

# Challenging agricultural norms and diversifying actors: Building transformative public policy for equitable food systems

Johanna Wilkes \*  
Wilfrid Laurier University

Submitted October 10, 2023 / Revised February 11 and March 25, 2024 / Accepted March 27, 2024 /  
Published online July 3, 2024

Citation: Wilkes, J. (2024). Challenging agricultural norms and diversifying actors: Building transformative public policy for equitable food systems. *Journal of Agriculture, Food Systems, and Community Development*, 13(3), 317–336. <https://doi.org/10.5304/jafscd.2024.133.032>

Copyright © 2024 by the Author. Published by the Lyson Center for Civic Agriculture and Food Systems. Open access under CC BY license.

## Abstract

Food systems governance regimes have long been spaces of “thick legitimacy” (Montenegro de Wit & Iles, 2016), where embedded norms benefit productivist agricultural practices. Within governance regimes, the science-policy interface and the scientists who occupy this space are integral in today’s public policy processes. Often treated as objective science, technical disciplines have become a powerful source of legitimatizing in decision-making. Without the contextualization of lived experience or diverse ways of knowing, these siloed spaces can lead policymakers towards an action bias (e.g., a rush to short-term solutions) that neglects the underlying causes and concerns of our current crises. Current governance arrangements in the science-policy interface demonstrate the bias toward technical science (e.g. economics) and

short-term solutions. However, by challenging productivist agriculture norms reformed public policy processes may shift from a space of repression to one of possibility. This reform can happen through investigating dominant actor coalitions and identifying tools to reconfigure these power arrangements. Public policy theory, such as the advocacy coalition framework (ACF), helps organize relations within current agricultural policy arenas. The work of practitioners and other disciplines offer tools that can support transformative action by food systems advocates in the pursuit of changing the way public policy is made. In part, understanding how power is organized and who may influence policy processes is critical to change. This reflective essay ends with tools and strategies for those wishing to engage governments in this shift. The proposed tools and strategies focus on how people (e.g. policy champions), processes (e.g. policy leverage points), and partnerships (e.g. allyship) generate ways in which advocates can, and do, engage governments in transformative change.

---

\* Johanna Wilkes, Ph.D. Candidate, Balsillie School of International Affairs, Wilfrid Laurier University;  
 <https://orcid.org/0000-0003-1960-8553>;  
[jwilkes@balsillieschool.ca](mailto:jwilkes@balsillieschool.ca)

## Funding Disclosure

The author is supported in part by funding from the Social Sciences and Humanities Research Council of Canada.

## Keywords

food systems transformation, public policy, thick legitimacy, advocacy, agriculture, agroecology, science-policy interface, agricultural politics

## Introduction

Food systems are teetering on the edge of converging crises. Human induced climate change has irreversibly altered our environments (Masson-Delmotte et al., in press). Rising global temperatures (Masson-Delmotte et al., 2018; in press), eroding soil health (Booker, 2021), increasing algae blooms in the Great Lakes system (Hance, 2020), declining biodiversity (Secretariat of the Convention on Biological Diversity, 2020), and struggling pollinator populations (Marshman & Knezevic, 2021; United Nations Environment Programme, 2016) all sound warning bells. In addition to failing the environment, our current industrial food system has also left growers, food workers, and consumers struggling (Kelley et al., 2020; Li et al., 2023; National Farmers Union, 2023b).

In Canada, where I ground much of my work, primary agriculture production workers were estimated to be ten times more likely to contract COVID-19 during the pandemic than the average Canadian (Kelley et al., 2020). Further along the supply chain, numerous outbreaks in processing facilities were recorded (Buchan et al., 2022; Dryden & Rieger, 2020; Wilson, 2022). However, vulnerability across the food supply chain predates COVID-19. For example, it is estimated that one of every four children in the ten Canadian provinces live in a household that experiences some form of food insecurity (Li et al., 2023; Statistics Canada, 2023). This number misses the stark realities of Indigenous, Black, single parent, and new immigrant households, which experience heightened levels of food insecurity (Li et al., 2023; Tarasuk & Mitchell, 2020) and more than twice the pandemic exposure rate of White Canadians (Carling & Mankani, 2020; Cheung, 2020).

Globally, a healthy diet is out of reach for an estimated 3.1 billion individuals (Food and Agriculture Organization of the United Nations [FAO], International Fund for Agricultural Development [IFAD], United Nations Children's Fund [UNICEF], World Food Programme [WFP], & World Health Organization [WHO], 2021), when we already grow more than enough food to feed upwards of 10 billion (Committee on World Food Security, 2022; Holt-Giménez et al., 2012). Market concentration, COVID-19, food price inflation,

debt crisis, and global conflict are having direct and indirect negative impact on community food and nutrition security around the world (Clapp, 2022; High Level Panel of Experts on Food Security and Nutrition [HLPE], 2020a, 2020b; IPCC, 2023; FAO, IFAD, UNICEF, WFP, & WHO, 2021), including impact on smaller, informal food system actors (Béné et al., 2021).

Despite all the negative externalities, the influence of the dominant industrial agricultural model is both omnipresent and yet difficult to perceive. Industrial agriculture is filled with power-laden norms and “thick legitimacy” (Montenegro de Wit & Iles, 2016). Defined as “authority that cannot unravel easily because it is multi-stranded and broad-based” (Montenegro de Wit & Iles, 2016, p. 2), thick legitimacy is an outcome and not the process itself. The process is rooted in constrained, path-dependent environments with deeply embedded effective industrial agriculture coalitions, including at the science-policy interface. The norms that emerge from this process are pervasive and inform knowledge creation, farmer identity, and the decision-making processes within public policy. For example, norms connected to industrial agriculture can be found in land-grant institutions (Francis, 2000), the nomenclature used around family farms (Bronson et al., 2019), and the development of “mega-corporations” in the global food economy (Clapp, 2021).

Consistent with the observations of Runge (1988), Coleman et al. (1996) assert that agriculture consists of a closed policy network system with little permeation from those on the outside, including the general public—leaving policy elites, influential private-sector actors, and powerful agricultural insiders as the main source of advice in public policy processes. This arrangement of influential actors necessitates questioning the government's role in creating policy environments and the potential consequences when closed policy networks determine policy outcomes (Wilkes, 2024). For example, when services and public goods, such as agricultural extension work, are underfunded, it can have a negative impact on small farmers (Labarthe & Laurent, 2013). Shifts in governance toward industry-led policies (Sankoff, 2019) and multi-stakeholderism (Levkoe et al., 2022; McKeon,

2017) also create challenges for transparency within public policy processes, making it more difficult for civil society to hold governments accountable.

One of the most challenging roadblocks to eroding the thick legitimacy of industrial agriculture is that governments, like the Government of Canada, play historical and ongoing roles in industrial agriculture coalitions at both the global and national scale (Wilkes, 2024). In Canada, the dominant industrial coalition possesses substantial funding and influence, so that few players are seen as legitimate, and legitimized, by governments (Wilkes, 2024). Presented in isolation from agriculture's colonial roots (Rotz et al., 2023), the inequitable nature of for-profit technology research (Smithers & Blay-Palmer, 2001) and the seriousness of environmental and social crises (Lee et al., 2023), high-tech quick-fix solutions presented by industry seem both a palatable and responsible direction for governments to support. However, when the social context and political economy of food systems is taken into consideration, the solutions that emerge are much different.

Shifts in the ways that public policy is developed, as well as the rebuilding, reconfiguring, and strengthening of alternative advocacy coalitions could reform the role of public policy toward more transformative futures. Academics have described the potential of coordinated policy across scales to build resilient systems through regionalizing food infrastructure as well as producing and making accessible nutritious food closer to home (Blay-Palmer et al., 2020; Reid et al., 2022). In particular, agroecology—an approach to food systems that recognizes integrating environmental, political, and social needs as one—has long been advocated internationally (Altieri et al., 2015; Anderson et al., 2020) and within Canada (Ahmed, 2022; Dale, 2020; Garthson, 2021; Isaac et al., 2018; Laforge et al., 2021; NFU, 2023a).

Agroecology, which is embedded within the food sovereignty movement (Gliessman et al., 2019), transcends geographical scales to unite growers, consumers, and researchers across the globe while being implemented at local scales (Anderson et al., 2021). As part of agroecology, food is seen as a fundamental human right rather than simply a commodity to be traded. In my years

working in agriculture, agroecology rarely came up. It wasn't until I began my Ph.D. program that I learned the holistic value of alternative food systems frameworks, such as agroecology, and was able to reflect on some of the deeply embedded norms in agricultural policy. Alternative food systems frameworks, such as agroecology, can support meeting our international commitments (e.g., the Sustainable Development Goals) while better aligning national food systems mandates with narratives, such as equity, inclusion, and environmental sustainability. Alternative food systems frameworks have the potential to shift narratives from platitudes to action by supporting better alignment between government communications and public implementation (Wilkes & Perttula 2021).

The following reflective essay is structured in several parts: exploring thick legitimacy at the science-policy interface, the challenges of agriculture's action bias, and tools and strategies to effect systems change.

