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Reconsidering the wholesale food market: The Ontario Food Terminal and the role of public infrastructure in a corporate consolidated food system

SPECIAL SECTION
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Abstract

The wholesale food terminal, public infrastructure that connects farmers with wholesale intermediaries, largely has been superseded in North America by major supermarkets and their private supply chains. Yet the Ontario Food Terminal, Canada's largest wholesale food terminal and the third largest on the continent, continues to play a key role in Toronto. Drawing on field and archival data in our case study of this public institution, we argue that the wholesale food market supports a diverse retail foodscape that widens food access in Toronto. Further, it provides a reliable marketplace for Ontario produce farmers, thus supporting both agriculture of the middle in the region as well as retail of the middle. We demonstrate how the wholesale food market can contribute to territorial food systems and should be considered as an institutional component of circular food economies.

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produce supply chains, territorial food system, agriculture of the middle, supermarkets, wholesale food market, commodity chain, community-based circular food systems

Introduction

In June 1954, the Ontario Food Terminal opened in Toronto, a middling Canadian city that would become North America's fourth largest metropolis by the end of the century (Toronto, 2017). The provincial government of the time sought to modernize the sale of fruits and vegetables by founding a wholesale marketplace on Toronto's outskirts, connecting the rural hinterlands to the city. The Terminal was seen as a public utility: it provided an essential service, establishing a marketplace where Ontario farmers could sell their product to the many wholesale buyers of the midcentury foodscape (Dipieri, 2023; Elton, 2010). When the Terminal opened, the chairman of the board made a statement that spoke to the vision of the new institution, promising "fresh produce available to consumers in a much-improved condition, lower prices, increased opportunities to dispose of [excess] produce and improved returns to growers" (Perkin, 1954, p. 2). What the founders of the Terminal did not know at the time was that they were not only building a public institution to manage the mid 20th century food system. As we argue in this paper, this institution would come to support midscale, regional agriculture and a diversity of retailers. In so doing, it offers a public institution as an alternative to the supply chains dominated by food businesses consolidated into major chains.

Wholesale food markets are urban infrastructure projects, and thus interest in them largely has been in the urban planning and history literature. Focus has been on the regulatory planning environment and evolving urbanization (Bressi, 1997; Burns, 1968; Donofrio, 2014; Lesh & Myers, 2022; Vitiello & Brinkley, 2014). Public wholesale markets are integral to food systems and are important to consider in this field. This is especially true because major supermarket chains now dominate, shifting the grocery industry away from public supply chain infrastructure and toward private ones. North American public wholesale food markets in many cases have been closed or privatized (Friedland, 1994; Tangires, 1997, 2019). These industry changes have been naturalized and understood discursively as the evolution of the marketplace. However, the cumulative research in this area demonstrates the role of government policy—or lack of it—in creating the market conditions that allow the largest corporate actors to replace small and midscale businesses. In our analysis of the Ontario Food Terminal's history, we aim to problematize this view that major supermarket chains represent the "natural" evolution of food retail. Are such supermarkets really the future and wholesale public markets the past? What is the role of the public food terminal today?

The moment is now to study and contemplate the role of public wholesale food terminals. It is widely recognized that the dominant industrial and globalized food system is unsustainable and unjust (Anderson et al 2019; Blay-Palmer et al, 2013). The climate crisis adds urgency: the long-distance transport of produce that the seasonless supermarket depends upon contributes substantially to emissions (Crippa et al., 2021; Li et al., 2022). Agricultural areas that have been sites of export agriculture are experiencing ecological impacts of climate change and anthropogenic environmental destruction, such as water shortages, extreme weather events, and diminishing soil fertility (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services IPBES, 2019). For example, for more than a century, agricultural entrepreneurs in California's Salinas Valley built fortunes shipping produce such as iceberg lettuce (Freidberg, 2009) to locations across North America. But the future success of such production is threatened by water shortages, pesticide contamination, and soil erosion (Carlin et al., 2023; IPBES, 2019). In the summer of 2023, hurricanes devastated agricultural areas across the U.S. and Mexico, where some produce sold at the Terminal is sourced. A produce industry newsletter reported in September 2023 that in the U.S. state of Georgia, farmers could not plant their beans on schedule due to rain-soaked soil (Campbell, 2023). That same year in Baja California, Mexico, it was reported that Hurricane Hilary threatened wind-sensitive plants such as cucumber.

Several hurricanes have damaged citrus and avocado production in Florida including Hurricane Helene in 2024 (Beaton, 2024) with the U.S. Department of Agriculture (USDA) reporting a 16% reduction in orange production compared to the previous year (USDA, 2024).

Another reason to consider the significance of the wholesale food market at this time is the political context. In Canada, the federal government has written the first-ever national food policy to "build a healthier and more sustainable food system" (AAFC, 2019, p. 3). and in 2024 it funded a national school lunch program (AAFC, 2019). The role of public investment in food system infrastructure is critical, not only in Canada and other high-income countries, but globally. This paper contributes to discussions about the public good and food systems.

Using a mixed-methods design, including archival research, field site visits, and qualitative interviews (see Methods), we make sense of this public institution in an increasingly global, complex, and consolidated food system. We consider its potential contribution to territorial food systems, as well as the circular systems that are the topic of this special set of papers in JAFSCD. We engage with the concept of a territorial food system as an emerging idea in the literature (Food and Agriculture Organization of the United Nations (FAO), 2022; International Panel of Experts on Sustainable Food Systems [iPES-Food], 2024; Lamine, 2023). Territorial food systems, including supply chains and markets, are "a set of agri-food supply chains that integrate sustainable development, that are localized on a regional scope and that are coordinated by a territorial system of governance" (Rastoin in Martorell, 2014, p. 4). Rastoin (2014) describes a territorial food system as one that assigns value to regional production, creates opportunities for small and midscale businesses as well as alternative marketing channels, and is better able to support health and sustainability while providing business opportunities to a wider range of actors than the dominant food system. Such territorial food systems can more feasibly contribute to circularity as their shorter supply chains can be refashioned away from complex, linear systems such as global produce chains. These global produce chains extract resources in the shape of zucchinis, tomatoes, and lettuce, and ship them to other territories, never to be returned, even as waste. As has been observed, circular economies can benefit food system actors such as farmers and retailers (Ouro-Salim, 2022), while the system needs to better support consumers' sustainable options (Jurgilevich et al., 2016). Further, it is held that circular economies can provide solutions to market failures, including in the food system (Curry, 2021).

After describing our research methods, we block out periods in food system history that have impacted wholesale food terminals generally in North America and specifically in Toronto. We discuss how the supermarket industry has shaped food systems on the continent. We describe "agriculture of the middle," a food systems concept that we apply in an analysis of the Terminal's role. Drawing on our empirical research, we argue that the public wholesale marketplace of the Ontario Food Terminal supports a diverse retail foodscape that widens neighborhood food access in Toronto. It also provides a reliable local marketplace to Ontario produce farmers, thus supporting the agriculture of the middle. We underline why the Ontario Food Terminal remains a cornerstone for strengthening a regional food system. In so doing, we argue that a wholesale food market can contribute to territorial food systems and should be considered as an institutional model that could be incorporated into a circular food economy.

