

# The Myths of Local Food Policy

Lessons from the Economic and Social History  
of the Food System

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“Let us all make a new start by working in alliance with Nature, and no longer in ignorant opposition to her. Let each industry freely settle where it may, in our territory or out of it, and within the lifetime of many already middle-aged we shall see progress in the wealth of our country, and in the growth and contentment of our population, far surpassing all our previous experience.”

—J.J. Menzies (1890: 460)

“But to-day one country after another abandons these [free trading] presumptions. Russia is still alone in her particular experiment, but no longer alone in her abandonment of the old presumptions. Italy, Ireland, Germany have cast their eyes, or are casting them, towards new modes of political economy. Many more countries after them, I predict, will seek, one by one, after new economic gods... the policy of an increased national self-sufficiency is to be considered, not as an ideal in itself, but as directed to the creation of an environment in which other ideals can be safely and conveniently pursued.”

—J.M. Keynes (1933)

## Executive Summary

For several years, activists and policymakers have promoted a wide range of local food initiatives. Many of these have been unsuccessful or have experienced significant problems. For instance, urban vertical farms went bankrupt. Backyard chickens showed up in increasing numbers in animal shelters. Participants in community-supported agriculture arrangements suffered from “supermarket withdrawal” syndrome and failed to renew their membership. Cases of fraud were uncovered at farmers’ markets. Even more problematic, intermediaries spontaneously emerged between middle- and upper-middle-class consumers and local producers of expensive niche products, a far cry from the fresher and more affordable food for all once promised by activists.

These outcomes were unavoidable because the approaches promoted by local food activists (also known as locavores) (re)created the problems that had historically motivated the development of modern agricultural production practices and of the globalized food supply chain. By promoting the increased production of local food that does not offer a compelling quality/price ratio while shunning modern production and processing technologies, activists ensure that our food supply will become more expensive, environmentally damaging, and hazardous to our health than is presently the case. This is because their prescription is based on five myths that are debunked in this paper. In summary:

### **Myth #1: Locavorism nurtures social capital**

#### *The locavores’ arguments*

Direct connections between final consumers and local food producers mend local community ties eroded by the anonymous character of the globalized food supply chain and large retailing operations. Knowing your farmer(s) promotes camaraderie, informal conversation, greater understanding, and good will between urban consumers and agricultural producers. This results in greater trust and collaboration among local actors and more resilient communities.



### *Facts*

Conventional food practices generate much social capital, such as when urban teenagers get part-time jobs working in grocery stores and come into contact with the complexity of the food system and the diversity of customers. There is no evidence that locavorism nurtures the development of more or better social capital than in its absence. Another problem for the locavores' claim is that intermediaries in the conventional food supply chain create value by delivering lower costs (by ruthlessly looking for the better deals among several suppliers), greater convenience (through closer geographical proximity to consumers) and less waste (by providing consumers with the amount of food they need when they need it) than direct marketing approaches such as farmers' markets and community-supported agriculture (CSA). While farmers' markets and CSA might result in genuine new friendships, spending more time and money to acquire food means fewer opportunities to nurture social capital in other ways, from charitable giving to volunteering.

Much evidence also suggests that: 1) direct marketing has and will by necessity remain insignificant in terms of overall food retail; 2) traditional problems inherent to retailing activities have and will result in the emergence of intermediaries between alternative local food producers and geographically proximate consumers; 3) producers and retailers in short supply chains have fewer incentives (e.g., lack of brand reputation, not valuable enough to be worth suing) than large food producers and retailers to tell the truth about their offerings.

## **Myth #2: Locavorism promotes economic development**

### *The locavores' arguments*

Additional local food purchases improve the economic circumstances of mostly small-scale farmers who otherwise struggle against international competition. Money spent locally stays in the community and generates additional employment in other lines of work rather than ending up in the distant headquarters of large retail chains, shipping companies, and corporate farms.

### *Facts*

In a market economy, retailers will always display local food that meets their specifications (e.g., volume, quality) when it offers the best quality/price ratio. Such local food creates value and jobs not because it is local,

but because it is the best option available at that point. Wholesalers and retailers do not bother importing food from distant locations unless it is a superior alternative to local products. Cheaper imports leave more money in the pockets of consumers to spend on other things, thus creating more jobs overall, both locally and elsewhere. While some painful personal or regional adjustments might sometimes be required as a result of imports, this process raises living standards overall, including those of agricultural workers, many of whom will be offered better employment alternatives as a result.

The high cost of land and other inputs in cities, along with inherent technical limitations, make urban agriculture in the form of urban rooftop greenhouses and especially vertical farms extremely expensive to build and operate. As such, their potential market niches are limited to expensive high-end products (herbs and leafy vegetables in the case of vertical farms) targeted at middle- and upper-middle-class consumers who share their owners' beliefs as to the unsustainable character of modern agriculture. The recent bankruptcies of many vertical farm projects suggest the model is inherently unprofitable.

Economic development has never occurred without urbanization and urbanization has long been impossible without substantial food imports from distant locations.

### **Myth #3: Locavorism is tastier, more nutritious, and safer**

#### *The locavores' arguments*

Because locally grown food is fresher, it is tastier and more nutritious than items that have travelled long distances. Food contamination is also more likely in central processing facilities where vast quantities of food from diverse geographical origins congregate and are exposed to undesirable elements. By contrast, the small scale of local food production ensures that problems are smaller and remain localized.

#### *Facts*

Major advances in the preservation and transportation of food in the 19th century marked a major break with the more monotonous and less nutritious local diets of our ancestors. When nutrition did improve for common people, it came at the price of a growing distance between producers and consumers.

The locavore's claim that freshness is key to superior taste and nutrition is both self-defeating and mistaken. Barring massive investments in heated greenhouses, fresh food is only available for short periods of time each year in temperate climates, whereas the globalized food supply chain delivers "permanent summertime" in the produce sections of supermarkets. Produce grown specifically for freezing and canning by large concerns is typically picked in its best state and, depending on the commodity, freezing and canning processes often preserve nutrient value better than refrigeration. For instance, canned peaches are just as nutritious as fresh ones, while canned tomatoes are more nutritious because the cooking process makes them more easily digestible. There is no simple correlation between freshness and nutritional value, but there is one between long-distance trade and the year-round availability of fresh produce.

Small farms and processing operations can never possibly assemble the same quality of equipment and food safety know-how as larger firms that can invest in sophisticated technologies and protocols to deal with the dangerous bacteria, viruses, and microbes that are all around us (e.g., salmonella, listeria, norovirus, campylobacter, *E. coli* O157:H7). Our modern food system is by far the safest in human history. Perceptions to the contrary are driven by the greater ease with which problems of various kinds can now be detected, acted upon, and reported in the media. Large supermarkets are also inherently safer than farmers' markets which are, in most cases, temporary outdoor events with few facilities and whose vendors have, in general, received only the most basic training in food hygiene.

Export operations in less advanced economies established by or working in collaboration with sophisticated producers based elsewhere typically implement state-of-the-art technologies which are then implemented in the domestic market. Paradoxically, food produced by small operators and sold at local farmers' markets in advanced economies rarely undergoes the same level of scrutiny.

Furthermore, the locavores' fondness for re-introducing livestock in the urban environment presents significant public health risks.

## **Myth #4: Locavorism increases food security**

### *The locavores' arguments*

Local producers are more dependable than foreign suppliers in times of political and economic crisis. Diversified local agriculture is also less likely to succumb to pests and diseases than monocultures.



## *Facts*

Famines have plagued humankind for at least 6,000 years. Many were attributable to natural factors such as unseasonable heat or cold, excessive or insufficient rainfall, floods, insect pests, rodents, pathogens, soil degradation, and epidemics that made farmers or their beasts of burden unfit for work. As the historical record clearly shows, the crop diversification strategy of subsistence agriculture communities could never overcome the fact that they were condemned to put all their production eggs in one regional basket.

What ultimately delivered most of humanity from widespread malnutrition and famine was long-distance trade and the ability of regions that were experiencing bad harvests to rely on the surplus of those that had enjoyed better than average ones. Because of global specialization and exchange, humanity currently enjoys its highest level of food security in history and perennial worries like food shortages and famines are now confined to the least developed and more conflict-prone parts of the planet.

The claim that monocultures and long-distance trade are more serious threats to food security than a regionalized alternative food network can only be sustained in the absence of broader economic development (which provides other income opportunities if local agricultural productions become problematic), long distance trade (including multiple suppliers and the movement of agricultural commodities when there is a local food shortage) and labour mobility (which makes emigration a realistic possibility when other options fail).

## **Myth #5: Locavorism heals the Earth**

### *The locavore's arguments*

Locally produced foodstuffs travel shorter distances between final producers and consumers (i.e., fewer “food miles”) and therefore generate fewer greenhouse gas emissions than food shipped from more distant places. Because they must serve a broader array of needs than export-oriented monocultures, local food production systems are inherently more diverse and therefore more beneficial to the environment. Promoting local food production further helps fight urban sprawl and promotes better environmental stewardship.

## *Facts*

Local food activists never compare today's agricultural problems with the more serious ones (e.g., land erosion, soil depletion) of the past, nor do they explain how promoting a less efficient use of resources, and therefore greater consumption of land, water, fuels, and other inputs, will prove beneficial to the environment.

The notion of "food miles," meaning the distance between farms and final consumers, is a meaningless environmental indicator. Key problems include the fact that producing food requires much more energy than moving it around, especially when significant amounts of heating and/or cold-protection technologies, irrigation water, fertilizers and pesticides, and other inputs are required to grow things in a nearby region, but not in a more distant one. In such circumstances, reducing food miles implies a greater environmental footprint because of the use of additional inputs. The distance travelled matters less than the mode of transportation. For instance, moving foodstuffs halfway around the Earth on a container ship often has a smaller footprint per item carried than a relatively short distance ride by pick-up truck to deliver produce from an alternative farm to urban farmers' markets. While imperfect because of subsidies, quotas, and barriers to international trade, market prices nonetheless factor in most relevant environmental trade-offs because of the costs incurred through the use of additional inputs.

Advances in transportation and conservation technologies have also historically produced a shift from producing, storing, and consuming local foodstuffs throughout the year to the consumption of increasingly diverse and fresher products shipped from regions located at different latitudes, in the process delivering not only greater variety and quality and lower prices, but also less waste and less energy devoted to cold storage. In recent decades, the southern hemisphere, where seasons are inverted (meaning that summer months in the southern hemisphere coincide with winter months in the northern hemisphere), has played an increasingly important role in supplying northern markets when local produce is not in season, in the process further reducing waste and energy expenditure.

Fears of losing valuable agricultural land to urban sprawl are also mistaken, as the increased productivity of modern agriculture has resulted in the abandonment of much marginal agricultural land and significant re-forestation and re-wilding in all advanced and most developing economies.

To the extent it takes place in a competitive setting, modern agriculture is always about getting more and better output from fewer inputs. It is puzzling that instead of clamouring for greater trade liberalization and the

end of price-distorting subsidies and quotas, local food activists believe in doing the opposite.

## Conclusion

What many enthusiastic local food activists ultimately fail to understand is that their vision is up against geographical advantages for the production of certain types of food; the creation of economies of scale and scope in food production, processing, transport, and safety; and the absolute necessity for economic development of coming up with an ever more sophisticated division of labour through which people are given the opportunity to acquire ever more specialized and useful skills. These realities have defeated very sophisticated local food production systems in the past and condemned their well-meaning initiatives to failure. Locavores should redirect their efforts toward promoting the greater globalization of our food supply.



## Introduction

The history of all advanced economies over the last two centuries is replete with local food initiatives triggered by economic recessions, wars, and national security considerations, romantic or “back-to-nature” impulses, and complaints about excessive commodity transportation and parasitical intermediaries.<sup>1</sup> Today’s “locavore” rhetoric echoes many of these older concerns, but it further supplements them with health and environmental considerations whose roots can be traced back to the early days of the organic food movement.<sup>2</sup> While some activists acknowledge this prescription entails higher retail prices (a Swedish activist group even calls itself *Dyrare Mat Nu!* (More Expensive Food, Now!)),<sup>3</sup> those higher prices are deemed necessary because of alleged shortcomings of modern agricultural production, processing and distribution practices.

Many Canadian policymakers have answered local food activists’ calls with legislation, by increasing the funding of old programs and creating new ones, and by sponsoring public information and education campaigns along with social science research. As new local food initiatives were pursued, however, old problems and new disappointments soon piled up. Urban vertical farms, i.e., buildings such as skyscrapers or warehouses in which crops are grown commercially in multiple layers or levels, went bankrupt. Numerous cases of fraud were uncovered at farmers’ markets. Backyard chickens showed up in ever greater numbers in animal shelters. Participants in community-supported agriculture arrangements suffered

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<sup>1</sup> See, among others, Brown, 2011; Desrochers and Shimizu, 2012; and Fernández Prieto, Pan-Montojo, and Cabo (eds.), 2014.

<sup>2</sup> Of course, many past influential figures in both groups often shared overlapping beliefs in the virtues of local food for local people. For instance, in the 1960s many consumers of organic food in Europe organized themselves into groups to provide their families with a regular supply of “safe” local food. See, among others, Lockeretz, 2007. For a recent illustration of how arguments once described as unscientific and counterproductive have become mainstream, see Shannon, Kim, McKenzie, and Lawrence, 2015.

<sup>3</sup> See the organization’s website at <http://www.faravelsforbundet.se/dyrare-mat-nu/>

from “supermarket withdrawal” syndrome. Even more problematic for the locavores’ vision, intermediaries spontaneously emerged between middle- and upper-middle-class consumers and local producers of niche and expensive products, a far cry from the fresher and more affordable food for all once promised by activists.<sup>4</sup>

As the remainder of this text argues, these developments were entirely predictable because the locavores’ vision and taxpayer-supported efforts to make it a reality ignored the real problems that had historically motivated the development of modern production practices and the globalized food supply chain. The paper is structured as follows. Section 1 summarizes the local food activists’ vision and some of the various ways by which Canadian policymakers have supported it over the last two decades. This is followed by a more detailed discussion of the problematic nature of the five key arguments put forward by local food activists, namely, that replacing food produced far away with local alternatives nurtures social capital, promotes economic development, delivers tastier, more nutritious and safer meals, increases food security, and has significant environmental benefits. Our main conclusion is that in their pursuit of allegedly fresher and more desirable local meals, local food activists have paved the way for the (re)creation of past social, economic, and environmental problems. A better way forward is the elimination of costly agricultural production subsidies and trade barriers.

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<sup>4</sup> These issues are dealt with in more detail in the main text.



## Part 1: Canadian SOLE Food<sup>5</sup>

For most of human history foodstuffs were produced in close proximity to final consumers. With the emergence of cities, a few non-perishable commodities (e.g., cereal grains, olive oils, dried cods, pickled herrings, sugar, wine, honey) were in time carried profitably over longer distances by small wooden ships. The development of the railroad and steel steamships in the 19th century and of container shipping in the 20th, along with relative trade liberalization, then paved the way for the development of the global agriculture and food value chain in which increasingly large and specialized farm operations are supported by suppliers and service providers of all kinds (see figure 1).<sup>6</sup> These changes delivered much greater agricultural productivity (e.g., something on the order of five or six times for corn over the last century) (Ritchie and Roser, 2019) which, when combined with the retail business moving away from a model characterized by low volumes and high profitability margins to one of high volumes and low margins (Desrochers and Brookes, 2018), made food much more available, diverse, affordable, and safer than in previous times.

As the American economist D. Gale Johnson has observed, humanity now has access to “more adequate nutrition than ever before and acquire that nutrition at the lowest cost in all human history, while the world has more people than ever before – not by a little but by a lot” (Johnson, 2000: 1). For instance, the average American household spent 41 percent of its income on food in 1900, 18 percent in 1966, and about 10 percent today (Paarlberg, 2010: 40).<sup>7</sup> In Canada, the average household similarly spent over 20 percent of its income on food in the 1950s compared to slightly more than 10 percent today (White, 1990: 1; Warnock,

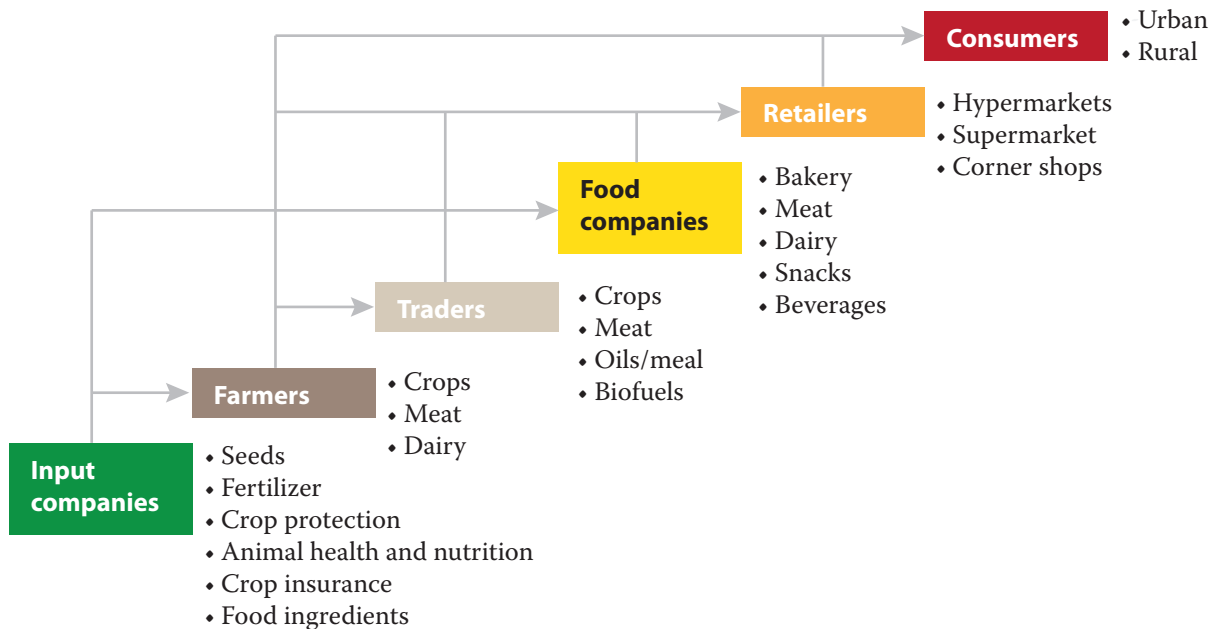
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<sup>5</sup> For a concise overview of the recent (re)birth of local food activism in English Canada and additional references, see Elton, 2015.

