

If Not Here, Where? Analyzing the Economics of the Willamette Valley's Local Food Movement

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Abstract

Advocates of the local food movement claim that it serves to reduce greenhouse gas emissions, improve food safety and quality, strengthen local economies and enhance social capital. With this study, we critically review the ambiguous definition of local food and the economic challenges within the movement that prevent these outcomes from occurring everywhere. We use the Willamette Valley as a case study to show that without resolving these economic issues, the local food movement cannot flourish to its full potential. We conclude by providing insights into what research can be done next to address potential economic challenges and how it is necessary to take a

more subjective, critical look at the local food movement in order to achieve long term community and environmental sustainability.

Local Food in the Willamette Valley

The local food movement has been gaining rapid momentum in recent years. Although the concept of eating locally grown food is nothing new, the local food movement has gained popularity and the term has worked its way into the vocabulary of producers and consumers globally. The swift spread of this movement has brought a whirl-wind of excitement but a severe lack of a clear definition. This poses a problem to many of those who follow the movement because of the ambiguity and unclear boundaries that guide local food. Definitions of the local food movement range from all-encompassing designations, explaining that it is a source of sustainable development, consumer confidence, and a cultivator for a more ecological agricultural future (Ilbery et al., 2010), to more narrow characteristics of people and communities promoting the value and benefits of consuming locally grown food (Cunningham, 2011). As defined in terms of eco-localism or local economy, the local food movement seeks to preserve local natural capital as well as local social capital which can only be accomplished by those who have an intimate relationship and knowledge of the area (Curtis, 2003). Other definitions attempt to provide specific boundaries, with geographic limits by citing a specific mileage radius. Although this attempts to provide specific boundaries and guidelines for the movement, not everyone uses the same geographic distances. Without common distances, the definition continues to be uncertain (Blake et al., 2010; Coit, 2008; Connelly et al., 2011; Martinez et al., 2010; Zepeda & Li, 2006). Within the literature, there is no single definition of the local food movement, but the most prominent definition says that it is a collaborative effort of people and communities to build more locally based, self-reliant food economies, incorporating sustainable food production, distribution, and consumption (Cunningham, 2011; DeLind, 2011).

Although no singular definition of local food or the local food movement exists, it is clear that the movement is focused around developing more sustainable forms of agriculture, consumption, and building a self-reliant food economy. According to the USDA, the sale of local food products increased by twenty percent since 1990 and it is

predicted to continue growing (USDA, 2005). To ensure the continued growth of this movement, it is important to examine and understand the relationships that can affect the success of any part of the local food system (Dahlburg, 1993). One aspect that greatly impacts the success of this movement is its economic stability. Despite the recent triumphs of local food, there are a number of economic challenges that threaten the success of the movement. Based on our research and definition of the local food movement there are four major economic challenges to the movement including consumer purchasing choices, the capitalist model of our society, exports, and economies of scale. Using the Willamette Valley as a case study, we will examine the extent to which the economic challenges will affect the local food movement's future.

The Willamette Valley: a case study

The study area that we have chosen to concentrate on is the Willamette Valley in Oregon. Located in the northwest region of the state, between the coastal mountain range and the Cascades, the Willamette Valley stretches approximately 11,500 square miles (Giombolini et. al, 2011). It consists of 10 counties: Benton, Clackamas, Columbia, Lane, Linn, Marion, Multnomah, Polk, Washington and Yamhill (Giombolini et al., 2011; ODA, 2009). The average population per county is 273, 428 and the total population of the Willamette Valley is 2,734,284, a relatively high population density considering the U.S. Census Bureau suggests that the population of all residents in Oregon was 3,825, 657 in 2009 (cite US Census Bureau).

Due to the rich soils, water availability and a temperate climate which receives steady rainfall from December to February followed by a drier summer that accounts for only five percent of the annual precipitation, the Willamette Valley is a highly productive agricultural center (Giombolini et al., 2010). The basin has a history of Ice Age floods, which carried massive amounts of sediments to the area, making the soil extremely fertile (Orr, 1964). The region produces over 170 different crops, including large-scale grain production and specialty crops such as hazelnuts and blackberries (Giombolini et al., 2010).

Of the 38,000 farms recorded to be present in 2009, with a 425 acre average size, 80% of them were 180 acres or less and 60% were 50 acres or less (Giombolini, 2011). Despite these figures and the growing capabilities of the region, it should be noted that a few large industrial farms account for most of the production, farm acreage, and revenue in the Willamette Valley. This is shown in a 2007 report, which found that 7.1% of farms produced 85.7% of annual agricultural sales in Oregon and occupied 48.5% of Oregon's farm acreage (Giombolini, 2011).

