

DISTANCE, SCALE AND OWNERSHIP IN VALUES-BASED PURCHASING

A REVIEW OF THE LITERATURE

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**University of California Sustainable Agriculture
Research and Education Program**

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INTRODUCTION

An increasingly globalized and industrialized food system means that institutional food purchasers have access to a wide variety of food products that may offer efficiencies in delivery, volume and prices, but lack ties to the season or local growing region. At the same time, institutional food purchasers have the opportunity to align their sourcing practices with supply chain values linked to economic, environmental, and social benefits. Institutions have the potential to make a significant impact on local food economies due to the large volume of food they purchase.

This literature review aims to outline potential broad impacts of institutions incorporating values-based purchasing standards into their food procurement programs. We focus on three criteria identified by the Center for Good Food Purchasing¹ in their standards for values-based institutional purchasing: 1) distance of the farm from an institution (local), 2) size and scale of the farm (small and mid-scale), and 3) ownership structure of the farm (family or cooperatively owned). The purchasing criteria are framed through a review of existing literature in order to provide context for values-based procurement decisions. In this literature review, we define each values-based purchasing criteria and follow with a discussion of their potential benefits. We also explore literature that challenges links between each purchasing value and its benefits. The review offers a high-level overview of potential impacts but is not exhaustive. For a more in-depth exploration, we recommend seeking out additional resources on these topics.

BACKGROUND

Between 2020 to 2023, UC Davis Center for Precision Medicine and Data Sciences, UC Sustainable Agriculture Research and Education Program, and UC Davis Health Food and Nutrition Services undertook a collaborative project to increase the purchasing of regionally grown, fresh specialty crops² by the UC Davis Medical Center. The project pursued a multi-pronged strategy, including: 1) developing a data collection process identifying purchased produce by origin, 2) strengthening relationships between the institution and local growers through a regional produce distributor, and 3) promoting locally sourced crops to both consumers and culinary staff. This literature review focuses on the purchasing values of distance, scale and ownership structure because these criteria are most closely aligned with the project's goals of increasing UC Davis Medical Center's purchasing from regional producers and enhancing sales channels for small and mid-scale growers in the region.³

¹ The Center for Good Food Purchasing (2023) identifies five core values to support institutional decision-making towards more sustainable sourcing. These five core values are: local economies, environmental sustainability, valued workforce, animal welfare, and nutrition. For more information about the Center for Good Food Purchasing Program, see: <https://goodfoodpurchasing.org/>

² Specialty crops are defined as "fruits, vegetables, tree nuts, dried fruits, and horticulture and nursery crops (including floriculture)" (USDA AMS, 2016).

³ To read more about lessons learned from this project, refer to [Institutional Procurement of Regionally-Grown Crops: Learning Lessons](#)

DISTANCE: WHY LOCAL MATTERS

“The term ‘locally or regionally produced agricultural food product’ means any agricultural food product that is raised, produced, and distributed in — (I) the locality or region in which the final product is marketed, so that the total distance that the product is transported is less than 400 miles from the origin of the product; or (II) the State in which the product is produced.”

– Food, Conservation, and Energy Act of 2008

“Local food: Food produced, processed, and distributed within a particular geographic boundary that consumers associate with their own community.”

– Economic Research Service, United States Department of Agriculture (Martinez et al., 2010)

The term “local food” is regarded by some as a social movement that encompasses small-scale production, community well-being, civic agricultural practices, and socio-economic relations of proximity, rather than restricted by a defined distance from production to consumption (Motta & Sharma, 2016; Hinrichs, 2003). Though there is not a universal definition for “local food,” many sustainability organizations identify 250 miles as the standard proximity for meeting this definition (Leighton, 2017). Some refer to “flexible localism,” such that the definition of local depends on population density and the ability of a given community to source supplies from close by or far away (Martinez et al., 2010). In this section, we outline the potential benefits aligned with preparing and consuming food that is grown locally, including flavor and nutritional value, food safety, economic and environmental impacts, and source transparency. Alongside those potential benefits, we challenge the notion that local is inherently good.

