than Retail Beef" (26 May 2023), online (blog): <https://foodinstitute.com/focus/study-lab-grown-meat-potentially-worse-for-environment-than-retail-beef/> [perma.cc/3GP7-JTAY] (the study cited in the article has yet to be peer reviewed).

124. Angela Lee, "The Stakes in Steak: Examining Barriers to and Opportunities for Alternatives to Animal Products in Canada" (2018) 41:1 Dalhousie LJ 219 at 236.

dairy industries. In recent history there have been objections (largely from the industry) to the naming of milk alternatives (including oat, soya, and almond) as "milk"[125] and vegetarian-based meats as "meats."[126] There has been such intense lobbying surrounding the naming and marketing of these products, that some countries have chosen to address these concerns through legislative response.[127] Internationally, this type of protest has already started against lab-cultivated meats, and legislative responses have been introduced, predominantly in the United States.[128] Constitutional litigation on the basis of freedom of expression has also been

---

125. In Canada, milk alternatives have traditionally been named and labelled as beverages instead of milk. This "legal" name and labelling on the package is a result of the *Food and Drugs Regulations* definition of what constitutes milk. According to the regulations, milk refers specifically to cow milk. See *Food and Drug Regulations*, *supra* note 118, s B.08.003. In countries that do not have a specific definition of "milk" linking it with specific animals, the fight over what to call these "milk" products has turned legal. See e.g. Leanne Garfield, "Dairy Companies Are Fighting with Soy Milk Producers over What Can Be Called Milk" (6 March 2017), online: <https://www.businessinsider.com/dairy-pride-act-soy-almond-milk-congress-2017-3> [perma.cc/9DSG-UVJ4]. Other countries do not have the same definition of milk and litigation on the issue of the definition of milk has occurred. See *Verband Sozialer Wettbewerb eV v TofuTown.com GmbH,* C-422/16, [2017] ECR I-1 at I-24.

126. Jonah Engel Bronwich & Sanam Yar, "The Fake Meat War" *The New York Times* (25 July 2019), online: <https://www.nytimes.com/2019/07/25/style/plant-based-meat-law.html> [perma.cc/K2BS-3DZ3].

127. Even Canada has started consultation on this issue. See Canadian Food Inspection Agency, "News release: Government of Canada Launches Consultation on Guidelines for Simulated Meat and Poultry Products" (30 November 2020), online: <https://www.canada.ca/en/food-inspection-agency/news/2020/11/government-of-canada-launches-consultation-on-guidelines-for-simulated-meat-and-poultry-products.html> [perma.cc/R73Q-P9CR]; see also Joshua Pitkoff, "State Bans on Labeling for Alternative Meat Products: Free Speech and Consumer Protection" (2021) 29 NYU Envtl LJ 297; Leo Sands, "'Steak' and 'Ham' Labels on Plant-Based Food? France Says Non" (5 September 2023), online: <https://www.washingtonpost.com/world/2023/09/05/vegan-meat-ban-france/> [perma.cc/K4T3-XDZT]; Daniel Fitzgerald, "Senate 'Fake Meat' Inquiry Recommends Overhaul of Plant-Based Protein Labelling Laws" (24 February 2022), online: <https://www.abc.net.au/news/rural/2022-02-24/definition-of-meat-inquiry-food-labelling/100855864#> [perma.cc/3P7D-YH4Z].

128. See US Bill S 3281, *Real Marketing Edible Artificials Truthfully Act of 2023*, 118th Congress, 2023, online: <perma.cc/M6S8-DBVC> and US Bill S 3693, *Fair and Accurate Ingredient Representation on Labels Act of 2024,* online: < perma.cc/9WKL-QFBW> and US Bill HR 71370, *Fair and Accurate Ingredient Representation on Labels Act of 2024*, 118th Congress, 2024, online: <perma.cc/ZE4R-WCD3>, as well as a number of US states that have implemented various measures; for example: US AB *555*, *An Act to create 97.50 of the statutes: Relating to: labeling a food product as containing lab-grown animal cells, providing an exemption from emergency rule procedures, and providing a penalty,* 2023–2024, Reg Sess, Wis, 2023, online: <perma.cc/4K93-7X2D>; US HB 2121, *Cell-cultured animal product, prohibition,* 2024, 56th Leg, Reg Sess, Ariz, 2024, online: <perma.cc/G872-L8RY>; US HB 908, *Food service establishments; certain food products to be disclosed as containing cell cultured meat and plant based meat alternatives require*, 2023–2024, Reg Sess, Ga online: <perma.cc/XB9D-8R5D>; US SB 586, *An Act Related to Cultivated* Meat, 2024, Reg Sess, Fla, 2024, online: <perma.cc/9GU8-QBNB>; US SB 582, *Prohibition on Cell Cultured Animal Products Act*, 2024, 86th Leg, Reg Sess, W Va, 2024 online: <perma.cc/JB8V-WCK3>; US HB 5349, *West Virginia Truth in Food Labeling Act*, 86th Leg, Reg Sess, W Va, 2024, online: <perma.cc/5XJF-SLL5>; US HB 2860 & SB 2870, *An Act to amend Tennessee Code Annotated, Title 39; Title 40; Title 44; Title 47 and Title 53, relative to cell-cultured food products*, 2023–2024, 113th Gen Assem, Tenn, 2024, online: <https://perma.cc/Y4FQ-CMV5>; US SB 1649, *Misbranding; misrepresenting; food products,* 56th Leg, Reg Sess, Ariz, 2024, online: <perma.cc/M4ZY-7QPX>; US SB 23, *Food Products, manufacture and distribution of meat from cultured animal cells prohibited*, 2024, Reg Sess, Ala, 2024, online: < https://perma.cc/ZJD9-VLKJ>.

initiated on this issue.[129] While 3D printed meat has not been singled out, most of the current legislative responses are broad enough to encompass all forms of cell-derived meats, including 3D printed meats. It is highly unlikely that Canada will be exempt from this controversy.[130]

Nonetheless, the first issue that will need to be addressed is what will 3D printed meat be named? Colloquially, many people may refer to the product derived from the 3D printing of animal proteins as "meat," but the question remains as to whether that is in fact an appropriate term for such a product. While the product is derived from animal cells, including commonly consumed fat and muscle cells which are then made into bioink, the manufacturing process does not require the use of an animal carcass or the slaughter of an animal.[131] Currently, the *Food and Drugs Act* and its regulations define meat in relation to the slaughter process,[132] while the *Safe Foods for Canadians Act*[133] and its regulations define meat products as "the carcass of a food animal."[134] 3D printed animal meat would not comport with either of these definitions. Thus, while the public may choose to identify and call the 3D printed product as "meat," classifying the product as such under the law will require amendments to current laws and regulations.

If the federal government fails to expand the definition of meat to include those derived from technologies not requiring the slaughter of animals or animal carcasses, manufacturers will be required to identify their meat using a different term.[135] This issue will be further complicated when attempting to identify the type of meat, grade, and cut that is being sold. For instance, scientists have successfully 3D printed a cut of wagyu beef that "looks just like the real thing."[136] Can this type of 3D printed meat legitimately be called "wagyu beef"? Again, in Canada, most of the regulatory provisions surrounding the naming of the meat, grade, and cut are premised on the meat being derived from an animal that was alive before slaughter and not on cell-derived technology.[137] These are issues that ultimately will require government

---

129. Animal Legal Defense Fund, "Challenging Texas' Unconstitutional Label Censorship Law: Turtle Island Foods v. Abbott" (5 August 2024), online: <https://aldf.org/case/challenging-texas-unconstitutional-label-censorship-law/> [perma.cc/U2ZF-CYGY].

130. For instance, vegan cheese being labelled as "cheese" has created litigation in Canada. See *Rawesome Raw Vegan Inc c Procureur générale du Québec,* 2024 QCCS 9.

131. Jane McNaughton, "Printing Meat from Stem Cells Could Be the Future of Food, but Consumers Will Need Convincing" (17 May 2021) online: <https://www.abc.net.au/news/rural/2021-05-18/3D-printed-meat-grown-in-lab-from-stem-cells/100131276> [perma.cc/XJ4G-AZAK].

132. *Food and Drug Regulations, supra* note 118, s B.14.002, which states "Meat shall be the edible part of the skeletal muscle of an animal that was healthy at the time of slaughter."

133. SC 2012, c 24.

134. *Safe Food for Canadians Regulations,* SOR/2018-108, Part 1, made under the *Safe Foods for Canadians Act, ibid.*

135. This will be similar to what has transpired with "milk" alternative beverages.

136. Corryn Wetzel, "Scientists Create First 3-D Printed Wagyu Beef" (2 September 2021), online: <https://www.smithsonianmag.com/smart-news/scientists-create-first-3-d-printed-wagyu-beef-180978565/> [perma.cc/L89W-SUH3].

137. See e.g. the Canadian Beef Grading Agency (a corporation that has been accredited by the Canadian Food Inspection Agency) whose trained graders assess the whole animal carcass to determine its grade. Beef Cattle Research Council, "Carcass Grading" (last accessed 12 December 2024), online: <https://www.beefresearch.ca/topics/carcass-grading/> [perma.cc/3U4Y-PZ6G].

intervention to fully resolve, and clarification on this nomenclature and how it can be applied to a wide variety of meats produced using 3D technology will need to happen.

