



# ECONOMICS COMMENTATOR

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## EATING LOCAL AND SUPPORTING THE FARM COMMUNITY

by

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The concept and practice of eating local food products has gained national acceptance in the past 15 years as an alternative strategy to sustain the rural farm communities. The number of active farmer's markets in the United States has increased from 1,755 to 4,685 between 1994 and 2009. The state of South Dakota has also witnessed a growing acceptance of farmer's markets in recent years (Warmann, Simon and Sottit, 2009). The increasing awareness of the need to support local farm communities via alternative food distribution channels, such as Community Support Agriculture (CSA), farmer's markets, and on-line food co-ops, have created new business opportunities for those who specialize in customer-oriented, labor-intensive local food markets.

### The Benefits of Eating Locally Produced Food

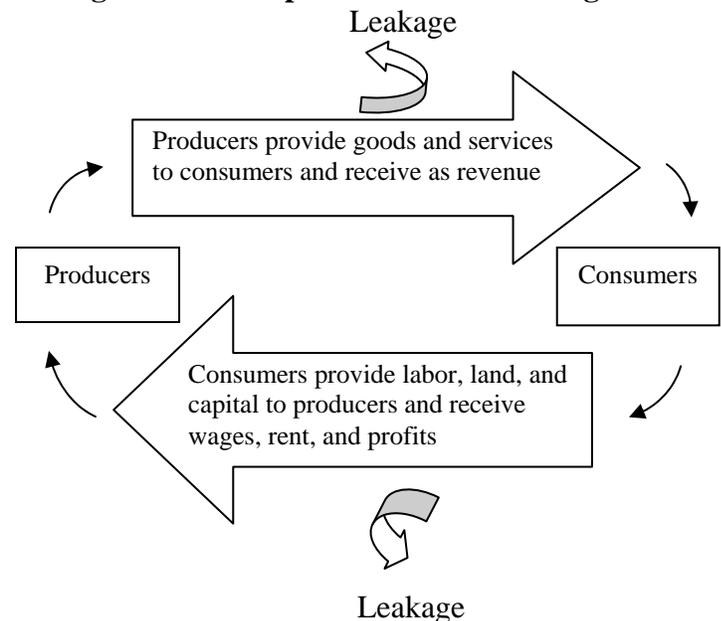
Two key benefits of eating locally produced food are: (1) sustaining local food production and the local economy and (2) reducing food miles while increasing food choices for consumers.

#### *Sustaining the Local Food Production Economy*

To explain why eating locally can help sustain the local economy, imagine a closed-system economy as shown in figure 1. Producers in this simple economy provide products and services to consumers and receive payments from consumers

as revenue. Consumers provide labor, land, and capital to producers (factors of inputs) and receive wages, rent, and profits from the producers. To operate this simple economy, money is used as the medium of exchange and for the preservation of value. As shown in figure 1, if the total amount of money circulated in this loop stays in this system, all the benefits and growth of the economy will return to individuals in the system.

**Figure 1. A Simple Circular-Flow Diagram**



In reality the balance in this simple economy can be upset for many different reasons. For example, a "leakage" of this system would be created if consumers decide to purchase products produced from outside of the local economy because the money consumers use to pay for those products will flow out of this economy. If producers use factors of inputs provided by parties who are outside of this economy, a leakage would also happen because

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wages, rent, and benefits will be given to outside providers. If no additional money is injected into this economy, any leakages will reduce the standard of living for this economy because the money available in this system shrinks.

Following this argument, the benefits of eating locally produced food can be explained as follows. First, if consumers choose to purchase more locally produced products, producers will react to this increase in demand by producing more products and expanding the quantity of production (and also increasing employment opportunities). This implies more wages, rent, and profits will be distributed back to consumers and the local community. Second, when consumers purchase local products, the money consumers pay to the producers will stay in the system, which would reduce the leakage and deterioration in standard of living for this economy.

#### *Reducing Food Miles*

“Food miles” is defined as the weighted average distance for a specific commodity that travels from the point of production to the point of consumption (Pirog et al. 2001). Elements such as location of the terminal market, the model of transport, methods of production, packaging, and distribution systems will all affect the magnitude of food miles. If we include input considerations such as the production of synthetic fertilizers and the machinery used in food production, the distance would be even bigger.

The concept of food miles can be applied to understand the benefits of eating locally when considering how much transportation, packing, and labor costs could be saved if consumers choose to purchase more locally produced products. In addition, the negative effect on the environment caused by creating extra emissions of carbon dioxide and water usage with each unit of consumption in conventionally sourced produce should also be a strong reason for consumers to consider eating locally.

Table 1 provides examples of food miles comparisons between locally grown and conventional products. For example, tomatoes from a conventional source traveled more than 26 times further than locally sourced tomatoes.

**Table 1. Weighted Average Food Miles to Iowa Institution**

| Product  | Locally Grown | Conventional Production |
|----------|---------------|-------------------------|
| Apples   | 61            | 1,726                   |
| Lettuce  | 43            | 1,823                   |
| Tomatoes | 60            | 1,569                   |
| Broccoli | 20            | 1,846                   |

Source: Leopold Center for Sustainable Agriculture.

