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Research Article

Rethinking jurisdiction: Mapping federal, provincial, territorial and local government actions related to food loss and waste in Canada

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Abstract

This manuscript utilizes data from policy stakeholder interviews and a systematic search of government websites to identify how the federal, provincial, territorial, and local governments in Canada address food loss and waste (FLW) and how stakeholders interpret jurisdiction over this issue. The findings show that government policies related to this issue represent a patchwork of disparate and overlapping actions that have been enacted by governments at different levels and across a variety of departments and agencies (e.g., environmental, agricultural, economic). Of these policies, only a few were identified as having the explicit objective to reduce the generation of this waste and/or divert it from landfill. Most policies, in fact, had non-FLW related objectives (e.g., to improve the profitability of the agricultural sector), but still had a potential or actual impact on the generation and/or management of this type of waste. Despite it being unclear who has jurisdiction over FLW in the country, an examination of interview transcripts reveals that policy stakeholders have limited views of which government entities have the authority to address FLW. This manuscript argues that the lack of jurisdictional clarity presents a barrier to a more comprehensive governance of FLW. While it may be possible to clarify who has jurisdiction over this issue, this manuscript contends that policy stakeholders need to rethink their understanding of jurisdiction itself. This manuscript operationalizes Valverde's "work of jurisdiction" to present an alternative way to interpret jurisdiction that opens new possibilities for the governance of FLW.

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Résumé

Cet article utilise des données issues d'entretiens avec des acteurs politiques et d'une recherche systématique sur les sites Web gouvernementaux afin de déterminer comment les gouvernements fédéral, provinciaux, territoriaux et locaux du Canada traitent les pertes et le gaspillage alimentaires et comment les parties prenantes interprètent la délimitation des compétences en la matière. Les résultats montrent que les politiques gouvernementales concernant cet enjeu constituent un patchwork de mesures disparates et redondantes adoptées par les gouvernements de différents paliers et par divers ministères et organisations (ex. : environnement, agriculture, économie). Seules quelques-unes de ces politiques ont été identifiées comme ayant l'objectif explicite de réduire ce gaspillage ou de détourner les pertes des décharges. En fait, la plupart des politiques n'avaient pas d'objectifs liés aux pertes et au gaspillage alimentaires (ex. : améliorer la rentabilité du secteur agricole), mais avaient tout de même un effet réel ou potentiel sur la création ou la gestion de ce type de gaspillage. L'attribution du pouvoir en matière de pertes et de gaspillage alimentaires au Canada reste floue, certes, mais l'examen des transcriptions des entretiens révèle que les acteurs politiques concernés ont une vision limitée lorsqu'il s'agit de savoir quelles entités gouvernementales sont responsables d'un tel dossier. Nous soutenons que le manque de clarté dans la répartition des compétences empêche une gouvernance plus complète en matière de pertes et de gaspillage alimentaires. S'il est possible de clarifier qui a la responsabilité de cet enjeu, les acteurs politiques doivent aussi repenser leur compréhension même des compétences. Nous mobilisons le concept de « travail des compétences » de Valverde pour présenter une autre façon d'interpréter cette notion qui ouvre de nouvelles possibilités pour la gouvernance en matière de pertes et de gaspillage alimentaires.

Introduction

Food loss and waste (FLW) is a significant issue. In Canada, almost sixty percent of food meant for human consumption is lost or wasted annually (Gooch et al., 2019, p.23). This uneaten food causes substantial environmental and economic harm. It squanders valuable resources (Gustavsson et al., 2011), generates 56.5 million tonnes of methane gas when disposed of in landfills, and costs the economy $49.5 billion each year (Gooch et al., 2019, pp.5-6).

Despite this harm, it is not currently clear which societal groups in Canada (e.g., government, nonprofit organizations, businesses) are involved in the governance of this harmful issue nor what they are doing to tackle it. The roles and actions of government are particularly unclear. Some FLW scholars have analyzed specific policy actions at the federal (Soma, 2018), provincial (DeLorenzo et al., 2018; Kinach et al., 2020), and local levels (Millar et al., 2020), but there has not yet been a systematic mapping of how this issue has been addressed across government departments and agencies at different

levels.[1] This mapping could contribute important insights into efforts to reduce and/or divert FLW from the landfill, Canada's progress relative to other countries, and gaps remaining to be addressed. While provincial governments traditionally oversee waste issues (Bendickson, 2020), mapping out actions throughout the country may allow for policy stakeholders to broaden their assumptions about who else can and should take FLW policy action and expand available options.

This manuscript utilizes data from a systematic search of government websites and policy stakeholder interviews to answer the following questions: how do federal, provincial, territorial, and local governments in Canada address FLW? What does this reveal about jurisdiction over this waste? This manuscript argues that the lack of jurisdictional clarity presents a barrier to more comprehensive FLW governance. While clarifying jurisdiction is possible, policy stakeholders need to rethink their understandings of jurisdiction itself. This manuscript operationalizes Valverde's (2008, 2009, 2014, 2021) "work of jurisdiction" to present an alternative understanding of this concept that opens new possibilities for FLW governance.

The multi-scalar governance of FLW

Within the past two decades, FLW has received significant global attention (Smith, 2020). This has prompted an increase in both government policy action to address this issue (Reynolds, 2023) and academic studies to examine these actions. Busetti and Pace (2023) refer to the contemporary period as the "era of food loss and waste policy" (p.3).

FLW is a complex governance issue that lacks a uniform definition (Roodhuyzen et al., 2017) or a harmonized measurement system (Xue et al., 2017). This has complicated policy stakeholders' ability to understand what FLW is, to quantify and track its distribution throughout the agri-food system, and to prioritize their attention. These challenges are also compounded by the fact that FLW lacks a clear problem definition (e.g., has several causes, occurs in multiple locations, and involves a lot of actors) (Närvänen et al., 2019). They are also exacerbated by FLW crossing several policy areas (e.g., waste management, climate change, food insecurity) and the fact that its impacts are not limited to national or sub-national borders (Righettini & Lizzi, 2019). The interjurisdictional nature of this issue requires multiple solutions, operating at a variety of scales, and implemented by various actors (Soma et al., 2020). This complexity has made it challenging to determine appropriate actors and strategies for FLW governance.