### **Thick Legitimacy in Action: Global Food Governance and the Science-Policy Interface**

The science-policy interface is a significant source of thick legitimacy in agriculture public policy. Scientists who focus on technological innovation and sustainable intensification disproportionately hold positions of power in food governance. Whether this is through the revolving door of industry representatives on government boards (Clapp, 2020) or through international scientific groups (Montenegro de Wit & Iles, 2021), the appointments of industry-affiliated scientists muddle the science-policy interface beyond its normal bounds. Rather than simply discussing the relevance of science and its transmission into policy, there is also the salient role of scientists operating inside the public policy process itself. With an increasingly complex network of multistakeholder and industry-led arrangements in global governance, technical sciences and targets (McDermott et al., 2022) can create a void in understanding the negative social externalities of public policy for governments and their constituents.

This scientific bias can be seen in the membership of two prominent global governance forums, the United Nations Food Systems Summit

(UNFSS) Scientific Group (UNFSS, 2023) and the High-Level Panel of Experts (HLPE). These two forums were the at center of my dissertation research, observing the work of different actors over four years. While the scientific groups were not the focus of my research, I observed their constant influence across the process and the growing role of the science-policy interface in global governance.

Of the 28 members on the UNFSS Scientific Group, 26 are housed in favoured disciplines, including many in “hard” or “technical” sciences.<sup>1</sup> Economists tend to be the most prominent in governance arrangements at the science-policy interface. In the High Level Panel of Experts (HLPE) (2021–2023) at the Committee on World Food Security (CFS) (HLPE, 2023), five of 15 members identify as economists. In the UNFSS Science Group, nine of 28 members identify as economists. In short, economists have the largest share of any individual discipline, eclipsing all other social scientists combined.

This lack of diversity can create bias in several ways. Dominance by any one discipline or way of knowing sends a message about whose knowledge is valued and what the priorities of that particular policy space are. The strong emphasis on members with advanced degrees values academic knowledge over other forms, such as Indigenous and experiential. While a strong mechanism or role for civil society actors in overall policy development can balance an academic-centered science body, they should complement one another rather than be seen as substitutes or for the latter to have disproportionate power.

These science-policy arrangements also encourage the exploration of problems from a relatively limited set of perspectives, missing key groups such as farmers, fisherfolk, small- to medium-sized enterprises, and consumers. These tightly knit elite arrangements say that the knowledge outsiders hold is only relevant when processed through the lens of academic institutions. This creates a biased gatekeeping mechanism for what is

seen as relevant for policy discussions as well as forming an academic filter through which information is processed before reaching government officials. When technical and academic knowledge is taken in isolation, the ensuing science presented to decision makers creates a narrative that is often devoid of historical policies (e.g., colonialization, extraction) connected to the global food economy. This is consistent with an analysis of the UNFSS Scientific Group demonstrating bias toward “science and technological information” (Montenegro de Wit & Iles, 2021, p. 200).

Montenegro de Wit and Iles (2021) also articulate an insidious exploitation by the UNFSS Scientific Group of racialized and marginalized identities in pursuit of “woke” science. The authors go beyond a disciplinary analysis of the Scientific Group to include the membership’s shared networks, connections to international institutions such as the World Bank, and affiliations with corporations (Montenegro de Wit & Iles, 2021). In other words, international scientists participate in elite arrangements, or coalitions, with industry actors similar to those discussed by public policy scholars (Atkinson & Coleman, 1989; Sabatier & Jenkins-Smith, 1993; Skogstad, 2008).

### **Agriculture’s Action Bias: Change at the Margins**

Characterized by highly technical, homogenous cropping systems with an orientation toward global trade, productivist agriculture has defined farming policy since the second world war (Lowe et al., 1993; Marsden et al., 1993). Some researchers even argue that we have entered an era of hyper, neo-, or super-productivism, which reflects on the acceleration of profit-seeking behaviors and a focus on business at the cost of much else (Dibden et al., 2009; Roche and Argent et al., 2015). A relentless need to focus on productivity is a shared core belief by industrial agriculture actors, derived from years of political campaigning at the science-policy interface. The concern with short-term solutions (e.g., action bias) is a subtle factor in the gap

---

<sup>1</sup> For the purpose of this article, “technical” or “hard” sciences are considered sciences that largely rely on quantitative data and isolated experiments to explain phenomena or impacts. Fields such as economics, crop science, and nutrition fall under this definition. However, there are always exceptions to the rule.

between transformative narratives and productivist recommendations. Patt and Zechhauser (2000) emphasise the desire for individuals “to do something.” Action bias allows practitioners to operate in complex policy environments rapidly but fails to allow for the depth required to address foundational challenges affecting society. Factoring in lack of accountability or enforcement at the international level (Koppell, 2010), solutions that could have been transformative in nature—such as those proposed in the International Assessment of Agricultural Knowledge, Science and Technology for Development report (McIntyre et al., 2009)—are shelved in favour of funder preferences, deeply embedded norms, technical solutions, and quick political wins.

For example, industrial agriculture narratives often adopted by scientists, politicians, and industry representatives strongly emphasize producing more food. This can come under the narratives of sustainable intensification, efficiency, increasing yields, or productivity growth. As the UNFSS Coalition on Sustainable Productivity Growth for Food Security and Resource Conservation (2021) states:

Agriculture faces the daunting challenge of producing more food to meet the nutrition needs of a growing world population while at the same time dealing with climate change and ever-tightening natural resource constraints. (p. 1)

Emphasis on increased production in association with food security underpins many political narratives about food systems (Soil Association, 2010) and establishes a false sense of urgency. Despite this panic for efficiency, we already produce enough food to feed 10 billion people (Committee on World Food Security, 2022; Holt-Giménez et al., 2012). Nevertheless, in 2021, 9.8% of the global population were affected by hunger (FAO, IFAD, UNICEF, WFP, & WHO, 2022) and a healthy diet was out of reach for over 3 billion people. Hunger is urgent, but the dire situation of millions is being co-opted to falsely uphold agricultural intensification beliefs and productivist norms. In the words of a recent blog by the United

Nations Environment Programme, this continued level of food insecurity is “not just math” (2020).

The work of the CFS and UNFSS scientific bodies illustrate how action bias can operate at the science-policy interface. When comparing the 2019 HLPE report “Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition” and the publication “Food systems: seven priorities to end hunger and protect the planet” (von Braun et al., 2023) by the Chair and co-Chairs of the UNFSS Scientific Group, the emphasis is clear. The CFS HLPE report puts a shared emphasis on technological advances *and* political transformation, with recommendations that balance the work required to act immediately while also transforming food systems for the long-term (HLPE, 2019, pp. 21–24). The report recommends to “establish and develop effective technology transfer mechanism to enhance the adoption of technologies in agroecological and other innovative approaches” (p. 23) and supports the need to “empower vulnerable and marginalized communities and address power inequalities in food systems” (p. 23). The UNFSS publication (von Braun et al., 2023) includes narratives that address the political economy of food but fails to integrate them into recommendations. Instead, the authors emphasize access to technology and increased production.

While imperfect, the HLPE report was compiled by scientists with the guidance and input of CFS actors in civil society, the private sector, and governments. It was put to the CFS membership for consideration as part of the “Agroecological and Other Innovative Approaches” guidelines. Although not all their recommendations were taken up, the report necessitated that, at a minimum, member states discussed the systemic issues and considered their implications when drafting the final guidelines (Committee on World Food Security [CFS], 2021). In short, the CFS report was a negotiation of perspectives and politics. The CFS helped bring together industrial and alternative food systems actors within a policy arena with defined roles, responsibilities, and rights. This collaborative process, even if fraught at times, can help buffer against action bias by considering the

broader political context of food as part of the science-policy interface.

In contrast, the impacts of the overall UNFSS are still to be seen but the process has clearly shifted the bounds of multistakeholderism and corporate engagement in global governance (Chandrasekaran et al., 2021; Clapp et al., 2021; Food Systems 4 People, 2023; Wilkes, 2022b). For example, the UNFSS document was produced by a small group of scientists operating in an influential policy space with little agency provided to actors that hold competing perspectives. The UNFSS Scientific Group informed the “recommended outcomes and clarify[ed] the level of ambition and commitments that emerge[d] from the Summit process” (UNFSS, 2021). The group helped define the scope and acceptability of game-changing solutions brought forward by the Action Tracks of the UNFSS (UNFSS, 2022).

The bias toward “scientific” knowledge feeds into the preference of governments, which can find it difficult to truly tackle systemic issues, reinforcing path dependent policies. The process surrounding the UNFSS document undermined the progress advocates for agroecology were making internationally at the CFS and the efforts to build trust within global food governance (Anderl & Hißen, 2023; Canfield, Anderson et al., 2021; Canfield, Duncan et al., 2021). The Chairperson and Vice Chairs of the UNFSS Scientific Group call on governments to “boost finances...increase scientific capacity...strengthen science-policy interfaces” (von Braun et al., 2023, p. 8); however, the Scientific Group’s view of science is very narrow, relying on technical scientists to interpret the situations and knowledges of those most affected by industrial food systems. In addition, these scientists act as a political sieve through which technical information flows from communities to policymakers. The “action bias” and narrow positionality in their work is evident based on the diversion between their narratives, which are inclusive of Indigenous knowledges, the political economy, and the universality of rights, and their recommendations, which are centered on technology, science, and finance. This divergence is highly significant as international science committees, such as the UNFSS Scientific Group, are agenda-setting bodies

often devoid of specific or binding decision-making powers. The emphasis on non-binding policy tools makes global governance the ideal scale to support norm shifting. However, the UNFSS Scientific Group document focused on re-embedding productivist norms through their recommendations while using narratives of transformation and urgency to bolster broader legitimacy. This shift to include new narratives could be in part due to the intensive scrutiny of industrial agriculture practices for their role in the climate (Houser & Stuart, 2020) and social (Clapp, 2023) crises.