C. Other Labelling Concerns

In addition to naming the 3D printed product, other discussions on how to label the product will also likely produce disputes. If the definition of "meat" is updated in Canadian law to include products derived from animal proteins, how the product will be labelled for consumer information will be an area of concern. Specifically, concern will focus on whether the product needs a label identifying that the meat has been produced using 3D printed technology instead of the current slaughter process. Food labelling is also regulated in Canada. Pursuant to the *Food and Drugs Act* and the *Safe Food for Canadians Act*, food labels must not be deceptive, misleading, or untrue,[138] and they must comply with providing specific nutritional information about the food product,[139] among other requirements. These would apply to 3D printed meat, but would the manufacturing or production process need to be included? How the government handled the labelling of GM foods may provide some insight as to how this issue might be addressed.

GM foods must comply with the food labelling outlined in the *Food and Drugs Act* and the *Safe Food for Canadians Act* and their associated regulations; there are no additional legal regulations that mandate that the product must be labelled to indicate that the food was produced using genetic modification technology. The rationale for the lack of labelling requirements is that "[t]hey are labelled like any other food because our safety assessments have found them to be as safe and nutritious as non-GM foods."[140] Despite the lack of mandatory provisions, the Canadian government has supported the development of a voluntary labelling system to allow foods to identify as genetically modified or to identify as non-genetically modified.[141] The decision to include this information is left to individual manufacturers of the food product. A similar approach could work for 3D printed meat. In fact, manufacturers of 3D printed meat may want to advertise the production process given the potential market benefits of producing cruelty-free, environmentally friendly meat products.[142] But whether this is an appropriate approach to 3D printing technologies should

---

138. *Food and Drugs Regulations*, *supra* note 118, s 5.

139. *Ibid* at part 11.

140. Government of Canada, "Novel Foods: Labelling Genetically Modified Foods" (18 May 2022), online: <https://www.canada.ca/en/health-canada/services/food-nutrition/genetically-modified-foods-other-novel-foods/labelling.html> [perma.cc/ZY4K-326W].

141. Canada, Standards Council of Canada & Canadian General Standards Board, *Voluntary Labelling and Advertising of Foods That Are and Are Not Products of Genetic Engineering*, reaffirmed May 2021, CAN/CGSB-32.315-2004 (2021) online (pdf): <https://publications.gc.ca/collections/collection_2021/ongc-cgsb/P29-32-315-2021-eng.pdf> [perma.cc/7XCT-774W].

142. As stated, this type of produced animal protein may have significant environmental benefits and offers a non-cruel alternative to traditional meat processing; there currently is a segment of the population who do not consume meat because of the concerns associated with traditional meat production. This population may be willing to consume this alternatively produced meat. See European Food Information Council, "Lab Grown Meat: How It Is Made and What Are the Pros and Cons" (17 March 2023) online: <https://www.eufic.org/en/food-production/article/lab-grown-meat-how-it-is-made-and-what-are-the-pros-and-cons> [perma.cc/5LQ7-C39E].

be carefully considered, and it is an issue that should be resolved prior to public sale of these products.

VI CONCLUSION

What will consumer response to 3D printed meat be? The answer to this question will likely ultimately determine whether the animal benefits, environmental benefits, and public health benefits discussed herein will be realized. One study showed that novel methods of food production that use digital technology are not well understood by consumers, meaning, essentially, that significant public education and advertisement will need to happen before these products become part of mainstream diet.[143] Even if consumers are willing to try these products, affordability may ultimately remain an issue.[144] Another key area of concern for consumers is where these products will be available. Will this process be a new form of mass industrialization replacing or building new printing factories beside traditional abattoirs? Will these processes become so efficient that restaurants or individuals will start purchasing their own 3D printers, bioinks, and recipe software? One of the biggest hurdles for consumers is how these products will taste. Will they really be able to replicate the texture and taste of traditional meat? How will these rapidly changing markets be regulated, if at all? These are several of the many questions that the 3D printing of meat raises and that need further investigation and research.

That said, despite the complicated regulatory demands this novel technology potentially presents, the 3D printing of meat could, once several of these regulatory concerns are adequately dealt with, be used to reduce some of the animal law concerns we have identified in this article, to reduce environmental degradation and destruction, and maybe to improve both animal and human health. Our article was limited in scope and focused on identifying key issues that the technology could alleviate in its application and some of the key regulatory issues that are bound to arise. As noted, more questions exist than we have raised here, and all of these will need to be answered at some point. However, while 3D printing of meat is not a panacea for the issues we have identified, it is certainly a new and developing technology that, when viewed through a system of animal ethics that gives greater moral consideration to animals and abides by the precautionary principle, offers considerable promise to make our world safer now and for future generations.

---

143. Ramachandraiah, *supra* note 23 at 15.

144. Rubin, *supra* note 114. Currently the cost of production is approximately twice the current market price of beef available for purchase, but eventually current manufacturers of 3D printed meat expect the cost to be cheaper than traditional meat.

POLICY SUPPORT FOR AGROECOLOGY IN CANADA: LESSONS FROM THE GLOBAL SOUTH

Jeannette M.E. Tramhel[*]

CONTENTS

Abstract

This article considers findings from a recent assessment of the policy environment for agroecology (AE) in Canada as these correspond with the basic elements and principles of AE outlined in international guidance documents, namely, the ten elements of AE adopted by the Food and Agriculture Organization of the United Nations (FAO) and the thirteen principles developed by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. These findings are evaluated in relation to nine case studies from the Global South that illustrate the benefits of, as well as the challenges in, applying the elements and principles of AE in practice, such as in adopting a national strategy for AE (Tanzania); applying a suite of interrelated policies (India); developing a national research agenda (Cuba); encouraging farmer-to-farmer knowledge sharing (Haiti); protecting cultural heritage (Ecuador); using

[*] BScAg, LLB, LLM, MEDes, Member of the Bar in Ontario and New York. The author is grateful for assistance provided during the editorial process from staff at the *Lakehead Law Journal*, in particular, Assistant Professor Tenille E. Brown and Co-managing Editor, Hailey Hayes, and anonymous feedback provided during the blind peer review process.

incentives to encourage better practices (Costa Rica); appreciating the cultural shift and stakeholder engagement necessary for change (Philippines); acknowledging the need for a paradigm shift in policy measures (El Salvador); and implementing policy through clear and simple legislative tools and administrative processes (Colombia). Despite significantly different circumstances, these case studies from the Global South reveal lessons that are relevant for Canada as it embarks on the development of a sustainable agricultural strategy. The article advances the view that because AE entails the integration and balancing of all three components of sustainability—environmental, economic, and social—both in its definition and application, AE is the most consistent interpretation of sustainable agriculture and therefore must be considered in the redesign of Canada's agri-food policy framework and our renewed legacy in international agricultural development.

I INTRODUCTION

Support for agroecology (AE) is rapidly mounting in many parts of the world, yet interest among policymakers in Canada seems more reticent. As Canada is about to develop a strategy for sustainable agriculture (SAg), an opportunity arises to embrace the fundamentals of AE and to signal endorsement of an ecocentric interpretation of SAg that supports AE in alignment with global trends and in response to global needs. This article considers findings from a recent assessment of the AE policy environment in Canada as it relates to the basic elements and principles of AE and in relation to nine case studies from the Global South with a view toward inspiring greater policy support for AE in Canada.

A. What is Sustainable Agriculture?

In 2015, the United Nations General Assembly (UNGA) adopted the *2030 Agenda for Sustainable Development*[1] of which the 17 Sustainable Development Goals (SDGs) constitute the core. Along with the goals "to end hunger, achieve food security and improved nutrition" SDG 2[2] aims "to promote sustainable agriculture," which is defined by the Food and Agriculture Organization of the United Nations (FAO), as "the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. [SAg] conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable."[3] This broad definition is subject to various interpretations. Some maintain that "technocentric" approaches centred on biotechnology (such as the use of genetic engineering) and efficient use of inputs (such as water, fertilizer, and pesticide applications through precision agriculture) fall squarely within the scope of sustainability. Others reject such techniques in favour of "ecocentric" approaches that emphasize biodynamic farming techniques (such as

1. *Transforming Our World: The 2030 Agenda for Sustainable Development*, UNGA, 70th Sess, UN Doc A/RES/70/1 (2015) GA Res 70/1 [*Agenda 2030*].

2. *Agenda 2030, Ibid* at 14.

3. UN FAO, *Building a Common Vision for Sustainable Food and Agriculture: Principles and Approaches* (Rome: FAO, 2014), citing *Report of the Council of Food and Agriculture Organization*, 94th Sess, UN FAO, 2014, UN Doc CL 94/REP.

permaculture or regenerative agriculture), possibly in conjunction with changes in consumption patterns and low-growth levels of human development.[4] Several approaches (e.g., climate-smart agriculture, organic agriculture, nature-based farming) fall somewhere along this continuum.

Confusion abounds, however, because some of these terms are used interchangeably, which is understandable given that certain practices are encouraged by more than one approach. For example, crop rotation and prohibition of the use of pesticides are common to organic agriculture, AE, and possibly other approaches as well. However, whereas agroecological methods yield organic produce, organic produce is not necessarily produced agroecologically.

This article does not attempt the impossible task of defining SAg but rather begins from the premise that AE clearly falls within the parameters of SAg and advances the position that as the definitions of sustainability and SAg continue to develop and become more clear, AE will emerge as the approach most consistent with the intended meaning of SAg and essential for the actualization of SDG 2.