Researching the Terminal: Methods

We conducted research at the Ontario Food Terminal, along its supply chains, as well as in public archives. Starting in 2020, Elton and collaborators—including Cole, Dipieri, and research assistants[1]—have been tracking the institution's produce supply chains from farms, through the Terminal, and then out into the community. We began with an investigation into the impact of

[1] The research assistants who contributed to this project as students are Matilda Dipieri, Jannatul Islam, Mohini Mehta, Aparna Menon, Tanjot Grewal, Kyle Resendes, Jasleen Sohal, and Ruth Siew.

COVID-19 on produce supply chains (Elton, 2023; Elton et al., 2023). With the support of external funding and academic colleagues at collaborating universities, the project widened into an ongoing multiyear study of the Terminal's role in the Ontario food system, addressing questions of food security, sustainability, and resiliency. Research included monthly visits to the Terminal for 13 months (June 2022–July 2023) to document produce sold and the farms selling directly to consumers at the market. We documented what produce was sold at points along produce supply chains, from farms to off-site warehouses to Toronto retailers. Research into international supply chains including agriculture, logistics, and trucking was conducted over the phone, drawing on the language skills of research assistants in Bangla, Hindi, Urdu, Punjabi, and Spanish. Research questions were informed by partners at the City of Toronto in the Poverty Reduction Office and Environment and Climate Division.

Key informant interviews (*N* = 110) provided an overarching view of the Terminal, its role in the urban food system, and its position vis-à-vis other fresh food supply chains in Toronto. We interviewed a range of food system actors, such as farmers, produce brokers, wholesalers, grocers, mobile produce vendors, restauranteurs who source there, Terminal staff and board members, and many other people in the city working to move produce from farm to fork. We also interviewed people who work in distal parts of the supply chains, for example in India and the Dominican Republic. The team conducted data-generating visits to the Terminal and to retail locations across the city, where many informal conversations about retail and wholesale sales took place. Photographs and field notes were produced, including photos to document shipping labels that recorded produce points of origin. Interviews were transcribed and these data were thematically analyzed by Elton and research assistants (Braun et al., 2019).

Archival research, informed by environmental history approaches, was conducted by Dipieri, who completed her master's thesis on the history of the Terminal (Dipieri, 2023). Much of the historical data is from the Archives of Ontario and the Toronto Public Library Archives, which includes the local newspapers *The Toronto Star* and *The Globe and Mail*. Focus was on materials from 1912 to 1956 that discuss the Terminal's planning and opening. This archival research was combined with a scan of the relevant scholarly literature and produce industry media, as well as interviews conducted with long-time industry insiders. We begin by presenting a periodization (Sparshott, 1970) of the Terminal's history.

Historical Findings

Here we situate the Ontario Food Terminal in a historical context.

1800s–1930s: Diverse Public Market Infrastructure in Settler Colonial City-Making

Public markets and market districts in North American settler-colonial cities of the late 1800s and early 1900s were important in fostering a food system that was both "equitable" and "efficient," according to Tangires (1997). Helen Tangires's (2019) landmark scholarly work, *Movable Markets: Food Wholesaling in the Twentieth-Century City*, has been key to our understanding of the role of these institutions in the wider food system. Tangires documents how there was a strong belief, specifically in American society, that governments had a role to play in making food accessible and affordable, and also in minimizing food waste. In fact, public market spaces were valued by late 19th and early 20th century governments because they eschewed waste and supported food security. Municipalities were growing with newcomers arriving largely from the United Kingdom and Europe (with additional immigrants from Asia, the Americas and the Caribbean) to work in settler-colonial agricultural, extraction, and industrial economies. The public marketplace helped ensure that all social classes had access to food and that farm labor and resources did not go to waste (Tangires, 1997, 2019). Wholesale markets founded during this period include Philadelphia's Reading Terminal Market in 1893 (Reading Terminal Market, n.d.) and Chicago's South Water Street Market in 1925 (Department of History, n.d.).

1940s–1950s: Social Production of Food Retail

During this period, concern arose among city planners that public markets were antiquated and inefficient, as informed by their appearance of disorder. Until the Second World War, market districts in cities such as Toronto, Baltimore, New York, and Chicago were jumbled agglomerations of carts, vendors, and fresh food sellers. For example, at Toronto's St. Lawrence Market in the downtown core, live cattle were traded alongside produce. The streets in the area were jammed with farmers' trucks (Dickau et al., 2021). Downtown food markets were seen by officials as inefficient in ensuring a steady supply of food. Spoilage and surplus production had increased in the post-war period alongside industrialized changes to food production. It was often the case that fruits and vegetables were left to rot in the market square because of oversupply and a lack of cooling infrastructure. While new technological advancements in agriculture promised Ontario farmers increased earnings, infrastructure challenges and supply and demand mismatches meant that earnings were instead stagnant or dropping in the 1940s (Dipieri, 2023). This was reported on extensively in the news media, as well as described in detail by the Terminal's proponents following the results of the study on the state of Toronto's food market retailing, commissioned by the Ministry of Agriculture after the Second World War.

These disorderly spaces ran counter to the visions of North American midcentury urban renewal projects. A motivation was to "clean up" cities, including by razing low-income communities in what were called "slum-clearing projects." As Kwate (2023) describes, in the U.S., urban renewal projects "transformed cities and particularly downtowns to make them more attractive to the White middle class, to attract capital and reinvestment" (p. 46). Many Black communities were razed, along with Black neighborhood businesses (Kwate, 2023, p. 51). As Kwate documents, a vision of modernity and whiteness not only informed new city designs but also food retail. At the same time that freeways were built to connect the city to the developing suburbs, a new kind of supermarket was advancing not only a different way to provision food but powerful ideas of whiteness (Kwate, 2023), modernity, hygiene, and femininity (Deutsch, 2012).

1950s–1960s: Food System "Modernization"

Mid-20th-century planners were uninterested in farmers driving their produce-filled trucks to downtown markets (Dickau et al., 2021) and wanted to transform urban food distribution (Donofrio, 2014). Part of "cleaning up" the city involved moving wholesale food trade to the suburbs and urban periphery (Donofrio, 2014; Elton, 2010; Tangires, 1995). This is how the Ontario Food Terminal came to be. In the U.S., the Department of Agriculture played a key role in coordinating national food system planning (Tangires, 2019). Conversely, in Ontario it was the province that took action and moved wholesale from the downtown to a new, modern facility on the city's periphery. A similar approach was taken in European countries such as France and Italy, where post-war governments, often funded by the Marshall Plan, invested in public wholesale food markets to build food security (Cadilhon et al., 2003). The goal was to convene a place to aggregate agrifood products, thus permitting quality control, market competition, and transparent, fair pricing. The wholesale food market was understood to be a public good.