### **Transforming Public Policy to Build a New Food Systems Coalition: Tools and Strategies for Change**

There is need for action when there is a crisis or challenge. However, we should also reflect on what actions are required both in the short and long term to build equitable food systems. The Canadian government shifted its central narratives over the past several years to include the need to tackle systemic racism, yet failed to translate these narratives into action as part of the federal agriculture and agri-food mandate letters (Wilkes & Perttula, 2022). The mandate letters, a communications tool the prime minister uses to direct the priorities to ministers, instead—like the Scientific Group—largely focused on immediate action that would blunt the margins of our complex crises rather than truly shift the equation.

Similar to the gap between narratives and action, I have found that theory and practice can, at times, seem to be worlds apart. However, the advocacy coalition framework (ACF) is a rare example where the two overlap. The ACF investigates policy subsystems as a way of explaining policy outcomes and power dynamics; in particular, allowing for investigation of coalitions (e.g., academic, private sector, government, not-for-profit) with dynamic and diverse membership that coalesce around a particular set of values (e.g., productivism) (Jenkins-Smith & Sabatier, 1993, 1994). In part, the ACF can help outline “the multi-stranded and broad-based” foundation that thick legitimacy rests on.

Throughout my work experience and Ph.D

research, I witnessed the powerful role of scientists and technical experts within public policy processes. The developers of the ACF were also conscious of the role these actors play (Jenkins-Smith et al., 2014, 2018):

To better understand policy processes is thus to understand how scientific and technical explanations are integrated into (or deflected from) belief systems, used in political debates and negotiations, and integrated with other forms of knowledge, especially local knowledge. (2018, p. 142)

In the ACF, scientific practice, politics, and public policy processes are all elements within the same framework, not seen as apolitical or disparate from one another. This intertwining is reflective of how public policy and power are practiced at both the national and international scale. Therefore, I also explore public policy reform from the perspective of process reform, which would allow for more ways of knowing and alternative actors to be perceived as legitimate and valued. The ACF concept helped put my research into an organized framework that aided both describing the dominant (productivist) coalition and finding ways to support alternative food systems actors' engagement.

Toward the end of my work, I began knitting together the differences between private-sector engagement and the engagement strategies of alternative food systems actors. While the former holds immense power through scientific and procedural means, there are specific tools that industry deploys effectively that could be replicated by agroecology advocates to advance transformation.

There are ways that the power held by dominant coalitions can be dislodged and reorganized, but these often take asserted effort and a willingness to engage with deeply embedded industrial institutions. However, I recognize that governments are not the exclusive answer to transformation. Governments can be institutions with histories of repression while also offering an important site of reform. This tension is constantly

present and the calculation of whether or not to engage is highly personal for each food systems actor. For those who are interested in engaging in government processes, the following tools and strategies are included to support their work. These tools and strategies are drawn from work at the international, national, and local levels. The recommendations reflect a few general assumptions: public participation in governance is of interest to the government or governance body (e.g. that multi-actor forums or consultation are used), that democracy—while bent—is not broken, and that transition to transformation is possible.

The suggested tools are taken from public policy work across different fields (e.g., social work, municipal planning) and are used as examples to help understand how transformative food systems actors can, and do, drive change. The tools—people, processes, and partnerships—can be deployed individually but I suggest they are strongest when taken in combination.

## People

### *Inclusive Public Managers*

One of the challenges I have observed as a practitioner and researcher, is the lack of public managers who were able to successfully create inclusive, collaborative spaces. While much of the public policy process is stuck in rigid structures, there are also personal elements (e.g., relationships, trust) that help foster or hinder the successful transformation of governance spaces. The work of inclusive public managers can act as an additional layer of democratic engagement, by creating authentic, innovative spaces of engagement that reflect public needs and provide agency for those most affected, while still understanding the larger political landscape in which they operate. Openings for policy and process innovation have led to advances such as participatory budgeting (Pinnington et al., 2009).

An inclusive public manager “facilitates the practice of democracy by creating a community of participation where people can share information from different perspectives and work together on problems” (Feldman & Khademian, 2007, p. 306).<sup>2</sup>

---

<sup>2</sup> To clarify, a community of participation can also be thought of as similar to a community of practice in other disciplines.

Successful inclusive public managers seek to bring different perspectives together, e.g., the “political, the scientific or technical, and the local or experience-based” (p. 306), and support an informed, deliberative process. Feldman and Khademian (2007) emphasize the informational and relational work of an inclusive public manager. Informational work allows inclusive policy managers to act as a knowledge “broker, translator, and synthesizer” (p. 312), helping managers understand and disseminate information across boundaries. As a translator, the manager can reformulate information to be better appreciated. Finally, as a synthesizer, the manager can facilitate different ways of knowing to come together to form a new understanding of the problem at hand. Relational work helps the public manager navigate the political landscape and interpersonal relationships among participants, ultimately building trust within the group.

Inclusive public managers are essential for realizing deliberative democracy in food systems, as Thompson et al. (2020) envision it, but with more structured ways of recognizing those most affected. An inclusive policy manager can also be critical in creating multi-actor engagement spaces that enable collaborative learning, empowerment, and cross-sectoral connections necessary for sustainable transitions (Frantzeskaki & Rok, 2018).

Identifying members within international organizations who can build trust and bridge perspectives is a critical first step to more collaborative and equitable policy environments. Bringing youth into the fold as part of early career development in international relations and food systems could also help shift the culture of multi-actor engagement for the next generation by creating new governance norms. Participation at the CFS and UNFSS have shown that delegates representing youth have an increasing role in global governance forums. It is imperative to our food systems futures that institutions ensure youth have the skills necessary to facilitate transformative pathways forward.

### *Policy Champions*

Critical to the work of transformation are allies leading from in front of, and from behind, the scenes. Looking for allies in unlikely places is an important step to expanding a network when seek-

ing to achieve change. Inside many institutions are policy champions for a particular cause. I have seen first-hand the power that policy champions bring to moving the work of advocates forward. Find these policy champions and work with them to achieve shared objectives (Wilkes, 2022a). Moon (2018) emphasizes identifying people with powerful positions who can “amplify the desired views within policy circles” (para. 5). Moon speaks to the time needed for both sides—the advocate and the policy champion—to form trust and ensure parties are on the same page. These bonds of trust are cultivated over long periods of formal and informal engagement between actors. Policy champions are typically thought of as individuals working inside government but can also be situated outside. External policy champions can lend their influential voices to provide legitimacy from outside institutions or can increase pressure for governments to act. While it is difficult to see the immediate impact of this relational work, researchers have begun to develop metrics of success (Devlin-Foltz & Molinaro, 2010).

Even in the most embedded institutions and governments, there are often policy champions seeking support to advance transformative frameworks such as agroecology. These champions can critically link into the inner workings of a policy process and may provide much-needed evidence to support advocacy within institutions.

### *Policy Navigators*

Throughout my research, I have observed a distinct shortage of policy navigators among the agroecology movement. I use the term policy navigator specifically, quite differently from a translator or inclusive policy manager. A policy navigator is someone who understands how, when, and where policy processes flow. Effective policy navigators are usually former senior government officials or those with extensive experience within policy development processes. A policy navigator may have vital information, such as how to get something in front of the treasury board or the person handling a particular file. In the private sector, policy navigators are often government relations professionals, some of whom are more commonly known as lobbyists. They work in-house for indus-

try associations, large companies, nongovernmental organizations, or government relations firms.

A policy navigator's value comes from strategic timing in policy interventions, knowledge of power structures, clear communication skills, and their extensive network of government connections. A sample of job descriptions for government relations positions shows the emphasis on such skills (*Hill Times*, 2023; Loblaw's Companies Limited, 2023). While there are many highly skilled policy professionals engaged in the movement to transform food systems, there is opportunity to invite in and incorporate the perspectives of skilled policy navigators as part of the advocacy process. Policy navigators can lend important insights and create connections across government networks that are invaluable to the success of new ideas. In addition, policy navigators are adept at finding policy champions and getting policy-ready products into the hands of influential actors.

Resource barriers can make it difficult for financially constrained civil society organizations to hire policy navigators, as their skills are highly sought after and well compensated in the private sector. However, policy navigators can be relied on in areas such as environmental and health movements to help train and support a community of new navigators within food systems governance. Leaning on the growing interest in food at the Conference of the Parties (CoP) on climate change (Slow Food Foundation, 2023), the COP15 conference on biodiversity (Wilfrid Laurier University, 2022), and conferences on nutrition (International Congress of Nutrition, 2022), could be a way to connect with like-minded navigators.

### *Diversifying the Role of Expert in Governance*

As discussed earlier, the science-policy interface lacks significant diversity. It is necessary to create space in scientific groups and expert committees that embrace diverse ways of knowing and being. In a study of certification programs, it was determined that market conditions, competition for ideas, and early decision-making influence the rate at which a scheme is taken up by a population and how it may, or may not, globalize (Auld, 2014). Meaningful inclusion of diverse perspectives from the beginning, such as farmers, Indigenous

leaders, and fisherfolk is essential. These everyday experts should be seen as valuable members who bring unique perspectives and a depth of lived experience that is equally relevant to western science. In addition, governments should look to farmer-to-farmer networks and other place-based knowledge arrangements to help guide decision-making.