B. What is Agroecology?

As interest in AE has grown, a number of definitions have emerged that "reflect articulations in line with the three constituent manifestations of AE as a science, a set of practices and a social movement."[5] Nonetheless, there are interlinkages and co-evolution among these manifestations that concurs with AE being "increasingly described as a transdisciplinary, participatory and action-oriented approach across ecological, agricultural, food, nutritional and social sciences."[6]

Broadly defined, AE is "a holistic and integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system."[7] Perhaps the most significant distinction from other approaches is the specific inclusion of the social aspect in its definition; this is a critical difference, because the integration and balancing of all three components—environmental, economic, and social—is fundamental to sustainable development. As this definition of AE is consistent with the above definition of SAg and as it is one approach that specifically includes the social component *in its definition*, it could be argued that AE is the only approach fully compliant with all aspects of SAg. While other methods may incorporate the socioeconomic component *in their application*, it is not inherent in the definition, for example, of either organic agriculture or precision farming.

---

4. Technocentric and ecocentric terminology as described by Guy M Robinson, "Towards Sustainable Agriculture: Current Debates" (2009) 3:5 Geo Compass 1757 at 1759.

5. Alexander Wezel et al, "Agroecological Principles and Elements and Their Implications for Transition to Sustainable Food Systems: A Review" (2020) 40:40 Agronomy for Sus Devel 39 at 39 [Wezel et al].

6. *Ibid.*

7. UN FAO, *The 10 Elements of Agroecology: Guiding the Transition to Sustainable Food and Agricultural Systems* (Rome: UN FAO, 2018) [*10 Elements*]. For an explanation of AE epistemology and ontology, see F Caporali, "History and Development of Agroecology and Theory of Agroecosystems" in Massimo Monteduro et al, eds, *Law and Agroecology: A Transdisciplinary Dialogue* (Berlin: Springer, 2015) 3 at 25 [Caporali].

C. From Definition to Policy Framework and Law

Is this definition sufficiently robust? Interestingly, as Wezel notes, the decision not to rigidly define the principles was an intentional one:

> FAO made a deliberate decision not to attempt to define the principles of agroecology, which they considered had been done . . . but rather, to identify a set of salient "elements" that can guide intergovernmental work in support of agroecological transitions towards sustainable agriculture.[8]

Thus, the framework for analysis that will be used in this article is based on the outcomes from two initiatives, one being the global multi-stakeholder consultation that resulted in the adoption of the ten elements[9] and the second being the development of a scientific experts' report that led to the thirteen principles,[10] two parallel processes that informed one another.[11] Table 1 lists the elements and corresponding principles in abbreviated form. These will serve as the basis for analysis of the case studies in Part II and as a lens through which to consider recent findings and policy recommendations for AE in Canada.

---

8. Wezel et al, *supra* note 5 at 40.

9. *10 Elements*, *supra* note 7.

10. High Level Panel of Experts on Food Security and Nutrition, *Agroecological and Other Innovative Approaches for Sustainable Agriculture and Food Systems That Enhance Food Security and Nutrition* (Rome: Committee on World Food Security, 2019) [*13 Principles*].

11. Wezel et al, *supra* note 5 at 3.

Table 1: Nine Case Studies from the Global South that Illustrate Key Elements and Principles of AE and Aspects Found Lacking in Canada's Current AE Policy Environment

Case Study	FAO 10 Elements	HLPE 13 Principles[12]	Common Ground Findings
Tanzania	9. Responsible Governance	12. Land and natural resource governance	13; 21c. Clearly articulated National AE Strategy
India	3. Synergies	6. Synergy	7. Suite of inter-related policies with a food systems lens beyond agricultural production that includes environmental, social, health, energy, infrastructure and economic development policies and situates AE within the structures of the system. 11. Multisectoral policies at municipal and bioregional levels. 18. Multipronged, progressive change strategy.
Cuba	4. Efficiency	2. Input reduction	4. National research effort and support for AE 14. 'Fit for purpose' national research agenda for food systems redesign
Haiti	2. Co-creation & Sharing of Knowledge	8. Co-creation of knowledge	21b. AE research and knowledge co-creation and sharing
Ecuador	8. Culture & Food Traditions	9. Social values and diets	12. Inputs to advance AE
Costa Rica	1. Diversity	3. Soil health 5. Biodiversity 7. Economic diversification	9. Incentives and measures to encourage change 18. Incentives and disincentives ('push/pull') to advance AE; legislative and regulatory measures / incentives and rewards

12. Columns two and three have been adapted from Wezel, *supra* note 5, Table 1, which lists the HLPE *13 Principles* as these correspond to the FAO *10 Elements*.

Table 1: Nine Case Studies from the Global South that Illustrate Key Elements and Principles of AE and Aspects Found Lacking in Canada's Current AE Policy Environment

Philippines	5. Recycling 10. Circular Economy	1. Recycling 7. Economic diversification 11. Connectivity 13. Participation	16. AE requires a deep cultural shift and change in mindset.
El Salvador	6. Resilience	3. Soil health 4. Animal health	8. Supportive policies for farmers and food producers as agents of change.
Colombia	7. Human & Social Values	10. Fairness 13. Participation	10. Regulatory measures, legislation & fiscal policy, to encourage a shift towards more sustainable practices.

While this article is concerned primarily with policy rather than law, it is important to acknowledge the role of law, both in its historical shaping of the current agri-food system as well as its limitations and potential as a tool for transformation. As the agri-food system has become fragmented, so too has the legal system become deconstructed into disjointed specializations—agricultural law, environmental law, land use and planning law, food law, and others—that are divorced from each other in theory and practice. As we try to reimagine and rebuild a more holistic agri-food system, it will also be necessary to rethink and reconstruct a supportive legal framework. This does not entail a "super-law" to replace existing fields but rather development of what might be called "a trans-law that, bottom up and progressively, attempts to link and coordinate regulatory measures between different legal fields, respecting their autonomy and distinction but, at the same time, emphasizing their common roots,"[13] a necessary task within the realms of both domestic and international law.[14] The premise of this article is that the development of AE policy is a critical first step to help knit together the sustainable agri-food system we imagine for the future and the road map for the requisite legal reforms that will give shape to that vision.

13. Massimo Monteduro, "From Agroecology and Law to Agroecological Law?" in Massimo Monteduro et al, eds, *Law and Agroecology: A Transdisciplinary Dialogue* (Berlin: Springer, 2015) 57 at 79.

14. Consider, for example, the disparate fields of international trade law and international environmental law in the treatment of issues related to global agri-food systems. For discussions on "whether space exists to advance AE through international law," see Rob Amos, *Advancing Agroecology in International Law* (London: Routledge, 2023) at 15 [Amos].

II ADVANCING THE POLICY ENVIRONMENT FOR AGROECOLOGY IN CANADA

Growing Common Ground is a recent report that assesses the state of AE policy in Canada.[15] Among its twenty-one findings, the report notes that although support is "still in its infancy," AE is being considered in policy but requires "a deep cultural shift away from the long-held productivist mindset of Canada as an agricultural power geared to exporting food export as its main contribution to food security and prosperity in Canada and internationally. It also requires a shift away from the mindset of commodifying food and keeping it cheap."[16] This is not the first such call for a change in mindset: As early as 1992, after a two-year study, the Science Council of Canada released a report with twenty-seven recommendations that were eerily prescient of the challenges facing Canada's agri-food system today.[17] Several of the findings[18] identified in *Growing Common Ground* as posing obstacles to an improved policy environment for AE in Canada are considered below, in conjunction with a discussion of how these or similar challenges have been addressed in the Global South. These findings have been included in Table 1 in relation to the particular element with which the ensuing recommendation most directly corresponds.

Nine case studies have also been included in Table 1 in relation to one of the corresponding elements, although each case could be used to illustrate several "interlinked and interdependent" principles, given the holistic nature of AE. While a more conventional approach might have been to select cases from countries having greater cultural and economic congruity with Canada and similarity in agricultural practices, the decision to showcase lessons from the Global South expands the range of examples with which policymakers may already be familiar and helps to debunk assumptions that only from among our industrialized peers will we find solutions. Second, there is merit in validating applicable lessons regardless of origin; for decades the presumption has been that innovations in agricultural development flow from industrialized economies to the Global South. Third, as sustainability in general requires an interdisciplinary approach that is often in stark contrast with the research silos that are prevalent in North America, in the course of the transition toward AE we may find ourselves turning more often to examples from traditional and Indigenous cultures, which tend to be more prevalent in the Global South. Although not all the initiatives in these cases have met with success, insights can be gleaned nonetheless for the development of AE policy in Canada.

---

15. Faris Ahmed, *Growing Common Ground: Pathways to Advance Agroecology Policy in Canada* (Waterloo: Laurier Centre for Sustainable Food Systems, 2022) at 1, online: <https://researchcentres.wlu.ca/centre-for-sustainable-food-systems/news/2023/growing-common-ground-report> [perma.cc/QE7S-Q8NN] [Ahmed].

16. *Ibid* at 1–2.

17. Science Council of Canada, "Sustainable Agriculture: The Research Challenge," Report 43, Catalogue No SS22-1992/43E (1992) [SCC]. For example, following recommendation 1, which states that the Council "should commission an independent review of its committee structure and membership with a view to meeting the needs of agriculture-food system in the 21st century," recommendation 3 reads: "The review should also consider how to shift the emphasis in modern agriculture from a narrow production orientation to a broader systems focus."

18. As some findings constitute primarily observations (nos 1–6, 15–17, 19, and 20), those that are examined in this article are ones from which recommended action can be surmised.

