Chapter 12: Local Food and Industrial Large Scale Production

Andreas Håkansson

Many local and regional food consumers state their intention to support local communities as the motivation behind buying local or regional food. This chapter compares this view to an economic perspective of what creates value and prosperity in a community. The economic perspective is generally less optimistic of the benefits of local or small scale production. However, as seen towards the end of the chapter, local and regional food producers still have an important role to play on the food market by adopting suitable strategies.

There has been a forceful drive towards local and regional foods during the last decade, as has been discussed at length in the preceding chapters. This can be described as an increase in the demand for regionally or locally - and often small scale - produced food over globalized industrial large scale food production. The drive towards local and regional food in the South Baltic Region has also received support from governments and the EU through the support for research projects, regional development funds and through promoting local food among its citizens.

The growing emphasis on local and regional foods is not without its critics, especially when it comes to government support for local food over conventional food production, see Desrochers and Shimizu (2012) for a comprehensive review. It could be argued that all publically funded support of specific goods is a way of forcing citizens to participate in the consumption of that good, regardless of their personal preferences. Given that all government activities are funded by taxes, even consumers without an interest in local food are contributing to government promotion campaigns. If local and regional food does offer substantial objective advantages over conventional food products, this could be justified; this is how we often motivate publically funded campaigns, for example, against smoking and binge drinking. As previously discussed, consumers state a variety of reasons for consuming local foods: they perceive it as healthier, tastier and more environmentally friendly. However, there is no scientific consensus on locally produced food actually having these effects. Studies show no evidence for local food being more nutritious or ethical than conventional food (Edward-Jones, 2010; Desrochers & Shimizu, 2012). Furthermore, the distance between food producer and consumer is a poor measure of environmental impact (Edward-Jones et al., 2008). Producing food closer to the consumer will reduce the “food mileage”, but distance between producer and consumer needs not be the determining factor. Long-distance transport in freighter ships has a much lower per kilometer and per kilogram food emission footprint than short-distance transport on half-full trucks or in the cars of individual consumers. Life-cycle analysis, attempting to take all relevant factors into account, even shows that large scale production with lengthy transport can lead to lower
emission levels than local food production in relevant cases (Schlich & Fleissner, 2005).

Another common motivation for buying local is that it supposedly supports the local community. Consumers wish to support local farmers and businesses, and thereby the local economy.

This chapter will explore to what extent buying local and regional food is a meaningful way of supporting the local community from an economic perspective. Furthermore, the implications on local and regional food production will be discussed. However, before drawing any conclusions we must first start very generally and discuss the differences between self-sufficiency and markets, and the effect of trade and specialization.

Figure 1. Good versus Evil? Regional sausages produced in small scale (left), and industrially produced candy bars (right).

Comparative advantages and the story of Ask and Embla

Allow me to introduce Ask and Embla, two isolated individuals living in a very remote part of the South-Baltic region. They know only two foods, potatoes and fish. Both Ask and Embla would, if possible, like to eat both fish and potatoes every day. Basically, they have two options, either Ask and Embla both work half their time as farmers growing potatoes and half as fishermen, or each specialize in one and trade with one another. If Ask is better than Embla at growing potatoes (i.e. he can either harvest more potatoes per hour spent in growing them, and/or the

27 Yes, this will be one of what Marx (1887) spitefully referred to as the “Robinsonades” of economics... The most famous example of using “Robinsonades” for making this argument is the bow maker/hunter example from Smith (1776).
potatoes produced are perceived as having higher quality) and Embla is better than Ask at fishing, it is advantageous for both to specialize in their field of expertise. If Ask grows potatoes and Embla fishes, the total amount of food produced per day would be larger than if each attempted to be self-sufficient. Alternatively, they could spend less time on producing food and more time in leisure. By trading they could then distribute the potatoes and fish between one another according to whatever principle they decide and enjoy both potatoes and fish. In the hypothetical situation described, Embla and Ask have what economics calls *absolute advantages* in fish and potatoes respectively. It is easy to understand the advantage of each in specializing in their field of absolute advantage and then trade. Ask has no reason spending an hour fishing when he could instead obtain more fish by growing potatoes and trading it for fish with Embla and, equivalently, Embla has no reason growing potatoes when she can obtain them more easily by trading for them using fish. The same reasoning can be applied to argue the mutual advantage for both Swedes and Costa Ricans in, respectively, specializing in apples and sugarcane and trading, instead of both attempting to be self-sufficient in the two goods: Swedes can obtain more and better quality sugar by producing apples and trading them for sugarcane-sugar and Costa Ricans can obtain more apples by trading for them by producing sugar.