Effects of Consumer Behavior on the Local Food Movement

Consumer behavior is one of the challenges to the local food movement. If food activists and other local food promoters want to converse about the economic challenges of the local food movement, it will be vital for them to look at particular purchasing behaviors to see if consumers will "buy in" to the local food movement. Consumer behavior, which is determined by spending habits and tendencies, can be broken down into two parts: consumer willingness to purchase certain products and consumer ability to purchase certain products. The willingness of a consumer to buy a product is different from the ability of a consumer to buy a product because in one case, a consumer may have enough money to buy a product but chooses not to, while in another case, a consumer does not have enough money to buy that product. Consumer willingness is represented by consumer preference, while consumer ability is determined by socioeconomic status. Together, consumer preference and socioeconomic status account for consumer behavior.

One factor that influences consumer behavior is consumer preference. How does consumer preference influence consumer behavior? Consumer preference reflects the willingness of a consumer to purchase a product based on the perceived benefits to the consumer. It is usually associated with the idea of substitutes; products that may have similar function or purpose, but are marketed differently (Hall & Lieberman, 2010). Consumers will choose one substitute over another according to their preferences. This is important when considering whether a consumer will choose a local product over its substitute, which will most likely be an imported one. Thus, consumer preference determines whether a consumer buys a specific product or not.

Zepeda and Li did a study that looked at consumer preference for local food products. They find that certain consumers are interested in buying local foods and that there are specific factors that influence their decision-making (Zepeda & Li, 2006). Specifically, consumers who practiced gardening or consistently shopped at health food stores had a higher probability of buying local than those who didn't (Zepeda & Li, 2006). Additionally, the authors found that consumers who regularly purchased organic food had a high probability of buying local food (Zepeda & Li, 2006). We see that consumer preference, in this case for buying organic food, results in these consumers preferring local foods.

Yue et al. (2011) conducted a study similar to Zepeda and Li but instead looked at consumer preference for organic, local or sustainable ornamental plants and garden starts. The authors used a survey amongst a set of consumers and discovered that consumers are highly interested in these locally produced, non-edible products (Yue et al., 2011). They also found that consumers who spent more of their money on organic food products were also more interested in locally grown and organically grown plants than consumers who didn't (Yue et al., 2011). They attribute this finding to consumers' willingness to be good stewards of the environment by supporting local economies and local farmers (Yue et al., 2011). It's evident that the consumers in this study who purchased locally grown plants perceived the benefits to be useful to them. Also, the consumers who usually purchased organic food had a preference for it over non-organic food (Yue et al., 2011). This preference then carried over to influence their decisions to purchase locally grown plants over non-locally grown plants.

Understanding consumer preference is an economic challenge because getting consumers to "buy in" to the local food movement is crucial to strengthening it. When it comes to food purchases, it may be difficult to change the common consumer preference for the cheapest food available, which generally constitutes imported, non-local products. With newspapers full of super-saver coupons, and the superfluous hype of "holidays" like Black Friday, it seems that the modern day consumer is wired to be as thrifty and price savvy as possible. It could even be argued that the preference for cheap food is a shopping habit that is ingrained into the typical, ordinary consumer. Although the literature mentioned above doesn't specifically address local food, we can

still relate consumer preference to being a challenge of the local food movement. The local food movement, unlike other social movements, is a financially-dependent campaign. It is unlike the civil rights movement of the 1960's or the current Occupy Wall Street sensation of 2011, where protesters used their voices and not their wallets. It's a movement where participation requires a purchase. If consumers do not understand its importance or are not thoroughly convinced to change their spending habits, the local food movement will not receive sufficient financial support and end up a trifling matter. Thus, we attest that consumer preference, as part of consumer behavior, poses as an economic challenge to the local food movement.

Another factor that influences consumer behavior is socioeconomic status. We referred to this earlier as being a determinant of consumer ability to purchase products. Socioeconomic status, as we see them, is indicated by annual household income along with other possessions of value such as real estate and stocks. So how does socioeconomic status influence consumer behavior? Socioeconomic status determines budget constraints, which in turn in affects a household's ability to make certain expenses. Households that are trying to best manage their money will, in most cases, consider their budget constraints for their expenses. On the one hand, households with higher socioeconomic statuses will have larger budget constraints and greater consumer ability to buy products. On the other hand, households with lower socioeconomic statuses will have smaller budget constraints and lower consumer ability to buy products. Lower consumer ability to buy products and smaller budget constraints impel these households to be more thrifty. In fact, Miller (1998) argues that thrift is a reinforced social value that ultimately depends upon household status. Households with larger incomes will undoubtedly have larger budget constraints than households with smaller incomes.

