The University of Georgia

Center for Agribusiness and Economic Development

College of Agricultural and Environmental Sciences

The Local Food Impact:
What if Georgians Ate Georgia Produce?

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Executive Summary

The following study, *The Local Food Impact: What if Georgians Ate Georgia Produce?,* conducted by the University of Georgia, College of Agricultural and Environmental Sciences, Center for Agribusiness and Economic Development (CAED), explores the potential impact of Georgia consumers purchasing more locally grown food products, defined as grown and sold within the state. The topic is a popular one in recent years for many reasons, including additional interest from consumers and new information about the many benefits from purchasing and consuming local food products. Yet there exists few measurable details about what these purchases can mean to the Georgia economy. Some highlights from the study include:

- The most recent Agricultural Census (2007) identified nearly 48,000 farms in Georgia, a decrease of 3% from 2005. In contrast, the total dollar value of the agricultural products sold on Georgia farms increased 45% over the same period. Georgia's Farm Gate Value Report for 2007 reported a direct farm gate value of $11.6 billion for food and fiber production, which resulted in a total economic impact to the state of over $58 billion. This impact comes from a diverse array of commodities, of which vegetables, fruits, and nuts comprise approximately $1.1 billion of direct farm gate value, $2.85 billion in overall economic impact, and accounted for more than 25,000 jobs in 2007.
- Closing the gap between what Georgia produces and local consumers eat can provide a valuable source of additional direct or local sales and the resulting economic effects. If Georgians produced all of the fruits and vegetables that they consumed, it could provide a way to close this utilization gap (the difference between state-wide production and consumption) of over $780 million per year. Even if this level can't be achieved, simply closing the gap in one commodity–lettuce, for example–could mean an additional $83.6 million of direct revenue to local producers.
- One component of local food sales is direct-to-consumer marketing by farmers or producers. In 2007 Georgia vegetable and melon farms sold over $5 million dollars worth of products directly to consumers by methods such as Community Supported Agriculture (CSA), farmer's markets, roadside stands, or pick-your-own. Similarly, Georgia fruit and nut farms sold in excess of $2 million in products directly to

consumers. Considering all linkages within the economy (multiplier effects), these direct sales of over $7 million involved a total of 132 jobs, $4.5 million in labor income, $6.4 million in value added , and $14.4 million in output in the Georgia economy.

- If Georgia vegetable, melon, fruit, and nut farms increased their direct-to-consumer sales per farm to the same average dollar value per farm as reported nationally, the result would be an increase from $7 million in direct sales to over $13 million. This increase of direct sales, when including linkages throughout the economy, would contribute 232 jobs, $7.4 million in labor income, $10.7 million in value added, and $23.6 million in output to the Georgia economy.
- Another scenario analyzed the impact on the state's economy if Georgia farmers overall increased their proportion of direct-to-consumer vegetable, melon, fruit, and nut sales to the level found nationally, resulting in an increase from $7 million in direct sales to over $14 million. In this scenario, the overall contribution–including multiplier effects–would be 228 jobs, $8.1 million in labor income, $11.5 million in value added, and $25.8 million in output.
- Using the Center for Agribusiness and Economic Development's Farm Gate Value Report as the basis, an additional scenario estimates the economic changes that would occur with every 5% increase in consumer local purchases as a direct sale from the farmer/producer. Considering linkages throughout the economy, the total effect to the Georgia economy for each 5% of consumer purchases captured locally is approximately 345 jobs, $13.6 million in income, $19.2 million in value added, and $43.7 million in output.
- From a broader perspective, if each of the approximately 3.7 million households in the State devoted $10 per week of their total food dollars to purchasing Georgia grown products–from any source, not just directly from producers–it could provide over $1.9 billion food dollars reinvested back into the state. This simulation allows an exploration of what a relatively small change in consumer behavior and budget can mean to the state's economy as a whole.