Governments must recognize when current policy processes are not appropriate for a particular workstream. For example, Robin et al. (2023) demonstrate the continued harm done by the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) in engaging with Indigenous communities; they suggest that forming "community-first principles and strategies" (p. 18) can support more meaningful engagement. Indigenous peoples are the experts and have a wealth of knowledge from across generations. State-based colonial governments need to recognize the sovereignty of Indigenous nations and uphold government-to-government processes that support Indigenous-led policy design.

Much work is needed to highlight different forms of policy design, such as Indigenous food guides (Wilson & Shukla, 2020), Indigenous sovereignty (Cidro et al., 2015; Coté, 2016; Robin et al., 2023), and connections between sovereignty movements (Anderson & Settee, 2020). Governments need to listen to Indigenous communities, leaders, and scholars and embody these learnings to truly take them to heart and commit to a justice-oriented framework. Overall, there is a need for place-based decision-making and policy design to take a more central role in public policy processes across communities and scales of government.

## **Processes**

### *Policy Leverage Points*

Policy processes have both planned and external leverage points. A planned leverage point might be a scheduled programmatic review. An external leverage point might be a system shock, such as the COVID-19 pandemic or demands for social justice. Advocates for agroecology, as well as for food sovereignty more generally, can use these leverage points as a meaningful entry way into policy discus-

sions. For example, Farmers for Climate Solutions analyzes issues facing Canadian farmers and seeks change through recommendations as part of the annual budget process and the renewal of the national policy framework (Farmers for Climate Solutions, 2021). Proponents for agroecology could use leverage points in the public policy process to create openings for incremental change through larger policy vehicles or evaluations.

### *Wrap Around Policy*

For a period, I had the privilege of working in community infrastructure policy. During this time, my work emphasized the importance of holistic service planning and community engagement. This is where I was first exposed to ‘wrap around’ policy. Adapted from the social services field, ‘wrap around’ policy “focuses on maximising collaboration between stakeholders, including the client and their support network, as well as services involved” (Wyles, 2007, p. 45). The ‘wrap around’ strategy—when applied in a conducive environment—has shown better outcomes and lower expenditures (National Wraparound Initiative, 2023), and promotes more client-oriented delivery and helps identify gaps in the current suite of programs.

Wrap around policy has been implemented in fields ranging from education to out-of-home care but has not yet been used in agricultural policy. If agroecological farmers were to access wrap around services for their technical, financial, and social needs, it could reduce the navigational costs associated with complex funding programs and increase access to services. Wrap around services would alleviate some of the process burden felt by farmers attending to agroecological transitions.

### *Transparency and Agency over Inclusion Alone*

This strategy is both a general observation from my participatory observation work and an action that civil society is deploying in many governance arenas. My experience with the UNFSS and CFS showed that establishing good practices for transparent, accountable governance from the start is essential. Advocates for agroecological approaches should continue prioritizing transparency and agency for those most affected (e.g., farmers, fisherfolk, consumers).

Global governance forums can be interpreted from the point of view of the work of Auld (2014) and Weldon and Parkhurst (2022), that they are defined by their earliest decisions on inclusion. These decisions, such as how the process will be structured, are critical to their outcomes. Therefore, the development of global governance forums needs to prioritize conflict-of-interest safeguards and transparency from the beginning, as well as establish clear roles in decision-making for those most affected by the global food economy. Good inclusive policy managers and effective policy champions can help advocate for transparency early in governance processes, from both within and outside government.

One of the strongest criticisms of the UNFSS was its lack of transparency (Canfield, Anderson et al., 2021; Canfield, Duncan et al., 2021). While the UNFSS offered several opportunities for broad stakeholder engagement, the inner workings of the Summit were less known. Based on participatory observation and content analysis, my findings support the idea that inclusivity does not translate into transparency or equitable access by default (Wilkes, 2023). To achieve the latter two, conscious choices need to be made about the structure of a process in its early stages. At the national scale, building out additional spaces for agency and transparency are central to creating, re-building, or maintaining good governance practices.

### *Early Intervention and Policy-Ready Products*

Policy ideas always come from somewhere. However, siloed debates, such as those in agriculture, can recirculate the same ideas repeatedly, albeit with different framing and narratives. New ideas entering old, entrenched systems can spark new life and become catalysts for process innovation. Having policy products ready for distribution and actively seeking opportunities for early intervention is crucial to leveraging policy openings. In Canada, an example of an early intervention effort is the Eat Think Vote Campaign by Food Secure Canada (2021), which with supporting partners produced and promoted several policy products that advocated for change in the 2021 federal election:

- Party platform evaluations

- Policy briefs
- Video
- Connection to the Sustainable Development Goals (which had been committed to by the Canadian Government)
- Social media tools

At the municipal level, Wayne Roberts and the Toronto Food Policy Council were at the forefront of solution building by creating effective policy products (Blay-Palmer, 2009; Stahlbrand & Roberts, 2022). Through its innovative strategies and policy expertise the Toronto Food Policy Council became an example for municipal systems worldwide.

Thinking even earlier than public policy development processes can be helpful too. Political platform development starts long before an election. By getting involved in the early stages of political priority making, advocates can get what is most important on the agenda—or at least into the discussion—before an election.

### *Scale-Shifting and Boomeranging in Policy Advocacy Work*

Attending to appropriate scale can be a powerful tool in policy development. Sometimes the politics of a country, province, state, territory, region, municipality, or even international institution are just not conducive to change. Such is the case for human rights advocates or Indigenous land defenders when far-right governments come into power (Giraldo & McCune, 2019; Human Rights Watch, 2022). Scale shifting is a way to re-evaluate where advocates might be both safest in their work and most effective. Nicholls et al. (2021) argue that the two characteristics that make a scale-shifting strategy are shifting political “focal points” and scale selection. Scale shifting might also occur if sufficient action has been taken on a particular level and advocacy is required at an additional level to achieve further change. Especially when resources are scarce, scale shifting allows for organizations to best assess the right level of government to exert their efforts.

It is also possible to ‘boomerang’ between scales. Originally developed in human rights literature (Keck & Sikkink, 1999), the concept of boom-

eranging has been applied to discuss forestry policy in British Columbia, Canada. Bernstein and Cashore (2000) note that some organizations will boomerang from the domestic into the international when sufficient effort has not been made at home by governments to incorporate alternative positions. Boomeranging can help hold governments accountable through engagement at a secondary level (e.g. international) by calling attention to the issue in an open setting with other state and non-state actors. This dynamic use of shifting jurisdictions or boomeranging between jurisdictions can both be strategically deployed and used to increase pressure to support domestic and/or global policy change.

### **Partnership**

#### *Allyship*

Advocacy can be stronger when it comes from outside traditional agriculture venues. Building alliances with environmental and climate activists as well as nutritionists represents a fruitful strategy. An example of alliance building is Greta Thunberg’s engagement in food systems politics (Deutsche Welle, 2021) and participation in the countermobilization to the UNFSS (Global People’s Summit on Food Systems, 2021), which may have brought wider awareness to the plight of food systems, erosion of democratic governances, and to the role of agroecology in repairing them. Laforge et al. (2021) discuss the importance of forming solidarity across different parts of the food system in Canada. This observation can extend far beyond food systems actors. A broader interest in food systems politics is also evident in the the David Suzuki Foundation advocating for banning neonicotinoids in Canada (2021). Agroecologists can extend their reach by encouraging external support from audiences wider than food systems alone.

In addition, agroecologists need to diversify their vision of who is the ideal policy practitioner in government. Canadian advocates can benefit from engaging with policy actors from the center, usually members of the Treasury Board, Finance, the Premier and Prime Minister’s Office, and other central ministries or departments. While this is a typical government relations strategy used by

industry actors, the strategy could have wider application by transformative actors in food systems work. A significant advantage of using central channels of influence is that while an alternative proposal may not achieve an entire policy shift, nevertheless advocates will be getting non-agriculture policy advisors to question assumptions embedded in the global food economy. Over time, this broader questioning can help erode the thick legitimacy of industrial agricultural norms.

### *The Public and Individual Efforts*

The often-forgotten influential actor(s) in almost all public policy debates is the public themselves. I find that people often underestimate their collective power within broader governing structures. Burstein (2003) found that public opinion had an impact on policy three-fourths of the time that it was gauged. Processes get so wrapped up in special interest groups, corporate influence, and government posturing that it can be easy to miss the omnipresent power of the public, the central apparatus from which all power is drawn. While corporations have gained ground in governance forums in recent decades, the power of the public remains. In rebuke to the treatment of corporations as persons, Ikerd writes:

The only power greater than corporate power is the political power of the people—working together. Only real people, acting together through government, can ensure that for-profit corporations serve the public interest of society as well as the private interests of shareholders. (2023, p. 4)

Whether it is voting, how money is spent, or who benefits from our time and labor, we—the public—are a powerful entity in and of ourselves. Where governments have failed, individuals have gone to work: feeding each other during the pandemic (FoodShare TO, 2021) or implementing community fridges to enhance dignity and choice through mutual aid (Kraemer, 2023).