A study by Leibtag and Kaufman (2003) compared low, medium and high-income household spending on food to better understand consumer behavior. In the study, low-income households are defined by a total annual income fewer than \$25,000, medium-income households between \$35,000 and \$49,999, and high-income households greater than \$50,000. The authors found that low-income households spend fewer dollars on food than higher income households, likely because of their more restrained

budgets (Leibtag & Kaufman, 2003). The authors noted that these types of households tended to economize by purchasing discounted foods, choosing generic brand products over brand name products and buying their products in bulk, as opposed to single units (Leibtag & Kaufman, 2003). Conversely, the results of their survey show that high-income households tended to economize less than low-income households. A look at meat expenditure data shows that low-income households expend \$81.04 per person while high-income households expend \$86.19 (Leibtag & Kaufman, 2003). Fruit expenditure data shows a similar trend, with low-income households expending \$26.90 per person and high-income households expending \$31.70 per person (Leibtag & Kaufman, 2003). These data indicate that high-income households have greater flexibility with their budgets than low-income households. It also shows that socioeconomic status affects budget constraints, and that these constraints affect a consumer's ability to purchase certain foods.

In the Willamette Valley, the median household income in 2009 was \$51,155 (U.S. Census Bureau, 2009). With that, of the ten counties that make up the Willamette Valley, four of them had median incomes of less than \$50,000 (U.S. Census Bureau, 2009). In the previous study, this would put the majority of the households in the high-income bracket. With this we can conclude that consumers in most of the Willamette Valley counties have a high flexibility with their budgets, giving them greater ability to participate in the local food movement.

However, other studies have said that socioeconomic status doesn't matter. Zepeda and Li argued that socioeconomic statuses were not dominant factors when it came to the consumption and purchasing of local food (Zepeda & Li, 2006). They instead argued that attitudes toward food and shopping were principal in local food consumption, primarily being the enjoyment of cooking. There are some problems with the way these studies were conducted. One weakness in this study was that the authors limited the definition of local food to food purchased at farm stands, directly from farmers, at farmers markets, or by CSA membership (Zepeda & Li, 2006). This definition is narrow and eliminates much of the possible range of consumers who possibly want to purchase local food but do most of their shopping at grocery stores.

Another study, by Stephenson and Lev (2004), asserted that consumers bought local food because of the quality of the food as well as social and economic reasons. The study compared two cities in the Willamette Valley: Corvallis and Albany. The study indicated that consumers purchased local agricultural products in hopes of supporting local farmers and that they were willing to pay a premium for local products (Stephenson & Lev, 2004). This study also claimed that education level and income were not significant nor were they indicators of support for local food. However, age was found to be associated with the likelihood of purchasing local food and was the least profound with the age groups of 21-29 and 65-86 (Stephenson & Lev, 2004). The 30-64 age group was found to be most likely to buy local food (Stephenson & Lev, 2004).

The authors did not address this finding with much thought, and this can be seen as a flaw in their conclusion. Contrary to their argument, we believe that local food consumption was lower in the age groups of 21-29 and 65-86 because of socioeconomic status and income. People that fall in the 21-29 age group are likely to be college students or early-career wage earners. College students have low-incomes, if any, because most are spending their time studying or with part-time, low-paying jobs. Early-career wage earners haven't had many opportunities for pay raises and thus are likely to have lower salaries than wage earners who have worked longer for a firm. People that fall in the 65-86 age group are likely to be retired and face more medical expense than the other age groups. Retired folk receive no income and live on retirement funds, unemployment benefits and applicable capital gains. People in this age group who are still working probably face higher medical expenses than the younger ages simply because of old-age complications that require costly medications. In either of the two age groups, it appears that there is less money available to spend on food than the 30-64 age group due to the above circumstances. Perhaps then, our argument that socioeconomic status matters can explain why Stephenson and Lev (2004) found the 30-64 age group to be most interested in local food. We believe consumer ability is lower in the 21-29 and 65-86 age groups than in the 30-64 age group. This lower consumer ability makes it harder for these age groups to participate in the local food movement, especially when there are cheaper, non-local substitutes

available. Other studies have tried to argue against the claim that affluence determines whether a person buys local food, but often times fall short due to small sample sizes, random sampling errors and failure to address data that can disprove those arguments.

Consumer ability, which results from socioeconomic status, poses as an economic challenge to the local food movement because households that cannot afford the price of local foods due to their budget constraints will not be able to participate in the movement. Socioeconomic status currently makes the local food movement exclusive to those who can spare the money. If people are unable to participate in the local food movement, it will be difficult to make it a wide-ranging and inclusive movement.