Background and Overview

The goal of this study – assessing the potential economic impact of consumers purchasing more locally grown food products – has become a popular one in recent years with the increase in interest and information about the benefits that may be attributed to purchasing and consuming local, fresh food products. Since economies can't be examined in a controlled laboratory setting as in some scientific disciplines, economic studies are conducted using analytic, observational, or mathematical techniques requiring some assumptions to be made, both explicitly and implicitly. One of the first issues to address in studying locally grown food products is that "locally grown" is a term that may be defined in numerous ways. For example, one study refers to the "common metric" of being grown within 100 miles of one's home (Matthew 2008), as does the New Oxford American Dictionary in their definition of locavore as the 2007 word of the year (Thilmany, Bond et al. 2008). On the other hand, an Economic Research Service (ERS) economist refers to multiple definitions depending on the questions being asked, with one defined as within 400 miles of home or within a particular state. The ERS economist suggests further definitions that depend on the "bundle" of characteristics that one would prefer to group together – perhaps support of small and mid-size farms, sustainability, or involving interaction between farmers and consumers (Hand 2009). As mentioned in a recent study on local food systems, the ERS found that, in general, there is not agreement on the definition of local food (Martinez, Hand et al. 2010). In the case of this study, our definition of "locally grown" is "grown in Georgia"[1]. In performing this analysis, researchers will create a number of scenarios assuming that purchases of locally grown products could change and what additional economic activity might result. In every case, researchers will operate under the assumption that sufficient capacity to meet any increased production already exists in the state.

Brief Overview of Previous Studies

Several states, regions, and localities throughout the U.S. have conducted comparable studies with a wide range of methodologies, data usage, and outcomes. Ohio State University conducted a similar study (Sharp, Webb et al. 2009) in which they analyzed (among other things) select characteristics of the Knox County, Ohio

[1] This definition was determined in collaboration with study organizers as best fitting with the goals and limitations inherent in the analysis. See Giovannucci, D., E. Barham, et al. (2010). "Defining and Marketing "Local" Foods: Geographical Indications for US Products." Journal of World Intellectual Property **13**(2): 94-120. for a recent discussion of defining local and what it can mean to small producers.

food and farming system, including potential opportunities and impacts of increasing local food production and consumption. Researchers found demonstrable impact, looking at multiple possibilities using input/output analysis for quantifying the economic effects on the county and the economic contribution of anticipated new agricultural sales resulting from increasing specialty crop sales, retail food sales, and recruiting additional food processing businesses to the area.

Researchers at Michigan Land Use Institute and Michigan State University in *Eat Fresh and Grow Jobs, Michigan* (Cantrell, Conner et al. 2006), explored the potential for changes in how local fruit and vegetable producers market their products as a way to "improve the profitability of the state's valuable farmland, grow job opportunities across the economy, and improve public health." (p. 2). Their study found that switching to more sales in fresh markets could result in additional jobs and revenue for the state economy. Hawaii viewed the problem from the perspective of "food self-sufficiency." Researchers (Leung and Loke 2008) examined impacts from doubling the present local consumption of selected crops, achieving 100% self-sufficiency of selected food products, and replacing 10% of imported foods with local. Utilizing input/output analysis, they found the impact for each possibility to be "non-trivial."

Virginia Cooperative Extension, Virginia Tech, and Virginia State University (Benson and Bendfelt 2007) took on a similar task when they created a scenario estimating how certain localities would be impacted if households spent $10 per week of their food dollars on local produce or farm-based Virginia products. Their study found that the $10 change per household could result in an additional $555 million food dollars per year reinvested in the local community. Other states, regions, and localities have also taken this approach.

The Leopold Center for Sustainable Agriculture has conducted several studies on the topic in recent years, each from a slightly different vantage point. One of the earlier studies (Swenson 2006) viewed potential economic impacts resulting from increased fruit and vegetable production along with increased direct and grocery sales to consumers. This impact assessment applied four scenarios with variations on the assumptions for each scenario. Details included the net impact and showed substantial economic development potential by substituting Iowa products for those currently imported. Several of the scenarios explored methods of distribution that included a range of products being direct marketed to consumers through a producer-owned network. Later work

along a similar vein (Swenson 2010a) determined that a producer-owned direct network requires more evidence before consideration as a feasible method of distribution. Swenson also evaluated the regional impact that could occur if producers in the region increased their fruit and vegetable production to meet local or regional demand for those products. Again adopting the scenario approach, Swenson found that additional employment and labor incomes could result. A broader work (Swenson 2010b) looked at potential economic values that might accrue to producers and the regional economy if six Midwest states increased their production of 28 types of fresh fruits and vegetables for local/regional consumption. In this case, all scenarios assumed that 50 percent of the local fruit and vegetable products would be sold using the earlier mentioned producer-owned direct marketing outlets.[2]

