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Consumer Purchases of Connecticut-Grown Food and Farm Products
Update 2015

**Zwick Center for Food and Resource Policy
Outreach Report #52**

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EXECUTIVE SUMMARY

Connecticut consumers are demanding local foods and agritourism experiences for a variety of reasons, including improving their diet and health, protecting the environment, supporting the local economy, and enjoying food. An earlier report estimated that in 2010 Connecticut households spent 2.5% of their food budget on locally grown (i.e., in-state produced) foods and approximately \$159.7 million on locally grown nursery and greenhouse products (Warner et al. 2012). The objective of this report is to: (1) re-estimate Connecticut consumer expenditures on Connecticut-grown food (including fruits, vegetables, dairy, poultry, eggs, meat, and fish), and (2) estimate expenditures on Connecticut-grown green industry production (nursery and greenhouse products) in 2015 to provide an update of the share of CT consumer budgets spent on local food and farm products.

KEY FINDINGS

- Connecticut consumers spent approximately 4.8% of their food budget on Connecticut-produced food products in 2015. Given data limitations, this value represents a midpoint estimate, and upper and lower bound estimates are described in the Methodology and Findings sections of this report.
- Connecticut consumers spent approximately 8.0% of their food budget on Connecticut-grown food and green industry products.
- If all Connecticut-grown food products were sold to Connecticut consumers instead of being shipped elsewhere, this would account for about 8.6% of Connecticut consumers' food budgets.

INTRODUCTION

U.S. consumers are increasingly demanding locally or regionally produced foods (Conner et al. 2016). Motivations for local or regional food purchasing include enjoyment of local food shopping experiences (e.g. farmers' markets), freshness and taste of local foods, support for agricultural producers and the local economy, and interest in promoting environmental sustainability (Zepeda and Li 2006). Connecticut consumers are greatly interested in the benefits of local foods. According to a recent USDA report (Low et al. 2015), Connecticut ranks high in terms of total direct-to-consumer sales by county, with most counties in the state reporting more than \$2.5 million in sales in 2012. The economic impact of local food sales in Connecticut was estimated to be between \$65.6 and \$75.2 million in 2015 (Lopez et al. 2017). In addition, agritourism is a strong agricultural sector in the state; significant growth has occurred in the winery industry over the last decade, and agritourism overall accounts for another \$16.2 to \$18.1 million in economic impacts (Lopez et al. 2017).

The socioeconomic and geographic advantages of Connecticut's local food system are important to consider for its future growth. The state ranks first in the nation in median household income, and many densely populated urban centers are in close proximity to rural agricultural areas. This is reflected in a strong locally produced greenhouse and nursery industry in the state. However, in 2010, only 2.5% of Connecticut's consumer food expenditures were spent on local foods.

Connecticut Public Act No. 11-189 in 2011 established the Governor's Council on Agricultural Development (GCAD) to "make recommendations to the Department of Agriculture on ways to increase the percentage of consumer dollars spent on Connecticut-grown fresh produce and farm products, including, but not limited to, ways to increase the amount of money

spent by consumers of the state on locally-grown farm products, by 2020, to not less than five percent of all money spent by such consumers on food.” In March 2018, the Connecticut General Assembly passed legislation further promoting Connecticut-grown products by establishing a farm-to-school program within the state Department of Agriculture.

In light of growing consumer demand for locally grown foods and the development of policies promoting local food systems in Connecticut, it is essential to track consumer demand for local foods and nursery and greenhouse products. Consequently, the objective of this report is to: (1) re-estimate Connecticut consumer expenditures on locally grown food (including fruits, vegetables, dairy, poultry, eggs, meat and fish), and (2) estimate expenditures on locally grown green industry production (nursery and greenhouse products) in 2015 to provide an update of the share of consumers’ food budgets spent on local food and farm products. Throughout this report, we define “locally grown” as synonymous with “Connecticut-grown.”

METHODOLOGY

Based on available data from the U.S. Department of Agriculture (USDA) and the National Green Industry Survey, the maximum value of Connecticut consumers’ purchases of Connecticut-grown fresh produce and farm products (CTFP) by commodity type was estimated. Data from USDA also indicate the aggregate value of Connecticut agricultural products sold directly to consumers, which we utilize to bound our estimate of Connecticut consumers’ purchases of CTFP. In other words, we establish lower and upper bounds, or minimum and maximum possible estimates, of the value of Connecticut consumers’ purchases of CTFP. We also estimate the value of Connecticut consumers’ total food purchases using data from Bureau of Labor Statistics (BLS).