Local Food Within a Capitalist Market

Upon closer examination of the local food movement, it's apparent that in the context of our capitalist society, local food is fundamentally inconsistent with the dominant economic model. Capitalism is rooted in the promotion of growth and exploitation for the sake of efficiency and profit, whereas local food is focused around decentralization, just communities, and sustainability above considerations of revenue or expansion. Due to the production, processing, and distribution costs associated with local food, in order for the long-term integrity of the local food movement to be sustained, it cannot be solely defined by profit margins (Curtis, 2003). Because of the inherent conflict of these two systems, and the lower operation costs of industrial food systems consistent with the capitalist model, local food must create its own niche market based around its comparative advantages over industrial agriculture.

The centrality of efficiency to large-scale industrialized agriculture has resulted in the availability of artificially cheap food and excessive portions to consumers, two characteristics the local food movement is unable to provide (Martinez, 2011). However, due in large part to the ambiguity of the "local" designation, many large corporations have been able to co-opt the local food label and integrate it into their capitalist model. Buying local has become trendy for consumers and has therefore been appropriated as a marketing strategy by corporations like Wal-Mart in order to serve the capitalist goals of increasing profits (Delind, 2011).

The appropriation of “local” has caused the local food movement to aggressively seek out characteristics that are unique to the non-corporate, grassroots model in order to compete with the cheaper industrialized “local” business. As a result, the local food movement has departed from many of its original goals (Delind, 2011). This divergence has been referred to as the “local trap” (Born, 2006). The premise behind the local trap is that local food is often conflated with ideas such as sustainability, social justice, democracy, better nutrition, food security, freshness, or quality (Born, 2006). Because of this conflation, local food is assumed to be inherently and universally good, which leads consumers to forgo assessing local food for its empirical benefits, instead assuming that it is in the best interest of the community and environment.

Local food has the potential to be equally unsustainable, input intensive, and inequitable as any other food production method due to concepts mentioned throughout this paper such as economies of scale, food miles, and cost. Mariola explores the energy consumption of local food through transportation, which he concludes is “no less reliant upon society’s fossil-fueled industrial infrastructure than that of long distance foods” (2008, p. 194). Additionally, he notes that in light of economies of scale the energy use of local food is likely higher per unit than that of large-scale production of long distance food (Mariola, 2008, p. 194). Other costs discussed by Mariola that are not factored into the price of local food include road maintenance and consumer travel to farms (2008, p. 195). Mariola’s concluding critique is that the local food movement continues to operate within the capitalist model of buying more instead of encouraging personal production or reduced consumption and remains equally dependent on the “fossil-fueled matrix of production and locomotion which envelopes the economy of the industrialized world” (2008, p. 196). In this way, local food fails to achieve the original goals of the movement and instead perpetuates a system that emulates the dominant one.

The converse of the local trap argument is that global and large-scale agriculture is also unjustly “conflated with a capitalist, industrial and ecologically destructive food system,” when in reality neither model can be simplified in such a way (Born, 2006, p. 199). Ultimately, consumers must remain critical of their food and approach local food

as a potentially effective means toward the core goals of sustainability, social justice, and economically beneficial practices, rather than an end in and of itself.

The looming threat of the local trap is as applicable to the Willamette Valley as it is in any community promoting local food. Co-optation of the concept of local is not specific to any place, and is therefore experienced within the Willamette Valley. Similarly, residents and local food providers must be careful of conflating local food with broader sustainability goals.

Additionally, the Willamette Valley is a major exporter of grains and grass seed. The transition from the production of export crops toward that of edible crops is a solution to the food miles dilemma. However, the question remains: is it more economically and environmentally sustainable to replace export crops with local edible crops or do the benefits of revenue and comparative advantage in the grain and grass seed markets outweigh the cost of lower edible local crop availability?

Economics of Exports

Exports play a considerable role in determining the success of the local food movement. Exports are products that are sold to markets outside of local markets, typically to another country. For understanding exports in relation to local food however we will include exports to be products sold outside of the region to other states, counties, regions, etc. Hall and Lieberman (2010), who are both respected economists, write about the role of exports in an economy. They argue that exports allow producers to enjoy greater production and higher standards of living than if they choose to be self-sufficient and hold on to all of their surpluses (Hall & Lieberman, 2010). They also argue that it is more productive and efficient for producers to specialize in products that they can produce the most of and then trade their excess away for profits. This action is also known as “Specialization and Trade” (Hall & Lieberman, 2010, p. 496). Thus, we claim that “Specialization and Trade” is the decision of a producer to export his products.