Food flavor, quality, and nutritional value

Many argue that the availability of fresh, unprocessed foods at institutions such as schools and hospitals may reduce the incidence of nutrition-related diseases by encouraging and offering opportunities for healthy eating behaviors (Vogt & Kaiser, 2008). Conventional produce is often selected with prioritization of durability, size, and shape at the expense of flavor (Sachs and Feenstra, 2008). In contrast, locally-grown produce is often harvested at peak ripeness when its flavor is at its best (Klavinski, 2013). Moreover, nutritional content has the potential to be maximized when food is procured from local farms; locally-grown food may have a higher nutritional value than food that is imported or transported a long distance, as nutrients are lost the longer the time between harvest and consumption (Martinez et al., 2010). However, nutritional content also depends on other factors such as growing practices and food preparation methods (Vogt & Kaiser, 2008). There is a lack of research comparing the nutritional content of identical foods traveling different distances.

Food safety

Food safety has become a major concern with the prevalence of more foodborne illness outbreaks such as *Escherichia coli* (*E.coli*). Some claim that food sourced locally and farm-direct changes hands fewer times and is therefore less likely to be exposed to contamination (Klavinski, 2013). Similarly, others argue that a local food supply network narrows the proximity between producers and consumers, thereby easing the traceability process and allowing for more transparency along the supply chain (Macieira et al., 2021). However, in a survey study of small and medium-scale farmers operating in a local food system, Harrison et al. (2013) found participants engaged in some agricultural practices that could increase the risk of foodborne illnesses.

Economy

Local food systems can contribute to economic development through income and employment growth; when food buyers and consumers spend money on local foods, those dollars remain in the local economy (Ekanem et al., 2016). A study in California demonstrated that for every dollar of sales, direct marketing producers in the Sacramento region were generating twice as much economic activity as producers not engaged in direct marketing (Hardesty et al., 2016). Another study found that over 31,000 jobs have been created by the specialty crop business in the Sacramento Region, and that every specialty crop job generates another 0.82 jobs in the regional economy (Shabazian et al., 2016). In other words, money is reinvested in local businesses and kept in the local economy. This also shifts more agency and decision-making power to the local community; more power to produce, distribute, and market food means less reliance on the globalized food chain and decreased vulnerability to long supply chain disruptions (Abate, 2008).

Environment

The concept of “food miles” – the distance food travels between where it is grown to the location where it is consumed – has received more attention as a method for evaluating energy use as climate change patterns have become more pronounced (Hill, 2008). A study conducted by the Leopold Center for Sustainable Agriculture compared miles traveled between local, regional, and conventional food sources, and found that local food systems reduce food miles, and thus, energy emissions (Pirog et al., 2001). However, regional systems were sometimes more efficient than local due to load capacity and mode of transport.

While some argue that local food requires fewer transportation miles, and thus reduces energy consumption, noise pollution, wildlife loss, and environmental degradation over time (Coley et al., 2009; Paxton, 1994), there are rebuttals of this idea. In a study comparing impacts of short and long food supply chains, Malak-Rawlikowska et al. (2019) found that longer food supply chains had less of an environmental impact per unit of production when measured by food miles and carbon footprint. This was partly due to attributing individual transportation to outlets such as farmers markets and farm stands, a factor that may be mitigated by the aggregation and distribution to institutions through wholesalers. Similarly, Mariola (2008) argues the importance of considering energy efficiency per pound of produce when comparing small and large scale food transportation.

Paxton (1994) argues that fossil fuel energy makes it viable for global industries to transport their food products long distances, while the prices consumers pay do not account for the environmental costs of transport. Pretty et al. (2005) argue that a focus solely on greenhouse gas emissions for transportation does not account for positive external benefits produced by sustainable farming systems, including carbon sequestration, biodiversity, and soil water holding capacity. Similarly, Chi et al. (2009) assert that agricultural production methods, not just emissions from transportation, need also be considered when evaluating the environmental impact of local food.

The USDA defines a food hub as “a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products” (Barham, 2017). Food hubs, which are sometimes cooperatives, benefit small and mid-size farms by providing them with access to retail and institutional markets. Depending on the model, a food hub may provide infrastructure or logistical services that the farmer cannot afford or manage on their own.