In 1946, the Ontario Legislature passed the Ontario Food Terminal Act (Cavicchia et al., 2019). It positioned fruit and vegetable wholesaling as a "public utility" for the province. The choice to pursue a *public* approach to fruit and vegetable wholesaling was significant. According to proponents, an investment in modern, efficient infrastructure unlike any other in Canada, would help secure Toronto's place as a flourishing urban metropolis. In 1954, the Terminal's first chairman's words captured the feelings of the day, juxtaposing the modernity of the new Terminal with what was viewed as the outdated market downtown: "Produce is still moving through a market established seventy-five years ago and originally designed for horses and wagon traffic when the city was only a fraction of its present size, whereas receipts now arrive at the Terminal by refrigerated express, freight and modern trucks and tractor-trailers" (Perkin, 1954, p. 2)

The Terminal's proponents saw the fruit and vegetable industry as an economic growth opportunity. The produce trade showed financial promise, as long as issues of redundancy, oversupply, and waste could be mitigated. State intervention in the food system was justified by the large capital investment required to build modern refrigeration and distribution facilities. These could not be made by the private sector because the size of Ontario's farms and related businesses could not sustain the scale of investment to secure the land and pay for terminal market infrastructure. Importantly, the Terminal would be positioned between new highways connecting the city to the hinterlands and also the Canadian National Railway, which would bring trains loaded with produce directly onto the grounds. This effort can be seen as part of a larger investment in mid-20th century public infrastructure, such as electricity utilities through the Hydro-Electric Power Commission of Ontario (Dipieri, 2023; Nelles, 2003). The provincial support was not matched by federally coordinated efforts for fruit and vegetable distribution in the rest of the country.

1980s–2020: The Corporatization of Supply Chains and Food Retail

The rise of the major chain supermarket[2] is key to understanding the public wholesale food market's diminished status today. While supermarkets have operated in the U.S. since the early 20th century, these corporate entities began their rise to prominence after the Second World War and continued to grow in importance over the next decades (Deutsch, 2012; Wrigley, 2001). Whereas a century ago, many North Americans would have purchased food from a variety of retailers, in the U.S. today, 65% of the grocery retail market is controlled by four companies; in Canada, the big five major chain supermarkets control just under 74% of the retail grocery market (USDA, 2023). These large companies have profound influence not only on the grocery sector but on the entire food system. Researchers have found that major chain supermarkets have shaped food safety and sustainability standards on the farm as well as in food manufacturing and distribution along the supply chain to the consumers (Burch et al., 2013). Further, the supermarket has affected purchasing habits and even diet profoundly (Burch et al, 2013).

Burch and colleagues (2013; also see Food & Power, 2023; Food & Water Watch, 2013) describe the power of major chain supermarkets in the marketplace largely deriving from their monopsony, though others call it an oligopsony, defined by Wilmers (2018) as a "collusive group of buyers … that reduce demand to force suppliers to lower prices below a competitive rate" (p. 239). Food retail is an economic marketplace where there are few buyers (wholesale buyers in this instance) and many sellers (farmers, food processors). This oligopsony has empowered major chain supermarket corporations to set industry standards, for example in food safety as well as in prices paid to suppliers. It has even had a negative impact on major chain supermarket worker wages (Wilmers, 2018) and contributed to higher grocery prices (Food & Water Watch, 2013). A further influence in the sector has been the financial interests of investment capital that funded supermarket expansion through debt (Wrigley, 2001). This kind of "financialization" in food and agriculture is not unique to supermarkets (Burch, 2013; Clapp, 2013; Howard, 2021). In the case of retail, it turns food provisioning into an economic investment driven by the need to produce financial returns for investors and speculators as opposed to profits for the people who own and operate businesses along the supply chains, from farms to retail.

There used to be more opportunities for a larger number and wider range of businesses to operate in food retail. That is, there were numerous small and midsized companies who competed in

[2] What is the difference between a supermarket and a grocery store? The terms used to describe retail grocers vary in the literature, in the food industry, as well as in common parlance. We follow the Oxford English Dictionary (n.d.) and define a supermarket as "A large store, typically one of a chain, selling a wide range of food and groceries, as well as household goods and other products" (para.1). Deutsch (2012) details the history of this institution. People at the Ontario Food Terminal call the largest supermarket chains the "majors." In this article, we refer to these institutions that dominate 76% (USDA, 2023) of the Canadian market as "major supermarket chains." We use "independent grocer" or "grocery store" to describe independent grocery businesses. These also could be chains—some independent grocery stores operate several locations—or cooperatives, worker-owned organizations, or privately held businesses.

the grocery business. Whereas the supermarket sector up until the 1980s was characterized by a diversity of businesses, more likely to be regional in scale, since the 1990s there has been corporate consolidation (Fold & Pritchard, 2005; Zwiebach, 1999). Corporations that owned supermarkets acquired other supermarkets. Private equity firms "bundled" smaller-sized chains into units that were then sold as investments or market consolidation opportunities for the largest supermarket corporations (Food & Power, 2023). Corporate consolidation has led to the mega-firms we know today (Wrigley, 2001). In Canada, nearly 74% of the food and beverage market is controlled by the top five supermarket chains: Loblaws, Sobeys, Metro, Walmart, and Costco (USDA, 2023). In 2013, Food & Water Watch calculated that 53.6% of American grocery dollars went to four major chains, with Walmart capturing a third of all sales. Supermarket consolidation continues, with supermarket mergers ongoing (Monteros, 2022).