The types of policy stakeholders involved in FLW governance and the roles they have taken vary across countries (Castells-Somoza, 2023). For example, Szulecka et al. (2019) point out that, while Sweden's national government has led the charge on addressing FLW, Norway has relied on the business sector, and Denmark on citizen action. Governments sometimes build off the momentum of other societal groups, as in the case of China where the national government revamped a citizen-led campaign (Feng et al., 2022; Shen et al., 2023). Governments also sometimes decline to implement FLW legislation and regulations if a nonprofit organization has made strides in addressing the issue, like in the UK (Blakeney, 2019). Occasionally, government policy action at one level influences actions at other levels, as in the case of the European Union whose lack of FLW legislation and regulations

[1] From a geographical perspective, the preferred term here would be "scale" to problematize the top-down, hierarchical understanding of federal, provincial, territorial, and local governance and to acknowledge the political nature of how space is divided in the country (Rodgers et al., 2013). This manuscript utilizes the term "level" as this is a common policy term.

complicated governance efforts in specific European countries (Arroyo Aparico, 2015; Porter, 2020). This can also be seen in the case of Catalonia, Spain, whose implementation of FLW legislation has motivated its national government to follow suit (Castells-Somoza, 2023).

Governments throughout the world vary significantly in terms of the policy actions they have implemented to address FLW. Some have introduced national FLW reduction strategies (Ananno et al., 2021; Bird et al., 2022). Other governments at various levels have implemented legislation and/or regulations that ban organic waste from landfills (Millar et al., 2020; Ryen & Babbit, 2022), protect businesses from liability for donating surplus food (Broad Leib & Ardura, 2022), prohibit public officials from wasting food (Shen et al., 2023), require specific sectors to recycle their waste (Okayama & Watanabe, 2024), or mandate that retailers donate their surplus food (Mourad, 2022; Sokołowski, 2019). Others have also encouraged FLW reduction and diversion through non-regulatory means, such as tax incentives for food donation (Kinach et al., 2020; Ryen & Babbit, 2022), funding for nonprofit organizations (Bird et al., 2022; Blakeney, 2019), educational awareness campaigns (Shen et al., 2020), and collaboration with non-governmental policy stakeholders (Biggi et al., 2024; Porter, 2020). Governments also address FLW indirectly via policy action related to solid waste management (Sahakian et al., 2020), renewable energy, compost production, and animal feed (Richa & Ryen, 2018; Shurson et al., 2023; Tsai, 2020), and sustainable agrifood systems (Olejniczek & Lyubashenko, 2024; Soma, 2018).

While scholars have critiqued governments for not doing enough to address FLW, little research investigates jurisdictional questions such as which government entities have (or do not have) the authority to address this issue and the reasons for this. Similarly, differences in FLW governance and its impacts between government entities have also been under-researched. This manuscript builds on the existing FLW policy literature by adding empirical evidence of what governments are doing in Canada to address FLW and by asking these deeper jurisdictional questions. The next section provides contextual information on how jurisdiction works in Canada.

Jurisdiction in Canada

Canadian jurisdiction is complex. Canada is the second largest country in the world by area (Statistics Canada, 2011, p.208). It is divided into ten provinces and three territories, which are further subdivided into over 3500 municipalities (Muniscope, n.d.). Some provinces also have an additional tier of regional governments (i.e., collections of municipal governments). Sections ninety-one to ninety-five of *The Constitution Acts of Canada, 1867 to 1982* are the main reference points for determining what authority each level of government possesses to govern different aspects of society (Bendickson, 2020). This legislation gives the federal government legislative authority (i.e., the power to implement laws) over trade and commerce, navigation and shipping, interprovincial and international matters, fisheries, criminal law, and Indigenous peoples and lands, among other things (Brideau et al., 2019). Provincial governments[2] can implement laws related to the development of natural resources, property and civil matters, local matters, and municipalities (Brideau et al., 2019). Municipal governments are "creatures of the province" in the sense that they are not assigned power

[2] Territorial governments do not have authority under the *Constitution* but have been given some of these powers and responsibilities from the federal government (Brideau et al., 2019).

under this act but can be given responsibilities by the provinces (Bendickson, 2020).

While the division of powers may appear distinct and definite on paper, it is not so in practice. Case law shows a long history of court cases in which jurisdiction has been contested (Environmental Law Centre of Alberta, 2003). Jurisdictional conflict occurs partly because the *Constitution* allocates legislative powers based on broad societal areas rather than specific issues, leading to overlap across levels of government (Bendickson, 2020). For example, the federal government typically governs toxic substances, hazardous waste, and waste on federal and Indigenous lands (Becklumb, 2019). Provinces, on the other hand, govern waste management within their geographic spaces (Yunis & Aliakbari, 2021) and can give municipalities the power to implement bylaws related to waste management (Environmental Law Centre of Alberta, 2003). Potential overlapping powers at different levels complicate governance, especially for FLW which spans multiple policy areas beyond waste management (Righettini & Lizzi, 2019).

The work of jurisdiction

Valverde's (2008, 2009, 2014, 2021) research on the "work of jurisdiction" challenges traditional understandings of jurisdiction. Jurisdiction is typically understood in terms of who governs (e.g., level of government, department, and/or agency), what is governed (e.g., people, things), and where this governance occurs (e.g., geographic space, area of society). It is also seen as something that can be assigned or possessed. While jurisdiction does not equate to sovereignty, the lines between jurisdictions are seen by policy stakeholders as relatively clear with minimal conflict. Valverde (2009) argues that these assumptions are "the work of jurisdiction." This "work" obscures how jurisdiction operates by making choices about governance appear technical, rather than political. Valverde (2008) points out that, when one aspect of jurisdiction is determined (e.g., who has authority), all other aspects (e.g., what/where/when/how they govern) automatically fall into place. The problem with this is that each government entity has unique rationalities, logistics, and access to resources and policy mechanisms that shape the specifics of how they govern. The uniqueness of each government entity's approach results in fundamentally divergent impacts on the people, spaces, and things that are being governed. Valverde (2008) prompts readers to think about "what would happen to the public infrastructure deficits of North American cities, if garbage disposal, homelessness and public transit were regarded as questions of national biopolitical security" (pp.6-7). The purpose of this question is to make the reader think about how something like public infrastructure would change if its governance was shifted to a different level.