Exports can be limiting to the success of the local food movement by way of reducing the availability of local foods in supermarkets and other stores. If food crops aren't kept within a growing region and sold to local markets, how are consumers who are willing to buy local foods going to access them? Exports act as barriers to the

movement by limiting the amount of variety and availability of local foods that consumers can have access to. Thus, we look at the role of exports from two perspectives. The first perspective is that exports affect the availability of local foods in the Willamette Valley. The second is that producers in the Willamette Valley will face opportunity costs should they switch their current agricultural production from mainly non-edible crops to edible ones. The farmers and growers of the Willamette Valley, seen as producers, will face significant opportunity costs should they decide to grow crops that aren't best suited for the growing environment.

It is important to look at the current production and selling behavior of farmers to see if they have the ability to sell to local markets and provide desirable products to consumers. Selling behavior will be determined by opportunity costs of producing alternative goods and the profitability of exports. Opportunity costs of producing alternative goods determine what a producer will grow and profitability of exports determines where and who a producer sells to. Collectively, opportunity costs and profitability of exports account for where a producer decides to sell their products and what they choose to produce.

Many farmers who aren't contracted by food corporations will have an uncertainty of selling all their harvests. An exception to this is Community Supported Agriculture (CSA), where community members pay farmers in advance for a certain amount of their harvests (Schnell, 2007). But, farmers who are under contracts with corporations can sell and export most of their harvests to their contracted corporation to ensure that they make profits (Schnell, 2007). Global markets have a higher willingness to pay because they do not have the comparative advantage of producing certain goods, for example grass seed in the Willamette Valley. In the United States the price of wheat in 2010/2011 was \$209 per metric ton whereas the price in Argentina was \$302 per metric ton showing the profitability of exports in specifically the wheat market.

In one article Ram (1985) argues that exports contribute to economic growth and that the importance of exports has increased dramatically since the 1970s, as global markets became closer and closer to each other. Utilizing economic data of less developed countries (LDCs), the author looks at the correlation between mean annual growth and mean annual increase of exports (Ram, 1985). Incorporating regression

analysis and statistical reasoning, she finds that the mean shares of exports of LDCs in 1960-1970 was 25.8 percent and rose to 30.7 percent from 1970-1977 (Ram, 1985). In this study it is apparent that export markets have risen due to the economic growth that they enable producers to acquire. While this article is not directly related to the local food movement or the Willamette Valley, it does show how useful an export market can be for an economy.

According to a study by Oregon State University (2000), "Oregon's eight agricultural sectors generated more than \$5.5 billion in exogenous demand, contributing 8.2 percent of the state's total export base in 1993" (OSU, 2000, p. 13). Thus, it seems that exports are important drivers of the Oregon agricultural economy. The study continues to note that "significant portions of crop sales are to foreign markets," and the financial potential of exports depends on the strength of foreign economies (OSU, 2000, p. 20). Giombolini et al. (2011) also concur that a large percentage of Oregon crops are exported to other international markets, as 92 percent of the wheat produced in Oregon in 2006 was exported. The current export market for Oregon wheat is primarily to Asian markets (Giombolini et al., 2011). Agricultural exports are a large part of the Oregon economy and because of low prices in Oregon and the United States, farmers are practically forced to sell their goods to foreign markets.

All of these examples demonstrate the profitability of exports and how it affects the decisions that producers make when they sell their products. While not directly related to the local food movement, the profitability of exports plays a part in hindering the local food movement. This is a challenge to the local food movement because farmers will need to export less of their products elsewhere and sell more of their products to local markets. If the availability of local foods is low, consumers will have a difficult time using their dollars to support the local food movement.

In economic terms, an opportunity cost is "what is given up when taking an action or making a choice," (Hall & Lieberman, 2010, p. 2). This term can be applied to the actions of farmers when they are deciding what to grow, which in most cases would be the most profitable crop. A profit-maximizing farmer, which most likely constitutes the majority of the farming population today, will choose to produce and sell products at a minimum cost, which includes minimum opportunity cost. Thus, many farmers will grow

crops with the highest productivity so that they can maximize their profits (Conway, 1997).

An example of this would be the extremely profitable grass seed industry of the Willamette Valley in Oregon. This industry is an exceptionally profitable sector of the regions' economy and grossed over \$275 million in 2003 (OSU, 2004). The article shows just how well grass seed grows in Oregon, as evident by the 655 million pounds of cool-season grass seed crops grown in the state in 2003 (OSU, 2004). Given the data from the article it is apparent that many growers and farmers in Oregon, specifically the Willamette Valley, are choosing to specialize in producing grass seed. A likely reason why so many pounds of grass seed were produced in 2003 is that many farmers chose to specialize in the crop best suited for the Willamette Valley. And it makes sense for them to do so. If such a profitable industry is already established and instituted, why would farmers venture into other parts of the industry that may not be as profitable? In most cases, it will not make economical sense and would inevitably lead to a lower potential of crop profits. However, the grass seed industry in the Willamette Valley is declining due to new regulations and diminishing market prices, forcing farmers to seek alternative crop production (Giombolini et al., 2011). This could prove to be beneficial to the local food movement in the Willamette Valley as some farmers are making changes to staple crops such as wheat (Giombolini et al., 2011).