Critiques of the global-local binary include that of the “local trap,” an assumption that proximity dictates inherent social and environmental outcomes (Born and Purcell, 2006). They suggest that local is not inherently good, and that it is important to critically examine the actors and agendas behind the local label. Born and Purcell (2006) share an example of buy-local campaigns, which sometimes conflate local produce with organic produce, and make claims about better taste, saving family farms, preserving open space, lowering taxes, and more. Similarly, Hinrichs (2000) argues that localism is a social construction of scale that is not necessarily neatly associated with positive social outcomes. Defensive localization – the imposition of rigid boundaries around a place with the hope of preserving and protecting the norms of a particular community – may have an “othering” effect that resists diversity and inclusion. Hinrichs (2003) explores the local food movement in Iowa, asking questions about what local Iowa food is, who decides what dictates local, and what types of farming practices are employed by local producers. In sum, these critiques highlight the idea that a narrow focus on distance between grower and consumer does not necessarily account for the social outcomes associated with different types of agricultural production systems.

SCALE: WHY FARM SIZE MATTERS

The USDA classifies farm size based on annual gross cash farm income (GCFI), rather than acreage.⁴ According to the USDA Economic Resource Service (2022b), farm size is designated on the following scale:

- *Small farm: annual GCFI less than \$350,000*
- *Medium farm: annual GCFI between \$350,000 and \$999,999*
- *Large farm: annual GCFI of \$1,000,000 or more*

In literature, the topic of farm size and scale is discussed and measured in both earnings and acreage. Small to mid-scale farms are often associated with sustainable growing practices, community well-being, and transparency for buyer-seller relationships. Consolidation of agricultural production is a significant issue in the discourse around farm scale. In addition to outlining potential benefits connected to purchasing from small to mid-scale farms, we will present literature that challenges the idea that small is better.

Economy

According to a report from the USDA Economic Research Service (ERS), most agricultural production is consolidated in a small number of large farm operations (MacDonald et al., 2018). Additional research points to a consistent rise in concentration of nearly all agrifood industry sectors in the U.S. since the 1990s (Hendrickson et al., 2002; Howard, 2009). In 2015, 51% of the value of U.S. farm production was from farms with at least \$1 million in sales, up from 31% in 1991 (MacDonald et al., 2018). Consolidation may have the effect of excluding smaller and low-resourced farmers, who cannot compete with increasing efficiencies, standardization, and specialization in industrial agricultural production (Hendrickson et al., 2015). Further, socio-economic disparities related to race are of increasing concern as agricultural operations are consolidated into fewer hands. From 2012 to 2014, white farmers generated most farm-related income from being landowners and owner-operators, while farmers of color owned less land and generated less farm-related income per person than their white counterparts (Carlisle et al., 2019). Another concern related to agricultural consolidation is the barriers that disadvantage new entry farmers, such as lack of access to capital, land, and markets.

Food safety

Food safety has become a major concern with the prevalence of more foodborne illness outbreaks such as *Escherichia coli* (*E.coli*). Some claim that food sourced locally and farm-direct changes hands fewer times and is therefore less likely to be exposed to contamination (Klavinski, 2013). Similarly, others argue that a local food supply network narrows the proximity between producers and consumers, thereby easing the traceability process and allowing for more transparency along the supply chain (Macieira et al., 2021). However, in a survey study of small and medium-scale farmers operating in a local food system, Harrison et al. (2013) found participants engaged in some agricultural practices that could increase the risk of foodborne illnesses.

Environment

Some research findings demonstrate that small-scale farms cultivate greater biodiversity, and have higher yields than large-scale, industrial farms (Rosset, 1999; Ricciardi et al., 2021). The rise of industrialized agricultural systems has contributed to more reliance on modern productivity tools such as agrochemicals to manage weeds and pests, and has coincided with ecological issues, including increased soil degradation and reduced biodiversity (Hendrickson, 2015). According to Cochrane's "technological treadmill" concept, with increasing pressure to be efficient and competitive, farmers move away from intensive weed management strategies such as

⁴ For the purposes of this document, we will take GCFI into consideration alongside the total acreage of farms when discussing scale. GCFI is important to consider because size of acreage varies greatly depending upon the crop being grown (Park and Deller, 2021). What is considered a large acreage for one crop may be considered small for another.

cover cropping and crop rotation and shift to the use of herbicide technologies from a consolidated input market (Hendrickson, 2015). Overtime, weeds develop resistance to those herbicides and the farmers become increasingly reliant on the latest agrochemical innovations. These issues can be mitigated by growing a greater diversity of crops, practicing crop rotation and cover cropping, and integrating animal grazing to help with weed abatement and soil fertility (Guzman et al., 2019). Crop diversification can also contribute to a desirable habitat for pollinators and other beneficial insects.