The "work of jurisdiction" obscures that jurisdiction is something that is unsettled and that must be enacted continuously. Valverde (2021) discusses how, even though the *Constitution* divides legal authority among levels of government, in practice a government can claim jurisdiction over an issue by implementing a policy action related to it. A federal government can, for example, claim jurisdiction over a local space by providing funding for a local program. Jurisdiction can also be refused by not implementing policy actions, like in the case of a government who wants to avoid backlash from stakeholders (Valverde, 2021). The "work of jurisdiction" also conceals that jurisdiction is inter-legal. This means that multiple government entities can govern the same issue, simultaneously, in ways that overlap and conflict.

This alternative understanding of jurisdiction is a valuable analytical tool that has been used to examine the governance of a wide range of issues. Pasternak (2014,

2017), for example, has used it in the context of settler colonialism to challenge the Canadian government's claims of sovereignty and denial of Indigenous jurisdiction. Lepawsky (2012) has explored the inter-legal nature of e-waste governance in and beyond Canada and showed the role that jurisdiction plays in characterizing which electronic devices count as e-waste and can therefore be recycled. This manuscript uses Valverde's concept of jurisdiction to question the unwritten rules for who can govern FLW and how governance and its impacts differ among government entities.

Methods

Data collection

The author conducted a systematic search of federal, provincial, and territorial government websites and interviews with policy stakeholders to identify government policy actions related to FLW. FLW was defined here in the broadest sense to include any edible and inedible parts of food items that have been lost or wasted anywhere throughout the agrifood system. This process involved an advanced Google search of each government's general website with search terms from the academic literature. These search terms included: "food waste," "food loss," "surplus food," "organic waste," "circular economy" + "food," "circular economy" + "organic," "solid waste" + "food," "solid waste" + "organic," "compost,*" "waste diversion" + "food," "waste diversion" + "organic," and "source separated organics." This process was repeated for department-specific websites if said department was found through the original search. All results for these searches were recorded in an Excel sheet with descriptive information. This search took place from mid-May until October 2021 and yielded over one thousand webpages and documents. The author then invited relevant stakeholders (e.g., government policy advisors at all levels, high-level employees of non-governmental organizations, consultants, and academics) to participate in online, semi-structured interviews. These interviewees were selected using a hand-picked sampling strategy (O'Leary, 2004) with the criteria that they either worked for a government who has implemented policy actions related to FLW or an organization that has engaged a government on this topic. These interviews took place from May until December 2022 and yielded sixty-five interviews. The author also included nine interviews from a 2021 project on FLW measurement that met this criterion. Some interviewees chose to provide written responses.

Data analysis

The author conducted a qualitative content analysis of the website results and interview transcripts. This involved two steps. The first was to identify FLW policy actions. Policy action was defined broadly to capture a wide breadth and depth of activities. It included any measure (e.g., legislation, regulation, strategy, educational effort, funding program) a government has taken that related to FLW or the broader categories of organic waste and solid waste (under which FLW falls), regardless of the actors or sectors targeted. It also included policy-relevant actions, such as research and report-based efforts, as these are part of the policy process and serve as indicators of government interest in the issue. Policy and policy-relevant actions were included if they either had the primary objective to prevent, reduce, and divert FLW

or had non-FLW objectives (e.g., regional economic growth) with a potential or actual impact on the generation and/or management of FLW. The second step used deductive coding to capture descriptive and evaluative information about each of these actions (e.g., who implemented them, which actors they targeted, what type of policy mechanism they used). This information was compiled in an Excel sheet. During the coding process, any new and relevant webpages and documents that came up were collected and coded as FLW is a fast-growing policy area in Canada. This coding process took place from May until the end of August 2023. The author also conducted a qualitative content analysis of stakeholder interviews using NVIVO to inductively code for statements regarding who has or does not have jurisdiction over FLW.

Limitations

This manuscript did not capture all FLW government policy actions in Canada. The website search, for example, failed to find some government actions that the author knew existed beforehand (i.e., food donation liability legislation in a few provinces). The website search may have missed some policy actions because of the search terms used, or due to a government either not posting them on their website or posting about them on a separate website that was not identified through the author's search. In terms of interviews, approximately sixty government entities found via the website search declined an offer to participate in an interview as most of them believed that FLW was not part of their jurisdiction. For government representatives who did participate in the interviews, it is possible that they were unable to or forgot to share some of their actions. Policy actions in Quebec were under-represented since most webpages and documents were only available in French and, therefore, did not show up via the English-based search of the Quebec government's website. Most of the data mentioned in the findings section for this province came from interviews. Local government actions were also underrepresented. The author did not conduct a systematic search of regional or municipal government websites and only interviewed a few policy advisors from the local level because formal jurisdiction over waste resides at the other levels of government.

Findings and discussion

Federal government policy actions

Table 1 shows that there are approximately twenty federal government departments and/or agencies who have implemented policy actions related to FLW. This table lists each government entity, their overarching mandate, the FLW-related policy actions, and whether these actions had the explicit objective to reduce and/or divert FLW.

Environment and Climate Change Canada (ECCC) has implemented the most FLW-related policy actions at the federal level. This department approaches FLW as a potential harm to the natural environment and has focused exclusively on FLW's impact on climate change. This framing sees the diversion of this waste from landfill as an avenue to reduce the country's greenhouse gas emissions. Besides committing in 2015 to the *United Nation's 2030 Sustainable Development* target 12.3 to reduce the country's FLW (Environment

and Climate Change Canada, 2019, p.1), the department's actions that explicitly aim to reduce and/or divert FLW have mostly involved information gathering to assess how the issue can be addressed. This has included working with the Commission for Environmental Cooperation (CEC), a North American governmental organization, starting in 2017 to produce reports on the issue (Commission for Environmental Cooperation, 2017a-e) as well as educational toolkits for schools (CEC, 2019, 2024a) and measurement guides for businesses (CEC, 2021, 2024b).