Individual citizen activism can be connected to system change. Wilkinson discusses the false dichotomy between individual and systemic action (Johnson & Blumberg, 2021) noting that the ripple

from an individual action to creating systemic change. These actions are both tied to accountability and norm shifting. In addition, media can be a helpful tool to amplify concerns and to communicate across the public. However, the role of media has become messier recently, with sharpening partisan divides and their reinforcing algorithms of social media and online news. More work from communications scholars would need to be reviewed to understand the opportunities and limitations of media for public influence on policy.

Agroecology advocates should consider effective ways to engage with individuals, and the wider public, to encourage government action. If the government feels pressure to act, the tools outlined above will present real opportunities for more equitable policy processes. While the public are an important ally at all steps in the policy process, their influence can be particularly valuable at critical leverage points, as discussed earlier. However, this relationship of trust between advocates and the public must be established over time in order to have support at critical junctures.

### **Conclusion**

I was inspired, in part, to write this paper by reading Montenegro de Wit and Iles (2016) work on thick legitimacy. The deeply embedded norms within industrial agriculture extend to public policy processes, creating a circular effect between government and industry. The ACF helps understand the roles and intimate connection between scientists, politicians, and public policy outcomes. These processes can be challenged, however. To challenge these dynamics and shift the dominant norms, innovative tools and strategies must be deployed.

To ensure that transformative ideas are included on the policy agenda, it is imperative to begin early, have policy-ready products, and think about how to build alliances with advocates across organizations. If you are not successful with early intervention, policy-ready products are helpful later in the process as well, at planned leverage points and during crises. If the public can make aspects of agroecology political issues, products developed by advocates can be presented to governments to promote solutions. However, similar to the efforts

involved in communicating complex research to communities (Ruhf et al., 2017), engagement in policy must be flexible and respond to the needs of those it is meant to serve as well as those who have contributed to its making.

These tools and strategies allow for flexibility and can be taken individually or in concert, but are most effective when at least one from each category is deployed. For example, an inclusive policy manager can work with advisors from other branches of government to ensure there is a collaborative approach in supporting an outcome (e.g., food security policy tied to a living wage mandate). Members of a coalition can then work externally to pressure the government to make the policies a priority, opening up an opportunity for internal policy champions to bring their work forward to decision makers. Should these efforts erode the dominant system sufficiently, there could be a transition to an agroecology-led transformation.

This reflection essay challenges what I observed throughout my time working in agriculture as well as what I heard from those around me about their relationship with food systems. Understanding the thick legitimacy of the globalized food system helped me grasp reasons why unlearning those norms and assumptions was uncomfortable for me, and why many people just don't feel connected to or informed about their food systems.

My Ph.D. work gave me the space and stability required to explore difficult questions about my own biases and positionality, but this is not a privilege afforded to most of my former colleagues and friends. There are many public policy concepts and tools that could accelerate the transition toward

agroecology by replicating a process of collaborative learning and action. The tools outlined above focus on both the advocate (allyship) and the policy practitioner (expanding the definition of who is an expert), allowing each to learn from the another and find partnership. These tools can also build more equitable spaces of learning, as has been the case with effective inclusive public managers, that emulate the opportunity I had through my Ph.D. work, but in a practitioner setting.

To change a policy environment, the alternative food systems community must continue to test new strategies and embark on a journey that is anything but linear, even at times disheartening. Inch-by-inch, person-by-person, systems can change. Sometimes, hope is required to believe that even within the most thickened of institutions there is a champion waiting. 

### Acknowledgments

I am grateful for the work of food producers, scholars, global governance experts, advocates, and practitioners across scales who continue to envision a better way forward toward a more inclusive, just, and sustainable future. Thank you for the generous insights from my tireless advisor, Alison Blay-Palmer, and friend, Jennifer Marshman while reading earlier iterations of this paper. Their comments and suggestions were invaluable. Thank you to Emily and Katie for their constant academic and personal support through the process of writing this article. I extend gratitude to the reviewers and JAFSCD editors, who provided patience, insights, and care throughout this process that strengthened my work immensely.

### References

- Ahmed, F. (2022). *Growing common ground: Pathways to advance agroecology policy in Canada. Report of the Agroecology Policy Research Initiative*. Laurier Centre for Sustainable Food Systems, Wilfrid Laurier University. <https://researchcentres.wlu.ca/centre-for-sustainable-food-systems/news/2023/growing-common-ground-report>
- Altieri, M. A., Nicholls, C. I., Henao, A., & Lana, M. A. (2015). Agroecology and the design of climate change-resilient farming systems. *Agronomy for Sustainable Development*, 35(3), 869–890. <https://doi.org/10.1007/s13593-015-0285-2>
- Anderl, F., & Hißen, M. (2023). How trust is lost: The Food Systems Summit 2021 and the delegitimation of UN food governance. *European Journal of International Relations*, 31 (1), 151–175. <https://doi.org/10.1177/13540661231173553>
- Anderson, C. R., Bruil, J., Chappell, M. J., Kiss, C., & Pimbert, M. (2021). *Agroecology now! Transformations towards more just and sustainable food systems*. Palgrave MacMillian. [https://doi.org/10.1007/978-3-030-61315-0\\_7](https://doi.org/10.1007/978-3-030-61315-0_7)

- Anderson, C. R., Pimbert, M. P., Chappell, M. J., Brem-Wilson, J., Claeys, P., Kiss, C., Maughan, C., Milgroom, J., McAllister, G., Moeller, N., & Singh, J. (2020). Agroecology now—Connecting the dots to enable agroecology transformations. *Agroecology and Sustainable Food Systems*, 44(5), 561–565. <https://doi.org/10.1080/21683565.2019.1709320>
- Anderson, M. D., & Settee, P. (2020). Knowledge and education for peoples' sovereignty. *Globalizations*, 17(7), 1300–1309. <https://doi.org/10.1080/14747731.2020.1783785>
- Atkinson, M. M., & Coleman, W. D. (1989). Strong states and weak states: Sectoral policy networks in advanced capitalist economies. *British Journal of Political Science*, 19(1), 47–67. <https://doi.org/10.1017/S0007123400005317>
- Auld, G. (2014). *Constructing private governance: The rise and evolution of forest, coffee, and fisheries certification*. Yale University Press. <https://doi.org/10.12987/yale/9780300190533.001.0001>
- Béné, C., Bakker, D., Chavarro, M. J., Even, B., Melo, J., & Sonneveld, A. (2021). Global assessment of the impacts of COVID-19 on food security. *Global Food Security*, 31, Article 100575. <https://doi.org/10.1016/j.gfs.2021.100575>
- Bernstein, S., & Cashore, B. (2000). Globalization, four paths of internationalization and domestic policy change: The case of ecoforestry in British Columbia, Canada. *Canadian Journal of Political Science/Revue canadienne de science politique*, 33(1), 67–99. <https://doi.org/10.1017/S0008423900000044>
- Blay-Palmer, A. (2009). The Canadian pioneer: The genesis of urban food policy in Toronto. *International Planning Studies*, 14(4), 401–416. <https://doi.org/10.1080/13563471003642837>
- Blay-Palmer, A., Haibe-Bennett, E., Goupil, S., Friedmann, H., Settee, P., Wilkes, J., Ballamingie, P., Di Battista, A., Reid, H., Mcloed-Kilmurray, H., Mount, P., & Food Secure Canada. (2020). *Now is the time to build sustainable food system resilience*. Building Back Better Post-COVID-19 Task Force, Canadian Commission for UNESCO. iPolitics. <https://ipolitics.ca/2020/07/15/now-is-the-time-to-build-sustainable-food-system-resilience/>
- Booker, R. (2021). *Canadian farm soils still on the move*. The Western Producer. <https://www.producer.com/crops/canadian-farm-soils-still-on-the-move/>
- Bronson, K., Knezevic, I., & Clement, C. (2019). The Canadian family farm, in literature and in practice. *Journal of Rural Studies*, 66, 104–111. <https://doi.org/10.1016/j.jrurstud.2019.01.003>
- Buchan, S. A., Smith, P. M., Warren, C., Murti, M., Mustard, C., Hee Kim, J., Menon, S., Brown, K. A., van Ingen, T., & Smith, B. T. (2022). Incidence of outbreak-associated COVID-19 cases by industry in Ontario, Canada, 1 April 2020–31 March 2021. *Occupational & Environmental Medicine*, 79(6), 403–411. <https://doi.org/10.1136/oemed-2021-107879>
- Burstein, P. (2003). The impact of public opinion on public policy: A review and an agenda. *Political Research Quarterly*, 56(1), 29–40. <https://doi.org/10.1177/106591290305600103>
- Canfield, M., Anderson, M. D., & McMichael, P. (2021). UN Food Systems Summit 2021: Dismantling democracy and resetting corporate control of food systems. *Frontiers in Sustainable Food Systems*, 5, Article 661552. <https://doi.org/10.3389/fsufs.2021.661552>
- Canfield, M. C., Duncan, J., & Claeys, P. (2021). Reconfiguring food systems governance: The UNFSS and the battle over authority and legitimacy. *Development*, 64, 181–191. <https://doi.org/10.1057/s41301-021-00312-1>
- Carling, A., & Mankani, I. (2020). *Systemic inequities increase Covid-19 risk for Indigenous people in Canada*. Human Rights Watch. <https://www.hrw.org/news/2020/06/09/systemic-inequities-increase-covid-19-risk-indigenous-people-canada>
- Chandrasekaran, K., Guttal, S., Kumar, M., Langner, L., & Manahan, M. A. (2021). *Exposing corporate capture of the UNFSS through multistakeholderism*. Food Systems 4 People. <https://www.foodsystems4people.org/multistakeholderism-report/>
- Cheung, J. (2020). *Black people and other people of colour make up 83% of reported COVID-19 cases in Toronto: 21% of reported cases affect Black people, who make up only 9% of the city's overall population*. CBC News. <https://www.cbc.ca/news/canada/toronto/toronto-covid-19-data-1.5669091>
- Cidro, J., Adekunle, B., Peters, E., & Martens, T. (2015). Beyond food security: Understanding access to cultural food for urban Indigenous people in Winnipeg as Indigenous food sovereignty. *Canadian Journal of Urban Research*, 24(1), 24–43. <https://www.jstor.org/stable/26195276>