Tavernier (2004) found that small farms (those with sales under \$50,000) were more likely than their larger counterparts to follow sustainable agricultural practices by using a case study of agricultural producers in New Jersey. Similarly, a national survey of 542 organic produce farmers showed that large farms used fewer agroecological practices, such as maintenance of habitat for insect populations, reduced tillage, and crop rotations (Liebert et al., 2022). Esquivel et al. (2021) conducted a study with 20 farms in the Central Coast of California to understand the differences between adoption of diversification practices and farm biodiversity. They found that mid-scale farms – defined as 20 to 350 acres in their study – led in the adoption of diversification practices (e.g., mix of crops grown and crop rotations), and unplanned diversity, such as planting of hedgerows or preservation of wild spaces. Notably, the researchers also explained that the mid-scale farmers often had secure land tenure, access to resources and capital, and a diverse set of buyers that shared their values, factors that enabled them to more easily adopt diversification practices.

However, Ricciardi (2021) found in their study of farms across 51 countries that there was no relationship between farm size and resource-use efficiency or greenhouse gas emissions. There are a number of factors that affect the farming practices that a grower decides to adopt, and scale is not always associated with environmental sustainability. For example, in a study of the soil conservation and nutrient management practices of corn farmers across the U.S., Soule (2001) found that small farmers don't necessarily practice better land husbandry than large farmers. Soule also examined the associations between soil management and other variables, such as education level, farming experience, and land tenure. While a small and medium-farm scale may be associated with environmental benefits in some cases, it can also be helpful to understand the production practices employed by a grower.

Community

Some research shows that community well-being can be related to the scale of operation of surrounding farms (Lyson et al., 2001). A study of data from the Census of Agriculture and secondary sources showed that counties dominated by large, absentee-owned agricultural enterprises tended towards less favorable health outcomes and higher unemployment (Lyson et al., 2001). In contrast, communities organized around small-scale farms tended to be more civically-engaged and have a better quality of life. Similarly, in a study of two rural farming communities, Goldschmidt (1946) found small-scale farming communities were associated with diverse economies and egalitarian social structures, while industrialized agriculture was associated with negative social impacts (also see Hendrickson et al., 2017). Additionally, increasing capital consolidation in farms has been associated with lower income, lower education levels, higher rates of poverty, and increased social inequality between ethnic groups (Vogt & Kaiser, 2008; MacCannell, 1983).

On the other hand, there is conflicting evidence about the “Goldschmidt hypothesis,” as Park and Deller (2021) indicate in their analysis of U.S. rural county level data regarding the relationship between community well-being and farm size. Their research suggests further that a trend towards fewer and larger farms does not necessarily harm community well-being, but rather, yields mixed results: increased job earnings, decreased home ownership, lower business start-up rates, and improved health outcomes. In the case of increased job earnings, they suggest that larger farms yielding higher income levels may provide higher-paying job opportunities. Additionally, they note an increase in the number of small farms where farming income is secondary may lead to higher income in a community. Finally, based on their literature review, they assert that research on the relationship between community well-being and farm size and structure does not always use consistent measures of “community well-being,” which could contribute to these inconsistencies.

Source transparency

Mid-scale farms have proven to be well suited for institutional buyers because of the large volume of product that they can offer. Regional purchases from these farms have the added benefit of differentiated products, which tell a story about where the product was grown, how it was grown, and who grew it (Conner et al., 2011). A direct relationship between farmer and buyer may mean simpler communication channels and easier access to information about growing practices, varieties, and harvest projections.

OWNERSHIP STRUCTURE: WHY FAMILY AND COOPERATIVELY OWNED FARMS MATTER

"[A family farm is] any farm organized as a sole proprietorship, partnership, or family corporation. Family farms exclude farms organized as nonfamily corporations or cooperatives, as well as farms with hired managers."