Table 1: Federal Government Policy Actions Related to Food Loss and Waste

Department/Agency	General Mandate	Policy Actions	Was the objective to address FLW?
Environment & Climate Change Canada	To protect the environment	Signed an international agreement on sustainable development	Yes
		Supported a governmental organization's work on FLW	Yes
		Produced reports measuring FLW and organic waste	Yes
		Developed a tool for organic waste management	Yes
		Addressed climate change via international agreements, legislation, regulations, strategies, reports, guides, and funding programs	No
		Implemented legislation and regulations, funded programs and released guides and reports related to environmental protection	No
Agriculture & Agri-Food Canada	To support agricultural sector growth	Established a national food strategy	Yes
		Launched funding programs to tackle FLW and food insecurity	Yes
		Hosted a podcast about agricultural issues	Yes
		Donated surplus food from research centers	Yes
		Implemented a funding program with provinces/territories to improve their agricultural sectors	No
Global Affairs Canada	To maintain international relations	Released a video on FLW	Yes
		Participated in international discussions on agricultural, social, and environmental issues	No
Statistics Canada	To produce national statistics	Produced national statistics on waste management and agriculture	Yes
Fisheries & Oceans Canada	To oversee oceans and fisheries	Signed an agreement, released a report and a guide that touch on waste in oceans and fisheries	No
		Financed clean energy technology projects	No
Health Canada	To protect residents' health	Released information on healthy eating	No
Canadian Food Inspection Agency	To ensure food safety	Implemented legislation and regulations, provided information on food safety	No
		Issued standards related to food quality	No
		Enacted legislation and regulations, provided information on biosecurity	No

Infrastructure Canada	To develop public infrastructure	Launched a funding program with the provinces/territories for public infrastructure	No
		Issued an economic strategy for rural communities	No
Natural Resources Canada	To develop natural resources	Released reports on waste resources	No
		Published reports and guides on energy efficiency	No
		Financed clean energy projects	No
Parks Canada	To oversee national parks and lands	Implemented legislation and regulations, issued guides on waste management in national parks	No
Regional development agencies (multiple)[3]	To advance regional economic development	Offered funding to support regional businesses	No
Indigenous Services Canada	To support Indigenous peoples and lands	Provided funding for infrastructure, clean energy, and food security projects on Indigenous lands	No
Canadian Revenue Agency	To manage taxes	Offered a tax incentive for the use of scientific information and technology by businesses	No
Treasury Board of Canada	To offer advice on how to spend tax dollars	Developed a guide on property management for federally owned properties	No
Public Service & Procurement Canada	To assist the federal government in its purchases	Created a pest management guide for federally owned properties	No
Employment & Social Development Canada	To enhance residents' standard of living	Handed out awards for the volunteer sector	No
National Defense Canada	To support the Armed Forces	Hosted a challenge to improve the sustainability of portable camps	No
Immigration, Refugees & Citizenship Canada	To manage the immigration process	Released a video series on immigrant success stories	No
Library & Archives Canada	To preserve national documents	Renovated their building to be net zero	No

Within the last few years, ECCC has also created a few Canada-specific reports quantifying FLW and organic waste (AET Group Inc., 2021; ECCC, 2020a), evaluated the feasibility of a municipal organic waste measurement database (Interview #46), and developed a tool to help users assess the emission outputs of different organic waste management options (ECCC, 2022a-c). The rest of this department's policy actions have indirectly related to FLW. For example, this can be seen through the department's actions related to climate change. ECCC's (2020b) national climate change plan, *A Healthy Environment and a Healthy Economy,* its legislation and regulations like the *Greenhouse Gas Pollution Pricing Act* (2024), *Clean Fuel Regulations* (2024), and *Canadian Net-Zero Emissions Accountability Act* (2021), and its funding programs, like the 2017 Low Carbon Economy Fund, have set the stage for organic waste diversion (ECCC, 2021, 2024).

Agriculture and Agrifood Canada (AAFC) has the second highest number of policy actions on FLW at the

[3] Relevant agencies include Atlantic Canada Opportunities Agency, Canadian Economic Development for Quebec Regions, Federal Economic Agency for Southern Ontario, Pacific Economic Development Canada, and Prairies Economic Development Canada.

federal level. This department has primarily treated FLW as an outcome of an inefficient food system and an opportunity to improve sustainability and food security. AAFC's FLW-specific actions have included the development of the country's first national food strategy in 2019, which prioritized FLW reduction (Agriculture and Agri-Food Canada, 2019, 2023, November). This department has also implemented funding programs to reduce FLW and improve food security. The federally funded Food Waste Reduction Challenge, for example, was launched in 2020 and has provided financial incentives for businesses and nonprofit organizations to develop innovative "solutions" to FLW (AAFC, 2020, November). The Surplus Food Rescue Program was a temporary COVID-19 pandemic funding program to finance, package, transport, and redistribute surplus food from farms and factories to communities experiencing food insecurity (AAFC, 2020, August). This department has also raised awareness about FLW on its agricultural podcast (AAFC, 2021, January 6) and has donated surplus food grown at its research centers to those in need over the last few years (AAFC, 2022). While not explicitly focused on FLW, the department's Canadian Sustainable Agricultural Partnership,[4] an ongoing funding program launched in 2018 with provincial and territorial governments to improve the competitiveness of their agri-food systems (AAFC, 2023, June), has had some impact on FLW management. For example, it has funded projects like an on-farm biogas study (Hallbar Consulting, 2020) and the production of insect-based animal feed products made from FLW (AAFC, 2021, January 18).