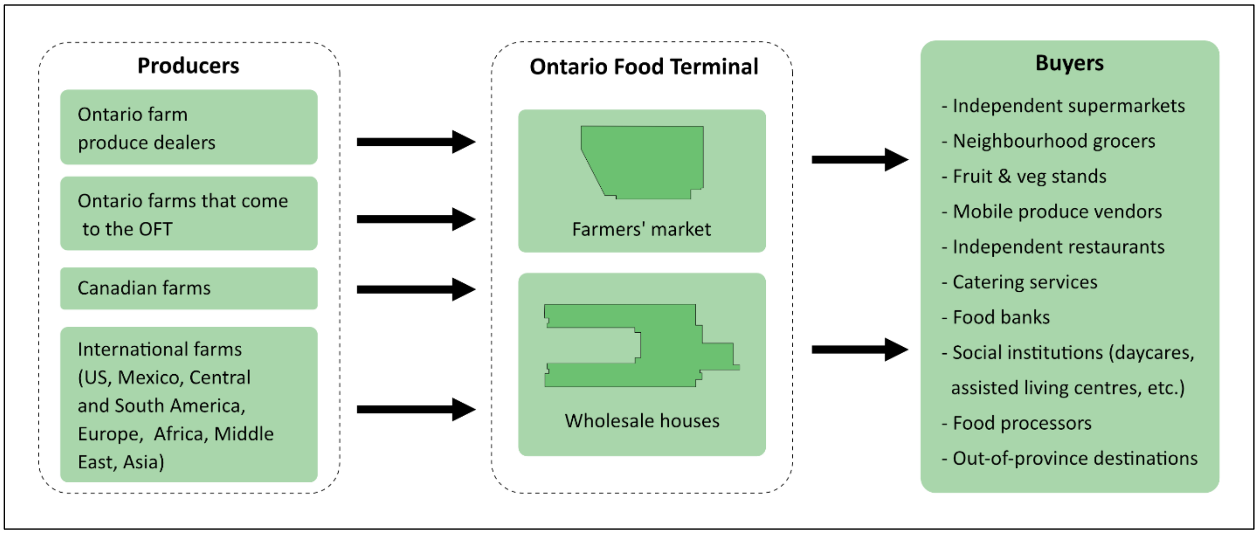
Another factor to consider about the consolidated major supermarket chains is how their businesses work differently than smaller companies. Unlike an independent grocery chain in our study—whose business involves sourcing produce at the Terminal that they then sell alongside other groceries (such as dry goods, dairy, meats) and meals they prepare in their own canteen with Terminal produce—a corporation such as Walmart does not only earn money through selling food. In 2022, the corporation earned US$2.1 billion in advertising revenue unrelated to grocery sales. The Loblaw company that owns the supermarkets with the highest number of Canadian shoppers (USDA, 2023) also generates revenue from its financial services business, real estate, and a sector called pharmacare that includes pharmacies and health clinics (Moscrop, 2024). The company's revenue in the fourth quarter of 2023 was CA$14.53 billion, with CA$541 million in profit (Loblaw Co., 2024). As reported in the business press, diversification allows supermarket companies to continue to sell food at "low-margin" prices (Hercher, 2022). The consolidated supermarket sector drew the attention of free-market regulators during the COVID-19 pandemic. When food prices spiked during this time, the Competition Bureau in Canada and the Federal Trade Commission (FTC) in the U.S. released reports that blamed supermarkets for higher food prices. In Canada, it was found that a lack of competition in the supermarket industry led to higher food prices; increased competition with more retailers was deemed a solution (Competition Bureau of Canada, 2023). In the U.S., the FTC found that supermarket corporations took advantage of supply chain disruptions to increase their profits (FTC, 2024). These criticisms of the consolidated supermarket industry were made by organizations promoting capitalist, free-market values of fair competition that have been deemed under threat by oligopsony in the sector.

Ontario Food Terminal: 70 Years in Operation

There used to be numerous wholesale food markets across the U.S. Some specialized in produce like the Ontario Food Terminal, while others sold a wider range of foods including eggs, fish, and meats (Tangires, 2019). Over the last century, public terminal markets have either shrunken, been privatized, or been shuttered entirely (Vitiello & Brinkley, 2014). For this reason, much of the literature that speaks of wholesale food markets discusses their origins and subsequent decline. While the Ontario Food Terminal remains open, its customer base has changed. These days, it is mostly independent food businesses—small grocers, midsized family-owned grocery stores, restaurants, and caterers—that pull past the secured-access gates six days a week to do their buying. These businesses are depicted in Figure 1.

When the Terminal first opened, the companies that grew into some of today's major supermarket chains also depended on it. As we learned in key-informant interviews, this practice started to wane in the 1990s as major supermarket chains built their own supply chains, sourcing directly from farms in Canada and around the world. This shift in corporate sourcing took place across the grocery sector in North America, largely cutting out this kind of wholesaler (Burch et al., 2013). The Terminal became a place where the major supermarket chains would go to fill "shorts" in their purchasing. Thus, wholesale food markets have faded from both the political and public consciousness on this continent. As one man who spent dec-

Figure 1. The Ontario Food Terminal's Supply Chains



Produce flows from farms, through the institution, and into a diversity of retail and food service businesses.

ades managing such supermarket produce supply chains said in an interview about the Terminal, "One time it used to be mainstream. It used to be the portal into the industry." Now, he notes that it's mostly for the independents: "It's kinda like the mice run around the elephant's feet."

But the Terminal remains seen as a public utility by the farmers, wholesalers, and buyers who run their businesses through the institution. Whether policymakers and the public recognize its importance is questionable. In 2019, it was rumored that the provincial government was considering selling off the land for development. However, there was major outcry from businesses with vested interest in the institution, and nothing happened (Knope, 2019). However, the incident highlighted what could be interpreted as a fading appreciation of the Terminal by policymakers. This view has been corroborated in our research by bureaucrats at three levels of government. Sources have commented in interviews and in friendly exchanges that beyond the inner cadre of businesses that use the Terminal, and a handful of people who think about food systems in their government work, the significance of a public wholesale food market in the mostly corporate global foodscape is not understood by many. Further, judging from the responses we have received from people to whom we have explained our research, many members of the public do not know that the institution exists, let alone see its contribution to the variety of fresh produce on Torontonian's plates. Nevertheless, our empirical research at the Terminal leads to the conclusion that it has an important role in supporting the part of the food system called agriculture of the middle.

Framing the Terminal as Midscale: Agriculture of the Middle

The Terminal is best conceived of as a central node in a food system that serves agriculture of the middle. This term refers to producers who straddle the space between smaller, direct-sale alternative markets and commodity chains that serve the major supermarket chains (Lyson et al., 2008). Farms in this category produce volumes too high for the direct-marketing initiatives that have flourished through the alternative food movement but are not large enough to participate in global commodity markets (Bloom & Hinrichs, 2011a; De Master, 2018; Kirschenmann et al., 2008). There is concern that these midscale farms are disappearing (Stevenson et al., 2011). While there are many reasons to explain the diminishing number, some factors relate to major supermarket chains and supply chains. The global produce supply chains, led by these supermarkets, require agricultural systems that can meet their scale and time requirements.

We know that midsized and small-scale Canadian farmers have long faced marketing and distribution challenges (Beckie et al., 2012; Rosol & Barbosa, 2021; Cole et al., 2022). Midsized farms lack the volume to supply major supermarket chains year-round, so even stores located in areas where there is locally grown produce in season, the major chains are not able or allowed to stock produce from their area (Cole et al., 2022; Hasdell et al., 2020). These major supermarket chains expect long-term contracts committing farmers to produce a certain amount of produce for a certain price over an agreed-upon period. The major supermarket buyers typically do not want to contract with many small farms and prefer to buy from a few that can meet their specifications (Elton, 2010; MacCallum et al., 2014). Also, midscale farms often do not have technological investments such as in-field cooling equipment that lengthen the lifespan of produce, facilitating long distance transit (Brislen, 2018; MacCallum et al., 2014). This privileges large-scale producers (Bloom & Hinrichs, 2011a; MacCallum et al., 2014) and shrinks market opportunities for midsized farms. Even if mid- and small-scale farmers have the capacity to produce for major supermarket chains, MaCallum et al. (2014) found in their study of a major Canadian supermarket that the company's purchasing requirements for volume and quality were challenging for the farms outside their conventional, long-distance supply chains.