Researchers in Vermont and Massachusetts (Timmons, Wang et al. 2008) use data from their states as examples to outline a method of estimating local food capacity. Their method involves a comparison between statewide figures and U.S. figures to arrive at a "local food maximum" or the potential for local food to meet local needs (a maximum of 100% possible). They performed the analysis for each U.S. state using 2002 data, with the estimation for Georgia at 39.3%. In addition, they applied another technique comparing pounds of food produced to pounds of food consumed. Those researchers performed similar analysis on 2007 data (Timmons and Wang 2010) exploring limitations of Ag Census data and examining variations in direct sales between states in the U.S. using regression analysis. They found that Georgia's actual direct sales figures are below the predicted values in the model, suggesting that there is additional potential for increasing direct sales of farm products to consumers.

Georgia Organics and Emory University sponsored a Georgia-based data compilation that highlighted available data for the Atlanta Metro Region counties and the state as a whole (Meter 2008). Key among the findings in this research is that approximately 80% of food purchased by Georgians is from outside of the state. The research found that of the $20 billion in food purchased, an estimated $16 billion is produced outside of Georgia. Though not specifically an economic impact study, this study presents a comprehensive summary of the existing statistics on farm and food economies critical to Georgia.

In this analysis, researchers will also adopt a scenario methodology. However, because of the unique nature of the Georgia food/agriculture economy, this study will not exactly replicate any of the described studies.

[2] Other publications from the Leopold Center for Sustainable Agriculture can be found at their website, many exploring local food and related questions. (http://www.leopold.iastate.edu.)

Data and Methodology

The findings in this study are based on data from several sources, including the United States Census of Agriculture (2007), the UGA Center for Agribusiness and Economic Development (CAED) Farm Gate Value Report, and data from the Minnesota Implan Group, Inc. economic analysis model (see *Principles of Economic Impact Analysis* section for details).

Principles of Economic Impact Analysis

Economic impacts result from a multiplier effect that begins with input expenditures stimulating business to business spending, personal income, employment, and tax revenue. Economic impacts can be estimated using input-output models (in this case, IMPLAN from the Minnesota Implan Group, Inc.) that separate the economy into various industrial sectors such as agriculture, construction, manufacturing, trade, and services. The input-output model then calculates how a change in one industry changes output, income, and employment in other industries. These changes, or impacts, are expressed in terms of direct and indirect effects. Impacts are interpreted as the contribution of the enterprise to the total economy. Direct effects represent the initial impact on the economy of the operations of a specific business enterprise, such as a farming operation. Indirect effects are changes in other industries caused by the direct effects and include changes in household spending generated by direct effects. Thus, the total economic impact is the sum of direct and indirect effects. Input-output analysis can interpret the effects of an enterprise in a number of ways including output (sales), labor income (employee compensation and proprietary income), employment (jobs), and tax revenue (Olson and Lindall 2004)

IMPLAN models include a regional purchase coefficient (RPC) for each impact variable that represents percentage of demand that is satisfied by production within an impact area (which we are calling local, in this case). Demand for inputs not satisfied within the impact area represent leakages that have no indirect impacts in the impact area. Enterprises vary in their multiplier effects due to differing expenditure levels, RPC's, and sectors in which their expenditures are directed. Impact analysis involves quantification of spending levels and proper allocation to impacted sectors.