<sup>6</sup> See, among others, Reardon and Timmer, 2012; and Desrochers and Shimizu, 2012.

<sup>7</sup> For a broader overview of the relevant issues and data, see, among others, Roser and Ritchie, 2019a; Ritchie and Roser, 2017; Roser and Ritchie, 2019b. See also the statistics compiled under the headings “Food Consumption,” “Food Production,” and “Malnutrition” at <https://humanprogress.org/dws>.

**Figure 1: Simplified Agriculture and Food Value Chain**



Source: KPMG International (2013): 5.

1978; Statistics Canada, 2017a).<sup>8</sup> These numbers did not come about by cutting down on quality, for as the food policy analyst Robert Paarlberg has argued, “the charge that junk-food prices have fallen while fruit and vegetable prices have not is... bogus” for both the “price of traditional in-season fruit and vegetable products has fallen while the variety and year-round availability of fresh products have increased dramatically” (Paarlberg, 2010: 86).<sup>9</sup> In large part because of these advances, humanity enjoyed important gains in life expectancy and quality of life.<sup>10</sup>

<sup>8</sup> For a more detailed yet accessible breakdown of Canadian households’ expenditures on food, see Agriculture and Agri-Food Canada, 2017.

<sup>9</sup> Of course, as in the past, the situation of lower income households and of people living in remote communities remains problematic, but this does not deny the substantial progress accomplished in the last decades.

<sup>10</sup> See the various entries under the categories “population,” “food” and “health” on the website Our World in Data for a detailed statistical picture of progress over the last two centuries <https://ourworldindata.org/>.

In Canada as elsewhere, achieving these advances required drastic changes, including the greater consolidation, specialization, and scaling up of agricultural operations and the transportation of ever-growing volumes of agricultural inputs and products over longer distances (Reardon and Timmer, 2012; Agriculture and Agri-Food Canada, 2017; Statistics Canada, 2017b; Edge, 2013). However, replacing the good with the better generated much backlash among agricultural producers who failed to adapt and among activists suspicious of the health and environmental impacts of recent technological advances. As a result, consumers and voters were bombarded with claims of diminished economic opportunities and greater food insecurity, environmental degradation, and chronic diseases.<sup>11</sup>

As many critical scholars and activists see things, our modern-day, genetically-modified “corn-utopia” spews unsustainable volumes of greenhouse gas emissions in order to deliver junk food, too much meat, rural poverty, migrant labour exploitation and agricultural pollution. Determined to purchase as much as possible “beyond the barcode,” to battle “brand bullies,” and to break “chains of bondage,” many critics have promoted the “re-regionalization” of food production systems and the re-emergence of smaller and more diversified agricultural operations.<sup>12</sup> According to philosopher Mark Nevin, to many critics the global food supply is environmentally unsustainable and vulnerable to “even moderate economic disruptions and natural disasters.” It undermines local food cultures and alienates consumers and producers while exploiting and harming agricultural workers. It delivers food that is less nutritious and less safe than it could otherwise be (Nevin, 2015).

As defenders of modern practices have pointed out, however, the problems confronting us today are much less severe than those that existed in the past.<sup>13</sup> For instance, many poor people are now fat, but this is arguably a lesser problem than the chronic malnutrition and starvation their ancestors experienced. True, modern agri-business practices depend on the burning of huge volumes of fossil fuels, but we could never even have the theoretical possibility of feeding several billion people adequately without them. Yes, there are now more intermediaries between farmers and final consumers than in the past, but food is now cheaper and more easily available than before. And ultimately, defenders of modern practices

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<sup>11</sup> See, among others, International Panel of Experts on Sustainable Food Systems (IPES Food) and Global Alliance for the Future of Food, 2017.

<sup>12</sup> See, among others, Walsh, 2009; Kneen, 2012; IPES-Food, 2016; Hui, 2016; Elton, 2015; Steinman, 2017.

<sup>13</sup> For accessible critiques of the food activists’ rhetoric, see, among others, Fresco, 2012/2016; Lusk, 2016, 2013; Norwood and Lusk, 2011.

ask, if everything is killing us, where are the victims? And why are there so many more of us now living longer and healthier lives?

Defenders of modern practices have another common criticism of activists: most pay little if any attention to government policies that actually harm consumers and the environment (e.g., biofuel subsidies, supply management, protectionism, retail constraints).<sup>14</sup> For instance, according to the authors of an on-going series of reports published by the Organisation for Economic Co-operation and Development (OECD), much governmental support for agriculture creates “policy dis-incentives to increasing productivity, sustainability, and resilience.” Reducing or eliminating production and trade-distorting policies, they argue, “would allow domestic and international markets to function better, discourage over-use of inputs that can damage the environment, and make limited public funds available for more efficient and effective alternative investments” (OECD, 2018: 34). Other authors have made similar or related claims in the Canadian context.<sup>15</sup>

Discussing in further detail the issues raised by critical academics and activists along with the various rebuttals to their claims is beyond the scope of this paper. Instead, our goal in the rest of the paper will be to describe and challenge the case made on behalf of the re-localization of food production, better known as “locavorism.”

### *On the nature of locavorism*

Although the specific interests of local food activists do vary,<sup>16</sup> the majority arguably share a few core beliefs, most notably: 1) because it is “something that goes to the heart of human livelihood, culture and security” (Rosset, 2006) food should not be treated like other commodities; 2) life was overall better in the past when local communities were more vibrant, supply chains shorter, and food produced more “naturally;” 3) local farmers who feed and care about their community are struggling because of the exploitative and unsustainable practices of distant competitors; 4) the geographical distribution of economic activities is not driven by inescapable facts of economic life (e.g., consumer demand, absolute and comparative advantages, economies of scale, and innovative behaviour), but by power

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<sup>14</sup> For broad discussion of these issues, see OECD, 2018; Myers and Kent, 2001. For supply management, see Desrochers, Geloso, and Moreau, 2018; and various publications of the Fraser Institute on this topic at <https://www.fraserinstitute.org/tags/supply-management>.

<sup>15</sup> See, among others, Brubaker, 2007; and Fox, 2019.

<sup>16</sup> See, among others, Werkheiser and Noll, 2014; Noll, 2014; and Navin, 2015.

differentials that benefit large subsidized corporations (see, among others, Scharber and Dancs, 2016).

This being said, many locavores will privately admit to not wanting to give up on imported products such as red wine, exotic produce, coffee, and chocolate.<sup>17</sup> This lack of intellectual consistency is hardly new. As writer J.J. Menzies commented in 1890:

Experience keeps constantly adding to our knowledge of the special advantages of each locality, and every free movement of trade and industry increases the sum of their usefulness to the human race. Scarcity of food can no longer exist among nations that have kept abreast of this economical revolution... Those who doubt the advantages of this universal, world-wide intercourse and exchange are bound in consistency to advocate the reversion of society not merely to any earlier stage in its development, but to that state of things which preceded its initiation – that is, to pure and simple cannibalism; for an argument that is good against one step in this march of progress is equally good against another. (Menzies, 1890: 455)

Rather problematically for local food activists, two decades of intense debate have not settled the boundaries of what is “local.” Indeed, according to the authors of recent articles on the subject, the concept remains as “ill-defined and amorphous” as ever (Scharber and Dancs, 2016: 130. See also Eriksen, 2013) and is especially “fuzzy for the consumer, as distance can be defined in several ways (e.g., distance from their home, produced within 100 miles, or produced in their state)” (Figuroa-Rodriguez, et al., 2019: 2).

In an attempt to come up with a politically acceptable compromise, the United States Department of Agriculture (USDA) defines “local” as a distance of 400 miles or less (Martinez et al., 2010). The Canadian Food Inspection Agency’s (CFIA) take is both more geographically extensive and less consistent as it recognizes as “local” food that is produced in the province or territory in which it is sold, or food sold across provincial borders within 50 km of the originating province or territory (thus excluding adjacent American states) (CFIA, 2019). To the Conference Board of Canada, local refers to “food consumed as close to where it is produced and processed as is reasonably possible, taking into account regional differences in seasonality and availability” (Edge, 2013).

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<sup>17</sup> This observation is based on personal observation and interactions that stretch over a decade.

The least politically controversial stance, however, is arguably that of supermarket chain Loblaw's, whose "Grown Close to Home" campaign labeled as "local" products produced anywhere in the country (Flavelle, 2009).

Another conceptual problem for local food activists is that many do not seem to care about the fact that most agricultural producers, whether modern or organic, use a wide range of inputs produced in distant locations (e.g., petroleum products and electricity; production, packing and transportation vehicles and equipment; animal feed; (organic) fertilizers and pesticides; computers).

While many local food activists are hard-pressed to specify geographical boundaries, they are more explicit in their dislike of modern production and distribution practices. Researchers at the University of California-Davis thus define a "sustainable community food system" as a "collaborative network that integrates sustainable food production, processing, distribution, consumption and waste management in order to enhance the environmental, economic and social health of a particular place." The result is a "more locally based, self-reliant food economy" that increases "resident participation to achieve the following goals:

- A stable base of family farms that use sustainable production practices and emphasizes local inputs;
- Marketing and processing practices that create more direct links between farmers and consumers;
- Improved access by all community members to an adequate, affordable, nutritious diet;
- Food and agriculture-related businesses that create jobs and recirculate financial capital within the community;
- Improved living and working conditions for farm and food system labor;
- Creation of food and agriculture policies that promote local or sustainable food production, processing and consumption, and
- Adoption of dietary behaviors that reflect concern about individual, environmental and community health." (Agricultural Sustainability Institute, Undated)<sup>18</sup>

In her *Canadian Encyclopedia* entry on the country's "Local Food Movement," journalist Sarah Elton defines "sustainable, regional food systems" as those in which "farmland is spared from urban and industrial sprawl so that ecologically-minded farmers produce food, with considera-

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<sup>18</sup> For a long list of academic articles on these issues, see the "Community Food System Resources" compiled by the Agricultural Sustainability Institute at the University of California-Davis: <https://asi.ucdavis.edu/programs/ucsarep/research-initiatives/fs/assessment/community-food-system-resources>.



tion for animal, environmental and human health” (Elton, 2015). Alberta biodynamic<sup>19</sup> farmer Kris Vester considers food “local” to the extent it is “produced using local resources, both in space and time, and doesn’t negatively affect either future generations or the delicately balanced systems which maintain all life on earth. In other words, both the inputs and the outputs, whether intended or not, are localized.” As he further argues: “It’s overly simplistic to believe that food is local purely as a function of geography. Even though something may come from a nearby farm, there’s the question of where the inputs used in its production come from. Is an apparently local egg still local if the corn and soy, which make up the largest portion of most chickens’ diet, come from 1,000 km away? An agricultural product can’t honestly be called local unless the resources used in its production are equally local” (Desrochers and Vester, 2018).

(Needless to say, such considerations echo the distinction in labeling guidelines between a “Product of Canada” with 98 percent Canadian content and a product “Made in Canada” which requires a 51 percent threshold with the proviso that the last “substantial transformation” must have occurred in Canada (Competition Bureau of Canada, 2009). In both cases products labeled as such are considered local by Canadian authorities, although it is doubtful that most consumers grasp the distinction.)

Although they might quibble over geographical boundaries and production methods, most activists justify their prescription by invoking all or some of five alleged benefits:<sup>20</sup>

- *Social*: Direct connections with local food producers can help mend local community ties eroded by the anonymous character of the globalized food supply chain and big box retailing. Knowing your farmer(s) promotes camaraderie, informal conversation, greater understanding, and good will between urban consumers and agricultural producers. This results in greater trust and collaboration among local actors and more resilient communities.<sup>21</sup>
- *Economic*: Additional local food purchases improve the economic circumstances of mostly small-scale farmers who otherwise struggle against international competition. Money spent locally stays in the community and generates additional employment in

<sup>19</sup> Biodynamic agriculture is a more radical branch of organic agriculture that includes esoteric practices such as an astrological sowing and planting calendar. See the webpage of the Anthroposophical Society in Canada: <https://www.anthroposophy.ca/en/initiatives/biodynamic-agriculture/>.

<sup>20</sup> This typology is based on extensive readings and personal interactions. For local food activists making similar claims, see, among others, SpendEdge, Undated; Canadian Co-Operative Association, 2008; Elton, 2015; and Kepkiewicz and Rotz, 2018.

<sup>21</sup> For a more detailed discussion and additional references, see Bauermeister, 2016.

other lines of work rather than ending up in the distant headquarters of large retail chains, shipping companies, and corporate farms.

- *Taste, Nutrition, and Health:* Because locally grown food is fresher, it is tastier and more nutritious than items that have travelled long distances. Food contamination is also more likely in central processing facilities where vast quantities of food from diverse geographical origins come together and are exposed to undesirable elements. By contrast, the small scale of local food production ensures that problems are smaller and remain localized.
- *Security:* Local producers are more dependable than foreign suppliers in times of political and economic crisis. Diversified local agriculture is also less likely to succumb to pests and diseases than monocultures.
- *Environmental:* Locally produced foodstuffs travel shorter distances between final producers and consumers (i.e., fewer “food miles”) and therefore generate fewer greenhouse gas emissions than food shipped from more distant places. Because they must serve a broader array of needs than export-oriented monocultures, local food production systems are inherently more diverse and therefore more beneficial to the environment. Promoting local food production further helps fight urban sprawl and promotes better environmental stewardship. Because of its scale, corporate agriculture generates more damage, or environmental externalities, than smaller and more diverse local food systems.

### *The locavore’s (political) prescription*

Unlike free-market economists who argue that the right balance between local and non-local food production must ultimately be determined by profitability considerations (i.e., local food productions add value if they are profitable and destroy wealth if they are not), locavores ultimately lack a clear criterion for determining what should be produced and in what quantities. The result is often conflicting prescriptions. For instance, southern Ontario food activists have suggested various—and often incompatible—ways to substitute produce destined for human consumption for current animal feed production.<sup>22</sup> Another thorny issue is whether long-standing protectionist practices such as supply management policy (i.e., a set of restrictive measures that put many obstacles to the launching

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<sup>22</sup> This is a point heard by this writer at a few events and academic conferences.

of small alternative productions in dairy, poultry, and eggs) should be supported, amended, or abolished.<sup>23</sup>

Local food activists have also devoted much energy to the (re) creation of urban agriculture through various means such as community gardening, rooftop greenhouses, and vertical farms. They have also promoted the creation of direct links between local farmers and final consumers. In this latter case, producers sell directly to final consumers, typically individuals and restaurants, without the services of intermediaries. Direct sales made on production sites can also take the well established formats of U-pick (or pick-your-own) operations, farm gate sales, roadside stands, and permanent retail stores. Another long-standing but rapidly expanding approach is that of farmers' markets.<sup>24</sup> A more recent and marginal approach is community-supported agriculture (CSA), an arrangement through which consumers pay up front for a share of a growing season's harvest by a local farmer or group of farmers. In doing so, they waive any guarantee in terms of the amount, quality, and even variety of food delivered. This approach is justified on the grounds that consumers should "share the risk" of food production with farmers. In Ontario and many other jurisdictions, most CSAs are found in relative proximity to large urban centres, have between 35 and 200 members, and are by design much more diverse in terms of output and production methods than conventional agricultural operations.<sup>25</sup>

The popularity of the SOLE (Sustainable, organic, local, and ethical) narrative and long-standing government involvement in food policy<sup>26</sup>

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<sup>23</sup> Supply management policy creates barriers to entry by limiting production through quota allocation, drastically restricting imports through tariffs, and regulating higher prices through marketing bodies. Local food activists who support supply management include Elton and MacRae, 2018. For a more detailed discussion of the barriers to entry for alternative local producers, see Young and Watkins, 2010; and Gibson, 2016.