In the state of Oregon, twelve percent of the total economy is dependent on foreign exports and Oregon is one of the states that is the most dependent on exports (Oregon Blue Book, 2009). The top 10 commodities sold in 2009 were (in order of most to fewest): greenhouse and nursery products, hay, cattle and calves, grass seed, milk, wheat, onions, potatoes (all), Christmas trees, and pears (Oregon Blue Book, 2009). Thus, the competition the local food movement faces much competition against the profitability of exports.

The local food movement is, in a sense, a movement against globalization in regards to food trade. The goals of the local food movement seem to entail the need for keeping products grown in a region within the local markets. The opportunity costs of replacing exports will pose as a challenge. The challenge of overcoming the profitability of exports in the Willamette Valley is great. The local food movement is trying to

promote local and self-reliant economies that can support themselves instead of relying on other areas to support their needs (Curtis, 2003). This proves difficult to achieve in the face of more profits for farmers through exporting their goods or producing non edible products.

Economies of Scale

The local food movement within the Willamette Valley faces a series of obstacles including the cost advantages of economies of scale. The term economy of scale refers to the long run market phenomenon that occurs when production increases. As the quality of production increases over time, the average cost of each unit decreases (Markandya, 2001). This poses four major problems to the local food movement. Among the most severe hurdle to the movement are the government subsidies that industrial farmers receive for producing monocultural crops. Secondly, economies of scale lower the cost of production, or comparative advantage for large industrial farms that results in a large supply to consumers. Another derivative of economies of scale is the marketing competitions between local markets and the industrial market. The last challenge of economies of scale to the local food movement and specifically within the Willamette Valley is the seasonality and short shelf life of crops. All of these issues must be closely analyzed before the movement is successful.

The first struggle to the local food movement is the government subsidies. The subsidies that governments hand out to large industrial farms, meant to promote growth of certain crops and increase agricultural production, furthers the advantage of large scale production in the competition between large versus small scale farms (Curtis, 2003). The definition of competition is defined as two or more parties acting independently to secure the business of a third party by offering the most favorable terms and products (Daly, 1996). Industrial agriculture tends to win this competition due to the low cost of their products as a result of vastly mechanized methods of producing high yields of a single crop. The combination of this and cheap labor results in the presence of low cost food in grocery stores; another way large scale gets the upper hand (Allen, 2006). It has also been determined by Colastini (2016) that subsidies only benefit farms producing monoculture crops large enough to reap the benefits of such

small financial support. This disables small local farms' ability to compete with large industrial farms because they are not supported in the same way. Although, subsidies are given to farmers that produce staple crops, they can also receive subsidies for the production of crops used for biofuels which removes food from the local market as well as shifting the supply and demand of the product (Hill et al., 2006). Throughout the state of Oregon, one million dollars per year is spent on biofuel subsidy programs. It is called the Oregon Incentive Program, and it is designed to persuade farmers to switch from food growth crops to crops like corn, that are grown solely for the purpose of generating biofuels (Jaeger et al., 2009). With this subsidy program present throughout Oregon, the richest growing region in the state, the Willamette Valley, could potentially be used to produce fossil fuel alternatives, instead of feeding its residents and forcing food to be imported from elsewhere.

This government assistance and resulting low cost of production, enables industrial farmers to ship crops large distances, and still sell these products at a low cost in grocery stores. This is largely how our food system works and it does not reflect the real cost of food production (Daniel et al., 2009; Gorter et al., 1992). With consumers purchasing large amounts of cheap food that is shipped into areas where local farmers produce their crops, the smaller farms are unable to compete with the "unreal" cost of food production that industrial agriculture provides. Subsidies are presented to farmers based on the number of outputs they produce and not by the number of inputs so as the theory of economies of scale suggests, the farmers able to produce the highest yields will have the lowest production costs (regardless of how damaging the process is), on top of receiving more government support (D'Silva, 2011). The majority of U.S. subsidies are given to industrial farmers producing high yield staple crops (Colastini, 2006). As a result, there is little economic incentive for farmers to transition to a more diverse harvest that of which the local food movement requires. Ultimately, these subsidies encourage farmers to grow monocrops through economic incentive (Webber, 2010). This poses a problem to the Willamette Valley because currently with only a small percentage marketing locally, the current model for government subsidies supports large scale farms, making it difficult for those small farmers to maintain their farms and deter large scale production to move to a smaller

scale. If the local food movement is going to flourish in the Valley, more local farmers need to join the market.