While Statistics Canada worked with stakeholders to improve agricultural statistics for more accurate FLW estimates (Interview #29) and Global Affairs Canada has produced an FLW awareness video (Interview #48), the rest of the government entities at this level have addressed the issue indirectly. The Canadian Food Inspection Agency, for example, has unintentionally contributed to the generation of FLW through legislation and regulations such as the *Food and Drugs Act* (2024), *Safe Food for Canadians Act* (2023), and *Safe Food for Canadians Regulations* (2024). These actions have set standards for the quality, appearance, packaging, and labelling of food items, and, in turn, led to discarding edible food. This agency has also amended other pieces of legislation in ways that have limited FLW management options through their efforts to prevent global biosecurity-related outbreaks. For example, the *Health of Animals Act* (2019) banned food waste containing meat as a source of pig feed and the *Fertilizers Act* (2020) prevented the use of specified risk materials from ruminants like cows as fertilizer on food crops. Other departments, like Health Canada through its healthy eating guide (Health Canada, 2019) and Employment and Social Development Canada (2017) via a volunteer award to La Tablée des Chefs, a food redistribution organization, have indirectly encouraged FLW reduction and diversion.

This subsection shows that the federal government has not taken the lead on addressing FLW. Despite a failed attempt to pass FLW legislation (i.e., *An Act to Establish National Food Waste Awareness Day*, 2020), Canada currently lacks a national strategy to tackle FLW and legislation or regulations to encourage its reduction, monitoring, and measurement. There has similarly been no guidance from the federal government on how policy stakeholders can tackle this issue. Most explicit FLW management policy actions were only introduced in the past five years. While some FLW and food security funding programs have targeted specific

[4] This was previously called the Canadian Agricultural Partnership but goes by this new name as of 2023.

actors (e.g., businesses, food security, food producers and processors), many actions lacked specific targets, calling for all actors to play a role. Policy action at this level has relied on largely persuasive (i.e., provided information) and market-based policy mechanisms (i.e., offered economic incentives or disincentives) rather than stronger regulatory measures to encourage others to reduce and divert their FLW (Giordano et al., 2021). These actions have also aimed to reuse surplus food and divert waste from landfills, rather than to prevent its generation. According to Mourad (2016), this would constitute weak sustainability as these actions reinforce, rather than challenge, the systemic causes of FLW.

Provincial & territorial policy actions

Table 2 breaks down government policy actions at the provincial or territorial level by department type (e.g., environmental, agricultural). Each provincial or territorial government differs in how they name their departments and agencies as well as how they distribute responsibilities among these entities. This is partly due to the unique geographic, demographic, political, social, and economic characteristics that shape their governance structures. Despite these differences, government departments and agencies can be grouped into department types based on the similarity of their general mandates. These department groupings include environment; agriculture, aquaculture, and fisheries; natural resources and energy; infrastructure and municipal affairs; community and social services; health; economic development; education; and other. Table 2 lists the department types, their mandates, FLW-related policy actions, governments who have implemented these actions, and whether said actions had the explicit objective to reduce and/or divert FLW.

Environmental departments have implemented the most policy actions on FLW at this level. These actions have primarily focused on FLW's environmental harms (e.g., soil and water contamination, climate change, human-animal conflict). Actions have also varied significantly, with only a few provinces addressing FLW management directly. Nova Scotia and Prince Edward Island, for example, banned organic waste in landfills in 1997 and 2002 via *Solid Waste-Resource Management Regulations* (2023) and amendments to the *Resource Management Regulations* (2019). Ontario and Quebec introduced strategies to reduce FLW and organic waste in 2018 and 2020 (Ministry of Environment, Conservation & Parks, 2018a, b; Interview #34; see Ministère de l'Environnement et de la Lutte contre les changements climatiques, 2020). Quebec also released a province-wide FLW measurement report (Recyc-Québec, 2022). Manitoba, on the other hand, implemented the Compost Support Payment program in 2014 to finance compost facilities based on tonnage of organic waste that they divert (Government of Manitoba, 2024). British Columbia has also created a substantial collection of resources to encourage various sectors to measure, reduce, and/or divert their food waste, which are accessible on their website (Government of British Columbia, 2022). These actions also include recent funding for organic waste diversion infrastructure (Government of BC, 2023, 2024 August), toolkits for food waste prevention (Ministry of Environment and Climate Change Strategy, n.d., a, b; Tetra Tech, 2015), and case studies on organic waste (Government of BC, n.d.). Besides this, environmental departments at this level have addressed FLW indirectly through their policy actions on waste management, climate change, and general environmental protection.

FLW has not been addressed consistently among agricultural, fisheries, and aquaculture departments at this level. PEI plans to develop a FLW reduction strategy (Interview #15, see Honourable A. Perry, 2021,

p.16) and Quebec introduced a biofood strategy in 2021 that contains measures to prevent FLW upstream (Interview #34; see Government of Quebec, 2021). Besides this, most of these departments address FLW indirectly through their efforts to improve the profitability of these sectors. Some provincial governments, like Alberta (Government of Alberta, 2024) and Nova Scotia (Interview #28), have offered consultation services and conducted organic waste inventory reports (Alberta Agriculture & Forestry, 2015). These departments also financed businesses to encourage the use of surplus food and organic waste for value-add products, such as flax shives turned into fire logs (Interview #51) and non-filet pieces of salmon made into jerky (Interview #50). They have additionally addressed agricultural waste through regulations on managing dead animals (Department of Municipal Affairs & Environment, 2017; *Ontario Regulation 105/09: Disposal of Deadstock*, 2009) and information on crop loss prevention (Ministry of Agriculture, Food & Fisheries, 2021; Ministry of Fisheries, Food & Agriculture, n.d.). Efforts by these departments have also recently included the promotion of surplus food donation and purchase (Interview #39, 50, 63) and the use of organic waste as a compost product (Government of Yukon, 2016) to bolster self sufficiency in local food systems.