Agriculture of the middle is an important component of a regional food system, contributing to both rural (Jablonski & Schmit, 2015) and urban communities by enabling a marketplace that exists outside of the ones dominated by major supermarket chains. Such farms often are part of a network of regional businesses from companies that supply farm equipment to the kinds of retail establishments that frequent the Terminal (Elton, 2013; Kirschenmann et al., 2008). The observed benefits of the wholesale food markets that serve farmers who count as agriculture of the middle, as well as smaller farmers, are so significant that organizations such as the FAO promote agriculture of the middle as a strategy to help countries in the Global South build food security, protect ecosystems, and generate wealth in local economies (FAO, 2024). There is a similar emphasis placed on wholesale food markets (FAO, 2020). Also, states in Europe and Asia currently are investing in and modernizing wholesale food markets, such as Simummuang Market in Thailand (Laotian Times, 2024) and Paris's Rungis market, where management is investing millions of euros into the institution (ActuParis, 2024). As one European interview participant who works in the sector noted, "It is the moment for the wholesale food market."

Stahlbrand (2016, 2018, 2019) builds on the concept of agriculture of the middle and coins the term "infrastructure of the middle" to characterize the necessary infrastructure to support a midscale food system. This includes logistics operations, warehouse facilities, and commercial relationships connecting different parts of the food system. According to Stahlbrand, what she calls "food hubs" are key to infrastructure of the middle. These are described as "warehouses, loading docks, processing facilities and meeting spaces" (Stahlbrand, 2016, p. 38). While food hubs in the current discourse are framed as community-based, grassroots organizations (Blay-Palmer et al., 2013), they have much in common with the Ontario Food Terminal's infrastructure. That is, the Terminal provides the kind of midscale infrastructure, connecting a diversity of actors and providing services such as warehouse space and cooling, that has been identified as key to remedying problems of conventional supply chains (Marsden, 2012). Thus, within the consolidated supermarket context of the Canadian retail landscape, we will now explore how the Terminal supports both agriculture of the middle and a diverse retail landscape—retail of the middle. This provides a midscale market for Ontario produce farmers of the province's agriculture of the middle. It also widens neighborhood access to fresh produce.

A Marketplace for Midscale Ontario Farmers

There are two distinct purchasing areas at the Terminal: the main building, where the wholesale tenants are located, and an outdoor area, covered by a parking arcade known as the farmers' market (see Figure 1). Farmers bring their produce to the farmers' market to sell directly to the range of Terminal buyers, alongside dealers in Ontario produce. During the local growing season, the area is packed with produce grown in the province. We documented 46 different kinds of fruit and vegetables on display (see Table 1).

There are potted flowers for sale and, in the spring, seedlings to be sold to home gardeners. From late fall through the winter we observed storage crops for sale such as carrots and potatoes as well a greenhouse production. In 2012, one study estimated that 30-40 %of produce sold at the Terminal was grown in Ontario (Coutu et al., 2012). In the Terminal's 2022–2023 annual report, it was estimated that "the volume of produce distributed annually through the Terminal is nearly 2 billion pounds and there are approximately 400 different varieties of produce" (Ontario Food Terminal Board, 2023, p. 3.). Terminal staff told our researchers that this number is estimated to be 2.11 billion pounds in 2023–2024. They estimate the quantity of food based on truck activity. Facilities provided to farmers who sell direct include the opportunity to rent space in the cooling rooms and place to sell from at the farmers' market.

What we learned by documenting the farmers who sell direct at the Terminal is that the postal codes of 87 % of the farms that sell direct are within in a 200 kilometer drive (124 miles) (see Figure 2).

The farms are of varying sizes. For example, one farmer we interviewed cultivates 600 acres while another cultivates 200 acres of produce. In 2016, the average area dedicated to field vegetables in the province was 135,420 (Statistics Canada, 2017). In peak season, midsize Ontario farms can provide large volumes of produce and need buyers—which was one motivation for building the wholesale food market in 1954. Interviewees reported that the diversity of buyers at the Terminal acts as a sales security net for the farmers, whereby their fruits and vegetables are assured a buyer. One farmer who sells at the Terminal, a country market, and their on-farm market, described the Terminal demand as a weekly cycle: "We go to the Terminal two days a week. Strategically on the days that, over the years, people have come the heaviest to the market. Thursday because they are stocking up for the weekend. And Tuesday because they are stocking up on whatever they sold on the weekend."

Also, participants reported that the Terminal market facilitates long-standing relationships. The farmers, dealers, wholesalers, and buyers at the Terminal we spoke with underlined the importance of these relationships mediated by the facility. One

Table 1. The Different Fruits and Vegetables, Grown in Ontario, That Were Documented as Being for Sale at the Ontario Food Terminal Farmers' Market During Five Site Visits in June–August 2022 and in October 2024

Apples	Eggplant	Peach
Asparagus	Endive	Kale (multiple varieties)
Beets	Escarole	Pears
Bell Pepper	Fenugreek (methi)	Peppers
Broccoli	Garlic	Plum
Cabbage (red, green)	Ginger	Potatoes
Carrots	Grapes	Radish
Cauliflower	Green Beans	Rapini
Chard	Kohlrabi	Raspberries
Chilli peppers	Leeks	Squash (multiple varieties)
Cilantro	Lettuce (multiple varieties)	Strawberries
Collard greens	Melon	Tomatoes
Cucumbers	Mushroom	Turnips
Daikon	Napa cabbage	Watermelon
Dandelion	Onion	Other: Eggs, apple cider, maple syrup, flowers, potted herbs and potted plants
Dill	Parsley (flat and curly leaf)	

grocer, whose family business relied on the Terminal for decades, said: "You know the people that you've been dealing with the past twenty, thirty years. It's important. To me it's important because they *know* the kind of quality of products I want." In particular, he stressed that these relationships helped him through the challenging times at the start of the pandemic. These relationships reach out from the Terminal into smaller communities as described by one wholesaler we spoke to: "I buy produce for customers who aren't as close to the city, so I'm kind of like a third-party buyer. Meaning if you would own a grocery store out of town, you would contact me and I would buy on behalf of you. So I provide that service for them." In this way the Terminal facilitates a plurality of business relationships connecting farms with a range of buyers (see Figure 1).