The second challenge to the local food movement is the low cost of production within industrial agriculture. This creates an unfair comparative advantage against small scale, local production. Comparative advantage is defined as when one producer has a lower opportunity cost of producing a good than another seller (Hall & Lieberman, 2010). The comparative advantage of industrial agriculture creates an inequality because the supply potential of industrial agriculture is far greater than small local farms. Tied into this is the opportunity cost for local farms. Defined as what is forgone when deciding to take another action (Hall & Lieberman, 2010), opportunity cost becomes important because in order for farmers to participate in the local food movement they must forgo the opportunity to produce more profitable crops. Thus, due to comparative advantage farmers generally produce what they believe will yield the largest amount of money. It is suggested, and proven within the Willamette Valley, that local production of food is insufficient and incapable of providing the population with an adequate supply of food (Curtis, 2003; Gibson-Graham, 2004; Giombolini et al., 2011). This idea is expanded by opponents of the movement with “the logic of dominant scale” concept, which suggests that sustainable alternatives are not credible, simply based on production size (Gibson-Graham, 2004). This produces a problem to the Willamette Valley because if it is not possible to generate enough food in that region then a comparative advantage will always exist, forcing communities to rely upon imports instead of local products (Starcevic et al. 2002). The local food movement is looking to break this reliance on large scale industrial agriculture, but before that can happen, this issue must be addressed.

Another challenge for the local food movement produced by economies of scale is the competition of local and industrial agriculture marketing strategies. Due to the absence of a distinct definition, the term local has been transformed into a marketing strategy that large corporations have adapted to increase sales. This has had a negative effect on the local food movement because the word “local” has become a trendy fashionable term that has veered from the original goals of the movement (Delind, 2010). In attempts to make the movement more of a success with consumers,

marketing of local food has created a feel good fad for consumers that further distort the ideals of the movement (Liberty et al. 2010. Delind, 2010). Two companies in the Willamette Valley that promote local food are Bon Appétit and Life Source. Both these establishments have different definitions of local. For example Bon Apetit classifies local as a product that was produced with 150 miles of the location it is sold (Mark Marelich, personal communication, date we talked to him. Life Source believes local to be anywhere within Oregon, but they mainly apply that rule for produce. Their local meat supply includes meat that is produced both in Oregon and Washington or wherever they find a sustainable, reputable farmer (Matt, personal communication, October 26, 2011). This is a perfect example of the indistinct characterization of the local food movement. While one company applies a 150 mile radius, another applies a state boundary, but also attempts to include respectable, conscientious farmers into their definition as well. The inconsistency of the word, “local” has created a movement with unclear goals and motives that can be used to mean a social movement, a diet strategy, or even an economic incentive. Another aspect of local marketing strategies focuses on the economic ability of such a small movement (compared to industrial agriculture) to market to consumers. An interview with Life Source’s marketing manager discovers that only 1-2% of their income is devoted advertising (R. Magnuson, personal communication, October 26, 2011). The percent of income devoted to affective marketing techniques is much lower for companies like Life Source than large corporations because the gross income is far larger in big corporations. Thus, they can allocate more resources to the marketing of their unsustainable crops. In the Willamette Valley the lack of marketing is as profound as the rest of the country.

The final category within economies of scale that presents a dilemma for local food especially in the Willamette Valley is seasonality and the short shelf life of products. It was determined that one of the largest factors that disable the local food movement from being effective is seasonality and the short shelf life of produce (Colasanti & Hamm, 2010). Seasonality tends to be a large problem due to consumer demand for certain products year round (Coit, 2008). Due to industrial agriculture, consumers have expected pristine flawless fruits and vegetables year round. Specifically, in the Willamette Valley many popular produce items are not able to grow.

For example, bananas, apples, lettuce, and corn are crops that have become staples for most consumers in America even outside of the natural growing region and season. But in the Willamette Valley, these products are not capable of being grown year round, if ever. Without the aid of genetically modified organisms many popular species are not adapted to fit the climate of the Willamette Valley. Thus, forcing locavores to eat only what can be produced during the cold winter months (Giombolini et al. 2011; R. Magnuson, personal communication, October 26, 2011). If the entire Valley is to adopt local eating habits, the growing regions and seasonality of crops that has not affected consumer purchasing in the past, would greatly limit what consumers could purchase. The second part of this problem is the shelf life of local products. In today's society, consumers demand cheap food, when they need it and many consumers would like to save time at the grocery store and take one trip. Industrial agriculture and production has allowed consumers to do just that. With large amounts of artificial ingredients used in the production process, large scale production allows for a long shelf life so food can be stored for longer. Unfortunately, without these massive processing facilities, local food cannot make the same promise to consumers, which makes it an impractical option for some. Each of these challenges is a valid concern for consumers which cause a hindrance for the local food movement's success.