Table 2: Provincial and Territorial Government Policy Actions Related to Food Loss and Waste

Department/ Agency Type	Mandate	Policy Actions	Province/Territory[5]	Was the objective to address FLW?
Environment	To protect the environment	Implemented an FLW and/or organic waste reduction strategy	ON, QC	Yes
		Enacted regulations that ban organic waste from landfills	NS, PEI	Yes
		Funded programs to reduce and/or divert FLW and/or organic waste	BC, MN, NL*, ON, QC*	Yes
		Conducted research on FLW and/or organic waste	BC, MN, NL, NT, ON, PEI*, QC*, SK	Yes
		Provided information on improving FLW and/or organic waste management	BC, NB, NL, NS, PEI*, QC, SK	Yes
		Managed solid waste via legislation, regulations, guidelines, reports, and/or funding programs	All	No
		Addressed climate change via international agreements, legislation, regulations, strategies, reports, guides, and funding programs	All except NU	No
		Protected the environment broadly via legislation, regulations, guides, reports, and funding programs	All	No

[5] An Asterix (*) is used to indicate that a policy action was taken by an agency (e.g., waste, food, economic), rather than a department. Province/Territory abbreviations: Alberta (AB), British Columbia (BC), Manitoba (MN), New Brunswick (NB), Newfoundland and Labrador (NL), Northwest Territories (NT), Nova Scotia (NS), Nunavut (NU), Ontario (ON), Prince Edward Island (PEI), Québec (QC), Saskatchewan (SK), Yukon (YK).

Agriculture, aquaculture, and fisheries	To support sector	Offered services for and/or conducted studies on transforming FLW and organic waste into value-add products	AB, MN, NB, NS*, ON, PEI	No
		Provided information on agriculture waste management	All	No
		Established funding programs with the federal government to support the growth of these sectors	All	No
		Developed strategies and/or provided information to increase the profitability of these sectors	All	No
		Provided services and/or created funding programs to address food insecurity	PEI	No
Energy and natural resources	To develop natural resources	Implemented a renewable energy strategy and/or featured it within their broader energy policy	AB, BC, NB, QC, NL, NT, NS, ON, PEI, QC	No
		Provided financial incentive system to develop renewable energy projects	BC, NS, ON, QC	No
Infrastructure and municipal affairs	To manage government infrastructure and support municipalities	Developed funding programs with the federal government to build municipal infrastructure	All	No
		Created environmental guides for government-owned infrastructure	AB, BC, NB	No
		Provided funding, awards, guides, and reports to help municipalities reduce their greenhouse gas emissions	BC	No
Social and community services	To support residents' wellbeing	Offered funding for projects that improve resident well being	AB, BC, MN, NL	No
		Developed a poverty reduction plan and/or held workshops on it	BC, NB*, NU, ON, QC, SK	No
Health	To protect residents' health	Issued FW reduction tips for residents	AB	Yes
		Provided information on food safety related to food donation	BC, NB	Yes
		Implemented food safety regulations and developed guides	All	No
		Created nutrition guides	MB, NB, NL, NS	No
Economic development	To strengthen the economy	Provided funding to support businesses and/or rural areas	BC, NB*, NU	No
Education	To support children's education	Developed nutrition and/or sustainability support for schools	AB, BC, MN, NS, SK, YK	No
		Provided guidance for curricula	NB, NS, NL, ON, PEI, SK	No
Other	N/A	Offered tax incentives for farmers to donate their surplus food	ON, NS, QC	No
		Enacted legislation to protect food donors from liability	BC, ON, NB, NS, NT, NU, MN, PEI, QC, YK	No
		Provided information and/or financial support for recovering from a natural disaster	BC, NB, NL	No
		Introduced a contest related to the sharing economy	ON	Yes

Most other government entities at this level have addressed FLW indirectly. Select health departments have provided guidance on safe surplus food donation in British Columbia (British Columbia Centre for Disease Control, 2019a, b) and household food waste reduction tips in Alberta (Alberta Health Services, 2019). Besides this, energy and natural resource departments addressed FLW indirectly by treating it as potential feedstock for renewable energy. This can be seen via regulations like Prince Edward Island's *Renewable Energy Act* (2023) and Ontario's feed-in tariff programs for anaerobic digestion facilities (Interview #33; see Ministry of Energy & Electrification, 2022). Infrastructure and municipal affairs departments utilized money from the federal Investing in Canadian Infrastructure Fund program, which is an ongoing program started decades ago to co-fund organic waste diversion infrastructure (Housing, Infrastructure & Communities Canada, 2016). These departments also developed sustainability guides for public infrastructure (Alberta Infrastructure, 2018). Community and social service departments, on the other hand, supported surplus food redistribution to improve citizen wellbeing by financing organizations like the Leftovers Foundation (Government of Alberta, 2022). All governments at this level additionally implemented civil legislation to protect businesses from liability if they donate surplus food (e.g., Nunavut's *Donation of Food Act,* 2013; Saskatchewan's *Donation of Food Act*, 1995). These laws were variably introduced between 1988 and 2013 depending on the province or territory. Some governments, like Ontario in 2013, have introduced tax incentives to encourage farmers to donate surplus crops (Ministry of Finance, 2023).

Table 2 shows that most provinces and territories have not led efforts to address FLW. Many governments lack explicit strategies, regulations, or other policies to encourage FLW reduction and diversion. FLW-specific policy actions at this level have mostly utilized persuasive and market-based mechanisms that rely on food wasters to be aware that food waste is a problem and to act out of goodwill or economic incentive (Giordano et al., 2020). These actions have largely targeted waste management facility operators and local governments, prioritizing the diversion and use of FLW over its prevention (Giordano et al., 2020). For the most part, these policy actions reflect weak sustainability (Mourad, 2016). Quebec's biofood strategy to transform their agri-food system is an exception as it is an example of strong sustainability.

Local government policy actions

Local governments differ significantly in size, population, resources, and the power and responsibility delegated by their provinces and territories. This can influence their roles in waste management. For example, waste management at the local level can involve provincial and territorial governments, municipalities, regional governments, service boards, private companies, or a mix therein. Because of this diversity and the lack of systematic data collection conducted at this level for this manuscript, this section provides some examples of the ways that regional and municipal governments have addressed FLW.