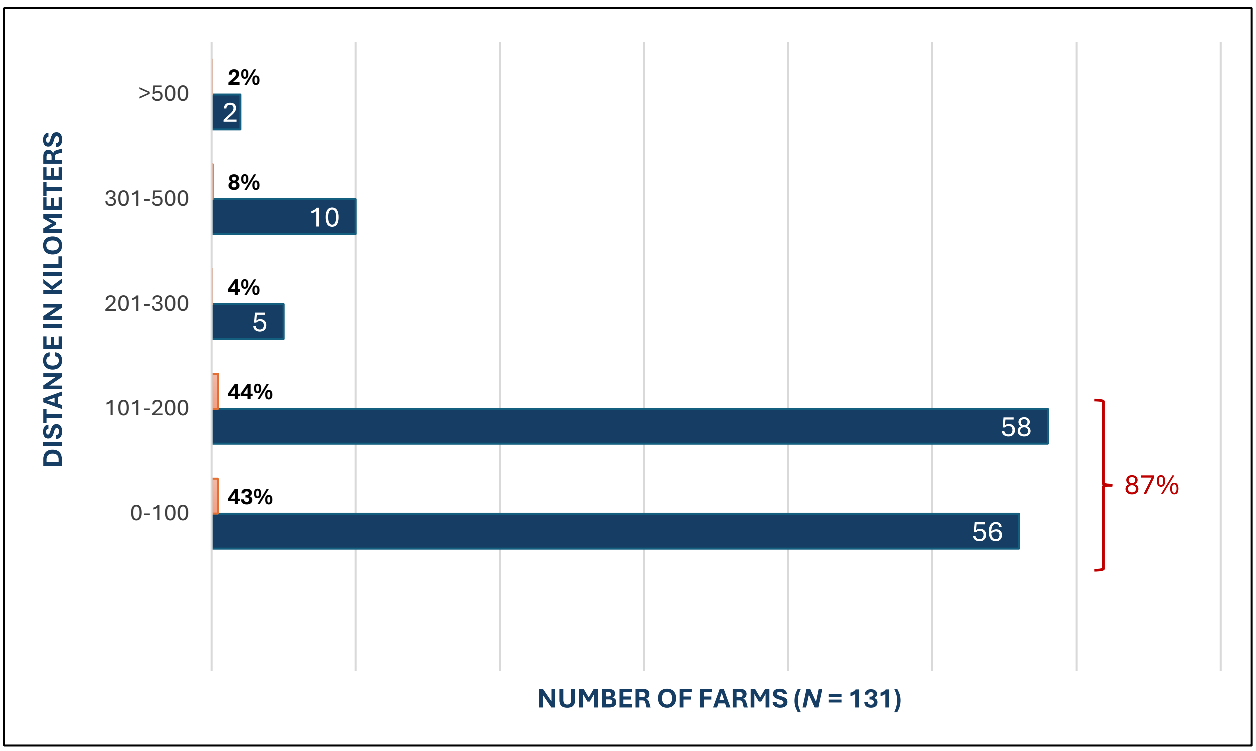
In interviews, farmers compared selling into the major supermarket supply chains versus selling to Terminal buyers. Firstly, they characterized their relationships with Terminal buyers as being more secure than those with the major chain supermarkets. One farmer described how they sold between 15-20% of their crops at the Terminal, with most of their products going to the three large Canadian major chain supermarkets. While the Terminal did not represent the majority of their sales, they stressed the importance the institution played in providing a steady, loyal customer base. This farmer said:

> The people that buy from the Terminal are the stores that I personally would rather shop at. They're local stores that buy their few skids a week. But they pay right away. They want quality. They want to know where it's coming from.

They saw major chain supermarkets as inferior clients:

> You can't do it without relying on the chain stores just because of the volume that they take. They pretend they're all about loyalty and local and supporting the farmer and blah,

Figure 2. Driving Distance Between Postal Code of Farms that Sell Direct at the Terminal's Farmers' Market and the Ontario Food Terminal in Toronto, as Calculated by Google Maps



> blah, blah, blah. . . . You can get promises [from major chain supermarkets] at the start of the year. "We'll take this volume of your crop." And then stuff happens and they get it cheaper from who knows where, or maybe demand isn't there. Then all of a sudden, "Yeah, sorry, all that stuff we were going to take from you, we don't need that." And, yeah, it's hard.

This quote highlights the importance to farmers of having many possible buyers for farm produce, rather than having to rely on one big buyer. When a major chain supermarket buyer chooses not to buy what they had previously "promised" to purchase, the farmer needs another buyer, and quickly because produce has a short shelf life. Major chain supermarkets have many options for sourcing, such as strawberries from California when Ontario ones are ripening, and do not necessarily purchase Ontario crops at harvest time (Elton, 2010). Conversely, participants explained that the Terminal provides a steady source of sales for farmers during the few months of the year when Ontario produce must move quickly from field to plate. This is possible because every day, a range of buyers arrive at the Terminal with varying needs. If one buyer does not need the broccoli that an Ontario farmer has harvested, there are many possible buyers including a range of independent grocers from Toronto, further afield in Ontario and the Atlantic provinces, as well as small-time wholesalers who sell to restaurants and grocers, flea market sellers, mobile produce vendors, food banks, and food service including restaurants, caterers, and institutional food buyers. Thus, one farm dealer described the Terminal in terms of business protection:

> Well, it's like a safety valve actually for the farmers. See, like my farmer. He goes to the chain [and has] extra stuff, which is like 20 percent [of his harvest]. What are you going to do with it? So you ship it here to the market. If you don't have no default terminal—you know how hard it is to go from store to store to try to sell? You show up at the store with the truck and you want to sell? They think you're desperate and they'll kill you on the price. Meantime, here you got a few thousand buyers.

That said, the Terminal does not guarantee sales. Another farmer who chooses not to market to major chain supermarkets reported that they often did not sell everything they bring to the Terminal in a day. This led their farm to start a farm store on their property where they move unsold produce.

The Terminal also serves midscale Ontario farms by creating a marketplace for produce dealers who specialize in local product. Dealers bring produce from farmers who do not want to—or cannot—invest in the infrastructure and labor needed to travel there themselves. Our team has tried to enumerate all the farms that sell at the Terminal, including through dealers. We were unable to complete this task, however, because dealers often have informal buying relationships with many different farms. One dealer addressed these informal connections:

> There's [someone] always popping up. Somebody comes in. Like some brokers even dropped those tomatoes over there. They came in, the guy needed help. He said, Could you sell them? So we took from him. . . . It's like I buy from these friends, but I also buy from that guy and he buys from these farms. It's like a Russian doll that never ends. . . . I would say 90 percent of the [fruit and vegetable] farmers from Ontario come to the Terminal, directly or indirectly.

This quote illustrates the business networks that branch out from the Terminal.

That the Terminal supports agriculture of the middle is not only significant for the farms themselves. There are food systems benefits. Kirschenmann et al. (2008) find that midscale farms play a distinct role in the food system. Firstly, they can be "flexible and innovative" (p. 8). Secondly, they fill a niche between the smaller direct sales operations, that can only produce so much food, and the larger farms servicing major chain supermarkets. This flexibility and position in the system was observed in our research. In the first phase of this study, we documented the resilience of people at the Terminal as they rapidly adapted to the emerging pandemic (Elton, 2023; Elton et al., 2023). In early spring 2020, farmers had to decide what to plant that summer. One farmer described shifting his planting to serve grocery customers and away from the restaurant clients whose businesses were not operating due to the lockdown. This nimbleness was possible in part due to the size of his operation and the fact that he had close relationships with his clients through the Terminal. Thus, a diverse intermediary and retail landscape provides protection and flexibility for farmers. This is particularly important given the heightened risks of climate unpredictability and current labor shortages.