- Clapp, J. (2020). *Food* (3<sup>rd</sup> ed.). Polity Press.
- Clapp, J. (2021). The problem with growing corporate concentration and power in the global food system. *Nature Food*, 2(6), 404–408. <https://doi.org/10.1038/s43016-021-00297-7>
- Clapp, J. (2022). *Food price spikes are about much more than Ukraine* [Op-ed]. Civil Eats. <https://civileats.com/2022/05/16/op-ed-food-price-spikes-are-about-much-more-than-ukraine/>
- Clapp, J. (2023). Concentration and crises: Exploring the deep roots of vulnerability in the global industrial food system. *The Journal of Peasant Studies*, 50(1), 1–25. <https://doi.org/10.1080/03066150.2022.2129013>
- Clapp, J., Noyes, I., & Grant, Z. (2021). The food systems summit's failure to address corporate power. *Development*, 64(3–4), 192–198. <https://doi.org/10.1057/s41301-021-00303-2>
- Coalition on Sustainable Productivity Growth for Food Security and Resource Conservation. (2021). *Concept note*. UN Food Systems Summit 2021. <https://www.usda.gov/sites/default/files/documents/Template-FSS-Coalition-Sustainable-Productivity-Growth-ENGLISH.pdf>
- Coleman, W. D., Skogstad, G. D., & Atkinson, M. M. (1996). Paradigm shifts and policy networks: Cumulative change in agriculture. *Journal of Public Policy*, 16(3), 273–301. <https://doi.org/10.1017/S0143814X00007777>
- Committee on World Food Security [CFS]. (2021). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition: Policy recommendations*. CFS Global Strategic Framework for Food Security and Nutrition (GSF). [https://www.fao.org/fileadmin/templates/cfs/Docs2021/Documents/Policy\\_Recommendations\\_Agroecology\\_oher\\_Innovations/2021\\_Agroecological\\_and\\_other\\_innovations\\_EN.pdf](https://www.fao.org/fileadmin/templates/cfs/Docs2021/Documents/Policy_Recommendations_Agroecology_oher_Innovations/2021_Agroecological_and_other_innovations_EN.pdf)
- Committee on World Food Security [CFS]. (2022, October 19). Keynote address by CFS Chair to the community of Portuguese speaking countries. <https://www.fao.org/cfs/resources/detail/en/c/1609703/>
- Coté, C. (2016). “Indigenizing” food sovereignty. Revitalizing Indigenous food practices and ecological knowledges in Canada and the United States. *Humanities*, 5(3), Article 57. <https://doi.org/10.3390/h5030057>
- Dale, B. (2020). Alliances for agroecology: From climate change to food system change. *Agroecology and Sustainable Food Systems*, 44(5), 629–652. <https://doi.org/10.1080/21683565.2019.1697787>
- David Suzuki Foundation. (2021). *Federal pesticide regulator flip-flops on proposed neonics ban after years of delay* [News release]. <https://davidssuzuki.org/press/federal-pesticide-regulator-flip-flops-on-proposed-neonics-ban-after-years-of-delay/>
- Deutsche Welle. (2021). *Greta Thunberg takes on food industry*. <https://www.dw.com/en/climate-activist-greta-thunberg-takes-on-food-industry/a-57633673>
- Devlin-Foltz, D., & Malinaro, L. (2010). *Champions and “Champion-ness”: Measuring efforts to create champions for policy change*. Center for Evaluation Innovation. [https://www.aspeninstitute.org/wp-content/uploads/files/content/docs/pubs/Champions\\_and\\_Championness\\_Aug2010.pdf](https://www.aspeninstitute.org/wp-content/uploads/files/content/docs/pubs/Champions_and_Championness_Aug2010.pdf)
- Dibden, J., Potter, C., & Cocklin, Cl. (2009). Contesting the neoliberal project for agriculture: Productivist and multifunctional trajectories in the European Union and Australia. *Journal of rural studies*, 25(3), 299–308. <https://doi.org/10.1016/j.jrurstud.2008.12.003>
- Dryden J., & Rieger, S. (2020). *Inside the slaughterhouse. North America’s largest single coronavirus outbreak started at this Alberta meat-packing plant. Take a look within*. CBC News. <https://newsinteractives.cbc.ca/longform/cargill-covid19-outbreak/>
- Farmers for Climate Solutions. (2021). *A down payment for a resilient farm future*. <https://farmersforclimatesolutions.ca/budget-2021-recommendation/#programs>
- Feldman, M. S., & Khademian, A. M. (2007). The role of the public manager in inclusion: Creating communities of participation. *Governance*, 20(2), 305–324. <https://doi.org/10.1111/j.1468-0491.2007.00358.x>
- Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development, United Nations Children’s Fund, World Food Programme, World Health Organization. (2021). *The state of food security and nutrition in the world 2022: Repurposing food and agricultural policies to make healthy diets more affordable*. <https://doi.org/10.4060/cc0639en>
- Food Secure Canada. (2021). *Learn: Eat Think Vote is a non-partisan campaign, gathering community members living coast-to-coast to speak with federal candidates ahead of the upcoming election*. <https://www.eatthinkvote.ca/learn/>

- Food Systems 4 People. (2023). *Multistakeholderism and the corporate capture of global food governance. What is at risk in 2023?* [https://www.foodsystems4people.org/wp-content/uploads/2023/05/EN\\_Analysis-report-2023\\_FS4P.pdf](https://www.foodsystems4people.org/wp-content/uploads/2023/05/EN_Analysis-report-2023_FS4P.pdf)
- FoodShare TO. (2021). *Right to food: A community-driven COVID-19 response* [Youtube video]. <https://www.youtube.com/watch?v=Kp7tTiTUd8w>
- Francis, C. A. (2000). Designing a durable and positive future for agriculture. *American Journal of Alternative Agriculture*, 15(1), 44–47. <https://doi.org/10.1017/S0889189300008468>
- Frantzeskaki, N., & Rok, A. (2018). Co-producing urban sustainability transitions knowledge with community, policy and science. *Environmental Innovation and Societal Transitions*, 29, 47–51. <https://doi.org/10.1016/j.eist.2018.08.001>
- Garthson, B. (2021). *Agroecology and the future of our mother earth*. Ecological Farmers Association of Ontario. <https://efao.ca/agroecology-earth/>
- Giraldo, O. F., & McCune, N. (2019). Can the state take agroecology to scale? Public policy experiences in agroecological territorialization from Latin America. *Agroecology and Sustainable Food Systems*, 43(7–8), 785–809. <https://doi.org/10.1080/21683565.2019.1585402>
- Gliessman, S., Friedmann, H., & Howard, H. P. (2019). Agroecology and food sovereignty. *IDS Bulletin*, 50(2), 91–109. <https://doi.org/10.19088/1968-2019.120>
- Global People’s Summit on Food Systems. (2021, September 24). *Today is the Global #ClimateStrike! Here is youth climate activist Greta Thunberg’s message for the Global People’s Summit on Food Systems* [Tweet]. <https://twitter.com/OurFoodSystems/status/1441365230731227136?cxt=HHwWgMCrIc2C4YAoAAAA>
- Hance, J. (2020, January 4). Lethal algae blooms—an ecosystem out of balance. Toxic formations across the US and the Baltic are part of a worrying trend linked to the climate crisis and farming methods. *The Guardian*. <https://www.theguardian.com/environment/2020/jan/04/lethal-algae-blooms-an-ecosystem-out-of-balance>
- High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security [HLPE]. (2019). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition* [HLPE Report #14]. <https://www.fao.org/3/ca5602en/ca5602en.pdf>
- High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security [HLPE]. (2020a). *Impacts of COVID-19 on food security and nutrition: Developing effective policy responses to address the hunger and malnutrition pandemic* [Issues paper]. <https://www.fao.org/3/cb1000en/cb1000en.pdf>
- High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security [HLPE]. (2020b). *Food security and nutrition: Building a global narrative towards 2030* [HLPE Report #15]. <https://openknowledge.fao.org/server/api/core/bitstreams/8357b6eb-8010-4254-814a-1493faaf4a93/content>
- High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security [HLPE]. (2023). <https://www.fao.org/cfs/cfs-hlpe/experts/en>
- Hill Times*. (2023). *Careers: Director, government relations* [Job Posting]. <https://hilltimescareers.ca/jobs/director-government-relations-2/>
- Holt-Giménez, E., Shattuck, A., Altieri, M., Herren, H., & Gliessman, S. (2012). We already grow enough food for 10 billion people...and still can't end hunger. *Journal of Sustainable Agriculture*, 36(6), 595–598. <https://doi.org/10.1080/10440046.2012.695331>
- Houser, M., & Stuart, D. (2020). An accelerating treadmill and an overlooked contradiction in industrial agriculture: Climate change and nitrogen fertilizer. *Journal of Agrarian Change*, 20(2), 215–237. <https://doi.org/10.1111/joac.12341>
- Human Rights Watch. (2022). *Brazil: Indigenous rights under serious threat* [News release]. <https://www.hrw.org/news/2022/08/09/brazil-indigenous-rights-under-serious-threat>
- Ikerd, J. (2023). THE ECONOMIC PAMPHLETEER: Agri-food corporations are not real people; why does it matter? *Journal of Agriculture, Food Systems, and Community Development*, 12(4), 5–8. <https://doi.org/10.5304/jafscd.2023.124.001>
- International Congress of Nutrition. (2022). *Program Symposium. 22<sup>nd</sup> IUNS-ICN International Conference of Nutrition*, Tokyo, December 6–11, 2022. [https://icn22.org/program\\_symposium.html](https://icn22.org/program_symposium.html)