<sup>24</sup> For a more detailed introduction to Canadian Farmers' Markets, see the website of Farmers Markets Canada: <http://www.farmersmarketscanada.ca/>

<sup>25</sup> CSA Farms, 2019; and URGENCI: The International Network for Community Supported Agriculture: <http://urgenci.net/>. See also Kelley and Kime, 2013.

<sup>26</sup> In Canada agriculture is a responsibility shared by the federal and provincial governments. As a result, numerous policy and programs were jointly developed by these two levels of governments. Regional and municipal governments also support or affect food production, processing and distribution in various ways. For concise discussion of Canadian agricultural policy history, recent programs and jurisdictional responsibilities, see, among others, Skogstad, 2014; Martorell, 2017; and Brynne, 2018. For a more detailed survey of the academic and policy literature on the promotion of Canadian local food systems until 2011, see the various studies devoted to Canadian cases in "Community Food Systems Bibliography—March

have resulted in various forms of political support for local food hubs, branding/marketing initiatives, agri-tourism, farmers' markets, community gardens, rooftop greenhouses, vertical farms, and community-supported agriculture. To no one's surprise, however, Canadian politicians have not made their market more accessible to agricultural goods produced in adjacent American states.<sup>27</sup>

At the federal level, Justin Trudeau and the Liberal Party promised during the 2015 electoral campaign to develop a national food policy. Following a broad consultation process, the federal government eventually announced the allocation, beginning in 2020, of \$134.4 million over five years to a national food policy initiative that will address concerns such as improving access to healthy food, reducing food waste, promoting Canadian food, and improving food security in remote communities. Among other initiatives, the plan includes a \$50 million Local Food Infrastructure Fund to support farmers' markets and other community-driven projects and \$25 million to a new Buy Canadian promotional campaign.<sup>28</sup>

Provincial governments have a much longer and richer history of devising and implementing local food initiatives, with the Quebec government being arguably the most distinctive in its approach (Martorell, 2017).<sup>29</sup> In English Canada the most proactive administration was that of the Ontario Liberal Party under the Dalton McGuinty and Kathleen Wynne governments, a 15-year period that provided much continuity in this respect (Ontario, 2019a). Among other highlights, the Ontario government launched its 2013 Local Food Act with the goal of fostering "successful and resilient local food economies and systems in Ontario, help increase awareness of local food in Ontario, including the diversity of local food, and develop new markets for local food" (Ontario, 2019a). Some of the institutions through which the Ontario government disbursed funds

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2013 Updates" from the Agricultural Sustainability Institute at the University of California-Davis: [https://asi.ucdavis.edu/sites/g/files/dgvnsk5751/files/inline-files/CommunityFoodSystemsBiblio\\_2013.pdf](https://asi.ucdavis.edu/sites/g/files/dgvnsk5751/files/inline-files/CommunityFoodSystemsBiblio_2013.pdf).

<sup>27</sup> See, among others, the Ontario Food Exports (OFEX) division of the Ontario Ministry of Agriculture, Food and Urban and Rural Affairs (OMAFRA): <http://www.omafra.gov.on.ca/english/food/export/index.html>

<sup>28</sup> See, among others, Johnson, 2019. For additional background on the process having resulted in this policy, see Canada, 2017; Standing Committee on Agriculture and Agri-Food, 2017.

<sup>29</sup> One Quebec provincial administration went so far as to create an official (if ultimately unsuccessful) food sovereignty policy and geographic indications (or controlled origin certification) and voluntary labeling designations. For recent initiatives, see the website of Aliments du Québec: <https://www.alimentsduquebec.com>. Mundler and Laughrea, 2015, has a recent assessment of direct marketing in the province.

include the Local Food Fund, the Greenbelt Fund (through its Local Food Investment Fund grant program), the Ontario Trillium Foundation, and various rural development programs.<sup>30</sup> For instance, the Greenbelt Fund recently described its role in one of several paid advertisements as “Ontario’s unsung hero of local food. An investor and enabler, the Greenbelt Fund has put more local food on the plates of Ontarians by connecting local food-industry leaders across the province since 2010. Working with businesses, institutions and non-profit organizations, the Greenbelt Fund is making Ontario farmers the first choice of food providers for Ontario consumers” (Greenbelt Fund, 2019, June 12).<sup>31</sup>

Regional and municipal governments, along with various government-funded institutions (e.g., universities, schools, hospitals, army bases, government offices, and correctional centres) through their food procurement policies have also supported or been asked to support local food initiatives in various ways.<sup>32</sup> The nearly three decade-old city-funded Toronto Food Policy Council (<http://tfpc.to/about>) has thus long promoted community gardening, urban agriculture, backyard hens, local food procurement, and food sovereignty (Toronto Food Policy Council, 1999). Numerous educational institutions have also pledged to increase their purchases of local food (see, among others, Maynard and Abraham, 2018) while occasionally supporting more ambitious initiatives. For instance, in April 2019 the University of Toronto Scarborough and Centennial College announced a collaborative project to develop an EaRTH (Environmental and Related Technologies Hub) District whose main feature will be a vertical farm. According to professor Bernie Kraatz, U of T Scarborough’s vice-principal of research, the “vertical farm will become a key resource in assisting communities across Canada in tackling issues related to food, water, air, energy, waste and advanced design and integrative systems. These are all key areas in understanding how to create resilient communities in the face of climate change” (Montgomery, 2019).

Perhaps more unexpectedly, support for the SOLE narrative has also resulted in some minor chinks in the otherwise strong policy armor of Canadian supply management policy. The Chicken Farmers of Ontario (CFO) thus announced in 2016 the creation of an Artisanal Chicken

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<sup>30</sup> For an overview of provincial funding, see Ontario, 2017. The Greenbelt Fund (<https://www.greenbeltfund.ca/about>) can be described as an attempt to provide alternative occupations and income to rural property owners who were prevented from selling their land to real estate and other developers.

<sup>31</sup> For a series of sponsored reports published in the Toronto Star, see [https://www.greenbeltfund.ca/toronto\\_star\\_series](https://www.greenbeltfund.ca/toronto_star_series)

<sup>32</sup> Recent cases can be found in the various Government of Ontario’s annual local food reports. See, among others, Ontario, 2019b.

Program directed at farmers “who are interested in growing between 600 and 3,000 chickens annually for select target markets such as local farmer markets (Chicken Farmers of Ontario, 2018a).” Not surprisingly though, anything beyond this small scale requires the new unconventional producers to acquire production quotas (Chicken Farmers of Ontario, 2018b).<sup>33</sup>

In line with their long-standing official support for supply management policies, various well-established actors in the food supply chain along with mainstream policy analysts have called for greater government involvement in the production, processing, and distribution of foodstuffs. For instance, the Steering Co-chairs of the National Food Strategy of the Canadian Federation of Agriculture (CFA) remarked that perhaps “because of our abundance [of food] we have not, as a nation, comprehensively planned to ensure an adequate and wholesome food supply for future generations” (Canadian Federation of Agriculture, 2017). A spokesperson for the Conference Board of Canada similarly argued that the opportunities and challenges of food production and distribution in the country had not been addressed adequately and comprehensively because they had been made in isolation. The Canadian Food Strategy recommended by his and other organizations, he argued, would help address the “lack of a shared national vision for food that promotes collaboration to achieve widely shared economic, social, and environmental goals” (Bloom, 2014).

Many private intermediaries and retailers have also tapped in the popularity of the SOLE narrative by promoting local food, although they have often done so with the financial support of government-sponsored organizations such as Foodland Ontario and the Greenbelt Fund.<sup>34</sup> For instance, Chartwells, Canada's largest educational foodservice provider and a division of Compass Group Canada, launched a new “Buy Local” program that allows their chefs to invite local food vendors in their community to become an approved vendor through an online onboarding process (Chartwells Canada, 2019). Similar (and often similarly subsidized) efforts have also been made by dominant wholesale grocery and food products distributors Gordon Food Services (GFS) and Sysco, which have developed programs to identify local food in their list of offerings (Reynolds, 2016).<sup>35</sup>

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<sup>33</sup> This program is “intended to support those targeted niche markets in Ontario which are looking for new ways to access larger volumes of locally grown chicken. The new application and quota-based Program will allow chicken farmers to grow between 6,000 and 60,000 chickens annually targeted at a well-defined discrete and distinct local market through various means including geographic identification, marketing channels, products, brands and/or business approaches” (Chicken Farmers of Ontario, 2018b).

<sup>34</sup> This is typically indicated in the press releases when they announce such initiatives.

<sup>35</sup> GFS thus benefitted from a Greenbelt Fund grant to identify and promote Ontario products (see Edge, 2013: 33).



Among food retailers, the “Big 3” (Loblaws, Sobeys, and Metro) have created initiatives that emphasize the local (typically defined as Canada-wide) origin of some of their offerings.

As will now be argued, however, these taxpayer-funded policies will not deliver on their promises because they ultimately recreate the very problems that were solved by the development of modern agricultural production practices and the globalized food supply chain.

## Part 2: The Untenable Promises of Locavorism<sup>36</sup>

Some aspects of the SOLE narrative have been either well documented or thoroughly debunked. For instance, much is known about the personal characteristics, motivations, and willingness to pay of people who shop at farmers' markets or subscribe to CSAs. The main challenges that small alternative local food producers face, from the (typically low) income of CSA farmers to their small market share, are also well documented. The lack of validity of food miles as an environmental indicator has also been demonstrated in many credible lifecycle analyses. Practical difficulties (see, among others, Edward-Jones, 2008) and the incontrovertible fact that most studies and reports on the subject are written by "scholar advocates" (see, among others, Feagan, 2007) who openly endorse the premises of the SOLE narrative,<sup>37</sup> however, make it difficult to document with the same level of confidence many other outcomes of the locavore prescription.<sup>38</sup>

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<sup>36</sup> The following critique of the local food rhetoric is that of someone who believes in the relevance of market forces such as supply and demand, consumer sovereignty, economies of scale and absolute and comparative advantages. For critiques of local food initiatives written from different perspectives, see, among others, Born and Purcell, 2006; Engler, 2012; and Fidler, 2012.

<sup>37</sup> To give but three illustrations of countless similar disclaimers, the guest editors of a special issue of the *Cambridge Journal of Regions, Economy and Society* on "Re-regionalizing the Food System?" write that the "majority of the papers in this issue begin with the assumption that the conventional agroindustrial food system is malfunctioning" (Donald et al., 2010). Philosopher Mark Nevin begins an article on alternative food networks by stating: "For the purpose of this article, I take for granted that there are many objectionable features of the systems that create, distribute, and sell the food we eat" (Nevin, 2015: 434). In a study on the price of local produce, environmental studies professor Jennifer Lynes observes that there "is general (and prolific) consensus in the published literature that supporting and encouraging local food sources result in economic, social, and environmental benefits" and that her "study is based on the assumption that local food is the preferred option in terms of the three aforementioned pillars of sustainability" (Donaher and Lynes, 2017: 747).

<sup>38</sup> For instance, empirical research into farmers' markets is deemed problematic

Be that as it may, rigorous quantitative evidence, economic logic, historical evidence, and suggestive anecdotes and observations gleaned from broader mixed methods and case studies, news reports, and discussion forums all point towards significant problems as to the validity of the locavores' prescription.

We now turn to a more detailed critique of what, in our judgement, can only be labeled as “myths.”

### **Myth #1: Locavorism nurtures social capital**

In its simplest form, social capital is defined along the lines of “the links, shared values and understandings in society that enable individuals and groups to trust each other and so work together” (Keeley, 2007: 102). Locavore writings on the concept, however, are typically just as fuzzy as their take on “local.” Sociologist Mark Bauermeister thus observes that the “local food movement literature does not describe the role of social capital in maintaining and forming collective identity and subsequent collective action among social movement organizations,” but rather postulates that the “lack of social capital and collaboration may inhibit collective action that can create beneficial change” (Bauermeister, 2016: 126). Philosopher Mark Navin is somewhat more specific when he argues that the relative transparency of alternative food networks, which he views as conditional upon the “existence of short supply chains between small producers and individual consumers,” allows “consumers to know how their food is made,” thereby empowering them to “promote various goods and to avoid participation in various bad practices” (Navin, 2015). In this context, direct exchanges encourage the development of “active trust” as opposed to the “passive trust” characteristic of conventional food systems (Sonnino and Marsden, 2006).

A number of scholar advocates have nonetheless gone beyond geographical distance and the number of intermediaries to characterize a supply chain as “short.” Among the factors emphasized are:

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because of a lack of conceptual clarity and data consistency; producers tend to understate their sales; and different state or provincial regulations on permitted products, especially meat and dairy, have long skewed results. See, among others, Brown, 2002; Freedman et al., 2016; and Figueroa-Rodriguez et al., 2019. Many academics' obvious dislike of corporate agriculture shines through the introductions and literature reviews of countless case studies.

1. the capacity for socializing and regionalizing food products, establishing a link between the local areas and the farm where it is produced;
2. redefining producer-consumer relations through information on food origin;
3. developing new relationships taking into account fair prices and (ecological) quality;
4. the connection between consumers and food products. (Darolt et al., 2016)

In this context, short supply chains are sometimes defined as follows: 1) Direct (or face-to-face) sales, where trust is based on interpersonal relations; 2) “spatial proximity” supply chain, where food is produced and distributed regionally (however defined); and 3) “spatially expanded,” where trust is transmitted through a quality guarantee procedure, typically a certification program of some kind (based on Darolt et al., 2016).

Be that as it may, the locavores’ ultimate point must be that purchasing more local food through direct marketing or a much shorter supply chain than would normally occur under normal market circumstances nurtures the development of more or better social capital than in its absence. After all, modern food practices also generate a fair amount of social capital, such as when urban teenagers get part time jobs working in grocery stores and come into contact with the complexity of the food system on the one hand and the diversity of customers on the other. Learning to function in this context is arguably beneficial to the creation of social capital.

As will be argued in the discussion of “Myth #2: Local food promotes economic development,” however, much evidence suggests that promoting locavorism beyond normal market circumstances typically results in more expensive alternatives that are only available in less convenient settings, a situation that leaves less money and time available to consumers and therefore fewer opportunities for the development of other forms of social capital through endeavours ranging from charitable giving to volunteering opportunities. Beyond these points though, much evidence suggests other problems for the locavores’ rhetoric, most notably: 1) direct marketing has and will by necessity remain insignificant in terms of overall food retail; 2) traditional problems inherent to retailing activities have and will result in the emergence of intermediaries between alternative local food producers and geographically proximate final consumers; and 3) direct interactions between agricultural producers and final consumers have never and will never imply that actors involved in short supply chains can always be taken at their words. We now examine each issue in turn.

### *The inherently limited retail and growth capacity of short supply chains*

According to sociologist Amory Starr, “U.S. agronomists, concerned about the fate of farmers... in the context of global commodity policies, have been encouraging direct marketing since 1995” (Starr, 2010: 479).<sup>39</sup> Over two decades later, the overall significance of direct-to-consumer sales remain barely noticeable in the American retail landscape: in 2015, 167,009 US farms sold approximately US\$8.7 billion in edible food directly to consumers, retailers, institutions, and local distributors (United States Department of Agriculture, 2010; USDA, Undated).<sup>40</sup> By contrast, in 2017, total US retail and food services sales amounted to about US\$5.75 trillion (Statista, 2019).