There is a range of small and midscale businesses at the Terminal. Warehouse tenants have held leases for many years, and independent produce wholesalers outside of the institution expressed frustration in interviews because they could not get procure leases at the Terminal. It is easier to gain access to the Farmers' Market. Farmers who want to sell direct there must demonstrate that they are a veritable farm and then can rent space from the Terminal board on a daily, semiannual, or annual basis. It was reported to our study that no farmer has ever been turned away from renting space at the Farmers' Market. We met numerous people who were second and even third generation in their family businesses, both farms and farm dealers. But not all businesses were surviving. In the summer of 2023, the word at the Terminal was that numerous Ontario farmers had decided to retire and sell their property, as land value continues to increase and the profitability of small and midscale farming around the Greater Toronto Area (GTA) is in jeopardy. When confirming postal codes for the Ontario farms selling directly at the Terminal, we came across several farmers' obituaries from the last few years and struck their farms from our list of farmers. The dealers who source produce direct from regional farms and sell it at the Terminal's farmers market, with whom we spoke, had noticed a similar trend. They explained having to source more produce from the neighboring province of Quebec, which is hundreds of kilometers further afield than the Ontario farms.

A Diverse Retail Landscape for Fruits and Vegetables

The Ontario Food Terminal has shaped Toronto's foodscape by providing independent retailers with access to a diversity of wholesale and farm sellers (Friedmann, 2014). Any business looking to source produce can pay CA$275 for a two-year pass to enter the marketplace and buy food. It is repeated often in Toronto, including during interviews, that independent grocery retailers would not exist without the institution. While this may sound like hyperbole, our research at least partly substantiates this claim. As we have described, the Terminal offers buyers access to a variety of wholesalers and farmers. There, buyers can choose what quality and quantity of specific products they wish to buy at a price they negotiate with whichever of the sellers they prefer to do business with. It is not only brick-and-mortar retailers that use the Terminal. Companies that sell food to the public through online platforms, we were told in interviews, also source produce there. One example provided to us by a former wholesale house employee was the online business arm of a major chain supermarket that sells groceries to consumers via a website. This digital company had ordered oranges from the wholesale house rather than from the supply chains of their own parent company, the major chain supermarket. This company came to the Terminal for the oranges, it was explained, because produce purchased at the wholesale house could be easily trucked to a local company that would then break down a crate into small bundles, suitable for direct delivery to their online consumers' homes by the digital grocer's trucks.

The fact that the Terminal provides wholesale access to a diversity of small and midsized businesses is not unique to the Terminal among wholesale food markets. These institutions in Europe, for example, are known to provide key services to smaller businesses such as storing produce, especially chilled products, when independent retailers may not have space on their premises to do this in bulk (Cadilhon et al., 2003). Wholesale markets also perform what is called "de-bulking." That is, the wholesalers at the Terminal buy in bulk, such as by the truckload, and then break down these units into pallets or half-pallets that smaller retailers can manage. One dealer who sells food from the Terminal outside of Toronto, who participated in the study, described the cost-advantage of this process: "I've got multiple customers. So the more buying power you have, the cheaper the commodity is. Whether my customer is buying 200 cases of bananas, or whether somebody's buying 10, usually that person's that's buying 10 would feel the benefit of getting that large volume price."

These services, facilitated by the existence of the public infrastructure that is the Terminal, enable a range of businesses to operate in the foodscape. We define them in three categories:

1. In addition to the major supermarket chains, the Toronto foodscape is characterized by small and midsized independent grocers and larger independent supermarkets catering to a variety of cuisines that some people in the industry call "ethnic supermarkets" (Kwon, 2013). Across the city, in high-income communities as well as in low-income enclaves, these independent grocers operate alongside the major supermarket chains. There is no local vernacular for the smallest scale of independents. They are a made-in-Toronto version of New York City's bodega or Montreal's *dépanneur*. The produce sold is a mixture of locally grown and international imports. They typically source from the Terminal either themselves or through an intermediary. Starting in May, when the first Ontario field crops like asparagus are ready, it can be easier to find local produce at these small grocers than at the major supermarket chains. Produce is the focus of these stores, but they often sell a limited selection of shelf-stable products.

2. The Terminal also supplies large independent grocers. Over the last 20 years, there has been a rise in the wider Toronto area of 'ethnocultural' supermarkets (Kwon, 2013). This includes large-scale grocers servicing Asian cuisines and other non-Euro Western foodways. These stores sell a wide range of products beyond fruit and vegetables, including meats, dairy and cooking equipment. Many stores, including ones where we conducted field observations, cater not to one cuisine but to many. Thus, customers can find fresh banana flowers from Vietnam sold alongside moringa from the Caribbean. Our team's research has found that many of these independent grocers source produce from the Terminal; parallel supply chains for produce grown in regions closer to the equator that do not operate through the Terminal also supply them with culturally specific produce.

3. Other retail businesses that source at the Terminal include food delivery boxes (ordered online as part of the consumer trend toward digital procurement, as described above), flea markets, and farm-stand sellers, as well as mobile produce vendors who sell from their trucks in low-income neighborhoods and mosque parking lots. Restaurants, catering, other food service companies, and institutions also source there.

By following the produce down the retail supply chain, we have tracked where Terminal produce ends up. This confirmed that the Terminal is a main source of produce at the non-major supermarket chain establishments we studied. While there are numerous independent wholesalers in the city that do not hold leases at the Terminal and operate independently, the public institution plays a significant role in supplying retailers. In the words of one produce buyer for an independent grocer, the Terminal is "Number one. Why? Because every single thing I need is available there." This stands in contrast to other Canadian cities that lack a public wholesale food market. In 2023, when food prices rose in Canada, the Competition Bureau (a federal Canadian law enforcement agency promoting competition in business) released a report calling for increased retail competition to mediate price increases by the major chain supermarkets that dominate the industry (Competition Bureau of Canada, 2023). It noted that across Canada, "Many independents have to buy groceries from their competitors. Unlike the grocery giants, most independents are not big enough to have their own warehouses or to buy directly from suppliers.

Instead, many of them buy the grocery products they sell from the likes of Loblaws and Sobeys, which in addition to their retail stores, also have large wholesale businesses. According to independents, this dependency makes it more difficult for them to compete on price" (p. 16). This is not the case for produce in Toronto. Montreal is another large Canadian city with a wholesale produce sales facility, with roots traced to the city's public market founded in 1847. However, La Place des Producteurs differs from the Toronto Terminal in that it is owned by a Quebecois wholesale company in partnership with the Quebec Produce Growers Association. Independent grocers who source at the Ontario Food Terminal or La Place des Producteurs in Montreal have access to these other supply chains and therefore do not rely on the major chain supermarkets, which is not the case in many Canadian cities. While we focused specifically on produce and not on groceries in general, our research demonstrates how the Terminal provides wholesale access to precisely those retailers identified in the Competition Bureau's report— those who do not operate the scale of business with warehouses or direct supply connections to farmers. In this way, the Terminal shapes the retail foodscape in Toronto and region by providing smaller players with a market to buy produce.