- Isaac, M. E., Isakson, S. R., Dale, B., Levkoe, C. Z., Hargreaves, S. K., Ernesto Méndez, V., Wittman, H., Hammelman, C., Langill, J. C., Martin, A. R., Nelson, E., Ekers, M., Borden, K. A., Gagliardi, S., Buchanan, S., Archibald, S., Eit & Gálvez Ciani, A. (2018). Agroecology in Canada: Towards an integration of agroecological practice, movement, and science. *Sustainability*, 10(9), Article 3299. <https://doi.org/10.3390/su10093299>
- Jenkins-Smith, H. C., Nohrstedt, D., Weible, C. M., & Ingold, K. (2018). The advocacy coalition framework: An overview of the research program. In C. M. Weible & P. A. Sabatier (Eds.), *Theories of the policy process* (4th ed.), (pp. 135–171). Routledge. <https://doi.org/10.4324/9780429494284-5>
- Jenkins-Smith, H. C., Nohrstedt, D., Weible, C. M., & Sabatier, P. A. (2014). The advocacy coalition framework: Foundations, evolution, and ongoing research. In P. A. Sabatier & C. M. Weible (Eds.), *Theories of the policy process* (3rd ed.) (pp. 183–224). Routledge.
- Jenkins-Smith, H. C., & Sabatier, P. A. (1993). The study of public policy processes. In P. A. Sabatier & H. C. Jenkins-Smith (Eds.), *Policy change and learning: An advocacy coalition approach* (pp. 135–142). Westview Press.
- Jenkins-Smith, H. C., & Sabatier, P. A. (1994). Evaluating the advocacy coalition framework. *Journal of public policy*, 14(2), 175–203. <https://doi.org/10.1017/S0143814X00007431>
- Johnson, A. E., & Blumberg, Al. (2021, July 29). How to save a planet?: Is your carbon footprint BS? [Audio podcast]. Spotify. <https://gimletmedia.com/shows/howtosaveaplanet/llh8gxxg>
- Keck, M. E., & Sikkink, K. (1999). Transnational advocacy networks in international and regional politics. *International Social Science Journal*, 51(159), 89–101. <https://doi.org/10.1111/1468-2451.00179>
- Kelley, M., Wirsig, K., & Smart, V. (2020). *Bitter harvest*. CBC Radio-Canada, Fifth Estate Investigations. <https://newsinteractives.cbc.ca/longform/bitter-harvest-migrant-workers-pandemic/>
- Koppell, J. G. (2010). *World rule: Accountability, legitimacy, and the design of global governance*. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226450964.001.0001>
- Kraemer, B. (2023). *Community Fridge KW launches new project*. CityNews, Kitchener, ON. <https://kitchener.citynews.ca/2023/03/29/community-fridge-kw-launches-new-project-6772528/>
- Labarthe, P., & Laurent, C. (2013). Privatization of agricultural extension services in the EU: Towards a lack of adequate knowledge for small-scale farms? *Food Policy*, 38, 240–252. <https://doi.org/10.1016/j.foodpol.2012.10.005>
- Laforge, J. M., Dale, B., Levkoe, C. Z., & Ahmed, F. (2021). The future of agroecology in Canada: Embracing the politics of food sovereignty. *Journal of Rural Studies*, 81, 194–202. <https://doi.org/10.1016/j.jrurstud.2020.10.025>
- Lee, H., Calvin, K., Dasgupta, D., Krinner, G., Mukherji, A., Thorne, P., Trisos, C., Romero, J., Aldunce, P., Barrett, K., Blanco, G., Cheung, W. W. L., Connors, S. L., Denton, F., Diongue-Niang, A., Dodman, D., Garschagen, M., Geden, O., Hayward, B. ...Zommers, Z. Intergovernmental Panel on Climate Change. (2023). Summary for policymakers. *Climate change 2023: Synthesis report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 1–34). <https://doi.org/10.59327/IPCC/AR6-9789291691647.001>
- Levkoe, C., Andrée, P., Ballamingie, P., Tasala, K., Wilson, A., & Korzun, M. (2023). Civil society engagement in food systems governance in Canada: Experiences, gaps, and possibilities. *Journal of Agriculture, Food Systems, and Community Development*, 12(2), 267–286. <https://doi.org/10.5304/jafscd.2023.122.005>
- Li, T., Fafard St-Germain, A.-A., & Tarasuk, V. (2023) *Household food insecurity in Canada, 2022*. Research to identify policy options to reduce food insecurity (PROOF), University of Toronto. <https://proof.utoronto.ca/>
- Lowe, P., Murdoch, J., Marsden, T., Munton, R., & Flynn, A. (1993). Regulating the new rural spaces: the uneven development of land. *Journal of Rural Studies*, 9(3), 205–222. [http://doi.org/10.1016/0743-0167\(93\)90067-T](http://doi.org/10.1016/0743-0167(93)90067-T)
- Marshman, J., & Knezevic, I. (2021). What’s in a name? Challenging the commodification of pollination through the diverse economies of “Bee Cities.” *Journal of Political Ecology*, 28(1), 124–145. <https://doi.org/10.2458/jpe.2307>
- Masson-Delmotte, V., Zhai, P., Pörtner, H.-O., Roberts, D., Skea, J., Shukla, P. R., Pirani, A., Moufouma-Okia, W., Péan, C., Pidcock, R., Connors, S., Matthews, J. B. R., Chen, Y., Zhou, X., Gomis, M. I., Lonnoy, E., Maycock, T., Tignor, M., & Waterfield, T. (Eds.). (2018). *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. Intergovernmental Panel on Climate Change. Cambridge University Press. <https://www.ipcc.ch/sr15/>

- Masson-Delmotte, V., Zhai, P., Pirani, A., Connors, S. L., Péan, C., Berger, S., Caud, N., Chen, Y., Goldfarb, L., Gomis, M. I., Huang, M., Leitzell, K., Lonnoy, E., Matthews, J. B. R., Maycock, T. K., Waterfield, T., Yelekcı, O., Yu, R., & Zhou, B. (Eds.). Intergovernmental Panel on Climate Change. (in press). Summary for Policymakers. In *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 3–34). Cambridge University Press. <https://doi.org/10.1017/9781009157896.001>
- McDermott, C. L., Montana, J., Bennett, A., Gueiros, C., Hamilton, R., Hirons, M., Maguire-Rajpaul, V. A., Parry, E., & Picot, L. (2022). Transforming land use governance: Global targets without equity miss the mark. *Environmental Policy and Governance*, 33(3), 245–257. <https://doi.org/10.1002/eet.2027>
- McIntyre, B. D., Herren, H. R., Wakhungu, J., & Watson, R. T. (Eds.) (2009). *Agriculture at a crossroads—Global report*. International Assessment of Agricultural Knowledge, Science and Technology for Development. <https://wedocs.unep.org/handle/20.500.11822/8590;jsessionid=7BC090A97E7A406D8C6D5688C17F171E>
- McKeon, N. (2017). Are equity and sustainability a likely outcome when foxes and chickens share the same coop? Critiquing the concept of multistakeholder governance of food security. *Globalizations*, 14(3), 379–398. <https://doi.org/10.1080/14747731.2017.1286168>
- Montenegro de Wit, M., & Iles, A. (2016). Toward thick legitimacy: Creating a web of legitimacy for agroecology. *Elementa: Science of the Anthropocene*, 4, Article 115. <https://doi.org/10.12952/journal.elementa.000115>
- Montenegro de Wit, M., & Iles, A. (2021). Woke science and the 4th Industrial Revolution: Inside the making of UNFSS knowledge. *Development*, 64(3–4), 199–211. <https://doi.org/10.1057/s41301-021-00314-z>
- Moon, J. (2018, September 19). Influencing policy change: Finding a champion. *Berkeley Public Policy Journal*. <https://bppi.berkeley.edu/2018/09/19/influencing-policy-change-finding-a-champion/>
- National Farmers Union. (2023a). *Agroecology*. <https://www.nfu.ca/campaigns/agroecology/>
- National Farmers Union. (2023b). *Canadian agriculture: The challenge of achieving authentic sustainability*. <https://www.nfu.ca/publications/cdn-ag-the-challenge-of-achieving-authentic-sustainability/>
- National Wraparound Initiative. (2023). *Wraparound basics or what is wraparound: An introduction*. Regional Research Institute, Portland State University. <https://nwi.pdx.edu/wraparound-basics/>
- Nicholls, W., Gnes, D., & Vermeulen, F. (2021). Local path dependency and scale shift in social movements: The case of the us Immigrant Rights Movement. *Geographical Review*, 111(2), 269–286. <https://doi.org/10.1080/00167428.2020.1780127>
- Patt, A., & Zeckhauser, R. (2000). Action bias and environmental decisions. *Journal of Risk and Uncertainty*, 21(1), 45–72. <https://doi.org/10.1023/A:1026517309871>
- Pinnington, E., Lerner, J., & Schugurensky, D. (2009). Participatory budgeting in North America: the case of Guelph, Canada. *Journal of Public Budgeting, Accounting & Financial Management*, 21(3), 454–483. <https://doi.org/10.1108/JPBAFM-21-03-2009-B005>
- Reid, H., Wilkes, J., Knezevic, I., Robert, N., Perttula, C., & Blay-Palmer, A. (2022). *The need for a strong regional food system*. Building Back Better Post-COVID-19 Task Force. <https://en.ccunesco.ca/-/media/Files/Unesco/Resources/2022/06/StrongRegionalFoodSystem.pdf>
- Robin, T., Rotz, S., & Xavier, A. (2023). *Indigenous food sovereignty in Ontario: A study of exclusion at the Ministry of Agriculture, Food & Rural Affairs*. Yellowhead Institute. <https://yellowheadinstitute.org/food-sovereignty-omafra/>
- Roche, M., & Argent, N. (2015). The fall and rise of agricultural productivism? An Antipodean viewpoint. *Progress in Human Geography*, 39(5), 621–635. <https://doi.org/10.1177/0309132515582058>
- Rotz, S., Xavier, A., & Robin, T. (2023). “It wasn’t built for us”: The possibility of Indigenous food sovereignty in settler colonial food bureaucracies. *Journal of Agriculture, Food Systems, and Community Development*, 12(3), 93–110. <https://doi.org/10.5304/jafscd.2023.123.009>
- Ruhf, K. Z., Devlin, K., Clancy, K., Berlin, L., & Palmer, A. (2017). Engaging multiple audiences: Challenges and strategies in complex food systems projects. *Journal of Agriculture, Food Systems, and Community Development*, 7(4), 179–185. <https://doi.org/10.5304/jafscd.2017.074.016>
- Runge, C. F. (1988). The assault on agricultural protectionism. *Foreign Affairs*, 67(1), 133–150. <https://doi.org/10.2307/20043678>