Future Recommendations

The points mentioned throughout this paper are what we believe to be the greatest economic challenges of the local food movement. However, this paper does not address all of the challenges to the local food movement and there are still other suggestions to consider. While these suggestions may not offer all the solutions to advancing the local food movement, they are worth examining.

Marketing for local food is one area that needs to be investigated further. While searching for articles about the economics of the local food movement, it was difficult to find articles that specifically looked at marketing of local foods. Roxanne Magnuson, Marketing Director of LifeSource Natural Foods, estimated that 1-2% of the store's gross income is devoted to advertising (R. Magnuson, personal communication, October 26, 2011). This is a small portion of their revenue and more money could be

spent on advertising. Marketing will be essential to the growth of the local food movement because it will help inform consumers who may not even be aware the movement exists. Yue et al. (2011) stresses that it is important for the green industry to implement sound marketing techniques and develop a profitable niche to get consumers educated. The more that consumers are educated about the local food movement and its existence, the greater the chance of recruiting more followers and growing the movement. Convincing a larger number of consumers to buy local food is crucial to sustaining the economics behind the local food movement. The reality of this movement is that the way markets in this economy thrive, is through solid marketing techniques. If no major change within our economy takes place, the local food movement will have to do a better job of marketing to their strengths. Questions to consider include: does a large portion of the population know that this movement exists? What marketing strategies can be employed to persuade consumers to purchase local foods? How do we educate people and inform them about the benefits of this movement?

Finally, more research regarding international local food movements should be carried out. The chisan-chisho movement in Japan is just one example of an international local food movement that has had some success (Kimura & Nishiyama, 2007). If other countries are participating in local food movements, an examination of these movements can provide insights for creating a successful movement in the United States. A study that assessed the likelihood of a local food movement in Detroit, Michigan provides promising evidence for the movement in other cities (Colasanti & Hamm, 2010). The authors call for urban agriculture as a way of producing food for the local population of Detroit (Colasanti & Hamm, 2010). Mariola believes that development in urban agriculture and community gardens would be a step in the right direction for promoting local foods (Mariola, 2008). Pothukuchi and Kaufma also address urban food issues and believe that the urban-rural food disconnect is illogical and food should be grown closer to where people live (Pothukuchi & Kaufma, 1999). Questions to consider include: What policies are foreign governments implementing to influence the food system? How do the geographical differences among different countries affect the likelihood of successful local food movements? Is urban agriculture a logical step for the local food movement?

Conclusion

The local food movement is a multi-faceted movement that encompasses economic, environmental and equitable factors. Given some of the limitations of the local food movement, the feasibility of the movement becomes the subject in question, especially given the projection that the world's population will reach ten billion at the midpoint of the 21st century (Conway, 1997; Evans, 1998). Looking simply at the economics of local food is too simplistic of an approach to understanding the deep complexities of the local food movement. It will be necessary to conduct more research from other perspectives, like an environmental perspective and an equitable perspective, to greater understand the broad range of challenges that currently face the local food movement.

Oregon's Willamette Valley faces a series of economic challenges that limit the effectiveness of the local food movement. The first challenge that prevents the success of the local food movement is consumer behavior. For the local food movement to meet its goals consumers must "buy in" drastically changing their purchasing behavior which is difficult during these economic times. The second problem that incapacitates the local food movement is the capitalistic economy in America. The complexity of our economic society provides incentive for processes to be created in timely, efficient ways with little thought of implications. The third problem is the challenge of a infrastructure change, and the loss of the values communities gain through exports. In particular, in the Willamette Valley the grass seed industry creates a barrier due to the value of these exports. The final large problem is the efficiency of economies of scale. These large industrialized agriculture companies focus primarily on efficiency and profits that creates disadvantages for the smaller businesses. For the local food movement to become successful these challenges need to be addressed and improved upon.

These are all very specific changes that we suggest the movement addresses in order for the movement to improve upon the things they have already accomplished. But in the bigger picture, the local food movement is attempting to thrive in an economy that is based upon the assumption that everyone has a right to cheap and affordable food when they need it. In order for the local food movement to thrive, it must

understand the challenging consumer culture that it is up against. The movement has made great strides in the recent decade, but there is much more to be done if the hope of a sustainable future is still to shine bright.

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