Connecticut-Grown Foods Sold in State

To estimate the value of consumer expenditures on locally grown agricultural products, the share of total state agricultural production destined for human consumption as food is estimated. Of the total \$806.2 million in agricultural production in the state in 2015, \$332.4 million involved food production (Lopez et al. 2017). This includes the following categories: (1) fruits, vegetables, and tree nuts; (2) dairy; (3) poultry and eggs; (4) beef and other animal products (pork, lamb, and aquaculture products); (5) wild-caught seafood; and (6) other foods (e.g., maple syrup and honey). Other Connecticut agricultural products include non-food crops such as tobacco, nursery and forestry products, and animal feeds, but these products are excluded from this analysis.

To establish the maximum potential value of CTFP purchased by Connecticut consumers, the value of overseas exports of CTFP was subtracted from the total value of CTFP. USDA Economic Research Service (ERS) estimates the value of CTFP exports as \$244.0 million in 2015; but of this total, approximately \$200 million were exports of hides and skins, processed fruit and vegetables, feeds, feed grains, processed grains, tobacco, and “other plant products,” a category which includes processed food that may be produced using ingredients grown outside Connecticut (USDA ERS 2015). Of the six categories listed above, the total value of CTFP exports was \$43.0 million.¹ By subtracting the value of exports from the value of Connecticut-grown food products, it was estimated that \$289.6 million in Connecticut-grown food products remain in the United States.

It is important to note that USDA only tracks agricultural exports from Connecticut to countries outside the U.S. There are no data on the value of agricultural exports from

¹ USDA ERS does not provide an estimate of the value of CTFP aquaculture or maple syrup or honey exported.

Connecticut to other U.S. states. Also, there are no publicly available data on the share of Connecticut-grown agricultural products that remain in Connecticut for consumers to purchase. As a result, we conduct our analyses in this study assuming a range of values for the share of Connecticut-grown foods that remain in the state.

Data from USDA ERS (2016–2018) are used to align farm production values with consumer food expenditures, since the value of agricultural products at the farm gate is not the same as the price consumers pay for those products. This proportional difference between the price farmers receive and the consumer price is called the marketing margin. Marketing margins from USDA ERS are only available by commodity using national estimates and not for Connecticut specifically. These data compare prices paid by consumers with prices received by farmers for corresponding commodities. As Table 1 shows, farms growing Connecticut food products sell their products for between 23 and 75 percent of the retail value (depending on the commodity), so the total value of Connecticut-grown food products purchased by Connecticut consumers is hundreds of millions of dollars higher than the value received by Connecticut farmers for those same products. We conclude that if all Connecticut-grown food products were purchased by Connecticut consumers, the total value of these purchases would be \$825.3 million. We refer to this as the “maximum potential” value of Connecticut-grown food purchases by Connecticut consumers.

We also use additional data from USDA National Agricultural Statistics Service (NASS) Local Food Marketing Practices Survey to verify the value of direct marketing of Connecticut-grown products for human consumption (USDA National Agriculture Statistics Service 2015).² NASS estimates that Connecticut farmers had \$92.9 million in direct retail sales of agricultural

² This measure excludes any sales through grocery stores and other retailers.

and value-added products to consumers in 2015. We presume that most *direct* sales of Connecticut agricultural products are purchased by Connecticut consumers. In the absence of data to confirm the true amount of food that is not exported from Connecticut, we suggest that a reasonable range for the estimated value of Connecticut-grown food sales to Connecticut consumers is 25%–75% of the total retail value of Connecticut-grown food (\$825.3 million), or \$206–\$619 million.

Connecticut-grown nursery and greenhouse products sold in state

In 2015, nursery and greenhouse products (green industry products) had a total value of \$243.1 million at the farm level. Data on Connecticut exports of green industry products are not available from USDA ERS but through the National Green Industry Survey (Hodges et al. 2015). According to the most recent publicly available National Green Industry Survey, in 2013 only 0.7% of Connecticut green industry sales were to U.S. regions outside the Northeast.³ Additionally this survey reports that 36.7% of green industry sales are through retailers, and the remainder are through wholesalers. Of the 63.3% of green industry sales through wholesalers, 54% are sales to landscaping firms, 36% are sales to single-location garden centers, and the remaining 10% is sold through other wholesale channels that likely sell to consumers outside of Connecticut. Thus, we assume that between 90% and 100% of the value of Connecticut green industry sales are made to in-state consumers. Further, it was assumed that the value of retail sales through intermediaries is 50% higher than the value received by farmers for wholesale sales.⁴

³ The 2013 Green Industry Survey is not a representative sample. Responses were voluntary. Based on reported sales for Connecticut respondents, the sample is perhaps biased toward larger firms: average annual reported sales were \$2.0 million. We expect that larger firms would be more likely to ship plants outside the region, so, if anything, we expect that the share of Connecticut products shipped outside the Northeast is even lower than in the survey sample.