- Sankoff, P. (2019). Canada's experiment with industry self-regulation in agriculture: Radical innovation or means of insulation? *Canadian Journal of Comparative and Contemporary Law*, 5, 299–348.  
<https://www.cjcl.ca/wp-content/uploads/2020/11/Sankoff.pdf>
- Secretariat of the Convention on Biological Diversity. (2020). Global Biodiversity Outlook 5—Summary for policy makers. <https://www.cbd.int/gbo/gbo5/publication/gbo-5-spm-en.pdf>
- Skogstad, G. (2008). Policy networks and policy communities: Conceptualizing state–societal relationships in the policy process. In L. White, R. Simeon, R. Vipond, & J. Wallner (Eds.), *The comparative turn in Canadian political science* (pp. 205–220). University of British Columbia Press. <https://doi.org/10.59962/9780774856188-013>
- Slow Food Foundation. (2023). *Slow Food: Food will be at the heart of COP28, but how? Agroecology must lead the way to shaping a new food system*.  
<https://www.slowfood.com/blog-and-news/slow-food-food-will-be-at-the-heart-of-cop28-but-how/>
- Smithers, J., & Blay-Palmer, A. (2001). Technology innovation as a strategy for climate adaptation in agriculture. *Applied Geography*, 21(2), 175–197. [https://doi.org/10.1016/S0143-6228\(01\)00004-2](https://doi.org/10.1016/S0143-6228(01)00004-2)
- Soil Association. (2010). *Telling porkies: The big fat lie about doubling food production*.  
[https://www.soilassociation.org/media/4906/policy\\_telling\\_porkies.pdf](https://www.soilassociation.org/media/4906/policy_telling_porkies.pdf)
- Stahlbrand, L., & Roberts, W. (2022). Food policy councils and the food-city nexus: The history of the Toronto Food Policy Council. *Canadian Food Studies/La Revue canadienne des études sur l'alimentation*, 9(1), 69–86.  
<https://doi.org/10.15353/cfs-rcea.v9i1.505>
- Statistics Canada. (2023). *Canadian income survey, 2021*.  
<https://www150.statcan.gc.ca/n1/daily-quotidien/230502/dq230502a-eng.htm>
- Tarasuk, V., & Mitchell, A. (2020). *Household food insecurity in Canada, 2017–18*. Research to identify policy options to reduce food insecurity (PROOF), University of Toronto. <https://proof.utoronto.ca/wp-content/uploads/2020/03/Household-Food-Insecurity-in-Canada-2017-2018-Full-Reportpdf.pdf>
- Thompson, M. S., Cochrane, A., & Hopma, J. (2020). Democratising food: The case for a deliberative approach. *Review of International Studies*, 46(4), 435–455. <https://doi.org/10.1017/S0260210520000017>
- United Nations Environment Programme. (2016). *Pollinators under threat—so what* [Blog]?  
<https://www.unep.org/news-and-stories/story/pollinators-under-threat-so-what>
- United Nations Environment Programme. (2020, July 10). How to feed 10 billion people [Blog]. UNEP,  
<https://www.unep.org/news-and-stories/story/how-feed-10-billion-people>
- United Nations Food Systems Summit 2021. (2021). *The science behind the summit*.  
<https://www.un.org/en/food-systems-summit/the-science>
- United Nations Food Systems Summit 2021. (2022). Game changing propositions. Retrieved from the Internet Archive:  
<https://web.archive.org/web/20220115180733/https://foodsystems.community/game-changing-propositions/>
- United Nations Food Systems Summit 2021. (2023). *Bios of the members of the Scientific Group of the UN Food Systems Summit 2021*. <https://sc-fss2021.org/about-us/bios-of-members/>
- United Nations Food Systems Summit Coalition on Sustainable Productivity Growth for Food Security and Resource Conservation. (2021). Background and Proposal. <https://www.usda.gov/sites/default/files/documents/Coalition-Sustainable-Productivity-Growth-background-and-proposal.pdf>
- von Braun, J., Afsana, K., Fresco, L. O., & Hassan, M. H. A. (2023). Food systems: Seven priorities to end hunger and protect the planet. In J. von Braun, K. Afsana, L. O. Fresco, & M. H. A. Hassan (Eds.), *Science and innovations for food systems transformation* (pp. 3–9). Springer. [https://doi.org/10.1007/978-3-031-15703-5\\_1](https://doi.org/10.1007/978-3-031-15703-5_1)
- Weldon, I., & Parkhurst, J. (2022). Governing evidence use in the nutrition policy process: Evidence and lessons from the 2020 Canada food guide. *Nutrition Reviews*, 80(3), 467–478. <https://doi.org/10.1093/nutrit/nuab105>
- Wilkes, J. (2022a). Municipal policy and as part of local food systems governance: Backyard chickens and land for growing. In D. Szanto, A. Di Battista, & I. Knezevic (Eds.), *Food studies: Matter, meaning, movement* (pp. 609–619). Food Studies Press. <https://doi.org/10.22215/fsmmm/wj58>
- Wilkes, J. (2022b). Reconnecting with nature through good governance: Inclusive policy across scales. *Agriculture*, 12(3), Article 382. <https://doi.org/10.3390/agriculture12030382>

- Wilkes, J. (2023). *Transcending borders: Global food governance in an era of multistakeholderism*. Unpublished manuscript.
- Wilkes, J. (2024). *Canadian agriculture: Proxies of power and (re)defining the expert*. Unpublished manuscript.
- Wilkes, J., & Perttula, C. (2022). Priorities, narratives, and collaboration: Insights from evolving federal mandates on food systems in Canada. *Frontiers in Communication*, 7, Article 793092. <https://doi.org/10.3389/fcomm.2022.793092>
- Wilson, J. (2022, October 31). *Ontario manufacturing workers most prone to COVID-19 deaths early in pandemic*. Canadian Occupational Safety. <https://www.thesafetymag.com/ca/topics/leadership-and-culture/ontario-manufacturing-workers-most-prone-to-covid-19-deaths-early-in-pandemic/425708>
- Wilson, T., & Shukla, S. (2020). Pathways to revitalization of Indigenous food systems: Decolonizing diets through Indigenous-focused food guides. *Journal of Agriculture, Food Systems, and Community Development*, 9(4), 201–208. <https://doi.org/10.5304/jafscd.2020.094.003>
- Wilfrid Laurier University. (2022, December 7). *Laurier's Alison Blay-Palmer advocates for biodiversity at COP15*. Laurier News Hub, Spotlights. <https://www.wlu.ca/news/spotlights/2022/dec/laurier-professor-alison-blay-palmer-advocates-for-agricultural-biodiversity-at-cop15.html>
- Wyles, P. (2007). Success with Wraparound: A collaborative, individualised, integrated and strength-based model. *Youth Studies Australia*, 26(4), 45–53.