Some regional and municipal governments have introduced food waste reduction strategies or included them in solid waste strategies, like Toronto (City of Toronto, n.d.). Many large cities now offer source-separated organics collection and processing services. Some have gone a step further in the last few years to implement bylaws that ban organic waste from landfills (Interview #53; see The Council of the Town of Banff, 2022). Quite a few regional and municipal governments also have ongoing educational campaigns and

information on their websites for residents related to FLW reduction and diversion. This includes media campaigns like Love Food Hate Waste (see Food Mesh, n.d.) and programs, like York Region's Good Food Program which set weekly FLW tasks for residents to complete and Let's Cook which taught cooking skills (Interview # 47; see The Regional Municipality of York, 2024a, b). Other municipalities have conducted research, such as pilot projects to test source-separated organics collection led by Ecology North in Whitehorse in 2009 (Interview #53) and Circular Innovation Council in Guelph-Wellington County in 2021 (Interview #10; see Alexander et al., 2023; Circular Innovation Council, n.d.). Some local governments have also tested solutions like at-home composter machines (Interview #17; see Federal Economic Development Agency for Southern Ontario, 2019), collaborating with academics on an examination of food redistribution practices in Saskatoon (Interview #58), and measuring food and other wastes via waste characterization audits and food diaries (ECCC, 2020a, pp.27-29; see Tetra Tech, 2023).

Regional and municipal governments have also indirectly impacted FLW management through initiatives like Guelph Wellington's 2021 Circular Opportunity Innovation Launchpad (2024) and Creston-Valley Kootenay Lake's 2016 Fields Forward (Government of British Columbia, 2024 December). These programs have financed the development of value-added products from surplus food. York Region also included the purchase of surplus local food in its recent local food strategy (Interview #47; see York Region Agriculture & Agri-Food, n.d.). Lastly, some governments at this level have engaged in ongoing, cross-departmental collaboration to tackle FLW. This involves waste and public health employees jointly educating the public about FLW reduction and healthy eating (Interviews #11, 17, 47; see Ontario Food Collaborative, n.d.).

While these represent some of the approaches to FLW that local governments have taken, they are not the norm. Many governments at this level have not prioritized FLW due to factors such as lack of awareness, competing priorities, small workforces, limited financial resources, insufficient authority as the "creatures of the province," or inadequate access to diversion infrastructure. Variability between local governments at this level in the types of policy mechanisms used and who they target in their FLW initiatives makes it difficult to evaluate policy actions at this level using Giordano et al. (2020) and Mourad's (2016) frameworks.

Stakeholder perceptions of FLW jurisdiction

An examination of interview transcripts revealed that policy stakeholders have limited views in terms of which government entities have the authority (and responsibility) to address FLW. Most interviewees were adamant that FLW fell under provincial and territorial, rather than federal, jurisdiction. An executive director for a waste non-governmental organization remarked that, "I don't know if the federal government [has] anything to do with food waste. I don't even know if it is their mandate." An executive director for a different non-government organization echoed these sentiments saying:

> Unfortunately, the federal government does not have a role. They should, but under our political system, they have no role, and they can try to bring together the provincial jurisdictions to do more. That's...one thing they can absolutely do. But...they do not have jurisdictional authority to really do anything.

This perception was not absolute, as some interviewees believed that the federal government did, in fact, have the power to regulate FLW-related matters.

Most stakeholders also identified environmental and, to a lesser degree, agricultural departments as having jurisdiction over FLW. This was evident through the refusal rate for government interviews. Sixty federal, provincial, and territorial government entities declined interview invites, with many of them expressing that FLW was not part of their jurisdiction and directing the interviewer to environmental and agricultural departments. Even some policy advisors from other departments who did accept interview invites said things like, "well food waste, as I said, isn't really part of my ministry" (a provincial policy analyst) and:

> I don't know if you've spoken to the food policy people at [Agriculture and Agri-Food Canada] yet, but they clearly have a scope of work that is...food loss and waste. We do not have that type of guidance, so it is not a priority. (a federal policy analyst)

There are likely many reasons why these stakeholders view FLW as the purview of environmental departments as opposed to that of other departments. One reason is that the federal government has done a lot of work framing FLW as a climate issue (i.e., as a way to substantially reduce greenhouse gas emissions) (see ECCC, 2019). This framing allows the federal government to tackle this issue, to some extent, under its Constitutional powers over international and interprovincial matters (Bendickson, 2020). As a climate change issue, this then falls within the authority of environmental (as opposed to other) departments.

Stakeholder perceptions of FLW jurisdiction were based on traditional understandings of jurisdiction as something to be possessed and siloed (Valverde, 2008). Despite the *Constitution* dividing jurisdiction into broad areas of society rather than specific issues like FLW, most stakeholders had the perception that FLW governance "belonged" to the provincial and territorial governments. Similarly, even though FLW crosses several policy areas (Righettini & Lizzi, 2019), stakeholders conceptualized FLW as a "waste" and/or "food" issue and identified environmental and agricultural departments as having the best fit in terms of mandate to address it.

Rethinking jurisdiction

This manuscript argues that the lack of jurisdictional clarity hinders more comprehensive FLW governance in Canada. The findings show that FLW governance in Canada is in its infancy. There is no legislation, regulations, or a harmonized strategy to reduce FLW in the country. Instead, a patchwork of unharmonized policy actions has been enacted by governments at various levels and across a wide range of departments and agencies. This patchwork consists of sometimes disparate, sometimes interconnected elements, with many aspects of the issue remaining inadequately addressed and/or unaddressed. The purpose of most policy actions was not to reduce or divert FLW, but they instead had indirect impacts through non-FLW policy objectives like economic growth. The few actions that explicitly sought to improve FLW management have only been implemented within the last five years and have mostly involved non-regulatory efforts to encourage rather than mandate action. All levels of government have largely addressed FLW by reducing surplus food and diverting waste away from landfills. This echoes Giordano et al.'s (2020) research, which has shown that governments typically neglect the prevention stage of the waste management hierarchy. Government policy actions at all levels have also

constituted weak sustainability according to Mourad (2016), as these actions focus on the symptoms rather than the root causes of the problem. Fragmented governance in Canada has partly been the result of an unclear jurisdictional division of legislative authority under the *Constitution* and the fact that FLW fits within multiple policy areas (Righettini & Lizzi, 2019).