In Canada, short supply chains remain of little interest to large and most medium-sized agricultural commodity producers. According to Statistics Canada, only 1 in 8 Canadian farm operations is involved in some form of direct marketing, with only a small fraction of these, typically ones very small and located close to urban markets, using the farmers’ markets and CSA channels (figure 2) (Statistics Canada, 2017c). Indeed, far from decreasing in importance, food wholesaling has grown in recent years. As industry analyst Ediz Ozelkan observed in 2017: “The Grocery wholesaling industry in Canada, which acts as the middleman between food producers and retailers, has seen comfortable growth in recent years due to a rise in consumers’ confidence and incomes, in addition to falling fuel costs” (Ozelkan, 2017: 5).<sup>41</sup>

As could be expected, the (by far) preferred forms of direct marketing among producers are U-pick and farm gate/stands/kiosks/stores as not only do consumers travel to the farm, but also in some cases do much of the final work themselves. Further, most producers who wish to do so can easily engage in this form of retail. Consumers also probably purchase only what they need, which is less likely to result in food waste. Needless to say though, getting produce from several producers as opposed to a more convenient (including much closer) retail location is both the least convenient

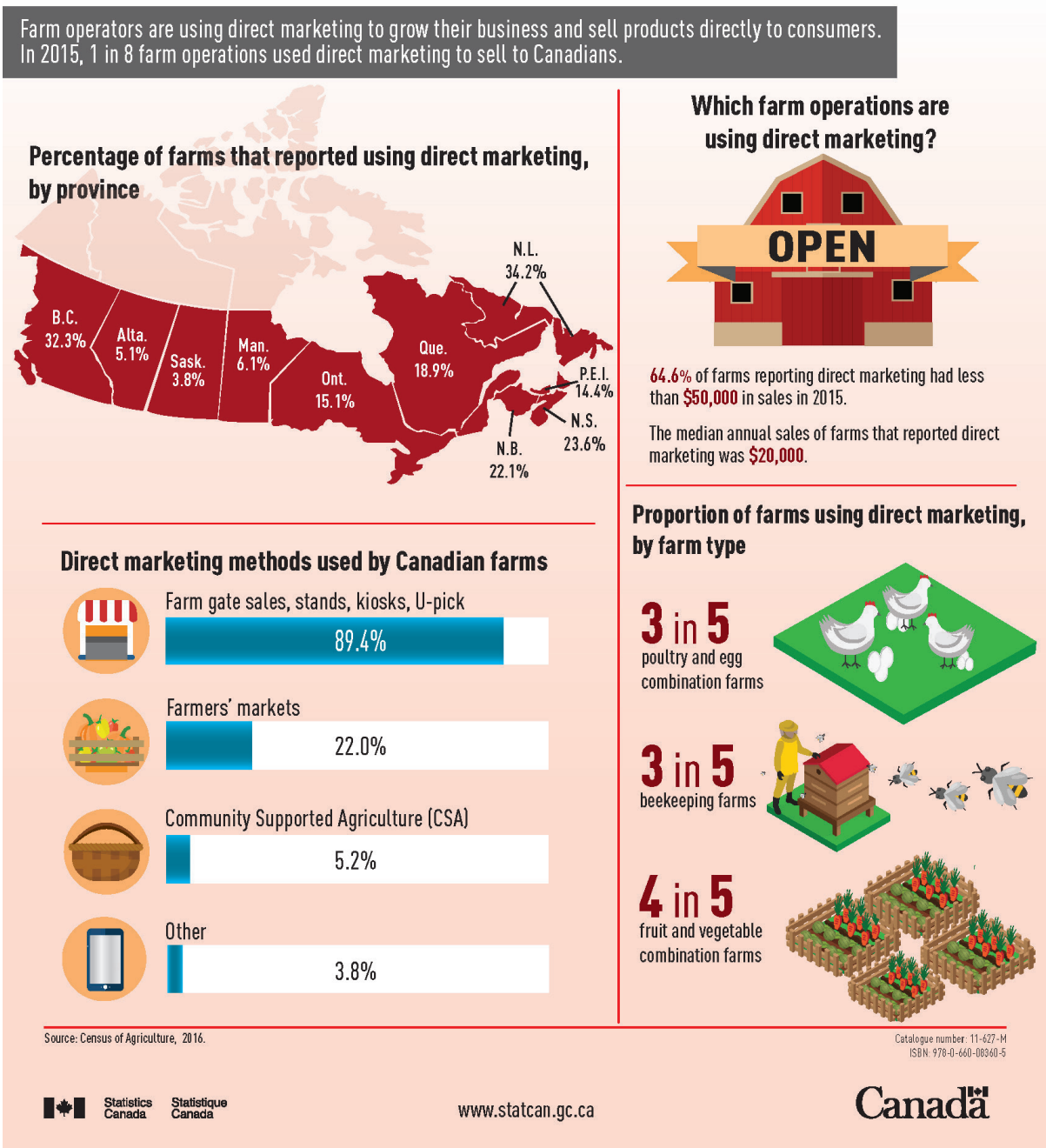
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<sup>39</sup> Starr’s article contains several academic references on American efforts in the 1990s and early 2000s to promote the direct marketing of food products.

<sup>40</sup> Needless to say, in the United States and elsewhere the real competition to traditional supermarkets during this period came from warehouse clubs, supercenters, mass retailers, convenience stores, and drug stores, as well as online retailers and grocery delivery services (see Duff and Phelps, 2016 and Desrochers and Brookes, 2018).

<sup>41</sup> This report contains much evidence to support this claim.

## Figure 2: Direct Marketing in Canada



Source: Statistics Canada, 2017c.

and most wasteful direct marketing approach in terms of transportation fuel use.

Under ideal conditions, farmers' markets provide enjoyable shopping experiences for typically wealthier than average or subsidized shoppers.<sup>42</sup> On the downside, they are seasonal and often limited in terms of convenient locations, parking options, opening hours, protection against bad weather (including heat), and access to bathrooms and accommodations for people with impaired mobility. On the supply side, the number and quality of offerings is often poor at the beginning and end of growing seasons. Many agricultural producers are also not fond of using farmers' markets as they do not relish spending several hours in all kinds of weather in order to interact with chatty customers who juggle cups of coffee while their animals and children contaminate the goods on display. Some also consider it annoying to be constantly subjected to various "sideshow acts."<sup>43</sup>

The community-supported agriculture approach is more complex and its inherent shortcomings deserve a more in-depth discussion. As previously mentioned, farmers in such arrangements are paid in advance to deliver what they have produced at agreed upon locations. On the consumer side, most members are committed to alternative agricultural models (e.g., organic, biodynamic, polycultures, grass-finished, free range, and pasture raised) and thus represent but a small fraction of the buying public. The truly defining feature of CSA, however, is that participants "share the risk" with the farmer they support, meaning that weekly pick-ups may be larger than expected when things are good, but smaller when the farmer struggles with typical agricultural problems (e.g., drought, too much rain, insect pests, equipment breakdown, and labour problems).

Common complaints by former CSA customers revolve around the seasonal character, inflexibility, limited choice, and unpredictability of the content of food deliveries (i.e., both in terms of volume and the nature of the products delivered).<sup>44</sup> A former CSA participant thus lamented in an online forum that "inconvenient drop-off locations or contracts... require

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<sup>42</sup> While there is evidence that people of lesser means will shop at farmers' markets when convenient, this is often a function of additional food assistance and incentive programs (e.g., in the United States increased amounts of money available through the Supplemental Nutrition Assistance Program (SNAP)—formerly known as food stamps—to purchase produce at farmers' markets). See Freedman et al., 2016; and Figueroa-Rodriguez et al., 2019. Food purchases by community-supported agriculture (CSA) participants of lesser means have also been subsidized in the United States.

<sup>43</sup> For a broader discussion of these issues and additional references, see, among others, Robinson and Farmer, 2017.

<sup>44</sup> For an overview of recent works that discuss these problems, see the literature review in Galt et al., 2019a.



more time or money than you can afford” (Ghezzi, 2009) as CSAs typically require their partners to either come up with several months’ grocery budget up front, or to pay in a few (nonetheless significant) instalments. Inflexible delivery schedules and quantities delivered are also problematic when scheduling conflicts occur, especially considering the fact that most CSAs do not offer a refund policy for missed weeks (Erway, 2013). Apart from these issues, production problems on the farm also often mandate “budget busting” trips to the local grocery store (Ghezzi, 2009).

Arguably the most significant problem of CSAs, however, is that they typically create greater waste than would have been the case if food had been bought on an as-needed basis at supermarkets, a problem often made worse by the fact that many heirloom or exotic varieties have a shorter shelf-life. Many participants have thus complained about the “sudden onslaught of produce” that would ideally require both more eaters and the acquisition of significant cooking skills and equipment, along with a serious time commitment for food preparation (Ghezzi, 2009). Joining a CSA is therefore often described as “a commitment to cook” unsuited to people who like to eat out or are otherwise too busy (Erway, 2013). When cooking is not an option, some produce might end up in the freezer (which obviously defeats the desire for freshness), given to friends or charities, or else on the composting pile. As the authors of a recent Texas CSA case study put it, “[u]nfamiliar foods and quick spoilage hindered acceptability through challenging meal planning, despite accommodations that included preparation advice” (White et al., 2018: 2866). Another disgruntled former CSA adherent found out that “many times ‘shared risk’ meant receiving “produce with major insect damage,” while on other occasions “the produce was beautiful, but I expected that there would have been more” (Altman, quoted in Desrochers and Shimizu, 2012: 51-52).

A significant challenge for customer retention is “supermarket withdrawal” syndrome, which is triggered by “receiving the wrong vegetables in the wrong quantities at the wrong times” (Ostrom, 2007: 14).<sup>45</sup> As policy analyst Marcia Ostrom observed in her detailed fieldwork, “CSA clearly cannot compete with supermarkets when it comes to providing the staples people are accustomed to having on demand. The unprepared found it onerous to adapt their menus to the vagaries of seasonality and the Midwest weather instead of seeing each week’s share as the ‘wonderful surprise offered up by the soil’ referred to by more positive members.” Many leafy greens (e.g., chard) and root crops (e.g., rutabagas, Jerusalem artichokes, parsnips) well-suited to local growing conditions proved both unfamiliar and unpopular even when they were not of poor quality. Customers also

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<sup>45</sup> For overviews of more recent material, see Galt et al., 2019b, 2019a; Kato, 2013.

often complained about quality, quantity, and selection as inexperienced farmers brought them “wormy corn, rotten melons, dirty carrots, unripe fruit, wilted greens” and a general lack of variety (Ostrom, 2007: 15). One female customer coined the term “vegetable anxiety” to describe the way she felt when a CSA delivery showed up before she had used up the vegetables from the last one (Ostrom, 2007: 18).

Not surprisingly, “wasted produce” turns out to be the “most common reason for people not to continue with a CSA program” (Altman, quoted in Desrochers and Shimizu, 2012: 51-52). Indeed, as the journalist Leigh Phillips put it, not only is there a “mountain of anecdotal evidence” to this effect, but the subtitle of *The CSA Cookbook* by Linda Ly is *No-Waste Recipes for Cooking Your Way Through a Community Supported Agriculture Box* (Phillips, 2015: 123).

On the producers’ side, typically small and often inexperienced alternative farmers soon realize that the amount of time and other problems inherent to marketing their products (e.g., finding customers and building their loyalty, delivering the produce, dealing with bad customers) is no longer available to them to address production issues. Most CSA farmers also struggle with low income for themselves and their workers (Galt, 2013; Paul, 2015; Ostrom, 2007), an outcome similar to that of urban farmers with low production volumes (Dimitri, Oberholtzer, and Pressman, 2016). As a former CSA farmer wrote in more vivid terms on a permaculture website:

#1 and most troubling. I hated being in debt. I really hated being in debt. I really really really hated being in debt. Owing my families a basket of vegetables every week for 20 weeks really sucked. Didn’t matter how sick I was, or what the weather was doing, or what the crops were doing, or what familial obligations I had, or whether the help showed up. I was in debt for one basket of vegetables per week. That sucked. I much prefer the freedom of a farmers’ market. I can pick as much or as little as I like.

I didn’t like all the food that got wasted. It’s not like I was growing exotic foods with funky tastes. I was growing standard foods for my area. I wasn’t overwhelming people with too much food. The widow lady ate everything in the basket every week and wanted more while some families with lots of big kids couldn’t be bothered. Often when I took a basket of food to someone, I’d see last week’s basket sitting there spoiling. It makes a farmer feel bad. I much prefer the freedom of a farmers’ market or a farm stand. People can buy the foods they like

in quantities that they are likely to eat.

Taking a basket to someone? Tsk. Tsk. The contract stated that they needed to pick up their baskets on Wednesday evening in town. Right. Like that's going to happen reliably!!! So I ended up delivering baskets, after dark, and the day of the week that I worked harder than any other day. And I still had to tend to the irrigation. Call me grumpy if you like. That eventually helped pushed me over the edge. People being unreliable about keeping their end of the bargain, and me not being callus enough to say "sorry about your luck" that you didn't pick up your basket.

I hated the crop failures... I know that is also part of the contract, but two years in a row every brassica crop of every species failed. That was too much to bear. I couldn't feel good about offering to grow food for people if I couldn't reliably grow food for people. That put my reputation at stake. It called into question my integrity. I prefer the farmers' market. If the cabbage fails one year I just don't take cabbage to market. (Lofthouse, 2015)

Another producer commented that, in the context of the demand for variety from a CSA, it would make more sense to grow "12 profitable things well instead of 40 things with some at a loss (factoring in time) and [if] you focussed hard on finding buyers for those 12 things, you could become way more profitable." He added that a CSA producer should expect to "get people who will ask for exceptions, payment plans, exchanges, etc. One year after sending out multiple email reminders to return boxes, I once had a customer ask me 20 weeks into the season if he should keep recycling the wax produce boxes, or if I would like to have them back... 20 weeks x \$3 box = \$60. He didn't read his email, and he cost me a real chunk of change" (Groce, 2015).

As could be expected in light of these difficulties, a growing trend among leading CSA producers is to act as middlemen, often by offering a wider range of non-local products through online hubs, even though one the original goals of the CSA approach was to promote direct interactions between farmers and final consumers. This gets us to the issues of the unavoidable rise of intermediaries in alternative local food networks.

### *The predictable rise of intermediaries in alternative local food networks*

From the beginning of markets and civilization, intermediaries have been engaged in the assembling, grading, packaging, processing, storing, transporting, financing, distributing, and advertising of food products of all kinds. As Plato observed over two millennia ago, “to find a place where nothing need be imported is well-nigh impossible.” A city, wherever it might be located, thus required merchants and sailors to “bring the required supply from another city” which was obtained by trading locally produced goods. Plato described a class of “retailers” who “sit in the market-place [and] engaged in buying and selling.” These individuals proved useful when a farmer brought “some production to market... at a time when there is no one to exchange with him” (Plato, ca 360 BCE). Permanent salesmen typically used a “money-token for purposes of exchange” in order to facilitate transactions between “those who desire to sell” and “those who desire to buy” when individuals with mutually complementary interests could not meet in person.

Two centuries ago the Swiss-French writer Benjamin Constant praised the useful role played by the “middleman class” that operated between the “grain producer and the consumer” by observing that these intermediaries had

more funds than the producer and more resources for setting up warehouses. Dealing solely with this trade, they can study better the needs they undertake to meet. They free the farmer from having to get involved in speculations which absorb his time, divert his resources, and drive him into the middle of towns. (Constant, 1815/2003)

True, Constant observed, these “middlemen have to be paid for their trouble. But the farmer himself has to be paid for this same trouble, which he takes less effectively and skillfully, since it is not his main activity, and at greater cost consequently” (Constant, 1815/2003). Far from being parasitical, he argued, the unique knowledge base and skill set possessed by middlemen resulted in lower prices and greater convenience for consumers.

Today as in Constant’s time, each profitable intermediary performs a task that producers could not do as efficiently on their own, making it possible for consumers to buy the right quantity of goods at a time and place that suits them for ever diminishing prices.<sup>46</sup>

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<sup>46</sup> For a more detailed introduction to the history of economic thought on the topic of intermediaries, see Monieson, 2010. For a more detailed discussion of the key players

Much anecdotal evidence suggests that attempts at direct marketing by unconventional local food producers have hit the same roadblocks that historically led to the emergence of for-profit intermediaries. As journalist Flavie Halais observes, direct marketing is costly and time-consuming as “producers tend to drown under marketing and distribution costs, and struggle to find retail channels for their products. To assume that urban farms can escape that trap because of their extreme proximity to consumers would be a mistake; getting food to consumers has proven a logistical nightmare for them as well” (Halais, 2014). Not surprisingly, a few niche wholesalers have emerged to address the need of alternative producers, sometimes even resulting in new location strategies. For instance, the now bankrupt Atlanta-based vertical farm operator PodPonic decided to use a distributor rather than sell directly to local restaurants. As it turned out, the distributor took the produce across town to their warehouse, only to return much of it to restaurants down the street from the production facility. This motivated Podponics’ owner to relocate operations closer to distributors than final consumers. As he put it: “It’s about being at the point of distribution, not at the point of consumption” (Michael, 2017).

In Quebec, the best known alternative food network intermediary is Montreal-based Lufa Farms. It uses a model inspired by community-supported agriculture and not only retails its own rooftop greenhouse produce, but also the production of small alternative Quebec farmers (including many things that cannot be grown profitably in greenhouses) and niche products from tropical locations (e.g., biodynamic citrus fruits).<sup>47</sup> As reported in an otherwise uncritical news story: “Lufa’s biggest innovation has little to do with farming techniques or architecture. It’s marketing and e-commerce. Lufa sells its produce through a complex distribution system that puts to shame the usual get-what-you-get offerings of farm co-ops found in many North American cities” (Halais, 2014). Southeast of Montreal, a new marketing co-op named Le Terroir Solidaire was recently created by eight small alternative high-end food producers based in the Brome-Missisquoi region. Their goal, as one of them put it, is to “spread out and therefore reduce costs related to product distribution and transformation, insurance, storage and warehousing, marketing and online visibility. The costs can be pretty steep, especially for small but rapidly blossoming businesses like ours” (Enns, 2019).

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and their role in the Canadian food supply chain, see Desrochers and Brookes, 2018.

<sup>47</sup> See the company website at <https://montreal.lufa.com/en/>. It is widely acknowledged that Lufa Farms would not be profitable without its wholesaling activities. This case is discussed in more detail in Desrochers and Brookes, 2018.