A. The Need to Develop a National AE Policy

Many of the respondents interviewed for *Growing Common Ground* identified the biggest drawback within the Canadian agriculture sector to be the absence of a comprehensive national plan to make agriculture and food systems more sustainable, ecological, and climate friendly.[19] Accordingly, the report considers "a clearly articulated National Agroecological Strategy" as essential and specifically one that is "embedded in a comprehensive . . . national food policy."[20]

Subsequently, in late 2022 Agriculture and Agri-Food Canada (AAFC) launched consultations to develop a Sustainable Agriculture Strategy (SAS), and in March 2023 a report was released outlining what had been heard in stakeholder feedback.[21] Presumably, the next steps will entail identification and evaluation of relevant pillars within the existing policy framework and perhaps integration with the recently adopted *Food Policy for Canada*.[22] Shared jurisdiction over agriculture between the federal and provincial or territorial (FPT) governments and their willingness to work together has been identified as one of the challenges in developing a collaborative SAS.[23] Perhaps the new Sustainable Canadian Agricultural Partnership (2023–2028),[24] that focuses on five key priorities identified in the Guelph Statement,[25] might ameliorate such concerns.

1. Case Study: Tanzania—A National Strategy

Tanzania is one state that has opted for an overarching national strategy to promote AE. The National Ecological Organic Agricultural Strategy (NEOAS) 2023–2030 has as its overall goal "to accelerate development and mainstream ecological organic agriculture subsector into existing national frameworks for agricultural sector development in order to enhance sustainable environmental conservation for improved health, income and food security by

---

19. Ahmed, *supra* note 15 at 26.

20. *Ibid* at 2, nos 13, 21(c).

21. Agriculture and Agri-Food Canada, "What We Heard Report: Sustainable Agriculture Strategy" (2023) online: <https://agriculture.canada.ca/en/department/transparency/public-opinion-research-consultations/sustainable-agriculture-strategy/what-we-heard-report-sustainable-agriculture-strategy> [perma.cc/TS3P-GQ8B] [AAFC].

22. Agriculture and Agri-Food Canada, *Food Policy for Canada: Everyone at the Table*, Catalogue No A22-628/2019E-PDF (2019), online (pdf): <https://www.canada.ca/content/dam/aafc-aac/documents/20190614-en.pdf> [perma.cc/5XXQ-S6RC] [*Food Policy for Canada*].

23. Grace Skogstad, "Towards a Collaborative Sustainable Agriculture Strategy for Canada (Perspective Report)," (Ottawa: The Canadian Agri-Food Policy Institute, 2023) at 6, online (pdf): <https://capi-icpa.ca/wp-content/uploads/2023/05/2023-05-29-CAPI-FPT-Report-EN.pdf> [perma.cc/AM9N-P8CH].

24. Agriculture and Agri-Food Canada, "Sustainable Canadian Agricultural Partnership" (19 June 2023), online (pdf): <https://agriculture.canada.ca/en/department/initiatives/sustainable-canadian-agricultural-partnership> [perma.cc/3MB8-8MTJ]. One of the cost-shared programs, RAFP, is discussed below.

25. Agriculture and Agri-Food Canada, "The Guelph Statement" (17 November 2021), online: <https://agriculture.canada.ca/en/department/initiatives/meetings-ministers/guelph-statement> [perma.cc/CV93-CNY6]. The five priorities are building sector capacity and growth, climate change and environmental protection, science research and innovation, market development and trade, and resiliency to respond to risk.

2030."[26] Therein it is pointed out that the NEOAS is aligned with national policies, specifically the National Agricultural Policy 2013 and the national livestock, fisheries, water, and environmental policies, among others, as well as specific regional and global policies.

NEOAS recognizes the potential and commercial value of AE but also identifies the challenges in making the transition to AE, which include inadequate coordination among stakeholders, weak regulation and certification, and inaccessible inputs.[27] As the NEOAS was only adopted in 2023, it is too early to evaluate its impact; however, endorsing AE by means of a national strategy is a strong signal to demonstrate commitment and guide the way forward.

a. Relevance for Canada: Responsible Governance

"Sustainable food and agriculture requires responsible and effective governance mechanisms at different scales—from local to national to global."[28] Many countries have already adopted AE legislation or policy, and Tanzania is one such example. Canada is encouraged to develop a national AE strategy that can serve as an overarching framework for the integration of initiatives at provincial and local levels. Such a strategy would create the necessary enabling environment to support the transition toward AE and could be carried out in conjunction with current SAS consultations.

B. Design Integrated Policies Using a Food Systems Lens

As pointed out in *Growing Common Ground*, AE requires "a suite of inter-related policies that are beyond agriculture policy . . . A food systems lens is key to situating agroecology within the structures of the system, [identifies] synergies and tradeoffs, and [goes] beyond the discourse on 'production' and 'efficient value chains' to include environmental, social, health, energy, infrastructure and economic development policies."[29] Such a holistic approach would require evaluation of a broad spectrum of policies and legislation at federal, provincial, and municipal levels as well as identification of outdated policies no longer consistent with a food systems perspective. Ironically, a holistic AE approach aligns with recommendations made by the Science Council over 30 years ago.[30] During recent SAS consultations, participants felt that Canada is behind globally in positioning its agricultural sector; while the current focus is on agricultural production, participants raised the importance of the entire supply chain, including

---

26. United Republic of Tanzania, Ministry of Agriculture, National Ecological Organic Agriculture Strategy (2023–2030) (2023), s 3.5, online (pdf): <https://kilimokwanza.org/wp-content/uploads/2024/03/The_Tanzania_-_National_Ecological_Organic_Agriculture_Strategy.pdf> [perma.cc/K2JK-VHDA].

27. *Ibid*, s 1.2.

28. *10 Elements*, *supra* note 7, Element 9; *13 Principles*, *supra* note 10, Principle 12.

29. Ahmed, *supra* note 15 at 2, no 7. See also nos 11, 18.

30. SCC, *supra* note 17 at 9–10. Recommendation 5: "using some research stations for . . . agro-ecosystems research"; 8 & 9: promote greater understanding "of agricultural systems"; 10: promote long-term, interdisciplinary research in food and agriculture"; 15: identify "indicators for sustainable agriculture"; 18 & 19: decouple subsidies from production, "create incentives for the adoption of practices integral to sustainability" and redirect farm support from subsidies to payments designed to preserve environmentally and socially desirable resources.

consumers, as significant in the development of a sustainable sector, with the SAS seen as an opportunity for change.[31]

1. Case Study: Andhra Pradesh, India—An Integrated Approach

Andhra Pradesh community-managed natural farming (APCNF) is described as "the largest transition to AE in the world," currently with 630,000 practising farmers and the aim to scale to 6 million.[32] It is the successor to a series of programs that initially focused on non-chemical pest management and gradually expanded to include interventions to improve soil health and water conservation. Thereafter, Zero Budget Natural Farming was introduced with nine principles that correspond closely to several of the elements and principles of AE.[33] Although the socioeconomic component is not included among these nine principles, the program is farmer-centric and follows a farmer-to-farmer extension system that is driven by farmer innovations. It was to reflect this focus that the name was changed to *community-managed* natural farming.[34] The program is administered by Rythu Sadhikara Samstha, a non-profit company established by the state government, but despite a commitment considered as the official launch of the scaled-up program,[35] it is difficult to confirm whether CNF has been "codified" as state policy. In fact, it has been suggested that a definitive public policy statement to scale up CNF as a part of the overall National Agricultural Policy would provide clarity and direction.[36]

Results are impressive. A recent impact assessment using The Economics of Ecosystems and Biodiversity for Agriculture and Food Systems (TEEBAgriFood) Framework compared the main economic, social, and health impacts of CNF with three other dominant farming systems in the state, namely tribal farming, rainfed dryland agriculture, and chemically intensive farming. It found that under CNF (1) yields averaged 11 per cent higher while crop diversity was higher; (2) net incomes averaged 49 per cent higher as a result of lower input costs and higher earnings; (3) social impacts included higher female workforce participation and higher levels of trust, cohesion, reciprocity, and enhanced social capital; and (4) there were fewer on-

---

31. AAFC, *supra* note 21, s 3.3.

32. Rhythu Sadhikara Samstha, "Andhra Pradesh Community Managed Natural Farming" (last accessed 15 October 2024), online (pdf): <https://www.indiaspend.com/h-library/19th-august-ap-cnf-overview.pdf> [perma.cc/KV7N-FZJM] [Samstha]. See also Harpinder Sandhu et al, *Natural Farming through a Wide-Angle Lens: True Cost Accounting Study of Community Managed Natural Farming in Andhra Pradesh, India,* GIST Impact Report (2023), online (pdf): <https://gistimpact.com> [perma.cc/DCY3-SS3H] [Sandhu].

33. *Ibid*. APCNF encourages (1) continuous soil coverage (365 days); (2) minimal soil disturbance; (3) biostimulants as necessary catalysts to achieve good soil health; (4) use of indigenous seeds; (5) diverse cropping (trees & crops); (6) integration of livestock with crops; (7) organic residue (compost); (8) organic pest management through botanical methods; and (9) no synthetic inputs (fertilizers, pesticides, herbicides).

34. Samstha, *supra* note 32.

35. UN Environment Programme, "Andhra Pradesh to Become India's First Zero Budget Natural Farming State" (2 June 2018), press release, online: <https://www.unep.org> [perma.cc/76WE-AQE4].