We also looked at retail prices and found the independent sector that we describe here to be competitive on price with the major chain supermarkets. Over the last quarter of 2022 (October to December), we assembled listed price data for 18 fresh fruits and vegetables sold at three independent grocers located on main streets in two lower-income neighbourhoods in Toronto, two major chain supermarkets' discount stores, and three mobile vendors operating in lower-income neighborhoods. Of the 13 products with complete October data for all three food distributor types, the mean prices for 10 products were lowest at the mobile vendors; two were lowest at the major chain supermarkets; and one was lowest at the independent grocers (see Figure 3). For data availa-

Figure 3. Mean Food Prices for 18 Fruits and Vegetables Sold at Major Chain Supermarkets, Independent Grocers, and Mobile Vendors in Toronto in October 2022

bility reasons across the three months of the quarter, we could only compare independent grocers and major chain supermarkets. For the entire quarter, an equal number of nine products had lower mean prices for each type of store.

From our analyses, we conclude that the diversity of businesses selling fresh produce from the Ontario Food Terminal widens neighborhood access to fruits and vegetables in important ways. Osorio et al. (2013) posit that higher-income communities are more likely to have better access to high-quality, nutritious, affordable food than lower-income communities. We found a different scenario in Toronto, where the Terminal supplies a diversity of retail establishments in a lower-income area. In following Terminal supply chains into the community to understand where produce was sold, the research focused on the east side of Toronto, including the inner suburb of Scarborough. The average household income in this area is 82% of the city average (CA$99,600 of CA$121,200; see City of TO [2024]). In Scarborough, there are 150 independent grocers as documented in a Google map (Alawi, 2024) that was produced by the Scarborough Environmental Association. Research assistants on our team conducted regular site visits to several of the small grocers on this map. Not only did grocers sell food from the Terminal, but we also found that these independent supermarkets and grocers offered a wide variety of culturally significant fruits and vegetables. The stores cater to the cuisines of people living in the area by selling items not typically found in major supermarket chains. The products we found for sale in these stores, but not at major chain supermarkets included amla, curry leaf, and a range of varieties of fresh beans from South Asia.

It was not possible to ascertain how much of this culturally significant produce came via the Terminal. Store owners are reticent to share information. Shipping tags on produce boxes identified the origin of the produce, yet it was often unclear which hands these boxes passed through. Still, it was confirmed by those who did speak with our team that the grocers sourced at least some of their produce from the Terminal. Further, at the Terminal we frequently saw trucks bearing the names of independent Scarborough grocery stores that were picking up produce. That these grocers cater to diverse cultural groups is important. Other research has found that grocers that cater specifically to 'ethno-cultural' communities are better able to serve their needs than major chain supermarkets (Bégin & Sharma, 2018; Komakech & Jackson 2016; Mankekar, 2002; Perry et al., 2020). Thus, not only does the Terminal support a retail foodscape of independent businesses, but in Scarborough, it also serves the community's food needs. In this way, the Terminal supports retail of the middle.

Concluding Discussion

The way the Ontario Food Terminal operates illustrates the role that public food system infrastructure can play, strengthening both agricultural and retail of the middle and promoting a diverse 21st century urban foodscape. Specifically, the role of such public infrastructure should be considered in the building of circular food economies. Jurgilevich et al. (2016) write that a "circular economy regarding the food system implies reducing the amount of waste generated in the food system, re-use of food, utilization of by-products and food waste, nutrient recycling, and changes in diet toward more diverse and more efficient food patterns" (p. 2). The role the Ontario Food Terminal plays in the food system elucidates what a wholesale food terminal can do in a region. These characteristics inform what kind of institutions might support a circular food economy and should be considered by policymakers.

As we see in Toronto, the Ontario Food Terminal makes space for many actors in the food system. It is an inclusive marketplace where small- and medium-scale food system actors have a chance to do business. The Terminal houses a wide group of intermediaries, buyers, and sellers that, our research has found, channel produce from farm to consumers via a network of independent retail grocery enterprises. The Terminal enables a multiplicity of businesses, from microentrepreneurs to intergenerational independent grocery chain businesses, to operate in the grocery retail sector. Competition between a number of businesses, rather than a consolidated marketplace, has been identified by the Canadian Competition Bureau as an important feature of a food system. The 2023 report by the Canadian Competition Bureau noted that "it can be difficult for small and medium-sized businesses to compete effectively against Canada's grocery giants" (p. 3). The Terminal counters this trend by supporting the independents in the region.

Also, the wholesale food market enables key food system processes to happen outside of the major supermarket chains. The Terminal serves as a physical marketplace where midscale sellers and buyers do business. It offers services such as cooling facilities that can be rented, and space where truckloads, crates and pallets of produce can be broken down into smaller units so that retail actors of all sizes can purchase only what they need for their businesses. Further, as our data illustrate, the institution supports business relationships between a variety of parties. As we have shown, these business networks provide security for midscale Ontario farms with reassurance that their produce will likely be sold. Baritaux and Billion (2016) provide an in-depth look at the roles intermediaries play in the food system, emphasizing this sector's relevance to system-level resilience. They position wholesalers and distributors as having a unique role in mediating between small and medium agricultural producers and retailers of various sizes; certainly, the Terminal plays this role. Then, when food leaves the Terminal, we have documented how prices at the independent grocers where we recorded price data are competitive with the major supermarket chains' discount stores. These data demonstrate the benefits of a public wholesale food market.

Toronto's wholesale food market thus provides institutional support to a regional food system that provides consumers with an alternative to the consolidated major supermarket chains. This model holds promise for community-driven circular economies, as it provides a time-tested institutional model that could be incorporated in the redesign of unilinear supply chains into circular ones. The public investment in this institution was made more than 70 years ago. At the very least, this legacy infrastructure should be investigated further as a component of territorial food systems generally and circular ones specifically.

We do not argue that the Ontario Food Terminal is perfect. Participants have pointed out problems, such as how it is almost impossible for a newcomer to obtain a lease for the wholesale facilities. There has been consolidation in the wholesale sector, too, as companies operating out of the Terminal have consolidated over the years. Also, the Ontario supply chains that produce food for the Terminal may be regional, but labor is international. Agricultural guest workers are flown in annually to do the hard work of actually growing the vegetables, and this program was deemed highly exploitative by the United Nation Special Rapporteur (Obokata, 2024). However, faults in the system do not mean the institution has failed, nor the wholesale food market model. Evidently, it can be improved upon with appropriate food system governance.

Our analysis makes visible the benefits of the public wholesale Ontario Food Terminal. We trust it can inspire other jurisdictions to consider the role of public wholesale food markets in boosting the resilience of regional food systems. Given the limited public appreciation for wholesale food markets, it is important to enact protective measures that allow these wholesale food markets to continue operating, and to consider the food system factors that allow them to thrive and invest in those as well.

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