In southern Ontario, the most prominent intermediary of this type is 100km Foods that acts as a broker and an aggregator between small alternative farms located in the Greenbelt and Greater Golden Horseshoe regions and niche restaurants and small specialty stores.<sup>48</sup> Chefs featured in the company's promotional videos state that dealing with a trustworthy intermediary who "understands them" and provides them with a range of local produce (as opposed to a single or a few items) makes "their life easier" by saving them time and money. Farmers similarly appreciate not having to market their produce themselves, thus allowing them to focus on production challenges (100km Foods Inc., 2019).

In 2016, 100km Foods co-founder Paul Sawtell observed that when he started his business a decade before, "there was no distributor in Toronto dedicated to local food exclusively" (Gilmore 2016). Indeed, Sawtell and his wife Grace Mandarano, described in other news stories as disillusioned pharmaceutical sale representatives, gained this knowledge by "attending a discussion on the politics of food, where they met chefs frustrated by the shortage of accessible local food, along with farmers in need of ready markets" (Newman, 2011). They soon founded their food brokerage and began cold-calling certified sustainable farmers located north of Toronto and in the Niagara Fruitland area (Newman, 2011). In time, alternative farmers began providing 100km Foods with a list of offerings. Chefs then get the list, which includes "how the produce is grown and packaged," place their orders at night, and get it delivered in about 36 hours. Needless to say, 100km Foods also hears from "a chef looking for a specific ingredient" and then hunts "for a farm that can provide it" (Newman, 2011). (Interestingly, Sawtell and Mandarano originally identified producers through a list compiled by Local Food Plus (LFP), a Toronto-based non-profit organization whose goal was to "bring farmers and consumers together to build regional food economies" (Neglia Design, 2019). LFP eventually ceased operations in 2014 as a result of "a rise in for-profit enterprises offering similar services, as well as dwindling grant resources" (Mann, 2014, May 17).<sup>49</sup>

As could be expected, building a small scale operation between alternative producers and niche chefs proved challenging as "[d]irect-from-farm procurement is vastly different than sourcing at the Ontario Food Terminal" (Gilmore, 2016). As explained in a 2015 Greenbelt Fund-sponsored news story:

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<sup>48</sup> See the company website at <https://www.100kmfoods.com/>

<sup>49</sup> Some of LFP main donors included the Greenbelt Foundation, the Metcalf Foundation and the J.W. McConnell Family Foundation (Mann, 2014).



Being relatively small, 100km's strength is that they can offer rapid delivery, specialty items and guaranteed freshness. But scaling up has been a problem. Having launched their business with just two trucks to do pickups and deliveries, says Sawtell, "we'd go from zero to 100 percent inventory, then to zero again." With a Greenbelt Fund grant, he was able to buy two more trucks, which allowed him to keep a steady supply coming in and going out. In turn, this allowed him to add more farms and service a larger area beyond the GTA. Twenty-three producers have been added to their roster, along with 58 new customers. "It took five to six years to become financially sustainable," he says. From first-year revenues of \$242,000, 100km Foods' annual sales are now \$2.3 million. (Snyder, 2015)

Apart from the fact that the business probably exceeded the distance advertised in its name on its first day of operations, the bulk of 100km Foods' customers have traditionally been "fine dining establishments" as opposed to "institutions and mid and lower priced restaurants" (Gilmore, 2016).<sup>50</sup> As could be expected, 100km Foods tried to reach out to the latter not directly, but by partnering with large-scale corporate food distributor Sysco (Snyder, 2015). In this context, the "social capital" emphasized in feel-good stories about local food switched from the benefits of final consumers getting to know producers to the "creation of stronger rural communities" through additional local food purchases (Newman, 2011).

Because the same problems call for similar answers, intermediaries similar to Lufa Farms and 100km Foods have been created in many other jurisdictions to address a pressing need in alternative food networks. To give but one case, in the Netherlands one now finds several "box schemes" (HelloFresh, BeeBox, Willem & Drees) which are defined as businesses that do not grow local food, but instead "operate as logistics service providers" through which local produce is "delivered to consumers" (Levelt and van der Schrier, 2015). Not surprisingly, in the United States and elsewhere some traditional wholesalers have become involved in these activities as the use of the term "CSA" is not regulated in most jurisdictions (Moskin, 2016).

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<sup>50</sup> On the price of these food items, see also Newman, 2011. In 2014, 100km Foods regularly served "about 100 restaurants, hotels and small retailers, with another 100 occasional customers" (The Packer, 2014, February 24).



### *Trust issues in direct marketing*

A key issue throughout the history of food provisioning—even when most products were “local” by today’s standards—was the capacity to establish the trustworthiness of multiple small-scale producers and retailers. Indeed, complaints about food fraud, such as substituting a cheaper substance or ingredient for a more expensive one or adding substances in order to mimic a desired appearance or taste while using cheaper inputs, go back thousands of years. As the author of the 1911 *Encyclopedia Britannica* entry on “adulteration” observed, the practice was “as old as commerce itself” (*Encyclopedia Britannica*, 1911). In the early 19th century several writers thus accused local businesspeople of, among other things, adding water to milk, wine, and beer, selling roasted chicory roots, peas, and beans as coffee, or selling horsemeat as beef (see among others, Wilson, 2008; and Johnson, 2014). In some cases, the health consequences were far from benign. An anonymous author, but self-proclaimed “enemy to fraud and villainy,” thus published in London in the 1830s various editions of a best-selling work with the lengthy title of *Deadly adulteration and slow poisoning unmasked; or, Disease and death in the pot and the bottle; in which the blood-empoisoning and life-destroying adulterations of wines, spirits, beer, bread, flour, tea, sugar, spices, cheese-mongery, pastry, confectionary medicines, &c. &c. &c. are laid open to the public, with tests or methods for the ascertaining and detecting the fraudulent and deleterious adulterations and the good and bad qualities of those articles: with an exposé of medical empiricism and imposture, quacks and quackery, regular and irregular, legitimate and illegitimate: and the frauds and mal-practices of the pawn-brokers and madhouse keepers* (An Enemy to Fraud and Villeny, 1830/1839).

In the book’s opening statement, the author declared that “the many sudden deaths that are daily happening in and about the metropolis, are no doubt assignable to the unprincipled and diabolical adulterations of food, spirits, malt liquors, and the other necessaries of life.” He added a few pages later that “in almost everything which we eat or drink, we are condemned to swallow swindling, if not poison—that all the items of metropolitan, and many of country, consumption are deteriorated, deprived of nutritious properties, or rendered obnoxious to humanity, by the vile arts and merciless sophistications of their sellers” (“An Enemy to Fraud and Villeny,” 1830/1839).

Historically, attempts to thwart food fraud often involved government, guild and religious regulations, or oversight. As food sourcing became increasingly distant, however, new packaging technologies were developed and the main market-based solution to this long-standing prob-

lem was the development of brands that guaranteed quality, consistency, and purity in sealed (as opposed to bulk) products. Pioneers among American national brands include National Biscuit, Swift, Armour, Heinz, Quaker Oats, Campbell Soup, Borden, Pillsbury Flour, and Libby (see, among others, Koehn, 1999).

As could be expected, today's alternative local food networks, like previous similar production systems, occasionally suffer from trust issues. For instance, when asked why he joined Feast ON (a certification program that recognizes businesses committed to sourcing Ontario grown and made food and drink) as a "preferred purveyor," 100km Foods co-founder Paul Sawtell gave the following answer:

We have been mentioned in the media and have had our name printed in restaurant menus by chefs at restaurants we do not work with and that has always irked us. On the flip side there are chefs in the city for whom we are their primary produce supplier, with no fanfare or recognition. We find both of those situations to be a bit unfair, so when Feast ON was launched we thought it would be a great way to celebrate those chefs who are authentically committed to procuring local food and holding others to their commitments. (Gilmore, 2016)

The problems faced by 100km Foods were hardly unique. To give another nearby example, Linda Crago, a Niagara peninsula organic producer, admitted a few years ago that local farmers will not always give truthful answers to customers and that sometimes even local certified organic producers might have resorted to using modern technologies to address a recurring pest problem or simply to increase yields and profits. This problem is made even worse by the fact that certified North American organic farms are never field-tested, let alone randomly tested. Ms. Crago also personally witnessed her vegetables listed on the menus of restaurants she had never sold to, even sometimes in May when the produce is a long way from being ripe. She had been invited "to appear at events in restaurants so there is the appearance of a close relationship with a chef. Sometimes there is no relationship... only for the event, but not before or after" (Crago, 2011).

Abuse of trust is also an issue at some farmers' markets where meeting people face-to-face is sometimes insufficient to establish the veracity of a seller's claims. In Ontario as elsewhere, some vendors turned out to be resellers who occasionally or systematically peddle products obtained from wholesalers under false pretenses, such as being "local," "organic," or "pesticide-free."<sup>51</sup> In 2017 CBC journalists thus uncovered five different

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<sup>51</sup> Some farmers' markets have stricter rules than others, but it is probably fair to

vendors operating at four Ontario markets (out of the 11 they visited) who falsely claimed to be selling fresh produce they had grown themselves, but were instead reselling wholesale goods purchased at the Ontario Food Terminal (Toronto). Interestingly, some of it turned out to be Ontario-grown Sunset tomatoes produced on an industrial scale in greenhouses near Windsor that were sold under false pretenses 500 kilometers away in the Peterborough farmers' market. In another case it was Mexican produce being passed off as Ontario-grown (Denne and Foxcroft, 2017. Also see Syal, 2017).

While such practices are obviously reprehensible, the business journalist Peter Taylor might have had the best take on the topic when he observed that food resellers are “true economic heroes” if they can travel a few hundred kilometers to the Ontario food terminal, buy products from middlemen who have themselves bought it from operations located far away, pass it off as fresh and local to consumers who cannot tell the difference, and still be able to undercut the prices charged by local farmers who have none of these additional expenses (Taylor, 2017).

As could be expected, similar complaints have been made in the context of CSA arrangements. A food blogger thus observed that there are “many unscrupulous companies out there that are doing things like buying conventional produce from supermarkets and selling it as local and organic. They'll deliver to your door and you'll never know the difference... Make sure you read what the company says they're offering. Many companies are simply produce delivery companies that deliver the same vegetables from across the world that you'll get at the grocery store” (Chefworks, 2014).

Alternative producer and local food guru Joel Salatin is fond of saying that “you can't legislate integrity” (US House of Representatives, 2009), but the problem is undoubtedly worse among small operators as they have much less at stake than the brand reputation of large corporations and are simply not worth suing. Besides, unlike the employees of large food processors and wholesalers, local food enthusiasts can only ask superficial questions and can rarely if ever inspect agricultural operations.

In the end, the problems inherent to the direct marketing of agricultural products are useful reminders of the valuable contribution played by intermediaries who not only deliver greater convenience and lower price while minimizing waste, but also play a key role in establishing trust among business partners and final consumers.

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say that the issue is generally more problematic in Canada than in jurisdictions that have sought to address the problem directly such as California (see Desrochers and Shimizu, 2012).

## Myth #2: Locavorism promotes economic development

The authors of a 2015 study on the potential strengthening of Southern Ontario's food system claimed that "more than half of Ontario's \$20 billion in imported food products could be produced in the province" and that if local production was "expanded to replace even ten percent of the top ten fruit and vegetable imports, the Ontario economy would gain close to quarter of a billion dollars in GDP and 3,400 full-time jobs" (Econometric Research Limited, Harry Cummings and Associates, and MacRae, 2015).

Such a stance, however, begs an obvious the question: Why would wholesalers or retailers bother importing food from distant locations if it wasn't a superior alternative to local products? Indeed, in Canada and elsewhere retailers never refrain from offering local products when they meet their specifications and offer the best quality/price ratio. Nothing further prevents them from advertising their local origin if they believe it is worth the expense. As one Canadian employee of Gordon Food Service (GFS) put it a few years ago, "since consumers are going loco for local, now is the time to capitalize on this craze" (Gordon Food Service, 2016). In 2015, GFS competitor Sysco invited its Ontario vendors to set up a farmers' market at its Mississauga office. As could be expected, most were well-established, technologically modern, and large scale producers such as Sunset Produce, Hillside Garden, Spearit Farms, Herbman, Gay Lea Food, Exceldor Foods, and Saputo that have long served both local and (sometimes much) more distant markets.<sup>52</sup> Some large food processors and restaurant chains have also emphasized the Canadian origin of ingredients used in the preparation of their mayonnaise, potato chips, and hamburger patties.<sup>53</sup> Loblaw's "Grown Close to Home" campaign put a spotlight on "local fresh produce during harvest season." As some critics pointed out, however, local produce included Ontario peaches shipped to Western or Atlantic Canada and British Columbia blueberries and cherries shipped to Ontario and eastern Canada. Once again, these and other standard offerings were produced on large modern operations that covered hundreds and, in some cases, thousands of hectares (Weeks, 2018, April 29).

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<sup>52</sup> For instance, Ontario-based Sunset Produce is the leading greenhouse vegetable company in North America while Gay Lea Foods is the largest dairy co-operative in Ontario.

<sup>53</sup> One corporation, Hellmans Canada, even devoted some not inconsiderable resources to the promotion of local (defined as Canadian) food in general. See their short film Eat Real. Eat Local at <https://vimeo.com/5236966>.

From an economic development perspective, cheaper imports leave more money in the pockets of consumers to spend on other things, thus creating more jobs overall, both locally and elsewhere. While some painful personal or regional adjustments might sometimes be required, this process is absolutely essential to raise living standards, including those of agricultural workers, many of whom will be offered better alternatives as a result. The idea that more jobs can be created by having people pay more for essential products flies in the face of both elementary economic teachings and historical experience.

Some local food advocates and alternative local food producers will admit that their prescription comes with a price premium,<sup>54</sup> but then justify it (typically without proof) in the name of ethical or quality considerations. Claims that local food production can be more affordable or at least comparable in price to offerings from more distant locations seem to fall in two categories (Donaher and Lynes, 2017). In the first, local food was already produced profitably before activists and academics showed up and therefore does not need a buy local campaign. In the second, new producers are offering products that seemed to be priced competitively during “peak season” (Donaher and Lynes, 2017: 749). Again, there is nothing objectionable in such cases if the business is sufficiently profitable. One suspects, however, that in some cases new producers might be selling at a loss when confronted with many similar offerings at farmers’ markets, especially near closing time.

As will now be discussed in more detail, however, there is no reason to believe that alternative local food producers can deliver lower prices year round, in convenient retail settings and for similar products or acceptable substitutes.<sup>55</sup>

### *The economics of the long distance trade in foodstuffs<sup>56</sup>*

The economic incentives driving the long-distance trade in agricultural products have always been straightforward. As the French economist Anne Robert Jacques Turgot wrote in 1766, “The diversity of soils and multiplicity of wants, compel an exchange of the productions of the earth,

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<sup>54</sup> Claimed benefits typically revolve around health, ethical, and environmental considerations. See Donaher and Lynes, 2017: 747 for a number of references on this issue.

<sup>55</sup> For a more systematic review of the literature on this issue, see Mundler and Laughrea, 2015.

<sup>56</sup> For a more detailed survey of the technical literature on this topic, see Reardon and Timmer, 2012. For a broader historical perspective, see Desrochers and Shimizu, 2012.

against other productions.” He added: “The man whose land was only fit to produce grain, and would neither bring forth cotton or flax, would want linen to cloath him. Another would have ground proper for cotton, which would not yield grain... Experience would soon teach every one what species of productions his land was best adapted to, and he would confine himself to the cultivation of it” (Turgot, 1766/1793).

Turgot further observed that the division of agricultural labour itself benefitted from a wider division of labour in the rest of the economy. Food and other raw materials thus needed to be worked upon in different ways, each of which required specialized expertise that itself relied on inputs produced by other people. Wheat had to be converted into flour before it was baked into bread. Hides had to be dressed or tanned. Wool and cotton had to be spun. These processes were facilitated by inputs and production goods of all kinds that owed their existence to many other specialists. The end result was a more efficient use of resources, higher quality and lower prices for consumers:

Take, for example, the preparation of hides: what laborer could attend to all the details necessary in this operation, which continues for several months, sometimes for several years? If he could, would he be able to, for a single hide? What a loss of time, space, materials which might have served either at the same time or successively, to tan a large quantity of hides! And even if he did succeed in tanning a single hide, he only needs one pair of shoes; what will he do with the rest? Shall he kill an ox to make this pair of shoes? Shall he cut down a tree to make a pair of wooden shoes? The same thing may be said concerning all the other wants of man, who, if he were reduced to his own field and his own labor, would waste much time and trouble in order to be very badly equipped in every respect, and would also cultivate his land very badly. (Turgot, 1776/1793)

As Turgot observed, all economic actions are ultimately about trade-offs, meaning the relinquishment of one benefit or advantage for a more desirable one. In a free market the decisions by countless economic actors to buy or not to buy, or to sell or not to sell, various goods and services, result in prices that reflect the relative scarcity of physical and intellectual resources. Prices are thus a yardstick with which to compare various alternative uses of scarce resources. Profits and losses are then generated by producers and traders’ ability (or not) to deliver consumers what they want. Producers of all kind can thus only be made better off by catering



ever more efficiently to the most pressing wishes of their consumers, a perspective often described as “consumer sovereignty.”<sup>57</sup>

In the daily operations of markets, final goods that are more valuable than the sum of their inputs are produced, while goods worth less are not. The appropriate measure of a firm’s success and social worth is therefore long-term profitability. Conversely, a loss indicates that scarce resources are wasted in particular ventures and should be directed to other uses. If losses persist, inefficient producers and intermediaries are eventually relegated back to the labour market where they will be employed by other individuals possessing better entrepreneurial and managerial skills and judgement.