36. D Narasimha Reddy, "Agroecology and Sustainable Smallholder Agriculture: An Exploratory Analysis with Some Tentative Indications from the Recent Experience of 'Natural Farming in Andhra Pradesh'" (2022) 41:3 J Indian Soc Sci Inst 233 at 266, online: <https://apcnf.in> [perma.cc/437K-P3RU] [Reddy]. Reddy notes that to do so might also entail repurposing current agricultural subsidies, which illustrates the conundrum.

farm health risks and working days lost to illness.[37] The study "gives new evidence to support agroecological natural farming as a key approach to help feed communities and transition farmers to nature-positive outcomes in support of the SDGs."[38]

a. Relevance for Canada: Synergies

"Building synergies enhances key functions across food systems, supporting production and multiple ecosystem services."[39] AE involves the design of diversified systems that selectively combine components (crops, livestock, trees, soils, water) on farms and agricultural landscapes to enhance synergies within the wider food system. The APCNF case was selected to showcase positive outcomes that can be achieved using an AE approach, but it also illustrates the challenges of scaling up a successful program. To integrate APCNF as a state-level initiative into India's National Agricultural Policy would necessitate a review of other policy measures that run counter to AE, such as subsidies and other forms of support to conventional farmers.[40] Such a comprehensive review would also be required in Canada;[41] facilitating a gradual transition to AE will require a multi-pronged strategy across many sectors and interrelated policies with a food systems lens that are integrated at the local, provincial, and national levels.

C. Adopt a National AE Research Agenda

As pointed out in *Growing Common Ground*, Canada needs a "national research agenda on agriculture and food systems . . . that produces transdisciplinary knowledge, spurs innovation, and fosters the kind of knowledge exchange that will support, rather than undermine, agroecological transition."[42] Under an export-oriented model of agriculture, which emphasizes commodity crops, research is largely industry funded, narrowly focused, and

---

37. Samstha, *supra* note 32 at Executive Summary.

38. Global Alliance for the Future of Food, "Groundbreaking Comparative Study Reveals Natural Farming Leads for Yields, Livelihoods and Health" (19 July 2023), press release, online: <https://futureoffood.org/insights/natural-farming-leads-for-yields-livelihoods-and-health/> [perma.cc/RE8N-23BV].

39. *10 Elements*, *supra* note 7, Element 3; *13 Principles*, *supra* note 10, Principle 6.

40. Reddy, *supra* note 36 at 266–267.

41. It is beyond the scope of this article to undertake such a review. By way of example, however, consider Canada's federal AgriStability Program, which helps farmers manage risks by offering payments when incomes decline significantly due to production losses or market disruption. Although this can enable farms to remain viable, "current design and delivery favours larger operators." see Agriculture and Agri-Food Canada, "Evaluation of AgriStability" (last modified 13 October 2022), online: <https://agriculture.canada.ca/en/department/transparency/audits-evaluations/evaluation-agristability> [perma.cc/4FCL-Y9HZ]. Unless reviewed through an AE food systems lens, programs such as this inadvertently support status quo conventional agriculture, such as in the meat industry, to maintain large, grain-fed feedlot operations (which have significant adverse environmental impacts and contributions to greenhouse gas emissions) at the expense of encouraging transition toward AE-like production methods, such as a regenerative grassfed model that is more often used by smaller operators. As another example, consider Canada's environmental impact assessment and how it might be viewed through a food systems lens. See Jeannette ME Tramhel, "Assessing Impacts on Food Security—EIA, SIA, or Both?" (paper delivered at the 35th Annual Conference of the International Association for Impact Assessment, 20–23 April 2015) [unpublished], online: <https://conferences.iaia.org/2015/Final-Papers/> [perma.cc/8ART-6AM6].

42. Ahmed, *supra* note 15 at 2, no 14. See also 43, where AAFC staff are quoted as saying "there's a crying need for a national agricultural research institute."

fragmented, often yielding results that are proprietary and protected by intellectual property law. Here again, similar advice has been offered before.[43] Research was also a recurring theme during the SAS consultations, "with many participants noting the decrease in AAFC-led research and funding in recent decades."[44] It is noteworthy that the recently adopted Strategic Plan for Science recommends that "AAFC . . . increase its capacity to quantify landscape-level trade-offs to clarify interconnected pathways toward better agro-ecosystem sustainability and resilience."[45]

1. Case Study: Cuba—Urban Organic Agriculture

After the collapse of the Soviet Bloc in the 1990s, domestic agricultural production in Cuba fell by half and food scarcity became acute because of the loss of the country's main source of supply for agro-chemicals, fuel, and food imports. In response, the government introduced austerity measures that included a new phase of agrarian reforms with the distribution of available land for free usufruct.[46] Cubans began to grow food any place that was available and, in the absence of agrochemicals, the food so produced was "de facto" organic.

The transformation during this period was probably due in large measure to Cuba's unique form of central government. An interesting observation, however, is that only after Cubans started taking action did the Cuban Ministry of Agriculture begin to offer support through the introduction of university research and expert extension services in the use of biopesticides.[47] Whether the impetus for research and development was bottom up or top down remains unclear; nonetheless, by the 2000s Cuba had become a world leader in research and development for organic and urban agriculture.

a. Relevance for Canada: Efficiency

"Innovative agroecological practices produce more using less external resources."[48] Generating biological and socioeconomic diversity can result in greater efficiency, and reducing or eliminating dependency on external inputs can increase self-sufficiency. This can occur either out of necessity, as happened in Cuba, or by choice. The Cuban case study exemplifies how a national plan for research and development can support agricultural transformation. Effecting a shift toward AE in Canada will require initiatives to counterbalance research that continues to be dominated by commercial interests and is disproportionately weighted toward conventional agriculture. Canada needs a national research agenda for AE that is "fit for purpose."

---

43. SCC, *supra* note 17 at 21.

44. AAFC, *supra* note 21.

45. Agriculture and Agri-Food Canada's Strategic Plan for Science, Catalogue No A59-91 (2022) at 17–18, online (pdf): <https://agriculture.canada.ca> [perma.cc/C7SY-YS4E]. Missions outlined therein are (1) mitigating and adapting to climate change; (2) increasing the resiliency of agro-ecosystems; (3) advancing the circular economy by developing value-added opportunities; and (4) accelerating the digital transformation of agriculture and agri-food.

46. Braulio Machin Sosa et al, *Agroecological Revolution: The Farmer-to-Farmer Movement of the ANAP in Cuba* (Cuba: ANAP & La Via Campesina, 2013) at 153–157, online (pdf): <https://viacampesina.org/en/wp-content/uploads/sites/2/2013/07/Agroecological-revolution-ENGLISH.pdf> [perma.cc/ZK7T-KQD4].

47. *Ibid*.

48. *10 Elements*, *supra* note 7, Element 4; *13 Principles*, *supra* note 10, Principle 2.

D. Support AE Knowledge Sharing and Extension Programs

Among the priorities identified in *Growing Common Ground* is a knowledge sharing agenda for AE that would include a cross-Canada research network, national spaces for knowledge co-creation and sharing using transdisciplinary approaches, and AE schools.[49] This point is closely related to the previous one on research and development; as there currently appears to be little "institutionalized" AE research, it follows that informal networks and farmer-to-farmer knowledge sharing must fill the gap. Here, too, recommendations had been made along a similar line over 30 years ago.[50] In recent SAS consultations, numerous comments were made on this topic, with support for on-the-ground agronomic extension and a desire for *unbiased* information, demonstration farms, and "availability of publicly accessible online databases with information on sustainable practices." Participants suggested that early adopters be recognized with rewards, publicity, and prizes and encouraged to serve as mentors.[51]

1. Case Study: Haiti—Knowledge Sharing and Extension Services

In Haiti's northern plateau, farmers have said that no government agricultural extension worker has visited since the 1980s;[52] consequently, farmers rely on support from international civil society organizations (CSOs). In furtherance of a sustainable model, such CSOs need to work in partnership with local entities, particularly small-scale farmer organizations, to rebuild a supportive social infrastructure. Groundswell International works in partnership with Partenariat pour le Développement Local (PDL) to create a network of local leaders and mentors through training in AE practices on model farms and farmer-to-farmer field schools.[53] A recent study into the impact of PDL's work found that average net incomes for AE farmers were almost double that of conventional farmers; moreover, 98 per cent of farmers said they would continue using AE practices.[54]

a. Relevance for Canada: Co-creation and Sharing of Knowledge

"Agricultural innovations respond better to local challenges when they are co-created through participatory processes."[55] AE is very specific to the local context, unlike the "one size fits all" approach more common in conventional agriculture. As a result, it demands hands-

---

49. Ahmed, *supra* note 15 at 3, no 21(b).

50. SSC, *supra* note 17, Recommendation 6 (reintroduction of demonstration farms), Recommendations 16–17 (extension activities).

51. AAFC, *supra* note 21.

52. Personal notes of the author.

53. Groundswell International, "Meet Our Partners" (last accessed 15 July 2024), online: <https://www.groundswellinternational.org/our-partners/> [perma.cc/329Y-PRZR].

54. Vanja Westerberg, Toni McCann & Luis Costa, "An Assessment of the Economics of Agroecological Farming in Haiti" (2023) at 12, online (pdf): <https://www.eld-initiative.org> [perma.cc/HM5R-YGZT]. Average net income was in the order of US$1,231 to US$1,596 for AE farmers compared to US$616 to US$806 for conventional farmers. See Table 22 therein regarding continuation.

55. *10 Elements*, *supra* note 7, Element 2; *13 Principles*, *supra* note 10, Principle 8.

on engagement with practitioners.[56] The Haiti case study illustrates the value and long-term benefits of farmer-to-farmer knowledge sharing; not only does this foster dissemination of knowledge and innovation, it also strengthens the social networks that are integral to AE and sustainability more broadly. While assurances of continued adherence by farmers in the Haitian example may be due to improved incomes, social support is undoubtedly also influential. Although the Canadian context is different, there is need here too for greater support of extension services, co-creation, and sharing of knowledge, not only to impart technical information and best practices but to strengthen the social fabric that is essential to a vibrant agri-food system.