However, what if Embla was better than Ask at both growing potatoes and fishing? What would be most beneficial method of production then? It can be shown that both could still be made better off by specializing in one of the activities. Let us, in order to be less abstract, assume that Embla can grow 10 potatoes when Ask can grow 8 and that Embla can catch 10 fish to Ask’s 4. Note that Embla has absolute advantages in both goods. However, she is relatively better at fishing than at growing potatoes in comparison with Ask, therefore she has what economists refer to as a *comparative advantage* in fishing, he is, relative to Embla, better at producing potatoes than fish. Similarly, Ask has a comparative advantage in growing potatoes compared to fishing. If Ask and Embla specialize in their respective fields of comparative advantages they will together produce 10 fish and 8 potatoes, and this is the maximum amount of food they could collectively produce. As a comparison, if each of them spent half the day at each activity, they would produce 9 (10/2 + 8/2) potatoes and 6 fish (10/2 + 4/2). It is a good exercise to try other alternative ways of allocating their time and ensure that there is no other option that gives a larger total production. In summary, even if one of them is better than the other in every field of work, there is an opportunity for both to be made better off by specializing and trading in comparison to remaining self-sufficient.

What implications does this now have on local and regional food production? Now assume that Ask lives in rural Latin America and Embla in a South-Baltic city. In Embla’s city, there is an old university, renowned for advances in paper technology and in Ask’s community there is long experience of sugar cane production. Embla and her co-citizens demand sugar for their coffee and have two alternatives, either they buy sugar cane sugar from producers in Ask’s community, or buy sugar beet sugar locally. Would Embla support her local community by buying local?
According to the discussion above, the answer is no. Embla’s community has a comparative advantage in high technology paper products (e.g. diapers, printed electronics, sanitary pads etc.) and Ask’s community has a comparative advantage in sugar production – note that this is true even if the farmers outside of Embla’s town would actually be able to produce sugar at a lower cost than the producers in Ask’s community (compare to the example of Ask and Embla producing potatoes and fish). Therefore, both communities could be made better off by specializing and trading. From this perspective, Embla would actually risk harming her local community and economy by buying locally. More people could be employed in the paper technology if fewer worked in farming, and, since the paper products can be traded at a higher price, it allows Embla’s community to obtain more of the goods the citizens value, or, alternatively, allow them to work less\(^{28}\). Ask and his community have even more to gain from specialization and trade since it can be assumed that their material standard of living is lower; obtaining more and better quality food could have an important effect on life expectancy and child mortality, and consequently have objectively beneficial effects for the citizens there. Ask and his countrymen would obtain more resources for their community by producing goods in which they have a comparative advantage than if they tried to start their own advanced paper technology industry. The extra resources obtained by specializing in sugar cane production can be used in any way they see fit: increasing consumption, for expanding the education sector, or for advancing the sugar cane industry to make it even more competitive for the future, for example by expanding it into biotechnological production using sugar cane as substrates. It could even be argued that the high technology paper industry in Embla’s country has arisen from such expansions of the once low-technology lumber industry.

Unemployment and creative destruction
The perspective offered in the previous section is contrary to conventional wisdom, and some would even go so far as to describe it as contrary to empirical evidence. Wherein lies this contradiction? For Embla, this is rather obvious. If she and her countrymen decide to buy their sugar from Ask and not from the local farmers, the local farmers will experience a decrease in the demand for their products, and local food prices will decrease until farmers can no longer make a living out of farming and eventually will have to leave the agricultural sector altogether. They might be forced to sell the farm where they have lived for generations, ending up without employment. This is probably what Embla is trying to prevent by buying local. The economist Joseph Schumpeter (1883-1950) has described this consequence of specialization and trade as creative destruction. It is “destruction” since it destroys old sectors of production, making old knowledge obsolete or forcing people into unemployment, yet it is also “creative”, since it is the underlying driving force in changing production systems towards higher-end products that allow improved standards of living. The unemployed farmer can move to the city and get a job in