While it may be possible to clarify FLW jurisdiction, this manuscript contends that it is also necessary for policy stakeholders to rethink how they understand jurisdiction itself. Most stakeholders assumed that FLW jurisdiction was located at the provincial and territorial levels in environmental and agricultural departments. These assumptions were underscored by a traditional understanding of jurisdiction as something to be assigned and as something that is siloed (Valverde, 2008). These points have important implications for who stakeholders expect to address this issue and who they hold accountable for the lack of progress to address FLW in Canada.

Valverde's (2008) alternative concept of jurisdiction allows for a more nuanced story about authority over and responsibility for FLW. This story casts all government entities identified in this research as players who have a stake in FLW jurisdiction and who could be held accountable for their actions (or lack thereof). The perception of some policy stakeholders that the federal government does not have jurisdiction over this issue also holds less weight. The federal government's efforts to sign the *2030 Agenda for Sustainable Development* (ECCC, 2019, p.1), to produce reports on FLW, and to encourage organic waste diversion under their climate change legislation could be seen as attempts to claim jurisdiction over FLW. It also recasts the lack of action by select provincial and territorial agricultural departments as a refusal to claim jurisdiction, and, therefore, as a political rather than a technical decision. Additionally, this reconceptualization highlights the inter-legal nature of FLW governance to show overlaps and/or conflicts in jurisdiction. For example, multiple levels of government and department types (i.e., agricultural, environmental, community, and social services) overlap in their funding of civil society organizations to divert surplus foods. Similarly, government entities within a single level of government differ in how they manage FLW, with environmental and infrastructure departments prioritizing the diversion and landfilling of FLW, agricultural departments focusing on the reuse of surplus food and waste, and energy departments finding ways to turn it into energy. These differing approaches have the potential to conflict like in the case of the United Kingdom where Bradshaw's (2018) work has shown how subsidies for renewable energy contradicted and took momentum away from food redistribution efforts.

Valverde's (2008) alternative understanding of jurisdiction also highlights how different government entities diverge in their governance of FLW and subsequent impacts on the people, spaces, and things connected to FLW. Across levels of government, for example, it was evident that different levels of government varied in the types of policy mechanisms that they used. The federal government utilized persuasive and market-based policy mechanisms rather than regulatory ones to try to reduce and/or divert. Provincial, territorial, and local governments, on the other hand, relied on a combination of several policy mechanisms, including regulations. At a department level, different types of government entities can be seen to conceptualize and engage the FLW problem in different ways. Environmental departments, who have a mandate of protecting the environment and its inhabitants, conceptualized food waste as a real or potential environmental contaminant. They mostly focused on food after the point where it has become "wasted" instead of before this point. They also targeted

waste management facility operators and local governments through regulations to control this contamination. Bradshaw (2018) points out that this focus on the end of the pipe is a systematic issue with waste law in general. Economic departments and agencies, on the other hand, have a mandate of improving the economic growth of a given region or province/territory. Through their policy actions, like funding businesses who create value-add products, they conceptualized food waste as an economic opportunity. Their attention focused on food processors, compost facility operators, and energy companies rather than on the commercial, institutional, and residential sectors.

Zooming out to look at all departments together, this reconceptualization of jurisdiction is important for understanding overall how Canada is approaching FLW governance and what gaps remain. For example, on-farm food loss is one area that seems relatively untouched. This reconceptualization can enable policy makers to find the departments best suited to address different aspects of FLW and to coordinate policy actions among jurisdictions to minimize conflicts. Most importantly, it can activate the jurisdiction of several departments to address this issue intentionally, contributing within the context of their mandates and, when possible, prioritizing reduction-based actions. This is not to say there should only be one level or department type that should lead the charge on this issue in Canada, but rather that every department can collaborate towards the same goal. This reconceptualization also allows citizens and other actors to hold a wider variety of government entities accountable for the nascent state of FLW governance, as it casts a wider net for which entities have the authority and responsibility to address FLW.

Conclusion

This manuscript analyzes data from a systematic website search and policy stakeholder interviews to examine the role of government in FLW governance in Canada. The findings show that FLW governance is a patchwork of direct and indirect policy actions by all levels of government and dozens of departments. The findings also show that policy stakeholders had a limited idea of who had jurisdiction over FLW, backed by traditional understandings of jurisdiction. This manuscript argues that the lack of jurisdictional clarity over FLW presents a barrier to more comprehensive governance of FLW and that stakeholders need to rethink jurisdiction itself. This manuscript uses Valverde's (2008) work to provide an alternative understanding of FLW jurisdiction and its governance.

This manuscript makes several contributions. It provides empirical evidence of what government entities are doing to tackle FLW in Canada. Canada is an understudied country in the FLW policy literature, and the analysis is of value to policy stakeholders to inform future governance. The second contribution is a methodological one. While a lot of FLW policy literature centers on a handful of selected policy actions, this manuscript utilizes a systematic website search to identify all government actions that relate to FLW. This approach identified a wider range of government entities that partake in FLW governance and the policy actions that impact FLW. This deepens the understanding of FLW governance and offers another way to analyze government actions beyond Canada. The use of Valverde's (2014) "work of jurisdiction" also

provides an important analytical tool for researchers to question how FLW jurisdiction works (and with what effects). Lastly, this manuscript makes a theoretical contribution. While Valverde (2008) points out that jurisdiction is often discussed in terms of "who" and "what," this manuscript raises the question of what happens when an issue is not established enough for the "who" and "what" to appear obvious to policy stakeholders. While other scholars have operationalized Valverde's (2008) work to point to the negative effects of the "work of jurisdiction" (see Lepawsky, 2012; Pasternak, 2014, 2017), this manuscript provides information that can be used to help create new governance possibilities to address issues like FLW in meaningful and impactful ways.

This manuscript recommends that policy stakeholders in Canada work collaboratively to intentionally think through which government entities are best positioned to address the various aspects of the FLW issue based on how they govern and the potential impacts they could have on FLW generation and management. Future research in this vein could focus on the role of other societal groups (e.g., civil society, business sector) in Canada and provide a deeper examination of government entities who do not consider themselves to have jurisdiction over this issue. This manuscript also recommends that scholars examine the "how" of jurisdiction in other countries to denaturalize assumptions about who does what with respect to FLW.

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