E. Protect Farmers' Rights to Seeds

Another challenge for AE concerns the controversy over the right to seeds. As described in *Growing Common Ground*, "increasingly restrictive seed laws will give plant breeders (companies and patent holders) exclusive rights over seeds, while farmers will receive a mere recognition of their 'privilege' to save and reuse seed on their farms."[57] The seed regulatory modernization (SRM) process currently being undertaken by the AAFC and the Canadian Food Inspection Agency[58] has prompted debates that reflect a clash of values reflected by two (possibly) competing regimes in the international legal order. One set of rules falls within the realm of intellectual property that seeks to protect patented seeds and plant varieties "with the aim of encouraging the development of new varieties of plants for the benefit of society."[59] Another set of rules aims to protect traditional knowledge and rights to seeds.[60] Although efforts have been made to reconcile these competing interests and establish a global system that

---

56. This has been described as "participatory research" that involves not only researchers but also farmers in the process from planning to implementation, and evaluation conducted on farm by an interdisciplinary team. See Caporali, *supra* note 7 at 44, citing CA Edwards et al, "The Role of Agroecology and Integrated Farming Systems in Agricultural Sustainability" (1993) 46(1–4) Agric, Ecosys & Envt 99.

57. Ahmed, *supra* note 15 at 29.

58. CFIA, "Seed Regulatory Modernization" (last modified 8 October 2024), online: <https://inspection.canada.ca/en/plant-health/seeds/seed-regulatory-modernization> [perma.cc/C34T-69Q7].

59. International Union for the Protection of New Varieties of Plants, "What Is UPOV?" (last accessed 24 November 2024), online: <https://www.upov.int/about/en/> [perma.cc/LG2D-2CRC]. The UPOV was established by the *International Convention for the Protection of New Varieties of Plants,* 2 December 1961, TRT/UPOV/003 (revised 19 March 1991), online: <https://www.wipo.int/wipolex/en/text/193358> [perma.cc/L9UQ-GDLD].

60. *Declaration on the Rights of Peasants and Other People Working in Rural Areas*, UNHRC 39th Sess, UN Doc A/HRC/RES/39/12 (2018) HRC Res 39/12, art 19 [UNDROP]. Article 19 states that peasants and other people working in rural areas have the right to seeds, including the right to the protection of traditional knowledge, to equitably participate in the benefits from plant genetic resources, to participate in decisions on conservation and use, and to save, use, exchange, and sell farm-saved seeds or propagating material. It also outlines the obligations on the part of states to take appropriate measures to support peasant seed systems and promote the use of peasant seeds and agrobiodiversity.

provides farmers as well as plant breeders and scientists access to plant genetic materials and a share in the benefits from the use of these genetic materials,[61] differences remain.

1. Case Study: Ecuador—Right to Seeds

In Ecuador there is strong support for peasant rights and preservation of heritage seeds.[62] Article 401 of the Constitution (2008) prohibits the cultivation of genetically modified (GM) crops, with certain exceptions.[63] The intention is to protect farmers' rights of access to GM-free seeds.[64] In 2018, however, the presence of transgenic soybeans was verified by CSOs whereupon a claim was filed and a judgment obtained that this constitutional right had been violated.[65] A year previously, under the constitutional exception, the National Assembly had approved the *Law on Biodiversity, Seeds and Promotion of Sustainable Agriculture*, Article 56 of which states that "(t)ransgenic seeds and crops are allowed to enter the national territory, only to be used for research purposes."[66] Litigation ensued, and the case came before the Constitutional Court in 2022, which declared those provisions of the law unconstitutional.[67]

---

61. See *International Treaty on Plant Genetic Resources for Food and Agriculture*, 3 November 2001, UNTS No 43345 (entered into force 29 June 2004), art 1.1 [*Treaty on Plant Genetic Resources*], which seeks to strike a balance with the objective of "conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use." Part III outlines farmers' rights, including the obligation of states to protect the same, and Part IV outlines the multilateral system of access and benefit sharing. Both Canada and Ecuador are parties. For further discussion on these conflicts and tools within the international legal regime that can be used to advance AE as well pose barriers, see Amos, *supra* note 14, at chs 1–2.

62. Stephen Sherwood et al, "Tackling the New Materialities: Modern Food and Counter-Movements in Ecuador" (2013) 41 Food Pol'y 1.

63. *Constitucion de la República del Ecuador 2008* (*Constitution of the Republic of Ecuador 2008)*, art 401, online (pdf): <https://www.oas.org/juridico/pdfs/mesicic4_ecu_const.pdf> [perma.cc/G7LQ-RZX7]. "Exceptionally, and only in the national interest duly substantiated by the Presidency and approved by the National Assembly, may GM seeds and crops be introduced."

64. As space does not permit consideration of the right to seeds in relation to the right to food in this article, see M Pierri, "Agrobiodiversity, Intellectual Property Rights and Right to Food: The Case of Andean Countries" in Massimo Monteduro et al, eds, *Law and Agroecology: A Transdisciplinary Dialogue* (Berlin: Springer, 2015) at 860 [Pierri].

65. UN FAO, "Views, Experiences and Best Practices as an Example of Possible Options for the National Implementation of Article 9 of the International Treaty" (2022) at 3, online: <https://www.fao.org/3/cc0994en/cc0994en.pdf> [perma.cc/N4PP-XJ9E].

66. *Ibid*.

67. Corte Constitucional Del Ecuador, Judgment No 22-17-IN (12 January 2022). In its written decision, the Court referred to UNDROP, *supra* note 60, art 3 (which contains the general duty of states to guarantee equality and non-discrimination in the formulation of policies), art 16 (the right to an adequate standard of living and access to means of production), the *Declaration on the Rights of Indigenous Peoples*, UNGA, 61st Sess UN Doc A/Res/61/295, (2007) at art 31 (the right to maintain, control, protect, and develop knowledge), the *Convention on Biological Diversity*, 5 June 1992, UNTS 1992 and the *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*, 29 January 2000, UNTS No 30619 (in respect of the definitions on GMOs), but did not mention the *Treaty on Plant Genetic Resources, supra* note 61. The Court found that to fulfill its obligation to promote and guarantee ancestral knowledge, the state must adopt measures so that this type of knowledge is adequately valued and enhanced. Otherwise, to ignore the potential of such knowledge would imply privileging only those who produce certified seed and omitting the guarantee and protection of collective rights, thereby generating a disincentive for the production of peasant and traditional seeds.

a. Relevance for Canada: Culture and Food Traditions

"By supporting healthy, diversified and culturally appropriate diets, AE contributes to food security and nutrition while maintaining the health of ecosystems."[68] With agriculture and food as core components of human heritage, AE seeks to build food systems that are based on the culture and tradition of local communities. As illustrated by the Ecuadorean case study, control over seeds is of critical importance to farmers. For AE practitioners, this is an essential way to preserve genetic diversity and build greater resilience against diseases and pests, which in turn enable diversified and healthier diets for consumers. Moreover, in many Indigenous communities seeds also have cultural and spiritual significance that cannot be separated from their economic value and that foster variety in food traditions and heritage. In Canada, similar positions are evident from the debates currently taking place in the SRM process and that indicate the dilemma facing policymakers. Nonetheless, an effective transition toward AE will entail supporting farmers as agents of change, and that will necessitate ensuring their right to seeds. Canadian policymakers will need to find a way to bridge the divide.[69]

F. Financial Incentives for Change

It is noted in *Growing Common Ground* that "farmers across Canada, whether ecological or conventional, have not felt supported in their efforts to make agriculture more sustainable" and that "incentives and support measures are essential in order to move farmers and society towards AE."[70] One such mechanism is payment for ecosystem services (PES),[71] used primarily for mitigation of greenhouse gas emissions (sequestration of carbon), watershed protection, biodiversity protection, and preservation of landscape beauty.

The Resilient Agricultural Landscape Program, introduced across Canada as a cost-shared program with FPT governments, uses a PES approach "to help producers conserve and enhance the resiliency of agricultural landscapes" and complements other programs such as the on-farm climate action fund.[72] In recent SAS consultations, producers emphasized that adopting environmentally sustainable practices must provide financial benefits, especially given that many practices take time to show a return on investment, which can create additional financial burdens for small and medium-scaled producers.[73]

---

68. *10 Elements, supra* note 7 at Element 8; *13 Principles, supra* note 10 at Principle 9.

69. For suggestions on how divergent views might be reconciled, such as pro- and anti-GMO positions, see Amos, *supra* note 14, ch 3. It is difficult to foresee a similar outcome in Canadian courts to that of this case; as noted by Pierri, *supra* note 64 at 875, the preamble of the Ecuadorean Constitution celebrates the "Pacha Mama" and the essential relationship of humans with nature, unlike the utilitarian doctrine underpinning European societies on which Canada's legal tradition is also founded.

70. Ahmed, *supra* note 15 at 48, no 9.

71. Sven Wunder, "Revisiting the Concept of Payments for Environmental Services" (2015) 117 Ecological Econ 234 at 236, DOI: <https://doi.org/10.1016/j.ecolecon.2014.08.016>. PES is defined by Wunder as a voluntary transaction in which a well-defined environmental service, or form of land use likely to secure that service, is bought by at least one ecosystem service buyer from a minimum of one ecosystem service provider, if and only if the provider continues to supply that service.