In the realm of food production, prices factor in, albeit imperfectly in the context of agricultural subsidies and various barriers to trade,<sup>58</sup> the opportunity costs associated with factors such as energy consumption, other production and transportation costs, and the particular geographical circumstances of a given location (e.g., climate, topography, soil, and latitude). As such, they provide a useful guide to help determine the more suitable type of production (if any) for a given location. Prices also convey important information about a much broader range of alternative uses of scarce resources, including the potential non-agricultural uses of resources such as land that could be devoted to increasing the housing, commercial, manufacturing, or infrastructure stock.

Supporters of alternative local food networks, however, typically deny or downplay the trade-offs inherent to specific geographical locations and attribute instead the rise of large monocultures to government subsidies paid out to large corporations and to abnormally cheap and plentiful petroleum products (see, among others, Scharber and Dancs, 2016). Much historical evidence nonetheless suggests otherwise. Suffice it to say that the emergence of the various “agricultural belts” that have long characterized the American landscape coincided with the development of coal-powered railroad and steamships and therefore long predated large governmental assistance to agricultural productions and petroleum-derived transportation fuels (see, among others, Finch and Baker, 1917). The significant benefits of unique geographical conditions and the creation of economies of scale will now be discussed in more detail.

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<sup>57</sup> Although the use of the term has been criticized by free market proponents, it is nonetheless useful to convey the basic idea behind it (see Murphy, 2018, April 13).

<sup>58</sup> For an overview of the problem at a global level, see OECD, 2019 and Anderson, 2016. For brief overviews of governmental interventions in Canadian agricultural productions, see, among others, Skogstad, 2014 and Rajsic, 2014, May 22.



### *Geographical advantages, economies of scale, and the high cost of alternative food models*

Although this was not their intent, the high cost of “re-regionalizing” food provisioning was made rather forcefully over a decade ago by Alisa Smith and James Bernard MacKinnon in their iconic 100-mile diet experiment. Indeed, the fact that their Vancouver apartment was located in the heart of one of Canada’s most productive and diversified agricultural and fishing regions only made their various struggles even more instructive. To give but a few illustrations, locally produced honey cost about \$11 a kilogram instead of \$2.59 a kilogram for imported refined cane sugar. Acquiring and preparing food for both immediate and later consumption, as opposed to relying on the work of food processors and other intermediaries, turned out to be comparable to holding a part time job. Needless to say, these costs would have been much higher if other residents of British Columbia’s Lower Mainland had similarly turned their back on the global division of labour and become much less productive as a result (Smith and MacKinnon, 2005 and Smith and MacKinnon, 2007).

For a variety of reasons, most alternative local food producers are committed to using less efficient production techniques (e.g., urban rooftops and vertical farms, organic methods, polyculture, and permaculture) and to growing heirloom and heritage varieties that are less productive and disease-resistant, and are more prone to spoiling rapidly. Because of this and their inability to compete directly with large conventional producers in saturated mass markets, alternative local food producers have naturally gravitated towards niche markets that cater to wealthier consumers who share similar beliefs as to the unsustainability or unhealthy character of modern plant varieties and production methods (Edge, 2013: 40).<sup>59</sup> Cases in point in the United States include Gotham Greens, Bright Farms, Green Spirit Farms, and Aerofarms that produce, in most cases in urban rooftop greenhouses, premium leafy greens and herbs for high-end retailers (Lambert, 2015; Holt, 2018). Although its product line is more varied, Montreal-based Lufa Farms’ offerings similarly revolve around niche produce, the small markets for which make them uninteresting to larger concerns (Desrochers and Brookes, 2018). Specialty potato producer Paul Brooks of Mt. Albert (Ontario) credits “the local food movement with allowing farmers to make a living by selling produce to restaurants at a fair price” (Newman, 2011). (“Fair” in such a context obviously means “higher.”) Le Select Bistro’s head chef Albert Ponzio explains that food acquired through 100km Foods “costs more, but it’s worth it.” He adds that

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<sup>59</sup> The economic logic behind this choice is discussed in more detail in Desrochers and Shimizu, 2012.

our “dinners are definitely more expensive to produce, like the pasteurized eggs we use from Mennonite farms—double the price but wonderful. To get our usual percentage is difficult, but worth it because it comes out in the flavour of the food” (Newman, 2011).

The targeting of high-end niche markets by alternative food producers is made even more necessary when food is produced in the high-cost urban environment. Indeed, it was mostly the normal workings of urban land markets that pushed many agricultural activities out of urban agglomerations at the turn of the 20th century. To summarize this now mostly forgotten history, because of the absence, inadequacy, or prohibitive costs of transportation and preservation technologies, large-scale urban food production remained a reality in advanced economies until almost a century ago. Abundant urban horse manure was then used to fertilize periurban market gardens, fields, and pastures. These, in turn, provided most of the rapidly perishable foodstuffs consumed by nearby humans and urban livestock such as pigs, chickens, rabbits, and dairy cows.<sup>60</sup> Of course, when given the opportunity, many urban households also grew a garden and kept a few animals. In time, however, cheaper imports, public health considerations, and the expansion of more profitable manufacturing and service activities confined urban food production to the realm of hobbyists.<sup>61</sup>

Unfortunately, most local food activists are unaware of this history and pay little attention to the price signals sent by urban land markets. As such, many have promoted the building of costly production facilities such as rooftop greenhouses and even more expensive vertical farms. The recent bankruptcy of many projects of the latter kind, however, is a powerful reminder that their additional costs and inherent limitations negate any potential benefits attributable to an urban location.<sup>62</sup> To summarize some key issues:<sup>63</sup>

- The cost of most urban inputs and services is typically much higher than in rural areas (land, labour, insurance, taxes, and water);

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<sup>60</sup> Urban livestock was also fed much organic household and industrial waste (e.g., brewery by-products, restaurant leftovers, human excrement).

<sup>61</sup> See, among others, Stanhill, 1977; Atkins (ed.), 2012; McClintock, Pallana, and Wooten, 2014.

<sup>62</sup> Among others, Alterrus (Vancouver), PodPonics (Atlanta), UF De Schilde (Netherlands) and Plantagon International (Sweden). See the website HortiDaily <https://www.hortidaily.com/> for brief discussions of these cases.

<sup>63</sup> For additional discussions of the subject, see, among others, Avery, 2010; Cox, 2012; Shackford, 2014; Hamm, 2015; Michael, 2017; Foley, 2018; Holt, 2018.

- The costs of building a huge number of expensive multi-story buildings that can support much greater weight than is typically the norm (i.e., growing plants requires using either water or water-soaked soil), use grow lights year-round (as opposed to taking advantage of natural sunlight when it is available), must be heated in the winter (as opposed to simply shutting down operations if unprofitable), and that necessitate much more pumping and lifting equipment than a conventional greenhouse, is typically prohibitive;
- Because of higher start-up and operating costs, along with the need to create new technologies due to unique production challenges, the food grown in vertical farms must be extremely lucrative for the operation to be profitable. The price premium asked by producers is most often justified in the name of freshness, geographical proximity, little to no use of pesticides and other alleged sustainability considerations, and the trustworthiness of the producer. Whether there is actually a demand for such expensive food outside of perhaps Manhattan and a few other extremely wealthy enclaves has yet to be proven in light of the recent wave of bankruptcies in the vertical farming business;
- Agricultural inputs and outputs from vertical farms cannot be moved using the subway and will therefore cause much additional road congestion in the vicinity of production facilities. Vertical farming proponents also seem to be unaware that most manufacturing operations left vertical structures in cities for flatter structures in the suburbs following the advent of electricity and trucking;
- Because of problems such as sunlight-deprivation and lack of wind, vertical farming is only really suitable for growing herbs and leafy greens;
- Although this should go without saying, vertical farming is especially unsuitable for smelly livestock production as the alternative to trucking animal feed into the city (e.g., a weight ratio of four-to-one in the case of pigs), dealing with animal waste using municipal infrastructure, and taking live animals to a (now typically rural) slaughterhouse is to bring in finished products (e.g., pork chops, chicken cutlets, steaks);
- Vertical farms and rooftop operations can never be as flexible as large land-based operations in rural areas where additional building construction or modifications can be accomplished much more easily. The rural operations might also mandate the nearby construction of additional processing operations if these cannot be incorporated in the original structure.

## *Distant markets and local economic development*

To our knowledge, the SOLE narrative has had no impact in cutting politically driven financial support for Canadian food exports, nor have successful Canadian food exporters been singled out as bad stewards of the Earth. Needless to say, communities where such operations are based benefit in many ways from international trade. As the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) reminds us, exporting food products beyond provincial borders helps local farmers in many ways:

### **Increase Sales and Profits**

- » Expanding into international markets gives your company a chance to increase sales and profits through new contacts.
- » Despite the added costs of exporting, you can save costs by producing on a scale that makes better use of resources (economies of scale), leading to higher profit margins.

### **Gain Global Market Share**

- » Companies can reduce dependence on existing domestic markets by expanding internationally. Exporting also helps small companies grow and become more competitive in all their markets.

### **Stabilize Market Fluctuations**

- » By expanding into foreign markets, companies are no longer held captive to economic changes, consumer demands, and seasonal fluctuations within the domestic economy.

### **Sell Excess Production Capacity**

- » By exporting, production capacity and length of production may increase, thereby decreasing average per unit costs and increasing economies of scale.

### **Enhance Competitiveness**

- » Trading in the global marketplace increases your exposure to international best practice, ideas and alternative ways of doing business – improving your chances of competing at home and overseas. (Ontario, 2019c.)

### *Urbanization, long-distance trade and economic development*<sup>64</sup>

Local food activists typically do not appreciate that economic development has never occurred without urbanization. Among other benefits, cities make possible the profitable operation of a transportation hub through which numerous firms and people can better serve a broad range of activities, both in local and more distant markets. Being located next door to diverse suppliers, customers, and creative people in general also facilitates the diffusion and development of a broader range of skills and the launching of new businesses.

The key point against locavorism, however, is that urbanization has long been impossible without substantial food imports from distant locations, something which was obvious over 2000 years ago to Plato's characters in his *Republic* when they stated that to find a city "where nothing need be imported" was "impossible" (Plato, Undated/1892). Like all predominantly rural societies, the world envisioned by locavores would unavoidably use scarce resources less productively and deliver lower standards of living than an urbanized one.

In the end, alternative local food production can only ever hope to be profitable through the production of high-end/higher-margin items that cater to wealthier than average consumers, especially those who believe in the alleged benefits of reducing food miles and in the superior nutritional value of produce grown using unconventional or old-fashioned means. This is obviously a far cry from the affordable and abundant food once promised by local food activists.

### **Myth #3: Locavorism is tastier, more nutritious and safer**

The capacity to move large quantities of food economically over geographical space has always depended on both the capacity to create mass manufacturing techniques for food containers (e.g., reed for baskets, clay for amphoras, oak wood for barrels, glass for jars and bottles, tin for cans, cardboard for boxes, and plastics for a wide range of wrapping, packing, and storing devices and applications) and economically viable means of transportation. Historically, water transportation (e.g., oceans, seas, rivers, and human-made canals) was cheaper than the alternatives and therefore used extensively. In the age of sail and small wooden ships, however, wind

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<sup>64</sup> For a more detailed discussion of this issue, see Desrochers and Shimizu, 2012.

patterns along with river and ocean currents drastically limited the number of profitable trade routes. Fortunately, in time, creative individuals developed steamboats for river navigation and screw-propelled steel steamships for oceangoing journeys. These advances, coupled with significant infrastructure projects such as the Suez and Panama canals, drastically increased speed, reliability, and route options while lowering freight rates. The 20th century saw the introduction of bunker-fuel- and diesel-powered ships and the advent of container shipping.<sup>65</sup> Meanwhile, the arrival of the railroad in the 19th century opened for commerce vast tracts of fertile lands that had been neglected because of poor access to navigable waters.

The main result of major advances in the preservation and transportation of food in the 19th century was a major break with the poor local diets of our ancestors. For instance, according to historians Frances and Joseph Gies, the diet of western medieval European peasants was not only low in calories and protein, but also often lacking in lipids, calcium, and vitamins A, C, and D (Gies and Gies, 2010). Until the mid-1800s, most Europeans remained “in a chronic state of undernourishment” while only the upper class could expect a daily intake of white bread and meat (Murton, 2000: 1412). The standard fare of an 18th century German rural labourer was “gruel and mush,” a soupy combination of grains and lentils (Collingham, 2011: 18). The diet of a typical English farm worker at the turn of the 19th century still consisted of “bread, a little cheese, bacon fat, and weak tea, supplemented for adult males by beer,” its monotony only “relieved to some degree by the harvest period” and, on good days, modest amounts of beef and mutton. Hot meals were also few, since cooking fuel was expensive. For this pittance, the labourer spent nearly three-quarters of his income, with starches such as bread accounting for the bulk of that expenditure (Clark, 2007: 38-41). In the United States, vitamin deficiency diseases such as anemia, beriberi, and pellagra were common until the 1930s (DeGregori, 2002: 93).

As the Marxist historian Jeffrey M. Pilcher observes, “when nutrition did improve for common [British] people, it came at the price of a growing distance between producer and consumer” (Pilcher, 2006: 55). This, however, was a small price to pay, for, in the words of Nobel laureate economist Robert W. Fogel and his collaborators, “in most if not quite all parts of the world, the size, shape, and longevity of the human body have changed more substantially, and much more rapidly, during the past three centuries than over many previous millennia” (Floud, Fogel, and Hong, 2011: 5). Furthermore, there is now on our planet at least one and a half overfed individuals for every malnourished one. While the problem is not insig-

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<sup>65</sup> For a more detailed introduction to the topic, see Rodrigue, Comtois, and Slack, 2013.



nificant, as the journalist Greg Easterbrook observes, “four generations ago, the poor were lean as fence posts, their arms bony and faces gaunt. To our recent ancestors, the idea that even the poor eat too much might be harder to fathom than a jetliner rising from the runway” (Easterbrook, 2004: xiv). What follows is a brief description of nutritional advances over the last century and a half.

### *Global is tastier and more nutritious*

The historian Christian Wolmar notes the “immediate and universally beneficial effect” of railroads on the diet of 19th century European and North American urban dwellers. “Almost overnight,” he writes, “fresh food became available from the countryside, which helped both farmers, who had a far wider market for their produce, and the consumers.” For instance, in France, “the consumption of fruit and vegetables by the French urban masses doubled in the second half of the nineteenth century almost solely as a result of the railways” (Wolmar, 2010). A similar process could be observed in Great Britain. As one observer commented in 1880:

Time was when [Manchester] was dependent upon Cheshire and the Lancashire bank of the Mersey for its supplies of fresh vegetables and fruits; but since the abolition of duties, improved steam navigation, and the more complete development of the railway system, no spot upon the earth’s surface appears sufficiently remote to deprive the teeming population of these districts of its productions... Diminished crops in this country from whatever cause no longer mean higher prices for the consumer. Abundance in any part of the world will flow into the scarcity of any other as surely as air rushes into a vacuum. (Page, 1880: 475)

Despite these advances, however, as late as the 1920s more than three million acres of good agricultural land in the American Midwest went uncultivated because the cost of moving crops by horse and wagon was greater than the value of the grain (Ridley, 2010: 141). This problem was solved through the development of trucking, which would also eventually gain market shares at the expense of the railroad.<sup>66</sup>

Apart from opening up new fertile lands to food production, transportation advances paved the way for larger and more efficient food processing operations that could generate significant economies of scale

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<sup>66</sup> For a more detailed discussion of the topic, see Hamilton, 2008.



by operating year round, but only because they received inputs from many different regions. A classic case was the development of the Chicago meat-packing district in the second half of the 19th century, the sheer scale of which made it possible to create by-products out of what had previously been waste.<sup>67</sup> The same logic is at work today in many large processing plants the world over, which is why some local products are often shipped some distance to be inspected and transformed, before a portion of these agricultural products returns to its geographical area of origin. In short, with the development of the global food supply chain, consumers were given access to a more diverse and affordable diet that contained more fresh produce and animal products than before.

Needless to say, however, geographical proximity in itself is insufficient to assume greater freshness. For instance, local items picked up a few days before being sold at nearby farmers' markets cannot be inherently superior to an identical item picked further away, but closer to the selling date, and preserved and transported using more advanced technologies. Be that as it may, most locavores are oblivious to the fact that their claim that local freshness is key to superior taste and nutrition is self-defeating. After all, barring massive investments in energy-guzzling heated greenhouses, fresh food is only available for short periods of time each year in temperate climates, whereas our globalized food supply chain delivers "permanent summertime" in the produce sections of our supermarkets.