\(^{28}\) It is often believed that work time continues to increase in our modern specialized and industrialized world, however, empirical evidence clearly show a continuous increase in leisure over work in modern societies with high degrees of specialization (Rones et al., 1997; Håkansson, 2014).
the factories of the paper industry and, instead of becoming farmers, his sons and daughters can study at university to become the highly-skilled engineers needed in paper technology. Schumpeter, and many contemporary economists, therefore argue that although the short-term effects of not buying local might seem harsh, it is economically advantageous in the long run. It should be emphasized, however, that the term “advantageous” does not necessarily equal increased profit, higher wages or even more money to the local community, but rather a situation where consumers themselves subjectively describe themselves as better off. The technical term is “economic efficiency” and is defined as a state where no single individual can be made (subjectively) better off without someone else becoming worse off. Economic historians often argue that the creative destruction of feudal agriculture in Europe and the flow of people to the emerging industries in the 1700-1800s was one of the most significant driving forces for understanding the subsequent increased standards of living (e.g. decrease in child mortality and increase in life-expectancy) (Rosenberg & Birdzell, 1987; Clark, 2009).

**What is the use of large scale food production?**

Comparative advantages and creative destruction explain why communities could have much to gain, at least in the long run, from specializing and trading instead of buying locally. But then again, does this also explain why food production must be carried out in the large industrial scale we have become used to?

Large scale production has economic advantages. This could be partly understood by returning to the story of Ask and Embla and the value of specialization. Large scale production allows workers to specialize in small tasks. Each worker can become a specialist in this small task and perform it more effectively than if they were forced to be a generalist, knowing a little about everything. Economists describe this as the effect of *economics of scale*, meaning that the cost per unit produced, or the quality of each unit at fixed cost, can increase if firms are larger. This might stem from cost reduction, e.g. from buying raw-materials in bulk, from having a proportionally smaller division for marketing, human resources or management. Larger firms also have the possibility to fund and drive large scale innovation projects, which could give advantages in more cost-effective or quality-consistent processing.

There are several specific examples of where large scale food processing can result in higher quality products due to the technological sophistication of processes employed. Notable examples (Fellows, 2009) are high temperature pasteurization which is more effective against pathogens yet less harmful to vitamins than the pasteurization that can be obtained using small scale equipment. Another example is in freezing technology. Industrial freezing often preserves food structure better than home freezing due to the lower temperatures and faster freezing methods employed in comparison to home freezers.

**Monopolization of the food market**

Many local and regional food advocates agree that economies of scale effects reduce production costs, however, they often argue that the reduced cost is not always carried on to the consumer. The advantage of large scale processing would then
mainly benefit the owners of these large scale food industries rather than consumers.

Assuming that the food market is fully competitive, each producer will set prices marginally above the production cost. Any producer setting a higher price will be out-competed and any producer setting a lower price will make heavy losses and eventually go bankrupt. Accordingly, the question as to whatever cost savings of large scale industries are advantageous to consumers is a question of the extent to which the food market is truly competitive. When producers become sufficiently large, they risk creating something close to a monopoly - becoming the sole provider of a good or service on a market. A monopolist will claim the entire value of the cost reductions themselves since they lack the competitive pressure to lower prices accordingly. The potential for increasing profit by growing large and becoming monopolistic was realized by many US firms in the early 1900s. Firms such as Standard Oil and Carnegie Steel, through mergers, became dominant in their respective industries and tried to leverage their size in setting monopoly prices (Rosenberg & Birdzell, 1987). However, it has been argued (Scherer, 1980) that they were never successful in this, a sufficient number of new entrants were always there to apply competitive pressure, and the profits these large trusts made were largely due to cost reduction through economics of scale rather than through exercising monopoly power.