72. Agriculture and Agri-Food Canada, "Resilient Agricultural Landscape Program (RALP)" (last modified 16 July 2024), online: <www.canada.ca/en/agriculture-agri-food/news/2024/07/resilient-agricultural-landscape-program-ralp.html> [perma.cc/U2LB-5EWV].

73. AAFC, *supra* note 21.

1. Case Study: Costa Rica—Payment for Ecosystem Services

In 1996, Costa Rica found that its forest cover had dropped from 75 per cent in 1940 to 25 per cent.[74] To arrest this trend, the government introduced Forestry Law No 7575 and created a National Forestry Financing Fund with the following objective outlined in article 46:

> [T]o finance, for the benefit of small and medium producers, through credits or other mechanisms to promote forest management, intervened or not, the processes of afforestation, reforestation, forest nurseries, agroforestry systems, recovery of denuded areas and technological changes in the use and industrialization of forest resources.[75]

Under the program, landowners receive direct payments when adopting sustainable land use and forest management techniques. While the original focus was forestry conservation, the program has since expanded to include agroforestry and silvopastoral practices. It is funded through fuel taxes, water charges, carbon credits, and alliances with the public and private sector. As a result of this program, forest cover in Costa Rica has recovered; it stood at 52 per cent by 2010 and 60 per cent by 2020 (unofficial figure).[76]

a. Relevance for Canada: Diversity

"Diversification is key to AE to ensure food security and nutrition while conserving, protecting and enhancing natural resources."[77] AE systems optimize diversity through practices such as agroforestry, intercropping, crop rotation, crop and livestock integration, mixed grazing, and choice of livestock and crop varieties. AE starts "rooting in society when a field or a farm is viewed first as an ecosystem."[78] The case study from Costa Rica is a dramatic illustration of how biodiversity can be re-established through incentives such as PES, which indirectly also contributes to economic or on-farm income diversification. While some forms of PES are already operational in Canada, these could be amplified and expanded with the benefit of lessons learned from PES programs around the world.[79]

---

74. Ina Porras, "Payments for Ecosystems Services: Costa Rica Case Study—Ina Porris" (14 June 2021) at 00h:02m:29s, online (video): <https://www.youtube.com/watch?v=opNNxn7Y4fw> [Porras].

75. Fondo Nacional de Financiamiento Forestal (FONAFIFO), "Objectives" (last accessed 5 December 2024), online: <http://www.fonafifo.go.cr/en/conozcanos/objetivos/> [perma.cc/9Z2K-MURN], citing Forestry Law No 7575, (Legislative Assembly Republic of Costa Rica, 1966), art 46.

76. Porras, *supra* note 74; World Bank Group, "Costa Rica's Forest Conservation Pays Off" (16 November 2022), online: <https://www.worldbank.org/en/news/feature/2022/11/16/costa-rica-s-forest-conservation-pays-off> [**perma.cc/V8E6-WX8Q**].

77. *10 Elements, supra* note 7, Element 1; *13 Principles, supra* note 10, Principles 3, 5, and 7.

78. Caporali, *supra* note 7 at 5.

79. Developing effective PES programming is challenging; certain aspects of Canada's programs could be beneficially incorporated into those of Costa Rica, and vice versa, particularly in monitoring and evaluation of their effectiveness for carbon capture and engagement of support from the private sector.

G. Shift From Export Mindset to Food Systems Lens

Another challenge identified in *Growing Common Ground* is "the long-held productivist mindset of Canada as an agricultural power" that is primarily a food exporter.[80] However, breakdowns in supply chains during the COVID-19 pandemic prompted many Canadians to become concerned over the fragility of the global food system and the need for change. Shifting toward AE will require a food systems lens and policy support for the redesign of regional, local, and urban food sheds with shorter supply chains grounded in a more circular economy. Such reconfiguration will necessitate extensive participatory consultation and engagement across the spectrum of stakeholders at various levels. While it might not seem that Canadian society is ready for such dramatic shifts as those underway in the Global South, the recent SAS consultations that have already been referenced provide interesting evidence to the contrary.

1. Case Study: Philippines—Community-Based Participatory Urban Design

In the Philippines, vacant land can sit idle for years, often immediately adjacent to very dense urban settlements where food insecurity is rampant. In Cagayan de Oro City, an innovative way was found to provide access to such land through the use of a tripartite agreement among the barangay (village) council, the landowner, and urban farmers, the terms of which restrict use of the land to food production. With several such community gardens in place, a subsequent project considered the possibility of integrating organic waste management into existing and new garden spaces.[81] This was in furtherance of the *Ecological Solid Waste Management Act of 2000*, a piece of national legislation intended for implementation at municipal levels that aims to maximize the use of valuable resources and encourage resource conservation and recovery (including through composting and recycling).[82] With participation from all levels of government, this project engaged local residents from three barangay in a participatory process of designing their own system to "close the nutrient loop"—an integrated food production and organic waste management system. Not surprisingly, stakeholders who had been involved right from the outset were much more likely to support policy change and subsequent design implementation, a process that can be described as participatory law reform.[83]

a. Relevance for Canada: Recycling and the Circular Economy

"Circular economies that reconnect producers and consumers provide innovative solutions for living within our planetary boundaries while ensuring the social foundation for inclusive

---

80. Ahmed, *supra* note 15 at 2, no 16.

81. Jeannette ME Tramhel, "Using Participatory Urban Design to Integrate Organic Solid Waste Management into Urban Agriculture: A Case Study from Cagayan de Oro City in the Philippines" in Mélanie Robertson, ed, *Sustainable Cities, Local Solutions in the Global South* (Ottawa, ON: Practical Action Publishing & The International Development Research Centre, 2012) 147.

82. Republic Act No 9003, *Ecological Solid Waste Management Act of 2000* (26 January 2001), s 2(b), online: <officialgazette.gov.ph/2001/01/26/republic-act-no-9003-s-2001/> [perma.cc/M8X5-X22N].

83. See IDRC, "MALAKAS! Using ABCD for the Design of Sustainable Cities" (2010), online (video): <https://youtu.be/BEts_EhXPok?si=InrNl__vg8vWFQpA> [perma.cc/39RW-MZU2].

and sustainable development."[84] AE reinforces biological processes and the reconnection of producers and consumers by re-embedding food systems into local economies. Social capital is thereby also strengthened through greater participation in decision making and to support local implementation of agri-food systems. All of these concepts are amply illustrated in the case study from the Philippines, which is presented to demonstrate the importance of participatory processes in effective system change. Although the practice of recycling, for example (including organic materials), is widespread across Canada, the extensive and numerous transitions necessary to create a circular food economy may require a significant cultural shift. Developing an overarching national AE strategy integrated with policies at regional and municipal levels will require extensive engagement of the Canadian populace at these various levels. The SAS process is an important start to support policy reform for the redesign of agri-food systems and subsequent implementation, but it should be considerably amplified and integrated with similar efforts at all levels of government.[85]

H. Reduce Barriers to Entry: Land and Credit

The high cost of land and the need for credit are significant barriers to anyone seeking to enter the farming sector.[86] However, as pointed out in *Growing Common Ground,* AE farmers face additional challenges, including steep costs of certification, marketing, and transition and increased risks.[87] At the same time that aspiring young farmers are seeking entry, Canada is facing "an agricultural skills crisis" with a shortage of agricultural workers and many farmers close to retirement.[88] During recent SAS consultations, participants shared that "more support needs to be given to the sector to encourage the transition of land ownership to a new generation of producers" and expressed concerns over the rising inequality between producers who own land and those who lease.[89]

1. Case Study: El Salvador—Access to Credit

While important for all farming enterprises, large and small, access to credit in the Global South can be particularly difficult for micro, small, and medium-sized (MSME) agri-businesses, especially those run by women, youth, and other marginalized groups because lenders still prefer traditional forms of collateral ("immovables" such as land). Those without such assets

---

84. *10 Elements*, *supra* note 7 at 12, Elements 5 and 10; *13 Principles*, *supra* note 10, Principles 1, 7, 11, 13.

85. It should also incorporate and build upon previous processes that engaged Canadians in the development of the *Food Policy for Canada*, *supra* note 21, which followed efforts that date back to the People's Food Commission. See People's Food Commission, *The Land of Milk and Money: The National Report of the People's Food Commission* (Ontario: Between the Lines, 1980), online (pdf): <https://foodsecurecanada.org/wordpress/wp-content/uploads/2023/06/1980-The-Peoples-Food-Commission-22Land_of_Milk_and_Money22.pdf> [perma.cc/R6M4-823C].

86. Agriculture and Agri-Food Canada, *2009 Dialogue Tour on Young Farmers and Farm Transfers,* Catalogue No A34-16/2010E-PDF (2010) at 10, online (pdf): <https://publications.gc.ca/collections/collection_2011/agr/A34-16-2010-eng.pdf> [perma.cc/5LCQ-LRV5].

87. Ahmed, *supra* note 15 at 2, 29.

88. Mohamad Yaghi et al, "Farmers Wanted: The Labour Renewal Canada Needs to Build the Next Green Revolution" (02 April 2023), online: <https://thoughtleadership.rbc.com/farmers-wanted-the-labour-renewal-canada-needs-to-build-the-next-green-revolution/> [perma.cc/AB2G-ZZKS].