– United States Department of Agriculture, 2022

"Agricultural cooperatives are organized to help farmers gain market power by joining together to market their crops, increase their bargaining power by achieving economies of scale, processing their commodity to add value, and/or to purchase supplies and services. Benefits and profits gained from the cooperative are distributed equitably to member-farmers on the basis of use of the cooperative."

– California Center Cooperative Development, 2022

The ownership structure of farms may have a bearing on the farm's connection to the local community and their potential influence on the local economy. Family farms are often associated with stronger local economies and social networks, as well as community well-being. Similarly, farmer-owned cooperatives and food hubs offer advantages to farmers themselves through the sharing of resources, and to the broader community through a greater focus on social gains and food access.

Economy

Family farmers residing in the communities in which their farms are located stand in contrast to absent landlords, who are generally considered to be nonoperating landlords living outside of the local farming area (Bawa & Callahan, 2021). A study released by the USDA reported that there were higher percentages of absent landlords in counties and states with indicators of poor economic health, including lower rents, land values, income growth, and employment growth (Bawa & Callahan, 2021). Further, there is concern about the increasing consolidation of the agricultural sector into large, nonfamily corporations that control the production, processing, and distribution of food (Hendrickson et al., 2017). Farm owners residing in their local farming community and employing people within their community are able to more actively participate in and contribute to the local economy. In addition, Bagdonis et al. (2009) point to family farms contributing to a stronger local tax base as well as the economic revitalization of rural farming communities. Similarly, in a study of county-level data, Park and Deller (2021) find that an increase in the proportion of "absentee" farmers that do not reside on the farm is accompanied by an increase in negative socio-economic impacts, including decreased homeownership rates and earnings per job, and increased poverty rates.

Community

Family farmers may have more responsibility and accountability to their communities due to direct social ties, as opposed to nonoperator owners who do not reside on the land and therefore are not as connected to their neighbors and community. Some research demonstrates that farm owners living in the community where their farms are located likely have more local social networks and contacts in the community (Petrzelka, 2014). A study by Yung and Blesky (2007) reinforces this point, sharing evidence that absentee landowners spend time away from the community and tend not to participate in local social activities. Also because of this distance, absentee landowners tend to be unaware of customs around "boundary practices," which require social negotiations, and may undertake land management practices that have adverse effects on their farmer neighbors.

In the face of agribusiness challenging corporate farming laws in a number of states, Lobao and Stofferahn (2008) evaluated 51 studies about the impact of industrial farming on community well-being. They found that 57% of the studies observed industrialized farming to have largely detrimental effects on community well-being and 25% some detrimental effects. Detrimental effects included socio-economic inequalities, loss of local autonomy to agribusiness, and adverse impacts on air and water quality and human health.

Farmer cooperatives may benefit farmers themselves as well as the broader community. To begin, this model allows farmers to pool financial resources and share the cost of infrastructure, machinery, and other supplies (Jolley, 2018). Farmers can also spread responsibility across the group, sharing chores and drawing on varied work experiences and skill sets. Food hubs, which are not always cooperatives, but may have similar principles, also provide benefits to farmers. In a stakeholder meeting, the Community Alliance with Family Farmers (2011) found that small farmers in particular could benefit from participation in food hubs due to support with packing, grading, and storage, as well as umbrella insurance coverage. Further, food hubs may be viewed as community-based initiatives that advance civic agriculture and focus on social gains, community cohesion, and increased local food access (Berti and Mulligan, 2016).

CONCLUSION

Institutions – schools, hospitals, prisons, and more – have the power to impact their surrounding communities – including farmers, ranchers, and consumers – by implementing values-based purchasing strategies. This document provides an overview of three criteria to consider for institutional values-based purchasing: distance of farm from institution, size or scale of farming operation, and ownership structure of the farm. There are nuances to these criteria. While some research points to the benefits that come with sourcing from local farms, it is also critical to consider the farming practices employed by growers, such that “local” does not guarantee ecologically-responsible land management or fair labor practices. Institutions hold significant purchasing power, and thus, have an opportunity to develop procurement standards that can have positive impacts – environmental, economic, and social – on the health and well-being of their surrounding community, including the viability of local agriculture. To access support developing values-based purchasing programs, institutions can seek out organizations and funders that assist institutions in tracking their purchasing according to particular criteria.

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