In addition to helping to reduce food miles, eating locally grown food can also help to preserve the diversity of agricultural products, which eventually benefits consumers by providing more choices for food and nutrition selection.

#### **Factors that Affect Consumers’ Decision to Purchase Locally Produced Food**

This section focuses on the following four factors that affect consumers’ decisions to consume locally grown food: (1) price and price elasticity of demand, (2) income and income elasticity of demand; (3) consumers’ willingness to buy and willingness to pay; and (4) access to information about local food products.

#### *Price and Price Elasticity of Demand*

In general, consumers will want to buy more of a given product when its price is low and vice versa (“law of demand”). To find the best pricing strategy to maximize profit margins, producers need to understand consumers’ reactions to changes in prices. To accomplish this task, we use the concept of “the price elasticity of demand” as a measurement of consumers’ responsiveness to the change in price. For example, if a 1% increase in the price of a commodity causes a 5% drop in the quantity of consumption for this commodity, we would say that consumers’ price elasticity of demand for this commodity is -5. Local food producers are usually more vulnerable to even a slight drop in sales compared to national retailers due to the relatively smaller production scale. Thus, a commodity with high price elasticity of demand often means a high risk to producers.

### *Income and Income Elasticity of Demand*

Although some studies indicate income and sales have a positive relationship for some locally grown food products, other studies of different products in different geographical areas suggest otherwise.

It is important to understand how consumers change their consumption for a specific product when their income changes. For example, do people buy less beef when their income decreases? If so, how much will this reduction in consumption be? We can apply the concept of income elasticity of demand to answer these questions. For example, if a 1% increase in income will cause a rise in beef consumption of 0.11%, we say the income elasticity of demand is 0.11.

Producers can find the information of both price and income elasticity of demand from the USDA/ERS website (<http://www.ers.usda.gov>). We strongly recommend producers and stakeholders who are interested in developing local food businesses to utilize this information when making production and marketing decisions. Table 2 provides sample indexes for price elasticity and income elasticity provided by the USDA/ERS.

**Table 2. Sample Index of Price Elasticity of Demand and Income Elasticity of Demand**

| Item               | Price Elasticity of Demand | Income Elasticity of Demand |
|--------------------|----------------------------|-----------------------------|
| Dairy              | -0.095                     | 0.117                       |
| Fish               | -0.098                     | 0.121                       |
| Fruit & Vegetables | -0.070                     | 0.086                       |
| Meat               | -0.089                     | 0.110                       |
| Bread & Cereal     | -0.040                     | 0.050                       |

Source: USDA/ERS

### *Willingness to Buy and Willingness to Pay*

We assume individuals make consumption decisions based on the goal of maximizing their utility. To accomplish this, consumers will consider several important product characteristics such as appeal, taste, freshness, nutrition, brand, and packaging when making any purchasing decisions. Although consumers generally have similar

attitudes toward most of these attributes, studies have found significant differences in consumers' willingness to buy and willingness to pay (WTP) due to differences in geographic regions, culture and demographic background, income, and other socio-economic attributes.

Information about consumers' characteristics may also be helpful for growers who want to develop the most efficient marketing and production strategies. Some of the most important characteristics to consider when making marketing plans are demographic background, socio-economic status, access to the market, and the types of consumers targeted (individual, household, groceries, wholesalers, institutions, and government facilities, etc.). On the other hand, while the concept of local food marketing is usually connected to individual and household consumers, several large wholesalers such as Wal-Mart purchase locally produced products. This fact suggests new potential market opportunities are emerging for distributing products produced by small- and medium-sized producers.

### *Access to Information about Local Food Products*

In addition to the location consideration, consumers often find information about local producers, farmer's markets, CSA, or other locally grown food markets via newspapers, magazines, booths, word of mouth, and email-newsletters. Although each of these advertising channels has its own merits and disadvantages, the efficiency of these markets depends heavily on the geographic and socio-economic characteristics of each region. Due to the inconsistent conclusions from previous studies on this issue, the best marketing and distribution strategies need to be designed to suit the specific characteristics of the products and locations for each local food market.

Dakota Rural Action (DRA, <http://www.sdlocalfoods.org>), a South Dakota local organization that aims to protect family farmers and ranchers, natural resources, and the traditional farming life, has worked for years to promote local food markets. Recently DRA published a booklet that contains local producers' contact information, food storage tips, and cooking recipes for consumers who are interested in locally produced

food products. According to Holly Tilton of the Brookings county chapter of DRA, educating consumers to understand the benefits of eating local and providing a direct connection between producers and consumers are very powerful marketing strategies for successful local food markets.

### Conclusion

This report discusses the benefits of consuming locally produced food products. Consumers can help the local economy and local farms thrive by choosing more local food products. Eating locally grown food can also improve our environment by byproducts of our consumption. Some important factors such as income and price elasticity, consumers' willingness to pay, and access to information about local food markets will all affect consumers' decisions about purchasing locally produced food products. Because most of these factors are usually locally specific, we strongly encourage producers to work closely with local

universities and institutes to develop efficient marketing strategies.

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