89. AAFC, *supra* note 21.

are either unable to access credit at all or only in "unsecured" form at very high rates of interest. By expanding the range of acceptable collateral to include movable assets, access to credit can be improved. Accordingly, the Organization of American States (OAS) developed the *Model Inter-American Law on Secured Transactions*.[90]

However, the type of legislative reform that is required by OAS member-states to implement the model law at domestic levels necessitates what can be described as a paradigm shift and change in mindset among lenders and borrowers to effect a new "culture of lending." To encourage this shift, the government of El Salvador engaged in an extensive process of stakeholder consultation and capacity building during the reform of its domestic lending regime.[91] As a result, the use of movables as collateral has become possible, which has democratized access to credit.[92]

a. Relevance for Canada: Resilience

"Enhanced resilience of people, communities and ecosystems is key to sustainable agricultural and food systems."[93] Just as biologically diverse systems are more resilient than monocultures, on a socioeconomic scale, producers with diversified income sources also have greater resilience. For MSMEs, a major vehicle for developing economic resilience is through improved access to credit. The case study from El Salvador illustrates the kind of significant change that can be effected through law; such major reforms, however, require an extensive consultation process that is inclusive of all stakeholders and, ideally, should be undertaken right from the outset of the reform process (in El Salvador, consultations began after the law had been enacted but prior to development of the registry).

Many farmers in Canada have "the desire and will to transition away from a system that entraps them. However, they need supportive policies . . . to move in a different direction."[94] Canada needs to find innovative ways to reduce barriers to entry for young farmers and introduce policies to enable the next generation to gain access to the "factors of production"—land and credit. Policymakers should remain open to ideas that will emerge during SAS consultations, even if implementation might entail a major paradigm shift to build greater resilience into Canada's agri-food system.

---

90. OAS, Secretariat for Legal Affairs, Department of International Law, *Model Inter-American Law on Secured Transactions*, OEA/Ser.K/XXI.6, CIDIP-VI/RES.5/02 (08 February 2002). In many states in Latin America, it is common to find a multiplicity of registries, each of which is dedicated to a particular type of collateral (e.g., vehicles). This creates both gaps and overlap, resulting in complexity and high costs of registration. By contrast, the secured transactions regime introduced by the OAS model law is based on a single security interest and one comprehensive secured transactions registry with priority based on registration sequence (similar to the personal property security legislation common across Canadian provinces).

91. OAS, Secretariat for Legal Affairs, Department of International Law, *El Salvador: Seminario de Capacitación sobre la Reforma de Garantías Mobiliarias* (*Training Seminar on the Reform of Movable Collateral*), OEA/Ser.D/XIX.17.1 (2014), online (pdf): <https://www.oas.org/en/sla/dil/docs/secured_transactions_seminar_el_salvador_2014.pdf> [perma.cc/GB23-TMZX].

92. Organization of American States, "Secured Transactions (El Salvador)" (13 August 2021), online (video): <https://www.oas.org/en/sla/dil/private_international_law_Secured_Transactions_Documentary_Video.asp> [perma.cc/LZS9-F7LT].

93. *10 Elements*, *supra* note 7, Element 6; *13 Principles*, *supra* note 10, Principles 3, 4.

94. Ahmed, *supra* note 15 at 2, no 8.

I. Simplify Regulation

As pointed out in *Growing Common Ground*, improved regulatory measures are also essential in the shift toward more sustainable practices.[95] Legislation, regulations, and administrative measures should be clear, less burdensome, and user friendly. Participants in SAS consultations have expressed confusion about the overlap of FPT programs, noting that the number of programs make it unclear "which programs offer what benefits and what they are eligible for, making it difficult to navigate, [and that] cost-shared programming can also be prohibitive for small scale producers and new entrants who do not have the capital to participate."[96]

1. Case Study: Colombia—Simplified Business Formation

In many countries in the Global South, formal business "start-up" is complex, which necessitates either a certain skill set or assistance by a third party, making the process time consuming and cost prohibitive. If formal business registration is out of reach, many individuals have no choice but to conduct their business activities anyway—in the informal sector—which then precludes access to formal credit.[97] Efforts have been ongoing at international levels to reduce legal obstacles faced by MSMEs throughout their life cycle and to facilitate formalization.[98] Along a similar line, in the Americas the *Model Law on the Simplified Corporation* was developed on the basis of successful advances made in Colombia, and OAS member states have been encouraged to follow this model in the course of their own domestic reforms.[99]

Colombia has offered the possibility of a simplified corporate form since 2008 when Law 1258 was enacted.[100] As of 2017 nearly half a million such companies had been incorporated, and about 98 per cent of companies being incorporated were using the simplified form.[101]

---

95. *Ibid* at 2, no 10.

96. AAFC, *supra* note 21.

97. In broad measures, nearly 2 billion individuals, accounting for around 60 per cent of the global workforce, are employed in the informal sector. See OECD, *Informality and Globalisation: In Search of a New Social Contract* (Paris: OECD Publishing, 2023) at 3, 95. DOI: <10.1787/c945c24f-en>.

98. *UNCITRAL Legislative Guide on Key Principles of a Business Registry*, UNGA 54th sess, UN Doc A Res 76/229 (2021), UNGA Res 76/229.

99. OAS, Inter-American Juridical Committee, *Project for a Model Act on Simplified Stock Corporation,* CJI/RES. 188 (LXXX-0/12) (2012); OAS, General Assembly, *Model Law on the Simplified Corporation*, AG/RES. 2906 (XLVII-O/17) (2017). The model law has also been evaluated alongside a similar initiative in Quebec to find ways to facilitate incorporation for small businesses and reduce the administrative load afterwards. See Robert M Yalden, "Québec's Sole Shareholder Regime and the Rise of Simplified Corporations: Innovation, Implementation and the Challenges Ahead" in Stéphane Rousseau, ed, *10e anniversaire de la Loi sur les sociétés par actions du Québec: rétrospective, perspective et prospective* (Montreal: Wilson & Lafleur Martel ltée, 2021) 70.

100. *Sociedad por Acciones Simplificada* (Law on Simplified Corporations), L 1258, The Congress of Columbia, (2008), online: <https://www.suin-juriscol.gov.co/viewDocument.asp?ruta=Leyes/1676307> [perma.cc/SPB8-D3CU].

101. OAS, Inter-American Judicial Committee, *Model Law on the Simplified Corporation: Status of Reforms in the Region*, OEA/Ser.Q CJI/Doc. 634/21 (2021) at 25.

a. Relevance for Canada: Human and Social Values

"Protecting and improving rural livelihoods, equity and social well-being is essential for sustainable food and agricultural systems."[102] AE places a strong emphasis on dignity, equity, inclusion, and justice and supports empowerment of people and communities. This case study demonstrates the connection between law and livelihood; as inspired by Colombia, the OAS model law was developed to offer a simplified form for business start-up that facilitates formalization and thereby enables more people to earn a livelihood with dignity and within the protection of the law. It also demonstrates the impact of a simplified regulatory framework and supports demands for less burdensome, user-friendly administrative measures. In Canada, the SAS process currently underway will undoubtedly lead to policy review and subsequent reformulation; policymakers should bear in mind this need for simplification and accessibility.

III CONCLUSION: REFLECTIONS AND LESSONS LEARNED

These case studies illustrate the relevance of lessons from the Global South in the furtherance of AE policy in Canada. Despite differences in circumstances, many of the challenges discussed in this article are common to both Canadians and our neighbours in the Global South. As we forge a path "to promote sustainable agriculture" that encompasses AE, let us consider the lessons learned. Can we be visionary like Tanzania, and adopt a national AE strategy? As AE emerges incrementally "from the ground up," as in Andhra Pradesh, India, will we have the courage to re-evaluate outdated measures in favour of AE policies? Do we have the foresight to forge a national AE research agenda, or will it take a (Cuban) crisis? Are we willing to support emerging AE knowledge sharing among farmers and to restore extension programs, after noting what this has achieved in Haiti? Are we creative enough to encourage innovation while also ensuring the farmers' right to seed? Will we encourage the shift to AE by expanding PES and similar incentives, inspired by successes in Costa Rica? Will we engage Canadians in designing integrated local food systems using a participatory process, drawing ideas from the Philippines? Are we sufficiently humble to recognize that a paradigm shift might be required to introduce the kind of law reform that will support a new AE policy direction, as did El Salvador? Can we step up to the challenge and develop a sustainable agricultural strategy that embraces AE, one that might become a global model for change, as Colombia's legislation has inspired others?

Today, despite tired promises over decades from an industrialized global agri-food system, more than 825 million people are hungry and over 2 billion people are malnourished. In its efforts to produce increasing quantities of "cheap food," conventional agriculture contributes to accelerated biodiversity loss and climate change, among other adverse environmental impacts. The most immediate task that faces the global community is to ensure food security for all those alive today as well as future generations and to do so while respecting planetary boundaries; as reflected in SDG 2, sustainable agriculture is a top priority, and we know this requires transformation of the current agri-food system. As AE entails the integration and balancing of all three components of sustainability—environmental, economic, and social—AE is the approach most consistent with the interpretation of SAg. Accordingly, as Canada

---

102. *10 Elements*, *supra* note 7, Element 7; *13 Principles*, *supra* note 10, Principles 10, 13.

embarks upon the development of a sustainable agricultural strategy, it is imperative that AE be considered part of that process.

Canada has a long-standing tradition as a leader in agricultural development. Now we must step up to the challenge as we shape a new vision for the agri-food system in Canada and the world. Countries that have a fraction of the resources available to us and double the challenges are making huge advances toward AE. We need only our imaginations coupled with courage and wisdom to take these lessons from the Global South to heart and present a bolder legacy for Canadian leadership—in sustainable agriculture and agroecology.