Another problem for locavores is that large food retailers insist on "pre-cooling" much produce, something that not all small scale producers can afford to do, an example of the fact that modern packaging and refrigeration technologies have come a long way in terms of preserving nutritional values over time (Barrett and Lloyd, 2012). Produce grown specifically for freezing and canning by large concerns is also typically picked in its best state, something to keep in mind because "depending on the commodity, freezing and canning processes may preserve nutrient value" better than refrigeration (Rickman, Barrett, and Bruhn, 2007: 930). Some canned products (such as peaches) might be just as nutritious as fresh items, while others (such as canned tomatoes) are actually more nutritious because the cooking process makes them more easily digestible (Durst and Weaver, 2013). If there is no simple correlation between freshness and nutritional value, there is one between long-distance trade and the year-round availability of fresh produce.

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<sup>67</sup> The meat-packing industry got its name from the practice of early settlers of curing, smoking, and packing pork domestically, a practice that was later commercialized. See, among others, Desrochers and Leppälä, 2010.

Another inconvenient truth for locavores is the fact that the fortification of food items ranging from milk and butter to salt, flour, and pasta can be accomplished much more effectively and cheaply (especially if vitamins and minerals are produced in large volumes) through large-scale facilities that serve a large customer base. Food imports can also be crucial for people who suffer from food allergies (e.g., celiac disease, lactose intolerance) if adequate substitutes are not available locally.

In the end, though, the real problem of the locavore's stance on nutrition is that while human consciousness might care about the geographical origins of food items, human bodies don't. From a physiological perspective, what matters about food is that it provides sufficient proteins, calories, vitamins, minerals, fiber, and other nutritional benefits. The cheaper, more diverse, and more abundant it becomes because of the globalized supply chain, the more human health will benefit. Were the locavores' rhetoric to become government-enforced policy, humanity would not progress towards a new system built around heirloom produce varieties and increased freshness, but rather regress towards the grain- and potato-based diet that our ancestors escaped from, for the priority of local food eaters in a less productive system would have to be, as it was back then, caloric intake over quality, diversity, and taste.

### *Bigger is safer*<sup>68</sup>

Far from being benign or inherently healthy for human beings, nature is replete with countless dangerous bacteria, viruses, and microbes that are all around us (e.g., salmonella, listeria, norovirus, campylobacter, and *E. coli* O157:H7). As the agricultural economist Dennis Avery observes, “[s]almonella bacteria are pretty much everywhere, and always have been,” from lettuce, spinach, peanut butter, and unpasteurized juices to ground beef, live chicken, and eggs. The USDA has never tested a cattle herd for *E. coli* O157:H7 without finding it and dangerous type of *E. coli* have also been found in wild pigs, mice, coyotes, cowbirds, and crows (Avery, 2010).

Fortunately, comparatively recent advances—from proper canning, pasteurization, refrigeration, and water chlorination to sanitary packaging and food irradiation, along with greater scientific understanding of problematic agents and the development of ever more efficient countermeasures—have helped eradicate once widespread foodborne illnesses and have made our modern food system by far the safest in human history.<sup>69</sup>

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<sup>68</sup> For a more detailed discussion of the issue, see WHO, 2015.

<sup>69</sup> For a brief history of advances in this respect in the United States in the 20<sup>th</sup> century, see Centers for Disease Control and Prevention, 1999.

Because many different agents can contaminate food and because different diseases have various symptoms, however, food safety at both production and processing sites is a complex issue that easily lends itself to much mythmaking among non-specialists. The data on the topic, however, are straightforward. In the United States, deaths from foodborne illnesses have dropped by perhaps as much as 100-fold since 1900 (Bailey, 2006, September 29). Less advanced economies, however, remain problematic (hence the care over food intake that tourists from advanced economies must display when visiting them). According to a recent report of the World Health Organization, there are “considerable differences in the burden of foodborne disease among subregions delimited on the basis of child and adult mortality,” with the most dangerous places on Earth being Africa and Southeast Asia, where diarrhoeal disease agents, salmonella, and other completely natural bacteria, viruses, parasites, toxins, and chemicals have not been brought under control (WHO, 2015). As food policy analyst Robert Paarlberg put it, several hundreds of thousands of people die every year from food- and water-borne diseases in Africa where “many foods are still purchased in open-air markets (often uninspected, unpackaged, unlabeled, unrefrigerated, unpasteurized, and unwashed),” versus only a few thousand in the United States (Paarlberg, 2010, April 26).

Unfortunately, as the economist Thomas DeGregori observed nearly two decades ago, too many food activists equate “preservatives with contamination and microbes with health” and are obsessed with the pesticide-residue molehill while ignoring the germ mountain (DeGregori, 2001: 90). Many locavores also fail to acknowledge that food safety is a more serious concern in small rather than massive food production and processing operations, if only because smaller operations can never possibly assemble the same quality of equipment and food safety know-how as larger firms. True, large operations are not perfect and from time to time major food recalls do occur. The perception that food is becoming less safe, however, is largely driven by increased reporting of smaller outbreaks that were detected through recent technological advances. In other words, greater media coverage about food safety issues is not a result of more significant problems than in the past, but of the greater ease with which they can now be detected and acted upon.<sup>70</sup>

There can be little doubt, however, that the food offerings available in a locavore world would be more dangerous to our health than is presently the case. A case in point is a 2011 listeriosis outbreak that killed 33 people in the Mountain West region of the United States. The guilty party turned out to be a “pesticide free” and “four generation strong” Colorado

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<sup>70</sup> See, among others, Williams, Scharff, and Bieler, 2010.

family-operated cantaloupe farm that had benefited from the “buy local” campaigns of large retailers in its area (e.g., King Soopers, Safeway, Wal-Mart, and Sam’s Club).<sup>71</sup> As the food industry blogger Jim Prevor (otherwise known as the “Perishable Pundit”) observed at the time, the food safety science for cantaloupes was pretty clear and operators at Jensen Farms had done the exact opposite of what safety protocols mandated in order to deliver more appealing cantaloupes to retailers. He then went on to observe that “whatever the specific cause of this outbreak, the more general cause is the local food movement. More specifically, the willingness of large buyers [such as Wal-Mart] to waive food safety standards so they can buy regionally.” “The priority,” he says, “can be safe or the priority can be local, but it cannot be both” (Prevor, 2011).

What is true for produce is also valid for livestock. Indeed, at the time of the listeriosis outbreak, there was no shortage of stories about small food producers having poisoned their customers because of badly designed production operations or the inability to afford the kind of safety measures and equipment commonly found in large and technologically advanced productions.<sup>72</sup> For instance, unlike small cage-free farms, large confined egg-producing operations can not only better protect laying hens from predators, soil-borne diseases, and extreme temperatures, but the health of confined animals can be monitored more closely at lower unit costs. Modern operations also use various systems, such as screens through which feces fall so that they are not walked on or eaten, and conveyor belts that move feed and eggs without being touched by human hands, that smaller operators often cannot afford. While no system is perfect and operations of all sizes can be badly managed, large producers and processors have both the means and the incentives to develop sophisticated food safety protocols as, unlike CSA or farmers’ markets operators, they are both protective of their brand(s) and worth suing.

There is also no doubt that large supermarkets are inherently safer for consumers than farmers’ markets which are, in most cases, temporary outdoor events with few facilities and whose vendors have, in general, received only the most basic training in food hygiene. Perhaps we would all be better served by heeding the warning of Welsh health experts that “given the restricted facilities at farmers markets and the early phase of implementation of hygiene management systems by market traders, it may be precautionary to restrict the sale of farm products at farmers markets

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<sup>71</sup> From the Jensen Farms website available at the time (CDC, 2012, August 27).

<sup>72</sup> See, among others, Goessl, 2011 and Smith, 2010. For more recent Canadian cases, see the public health notices webpage of Public Health Canada (<https://www.canada.ca/en/public-health/services/public-health-notices.html>) and the CDC webpage on food outbreaks (<https://www.cdc.gov/outbreaks/>).

to those that are regarded as low-risk” (Worsfold, Worsfold, and Griffith, 2004: 109).

The claim that local food is inherently safer than similar items purchased in countries with less stringent health and environmental regulations is also questionable, for the real issue is how, not where, the food is produced, processed, shipped, and preserved. While there are no ultimate guarantees anywhere, large-scale producers in foreign countries are visited by various purchasers and inspectors while food shipped to advanced economies is regularly inspected at large transit points. Exporters also have greater economic incentives for shipping good products because having these items rejected would cost them more due to the additional shipping costs than if they sold them in their home market. Export operations established by or working with producers in poorer parts of the world typically implement state-of-the-art technologies which are then implemented in the domestic market. Paradoxically, food produced by small operators and sold at local farmers’ markets in advanced economies rarely if ever undergoes the same level of scrutiny.

Last but not least, the locavore’s fondness for re-introducing livestock in the urban environment can also present significant public health risks. For instance, once ubiquitous chicken coops disappeared from urban backyards because of public health concerns such as salmonella and zoonotic diseases, to say nothing of the nuisance of bad smells and their propensity to attract predators (Atkins (ed.), 2012).<sup>73</sup>

Of course, improved transportation and food preservation technologies do not explain all positive trends; advances in sanitation (e.g., improved water supplies, sewage systems) and medicine (e.g., antibiotics, disinfectants, hand washing, and sterilization in hospitals) obviously played their part. Yet, many infectious diseases that plagued previous generations, especially those afflicting children, were made worse by calorie, protein, mineral, and vitamin deficiencies. Furthermore, other technological advances would not have been developed if numerous people had not been given the opportunity to leave the farm and pursue other occupations.

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<sup>73</sup> For a concise discussion of other problems inherent to the keeping of backyard chickens, see McWilliams, 2013.

## Myth #4: Locavorism increases food security

### *Famine in historical perspective*<sup>74</sup>

As the geographer Brian Murton observes, famines have plagued humankind for at least 6,000 years and scholars and chroniclers have long used them to “slice up history into manageable portions” (Murton, 2000: 1412). Some famines could be traced back to human actions such as wars, ethnic and religious persecutions, price controls, protectionism, excessive taxation, and lack of respect of private property rights. Other were attributable to natural factors such as unseasonable heat or cold, excessive or insufficient rainfall, floods, insect pests, rodents, pathogens, soil degradation, and epidemics that made farmers or their beasts of burden unfit for work.<sup>75</sup> Not surprisingly though, most famines had more than one cause.

According to a conservative estimate, the Roman Empire suffered through at least 25 major and countless local famines. Chinese inhabitants suffered an average of perhaps 90 famines per century in the last 2000 years. For instance, between 1333 and 1337 approximately six million people died of starvation in the Middle Kingdom whereas perhaps as many as 45 million perished in the first half of the 19th century. Japanese people suffered on average one year of famine out of seven between 600 AD and 1885, with the last major famine to hit the islands occurring in the 1830s (Saito, 2002). Over two millennia, the Indian sub-continent experienced approximately one famine per five years, with a major famine every half century (Loveday, 1914). In 11th and 12th century England, famine struck on average every 14 years. In France, historian Fernand Braudel counted “ten general famines during the tenth century; twenty-six in the eleventh; two in the twelfth; four in the fourteenth; seven in the fifteenth; thirteen in the sixteenth; eleven in the seventeenth and sixteen in the eighteenth.” One of these in the winter of 1709 caused the death of one out of every 20 inhabitants. Of course, Braudel adds, these numbers omit “the hundreds and hundreds of local famines” (Braudel, 1992: 74).

Before resorting to cannibalism, starving people would consume so-called “famine foods” such as wildlife, grass, leaves, bark, clay, dirt, and leather that were typically turned into cake, paste, soup, or ashes. In Ireland, traditional famine foods included fungi, seaweed, nettles, frogs, and rats. In Hawaii, weeds, ferns, and roots were on the menu while in Sweden

<sup>74</sup> For a more detailed yet concise introduction to the topic, see Murton, 2000. Unless otherwise specified, numbers in this section are taken from Murton’s chapter.

<sup>75</sup> Of these factors, drought is generally thought to have been the most significant (see Ó Gráda, 2009).



it was the inner bark of birch and straw.<sup>76</sup> As the historical record clearly shows, the crop diversification strategy of subsistence agriculture communities could never overcome the fact that they were condemned to put all their production eggs in one regional basket.

What ultimately delivered most of humanity from widespread malnutrition and famine was long-distance trade. In an essay written in 1768 promoting the liberalization of grain markets, the French economist and ecclesiast Nicolas Baudeau observed that even though no grain production took place in the heavily urbanized Netherlands, freedom to trade had long eradicated famine in the region. Similarly, grain never ran out in the free trading Republic of Genoa where no grain production took place. By contrast, government restrictions in the Papal States and Sicily insured that these polities, once significant grain producers, were by then struggling to feed themselves. The basic truth about food security, Baudeau argued, was that when freedom to trade was taken for granted, “les accidents se compensent entre les royaumes” (shocks cancel one another across kingdoms) (Baudeau, 1768: 44).

Many later commentators made a similar observation. For instance, in 1856 the British writer George Dodd observed that in the “days of limited intercourse, scarcity of crops was terrible in its results; the people had nothing to fall back upon; they were dependent upon growers living within a short distance; and if those growers had little to sell, the alternative of starvation became painfully vivid” (Dodd, 1856: 27). In his *Annals of Rural Bengal* published in 1871, the Scottish historian and member of the Indian Civil Service William Wilson Hunter noted that an important set of preventative steps against famines included “[e]very measure that helps towards the extension of commerce and the growth of capital, every measure that increases the facilities of transport and distribution... [and whatever tends] to render each part [of a country] less dependent on itself” (Hunter, 1871). More recently, the economic historian Cormac Ó Gráda concluded that “the historical record suggests that the integration of markets and the gradual eradication of famine are linked” (Ó Gráda, 2009: 157).

Another problem is that because of their lower productivity, past local food systems could only support a much smaller fraction of the human brains, capital, and sophisticated division of labour later made possible by large monocultures and international trade. Because people are not only mouths to feed, but also hands to work and brains that think of new solutions, the most market-oriented and urbanized societies have therefore

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<sup>76</sup> The premier online resource on the topic is the anthropologist Robert Freedman’s “Famine Foods” website: <https://www.purdue.edu/hla/sites/famine-foods/>.



always been the best fed.<sup>77</sup> As one anonymous commentator observed in an 1889 issue of the *Westminster Review*:

As population grows, instead of production being less per head, statistics clearly prove it to be greater. The intelligence which is fostered in large communities; the advantages of the division of labour; the improved transit, which increases in efficiency with an enterprising people in proportion as numbers become large, and is impracticable until population has developed – are more than a match in the competition of production for any advantage a thinly scattered community may in some respects gain on a virgin soil. Malthus and his followers, while bringing prominently forward the needs of an increasing population, keep out of view the increasing means of supply which the additional labour of greater numbers will produce.... and so long as there are a pair of hands to provide for every mouth, with intelligence and energy ample production is assured, unless society erects artificial barriers by means of its laws regarding the distribution of wealth. (Anonymous, 1889: 287)

### *Locavorism and food insecurity*<sup>78</sup>

Thanks to global specialization and exchange, humanity currently enjoys its highest level of food security in history and perennial worries like food shortages and famines are now confined to the least developed and more conflict-prone parts of our planet. Despite this progress, however, food activists periodically blame too much—as opposed to too little—“neoliberal globalization” for problems such as malnutrition in less advanced economies and international food price spikes. Their preferred solutions typically revolve around managed trade, the reaffirmation of national sovereignty, and increased local food production (Mousseau, 2010).

Apparently unaware of the historical evidence on this issue, locavores typically take their cue from environmentalist icons such as Rachel Carson who argued that under “primitive agricultural conditions the farmer had few insect problems” and that those arose with the “devotion

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<sup>77</sup> For much evidence to this effect, see Desrochers and Szurmak, 2018.

<sup>78</sup> Substantial debates between increased reliance on local productions or world markets go back to the birth of modern economic theory. See Ó Gráda, 2015, chapter 3. For recent takes on this issue, see, among others, Hebebrand and Wedding, 2010, and McCorriston et al., 2013.

of immense acreage to a single crop” (Carson, 1962/2002: 10). Several activists also believe that because they must be inherently more diversified, local food systems are more resilient to pests and diseases than export-oriented monocultures. In times of rapidly rising commodity prices, political turmoil, all-out war, or sudden decline in the demand for a particular crop, they add, vulnerable communities will be better served by nearby producers.

Defenders of agribusiness and trade liberalization, on the other hand, reply that there is currently (and can only ever be) enough food to go around *because* of modern food production technologies and long distance trade, and that the vast majority of today’s malnourished people are subsistence farmers and rural landless labourers without easy access to international food markets. Locavores also typically fail to appreciate the greater resiliency of a globalized food system, where regions that experienced bad harvests can easily tap into the surplus of others.

In the end, the claim that monocultures and long-distance trade are more serious threats to food security than a regionalized alternative food network can only be sustained in the absence of broader economic development (which provides other income opportunities if local agricultural productions become problematic), long distance trade (including multiple suppliers and the movement of agricultural commodities when there is a local food shortage), and labour mobility (which makes emigration a realistic possibility when other options fail).