⁴ We do not assume that retail prices are 50% higher than wholesale prices; rather, we assume that the value of retail sales is 50% higher than the value of retailer purchases. The discrepancy between these two assumptions lies in shrink, i.e., plants that are purchased by retailers but not sold for any reason.

Assuming that 100% of direct purchases and purchases through single-location garden centers and landscaping firms are made by Connecticut consumers, then the value of Connecticut consumers' purchases of Connecticut-grown green industry products was \$297.0 million in 2015, which represents a lower bound estimate. The upper bound value is \$320.1 million, if all products sold through other wholesale channels are purchased by Connecticut consumers.

These calculations establish the total value of Connecticut consumers' purchases of CTFP (food plus green industry products) to be more than \$389.9 million and less than \$1,145.4 million.

Value of Connecticut Consumers' Food Expenditures

Data on Connecticut consumers' total food expenditures was derived from the U.S. Bureau of Labor Statistics 2015 Consumer Expenditure Survey (CEX). Because CEX does not report state-level estimates of food spending, Connecticut household food spending is based on average food spending for all Northeast U.S. households. CEX reports that in 2015 households in the Northeast spent \$6,882 per year on all food (U.S. Bureau of Labor Statistics 2016). In the same year, there were 1,397,928 households in Connecticut. Multiplying average northeastern household food spending by the number of Connecticut household yields a total of approximately \$9.621 billion spent on food in the state in 2015.

Estimated total consumer expenditure on locally produced foods is divided by total CT household food spending to calculate the percent of CT household food budgets spent on locally produced foods.

FINDINGS

Table 1 reports results by food commodity and Table 2 for greenhouse and nursery products. In 2015, Connecticut consumers spent at least 3.9% (\$389.9 million divided by \$9.621 billion) of their *food budgets* on locally produced foods and other farm products. Because precise data on the value of Connecticut food and farm products sold in state is not available, a reasonable approximation is the midpoint between the value of direct sales and maximum potential estimate: 8.0% (\$767.7 million divided by \$9.621 billion). This is equivalent to assuming that 55.6% of Connecticut-grown food and farm products remain in Connecticut and the remaining 44.4% are exported overseas or shipped to other states.

Based on the midpoint estimate, Connecticut consumers spent about \$459.1 million on Connecticut-grown food in 2015, or about 4.8% of their food budget. By comparison, an earlier Zwick Center report estimated that in 2010, Connecticut consumers spent \$437 million, or 2.5% of their food budget, on locally produced foods. The earlier report used a different methodology—the major difference being the choice of denominator—and estimates from the two reports should not be compared to make the claim that Connecticut consumers' purchases of Connecticut-grown food products increased from 2010 to 2015.

If we adopted a similar methodology more directly comparable to the earlier Zwick Center report—assuming that Connecticut residents spent a total of \$19.935 billion on food in 2015, and applying the same estimates as the earlier report for the share of Connecticut production of each commodity that remains in Connecticut—this would yield an estimate that Connecticut residents spent \$642.8 million on Connecticut-grown food products in 2015, or 3.2% of their total food expenditures.⁵ Above, we estimated that the upper-bound value of

⁵ More details about the alternative assumptions and calculations are available from the authors upon request.

Connecticut residents' expenditures on Connecticut-grown green industry products was \$320 million. So, if we had applied the earlier methodology, we would have concluded that, at most, 4.8% of Connecticut residents' total food expenditures were spent on Connecticut-grown food and farm products in 2015 (\$962.8 million/\$19.935 billion).

Table 1. Food Production by Commodity, Export Value, and Marketing Margins in 2015 in Connecticut

| Commodity | Agricultural production value (2015 million \$) | Export value⁴ (2015 million \$) | Value of Connecticut farm sales (2015 million \$) | Farm value as share of consumer retail value (%) | Maximum potential value of Connecticut-grown food purchases by Connecticut consumers⁵ (2015 million \$) |
|--|--|---|--|---|---|
| Vegetables and melons | 44.1 | 1.3 | 42.8 | 26 | 164.4 |
| Fruits | 42.4 | 3.8 | 38.6 | 38 | 101.5 |
| Tree nuts | 3.2 | 0.0 | 3.2 | 38 ¹ | 8.3 |
| Dairy | 73.7 | 10.7 | 63.0 | 30 | 209.8 |
| Poultry and Eggs | 84.3 | 5.5 | 78.8 | 51 | 154.6 |
| Beef | 21.5 | 1.6 | 19.9 | 47 | 42.3 |
| All other animal production ² | 45.6 | 20.1 | 25.5 | 23 | 110.7 |
| Wild caught seafood | 15.5 | * | 15.5 | 50 | 31 |
| Maple syrup | 1.7 | * | 1.7 | 75 | 2.3 |
| Honey ³ | 0.6 | * | 0.6 | 75 | 0.4 |
| Food total | 332.6 | 43.0 | 289.6 | - | 825.3 |
| Accounting for Connecticut-grown foods that are sold in other U.S. states | | | | | |
| Food total (assuming 75% remains in state) | | | | | 619.0 |
| Food total (assuming 25% remains in state) | | | | | 288.9 |

¹ Marketing margin for fruits used; marketing margin not available for tree nuts.