Just as in oil and steel markets in the early 1900s, modern food production and retail have large firms. However, as long as there is a sufficiently number of smaller firms to challenge them, it could be argued that they would not be able to use their size in order to exercise monopoly power, but rather in cutting costs through economics of scale. In that case, in large scale production, the associated cost cuts translate directly into lower consumer prices or higher quality at constant prices, which must be considered good news for consumers.

\textbf{The good news}

When having read thus far in the chapter, local and regional small scale food production does not seem very advantageous from an economic perspective, yet it would be a mistake to interpret this as being that economists perceive no value whatsoever in local and regional food producers.

Classical economics put a large emphasis on the consumer’s right to decide what they prefer, without placing any judgement in terms of needs or what is beneficial for societies as a whole. In addition, economists often see producers as highly responsive to consumer demands. Therefore, if consumers value local food because they perceive it as more nutritious or beneficial to the local economy, producers will provide it and economics will pass no moral judgement.

Economists have also identified some objective advantages and niches for the type of producer usually associated with local and regional food. Large scale production and specialization offers, from a business management perspective, some challenges, particularly to agriculture. A self-employed craftsman has greater incentive in working hard than a worker employed and paid an hourly wage. Interests might
differ between workers attempting to conserve energy for more fulfilling leisure activities and their employers, who are trying to make them work harder to increase output or quality. Employers have traditionally solved this by monitoring workers. However, this is more difficult in agriculture than in other areas because of the considerable geographical area agricultural workers are dispersed over in large scale farming. Organizing agriculture through small self-owning farms could thus be beneficial from a societal perspective.

A more compelling (and more modern) argument for the importance of small scale processing is that these firms can be better suited to fill important strategic gaps that are less accessible to larger firms. The cost reduction offered by large scale industrial production is only one of the three classical business strategies originally asserted by Porter (1980). A strategy more suitable for small scale producers is differentiation. The large firms obtain their cost advantage by producing in large scale, hence, they will focus on large consumer groups and widely demanded products. This often leaves smaller niche markets unserved. Smaller firms therefore can step in and offer goods and services to these smaller groups. By supplying specialized goods closely adapted to what the specific segment requests, the distance between what the individual consumer demands and what the firm supplies can be reduced, making consumers willing to pay higher prices. This allows smaller firms to survive without having the low production costs of larger firms. Local and regional food can be seen as a niche market for consumers who put value in buying directly from small producers, and adhering to a differentiation strategy thus offers a compelling option for this sector.

As the local and regional food trend shows us, sometimes what that starts out as a small niche market may grow to be so successful that it significantly influences larger firms. If the demand for local and regional food continues to increase, it might bring about the creative destruction of the industrial food producers and globalized food industry, at least in affluent parts of the world where many consumers could afford the subsequent marked increase in food cost.

More realistically, large scale industrial production and small scale local and regional food production will continue to co-exist, since they both have their advantages and disadvantages in the eyes of the consumer. Consumers are rarely able or to, or interested in, determining the long-term effects of their consumption choices, and there are no apparent reasons why the pessimistic view of the economic perspective should influence the growth of the market for local or regional food.

**Summarizing the economic perspective**

In summary, economic analysis offers little support for the view that buying local or regional food does have an objectively positive effect on the local economy. In fact, it could be argued that the effect is reversed. Specialization in the sector of comparative advantage (i.e. high technology production for many South-Baltic regions) and trading for food produced on an industrial scale, should according to this perspective, hold higher potential for giving us more and/or higher quality food than promoting local and regional food production.
However, from an economic perspective, no moral judgement is passed on consumers demanding local and regional food. The fact that demand for local and regional food exists creates potential for small producers to be successful in the food market, especially when adopting a differentiation strategy, focusing at delivering products that meet the demand of this niche market.

- From an economic perspective, buying locally is not always advantageous for the local communities. Consumers and producers could be made better off by specializing in their field of competitive advantage and trading to obtain other goods and services.
- Large scale processing offers the possibilities of reducing prices at and/or increased quality. As long as food markets are competitive, this results in lower food prices for consumers, or higher quality at constant prices.
- Despite the objections raised, small scale local and regional food producers have a gap to fill in modern food markets, particularly by adopting differentiation strategies and serving demands from niche markets left unserved by larger firms.
References