For truly food insecure people—quasi-subsistence farmers in the least economically developed parts of the world—the problem is not too much globalization in the food sector, but not enough.

## Myth #5: Locavorism heals the earth

In a 2008 *National Geographic* article, journalist Charles C. Mann discussed how centrally planned soil management policies in communist China led to the creation of terrace agriculture in unsuitable conditions, the cutting down of trees, and the planting of grain on steep slopes. The results were massive soil erosion and depletion. Daring to challenge official edicts, some villagers replanted the steepest and most erosion-prone third of their land with grasses and trees, covered another third of the land with harvestable orchards, and focused their cropping efforts on the remaining lower flat plots that had been enriched by the soil washed down from the hillsides. By concentrating their limited supplies of fertilizer on the best land, Mann tells his readers, dissident villagers were able to increase yields to such an extent that they more than made up for the land sacrificed,

in the end delivering both increased output and reduced environmental impact (Mann, 2008).

Although there is obviously more to this story, the two political processes (i.e., top-down and bottom-up) and outcomes described by Mann are to some degree microcosms of the environmental impact of forced locavorism on the one hand, where local land must be brought under cultivation to feed the local population, versus the spontaneously evolved global division of agricultural labour where food production is concentrated in the most suitable locations. These very different outcomes were well summarized over a century ago by the Marxist theorist Karl Kautsky when he observed that “as long as any rural economy is self-sufficient it has to produce everything which it needs, irrespective of whether the soil is suitable or not. Grain has to be cultivated on infertile, stony and steeply sloping ground as well as on rich soils” (Kautsky, 1899/1988: 254). Fortunately, Kautsky added, in time the 19th century transportation revolution, increased commodity production, and overseas trade removed the need “to carry on producing grain on unsuitable soils, and where circumstances were favorable it was taken off the land and replaced by other types of agricultural production” such as orchards, beef cattle, and dairy cows (Kautsky, 1899/1988: 254). A brief overview of the environmental state of the agricultural world before the advent of modern agri-business will add additional perspective on these dynamics.

### *Agricultural production and environmental degradation before the age of agri-business*

Although largely forgotten today, many prominent environmentalists in the early decades of the 20th century constantly decried the impact of what was a *de facto* mostly local and organic food production system.<sup>79</sup> In a 1939 synthesis of this literature titled *The Rape of the Earth: A World Survey of Soil Erosion*, British writers Graham Vernon Jacks and Robert Orr Whyte stated that “as the result solely of human mismanagement, the soils upon which men have attempted to found new civilizations are disappearing, washed away by water and blown away by wind” and that the “destruction of the earth’s thin living cover is proceeding at a rate and on a scale unparalleled in history, and when that thin cover – the soil – is gone, the fertile regions where it formerly lay will be uninhabitable deserts” (Jacks and Whyte, 1939: 21).

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<sup>79</sup> For a more elaborate discussion of this issue and additional references, see Desrochers and Hoffbauer, 2009.

In his 1948 *Road to Survival*—the biggest-selling environmentalist book until the publication of Rachel Carson’s *Silent Spring* in 1962—American ornithologist William Vogt argued that, with rare exceptions, man had “taken the bounty of the earth and made little or no return.” Where he had not lost water and soil, he had “overgrazed and overcropped, and by the removal of animals and plants, [had] carried away important soil minerals, broken down the all-important soil structure, and generally exhausted the environment.” Civilizations were at risk for “[f]ire, the ax, the plow, and firearm have... in some of the most fertile and productive regions of the earth... raised the environmental resistance to such a height that the carrying capacity has been brought nearly as low as that of the Gobi or the tundra of Siberia.” Further, “[h]undreds of millions of acres of once rich land” had become “as poor as – or worse than – the city gardener’s sterile plot.” Population growth and wealth creation had in the end delivered “[d]espoiled forests, erosion, wildlife extermination, overgrazing, and the dropping of water tables” (Vogt, 1948: 33, 110, and 284).

In the same year, Vogt’s close friend, the conservationist Henry Fairfield Osborn Jr., published his book *Our Plundered Planet* in which he warned that environmental destruction would soon prove even more deadly than the Second World War, for “man’s destructiveness has turned not only upon himself but upon his own good earth – the wellspring of life.” Osborn deemed American agricultural production one “great illusion” for the “story of our nation in the last century as regards the use of forests, grasslands, wildlife, and water sources is the most violent and the most destructive of any written in the long history of civilization.” It was even futile to cling “to the feeling [that] there must be some continent where the relationship between man and nature is not out of balance.” Indeed, man’s “avoidance of the day of atonement that is drawing nearer as each year passes” meant he had to learn “to work with nature in understanding rather than in conflict.” Failure to change would not only “point to widespread misery such as human beings have not yet experienced,” it would also, in the end, threaten “even man’s very survival” for humanity had “now arrived at the day when the books should be balanced” (Osborn, 1948: 5, 11, 43, 75).

Another prominent eco-catastrophist voice at the time was the Indian academic, population control activist, and public servant Sripati Chandrasekhar who commented in 1954 that the North American agricultural surpluses had been “obtained at the cost of the longevity and perhaps the very life of the land itself” and that throughout most of the world “forests are not being used on a sustained-yield basis; they are being inexorably wiped out. Grasslands almost everywhere are being overgrazed. Water tables are falling; rivers are overflowing and changing their courses.

Nature is losing her balance. Man's ignorant and destructive hand has set the ball of disaster rolling" (Chandrasekhar, 1954: 215).

In hindsight we know that the pessimists were wrong and that improved inputs and strategies (e.g., contour plowing, windbreaks, legume fallow crops, mulching and alley cropping, deferred and rotational grazing, drip irrigation, no-till agriculture, and re-vegetation) took care of what were essentially localized problems (Desrochers and Hoffbauer, 2009). Indeed, thanks to the modern production package known as the "Green Revolution" (which included not only improved varieties of wheat and rice that could thrive with additional water and fertilizer, but also in time over 8,000 new seed varieties of crops ranging from barley and millet to sorghum and cassava), agricultural productivity drastically shot up in locations once believed to be on the brink of ecological collapse. For instance, wheat production was increased six-fold in Mexico between 1946 and 1963 and tripled in India between 1965 and 1980 while rice production during the 1970s increased by 37 percent in Indonesia and by 40 percent in the Philippines (University of Minnesota College of Agriculture, Food and Environmental Sciences, 2011; Robbins, Hintz, and Moore, 2010: 20).

Despite past successes, however, in the following decades the ecocatastrophist "erosion rhetoric" was periodically revived in Canada, the United States, and elsewhere, only to be proven wrong once again.<sup>80</sup> Interestingly, erosion is still viewed as a significant problem in parts of our planet that have not been affected to any significant degree by agribusiness and modern production practices. Environmental scientist Steve Banwart thus wrote a few years ago in the prestigious journal *Nature* that our "planet's soils are under threat, as witnessed in the past decade by dust-bowl conditions in northwest China, the desertification of grasslands in Inner Mongolia and massive dust storms across north-central Africa. Soil losses in some locations around the world are in excess of 50 tonnes per hectare in a year: up to 100 times faster than the rate of soil formation. In other words, we are losing nearly a half-centimetre layer of this precious resource per year in some places" (Banwart, 2011). While these facts may be true, as in the past, a satisfactory solution to these problems will have to include more long distance trade in agricultural inputs and products.

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<sup>80</sup> For a typical alarmist report, see Canada, Standing Senate Committee on Agriculture, Fisheries and Forestry, 1984. For a broader academic view on the subject, see Dotterweich, 2013.

### *Food miles to nowhere*

Producing food in the most suitable locations reduces the need for a wide range of inputs. For instance, exporting food from locations where water is abundant to consumers who live in regions where it isn't removes the need to drain surface waters and aquifers in the latter areas. Grazing livestock on the best pasturelands reduces the need for supplementary animal feed. Growing produce in locations where nature provides plenty of heat reduces the need for carbon fuel-heated greenhouses in colder locations. Planting apple orchards in dryer climates typically reduces the need for fungicides during the growing season.

Another non-controversial proposition is that producers and consumers use less transportation fuel overall when large quantities of food are delivered efficiently by rail and truck to large retail locations than when multiple consumers drive around a lot more to pick up small quantities of food from multiple producers.

In short, the long-distance trade in agricultural products and modern distribution practices result in more affordable and greater quantities of food while reducing environmental impact. Fears of losing valuable agricultural land to urban sprawl is therefore mistaken. Indeed, environmental scientists Jesse Ausubel and Iddo Wernick have documented and theorized that humanity might have already reached "peak farmland" (Ausubel, Wernick, and Waggoner, 2013), meaning that productivity gains in agriculture in recent decades have been such that a growing population will be able to meet its needs while using much less agricultural land overall.

Although they are quick to indict modern agricultural practices for their alleged environmental externalities, local food activists never compare today's problems to those that existed in the past, nor do they explain how a less efficient use of resources will prove beneficial for the environment. Many also still cling to the discredited notion of "food miles" as a proxy for the greenhouse gas emissions of food productions. Yet, as has been repeatedly and rigorously documented in numerous life cycle assessment (LCA) studies, the distance from farms to final consumers is meaningless in terms of the overall environmental impact of food production, processing and retail (see figure 3).<sup>81</sup> Among other issues, producing food typically requires much more energy than moving it around, especially when significant amounts of heating and/or cold-protection technologies, irrigation water, fertilizers and pesticides, and other inputs are required to

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<sup>81</sup> LCA analysis examines the environmental impacts associated with all the stages of a product's life cycle, from raw material extraction to disposal of the finished product. For a short survey of the best work on this issue, see Desrochers and Shimizu, 2012.



**Figure 3: Agricultural Chain: Scope, Player, Input**

SCOPE	PLAYER	INPUT
1. Raw material for production	Farm ↓	Seed, land, fertilizers, water, herbicides, pesticides, etc.
2. Production		Capital (machinery, facility buildings, etc.)
3. Packaging		Energy (fuel, electricity, oil) Labour
4. Distribution	Supply chain ↓	Storage Waste Transportation Labour
5. Consumption	Consumer ↓	Transportation Preparation Waste
6. Disposal	↓	Recycle Waste Transportation

Source: Desrochers and Shimizu, 2008: 8.

grow things in a nearby region, but not in a more distant one. In such circumstances, reducing food miles typically implies a greater environmental footprint because of the use of additional inputs.

Another well documented consideration is that the distance travelled matters less than the mode of transportation. For instance, moving things halfway around the Earth on a container ship often has a smaller footprint per item carried than a relatively short distance ride by pick-up truck to deliver produce from an alternative farm to urban farmers' markets. While imperfect because of subsidies, quotas, and barriers to international trade, market prices nonetheless factor in most relevant environ-

mental trade-offs as additional inputs typically imply additional costs. This is why, among other things, the higher production costs of vertical farms also reflect the fact that they have a much greater environmental footprint per unit of leafy vegetables than conventional greenhouses (Holt, 2018).

Advances in transportation and conservation technologies have also historically produced a shift from producing, storing, and consuming local foodstuffs throughout the year—a situation that resulted in much waste and increasingly less appealing products as the months went by—to the consumption of increasingly diverse and fresher products shipped from regions located at different latitudes, in the process delivering greater variety and quality, less waste, and lower prices. To give but one illustration, in Manchester (United Kingdom) in 1880, the first new potatoes seen on the market were of French origin and “always dear.” In May, the supply came first from Cornwall and the Scilly Isles (southwestern tip of the Cornish peninsula) and soon afterwards from Jersey (English Channel). These were then followed by “Ormskirk Pink-eyes” from South Cheshire. Later supplies came from both banks of the River Mersey and Northwest Lancashire. Finally, throughout the winter, large quantities of potatoes were supplied from Yorkshire, Lincolnshire, and Scotland (Page, 1880).

Needless to say, over time, supply regions became ever more distant from final consumers. In recent decades the southern hemisphere, where seasons are inverted (meaning that summer months in the southern hemisphere coincide with winter months in the northern hemisphere), has played an increasingly important role in supplying northern markets when local produce is not in season. For instance, importing New Zealand apples in the northern hemisphere in April rather than preserving local apples picked in September in controlled atmosphere storage for several months delivers fresher items while reducing both storage costs (attributable to factors such as higher than normal CO<sub>2</sub> concentrations and maintaining lower than ambient temperatures to inhibit spoilage or higher than ambient temperatures to prevent freezing) and losses to spoilage.<sup>82</sup> Of course, the reverse shipping routes are also busy and one can even find Italian kiwis in New Zealand at certain times of the year. The result is again greater volume, diversity, and affordability, but also better taste and reduced waste due to ever shorter storage periods.

To the extent it takes place in a competitive setting, modern agriculture is always about getting more and better output from fewer inputs. It is puzzling that local food activists genuinely believe in doing the opposite instead of clamouring for greater trade liberalization and the end of price-distorting subsidies and quotas.

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<sup>82</sup> In controlled atmosphere storage, the sealed environment is around 2 percent oxygen and temperature, humidity, nitrogen, and carbon dioxide are all carefully regulated.

## Conclusion

Upon visiting Paris in the middle of the 19th century, the economist Frédéric Bastiat marveled at the spontaneous provisioning of the French metropolis:

I said to myself: Here are a million human beings who would all die in a few days if supplies of all sorts did not flow into this great metropolis. It staggers the imagination to try to comprehend the vast multiplicity of objects that must pass through its gates tomorrow, if its inhabitants are to be preserved from the horrors of famine, insurrection, and pillage. And yet all are sleeping peacefully at this moment, without being disturbed for a single instant by the idea of so frightful a prospect. On the other hand, eighty departments have worked today, without co-operative planning or mutual arrangements, to keep Paris supplied. How does each succeeding day manage to bring to this gigantic market just what is necessary – neither too much nor too little? What, then, is the resourceful and secret power that governs the amazing regularity of such complicated movements, a regularity in which everyone has such implicit faith, although his prosperity and his very life depend upon it? That power is an absolute principle, the principle of free exchange. We put our faith in that inner light which Providence has placed in the hearts of all men, and to which has been entrusted the preservation and the unlimited improvement of our species, a light we term self-interest, which is so illuminating, so constant, and so penetrating, when it is left free of every hindrance. (Bastiat, 1845/1996)

In later decades, relative freedom to trade and technological advances of all kinds in the production, processing, preservation, and transportation of agricultural products further eroded dependence on the local foundations of humanity's food supply. One major breakthrough was the development of the so-called "cool supply chain" and later advances in home refrigeration. Reflecting on the geographical impact of these advances, the economic geographer Malcolm Keir observed in 1921: "Cold storage has lengthened the distance and time from bush to can, and now the enthusiasm over vitamins promises a new release" (Keir, 1921: 84). Eight

years later, the food writer Gove Hambidge wrote more colourfully: “It is because of the modern science of refrigeration, of course, that we now get good fresh meat and poultry the year round at points far distant from production centers... Now we have achieved the blessing of cold, along with the blessings of heat and of light. We can eat what we please, when we please, from wherever we please. We can outwit the insidious bacterium, and outdo the magician’s hat with a refrigerator” (Hambidge, 1929: 103).

Indeed, by the 1920s, the US food production and distribution system was sufficiently sophisticated to supply lettuce and tomatoes year-round while oranges, bananas, and lemons were sometimes shipped over 4,000 miles (Freidberg, 2009: 9). Long distance transportation was then associated with progress and the world’s best offerings. In the 1930s the candy, chocolate, and restaurant chain Schrafft’s proudly advertised that the fresh grapefruit, oranges, and strawberries in its fruit cocktails had cumulatively traveled 7,800 miles to its New York City locations while the components of its vegetable salad had racked up more than 22,250 miles (Freidberg, 2009: 9).

Yet, despite the seemingly obvious benefits of an increasingly globalized food supply chain, rural challenges, a sense of community loss, and fears of increased political and strategic vulnerability triggered a range of counter-reactions at the time, from a back-to-the-land movement to autarkic policies in communist and fascist regimes (see, among others, Baker, Borsodi, and Wilson, 1939). Although now mostly couched in environmental terms, 21st century local food rhetoric still undoubtedly taps into these more primal emotions. Whether several decades ago or now, however, uncompetitive local food promoted solely for its geographical origins can only deliver a world in which poverty, environmental damage, food insecurity, and diseases are more prevalent than is presently the case. Contra locavorism, more voluntary long-distance trade and ever improving technologies that deliver more real value (as opposed to unsupported claims) for money remain the only *proven* ways to lift large numbers of people out of rural poverty and malnutrition.

In the end, what enthusiastic locavores ultimately fail to understand is that their “innovative” ideas are up against regional advantages for certain types of food production, economies of scale in food production, processing, transport, and safety, and the absolute necessity of an ever more sophisticated division of labour for economic development. These unavoidable realities defeated even very sophisticated local food production systems in the past and condemn their well-meaning initiatives to failure. The sooner locavores redirect their efforts toward real agricultural problems—from costly production subsidies to international trade barriers—the better humanity and the planet will be.

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