² All other animal production includes pigs/hogs, goats, sheep and lambs, aquaculture products, and other miscellaneous animals.

³ Honey marketing margin computed from data available at: <https://www.honey.com/honey-industry/statistics/retail-honey-price>

⁴ Export value represents value of products that are exported outside the United States. This value does not include the value of products exported to other U.S. states.

⁵ Maximum potential value that Connecticut consumers spend on Connecticut-grown food products assumes that all Connecticut grown foods remain in the state.

* Export data not available

Table 2. Green industry products value by marketing channel, share of retail value to retail purchase value, and maximum consumer expenditures.

| Farm level sales of greenhouse and nursery products in CT (millions 2015 \$) | Value by marketing channel | Export value (million 2015 \$) | Ratio of retail value to grower sales value² | U.S. consumer expenditure on Connecticut-grown (2015 million \$) |
|--|-----------------------------------|---------------------------------------|--|---|
| Total farm sales | 243.1 | - | - | - |
| Direct retail sales | 89.2 | | 1.00 | 89.2 |
| Total wholesale sales | 153.9 | - | - | - |
| Landscaping firms | 83.1 | - | 1.50 | 124.7 |
| Garden centers | 55.4 | - | 1.50 | 83.1 |
| Other wholesale ¹ | 15.4 | - | 1.50 | 23.1 |
| Lower bound total consumer expenditures (90% of wholesale to Connecticut consumers) | | | | 297.0 |
| Upper bound total consumer expenditures (100% to Connecticut consumers) | | | | 320.1 |

¹ Other wholesale sales are likely transactions occurring with out of state purchasers and only enter the maximum or upper bound estimate for green industry products.

² We do not assume that retail prices are 50% higher than wholesale prices; rather, we assume that the value of retail sales is 50% higher than the value of retailer purchases. The discrepancy between these two assumptions lies in shrink, i.e., plants that are purchased by retailers but not sold for any reason.

DISCUSSION AND POLICY RECOMMENDATIONS

This report finds that Connecticut consumers are devoting approximately 4.8% of their food budget to Connecticut-grown foods and another 3.2% on products from the greenhouse and nursery industry. This represents a sizable amount of consumer spending in the state, although it is not clear if sales of locally grown food and farm products have increased over the last five years since consistent data are not available between 2010 and 2015.

These findings provide information that can be used to further promote local food and farm products and to support the agricultural industry in Connecticut through policy development. One such policy could be the establishment of official tracking of Connecticut consumer purchasing of locally grown food and farm products. Future state policies could provide funding for tracking these measures over time in a consistent and regular way. Or, partnerships with state agencies that collect data directly could be developed to track these measures more consistently over time. For example, DataHaven, a non-profit agency in New Haven, Connecticut, conducts a survey of a representative sample of Connecticut households every two to three years. Questions about food and farm product purchasing could be added to this survey to get a more accurate estimate of consumer expenditures on these products. Alternatively, food and farm product growers could be surveyed directly over time to track their sales by marketing channel type.

Clearly, these findings indicate that there is room for growth in in-state sales of Connecticut-produced food and farm products. Neighboring states such as Vermont report higher sales of locally grown products as a share of total food spending (Conner et al. 2016). How exactly to increase sales of these products is an open question and one that could be explored in detail by state and local policymakers in Connecticut, potentially in collaboration with food and

green industry producers to understand the challenges they experience in selling their products to Connecticut consumers either directly or through local retailers.

Some methodological limitations of this study warrant discussion. First, no publicly available data exist to estimate the share of Connecticut-produced food and farm products that is sold directly to consumers outside of the state. For the analyses presented in this report, it was assumed that all direct-marketing sales occurred in Connecticut. There may be some leakage across state lines of directly marketed food and farm products, but there are no data currently available on intra-state directly marketed food and farm products. Second, USDA Economic Research Service state-level export data are interpolated based on U.S. exports and state-level production data. No publicly available data existed on exports from states based on sales receipts or other in-state information at the time that this report was completed. Finally, the lower bound estimate of Connecticut consumer expenditures on Connecticut-grown food products is too conservative because the lower bound does not reflect any sales of Connecticut-grown food products through indirect channels, such as grocery stores and supermarkets. There are no publicly available data on indirect sales of Connecticut-grown food and farm products in Connecticut.

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