Output impacts are a measure of economic activity that results from enterprise expenditures in a specific industrial sector. Output is equivalent to sales, and this multiplier indicates how initial economic activity in one

sector leads to sales in other sectors. Labor income impacts for employees and proprietors measure purchasing power that is created due to the output impacts. This impact provides the best measure of how standards of living might be affected for residents in the impact area.

An enterprise involves a specified number of employees that is determined by the technology of the enterprise. Employment multipliers indicate the effect on employment resulting from the enterprise initiating economic activity. IMPLAN indirect employment includes both full-time and part-time jobs without any distinction. Jobs calculated within an IMPLAN industrial sector are not limited to whole numbers and fractional amounts represent additional hours worked without an additional employee. With no measure of hours involved in employment impacts, IMPLAN summations for industrial sectors which include fractional employment represent both jobs and job equivalents. Since employment may result from some employees working additional hours in existing jobs, instead of terming indirect employment impacts as "creating" jobs, a more accurate term is "involving" jobs or job equivalents.

Georgia's Agricultural Industry by the Numbers

In order to put the study into proper perspective, we will look at how Georgia's agricultural industry is described in the Census of Agriculture and CAED publications *Farm Gate Value Report* and *Ag Snapshots*. These resources provide not only descriptive information, but also lay the groundwork for our analysis of locally grown in Georgia.

2007 Census of Agriculture

The United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS) conducts a Census of Agriculture ("Ag Census") every five years, with the most recent one in 2007. In the Georgia State Profile (NASS-USDA 2007), the Ag Census found that 47,846 farms were identified, a decrease of 3 percent from the 49,311 identified in 2002. Similarly, the farmland decreased 6 percent from 10.7 million acres to 10.2 million acres and average size of farm decreased 3 percent from 218 acres to 212 acres. In contrast, the

market value of agricultural products sold on those farms increased 45% from $4.9 billion to $7.1 billion, with an increase of 49% in the average per farm from $99,608 to $148,662 (see Table 1 for summary).[3]

Table 1. Selected Findings from 2007 Census of Agriculture, Georgia

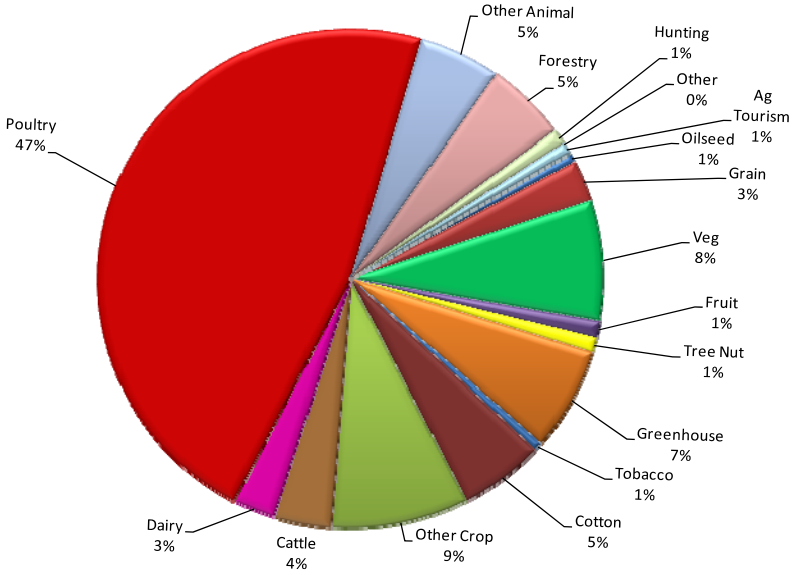
	2007	2002	% Change
Number of Farms	47,846	49,311	-3
Land in Farms	10,150,539 acres	10,744,239 acres	-6
Average Size of Farm	212 acres	218 acres	-3
Market Value of Products Sold	$7.112 billion	$4.911 billion	+45
Avg. Per Farm Market Value Sold	$148,662	$99,608	+49

Source: United States Department of Agriculture, National Agricultural Statistics Service, 2007 Census of Agriculture, State Profile, Georgia. Accessed 03/22/10 http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Georgia/cp99013.pdf.

Georgia Farm Gate Value Report

Another informative source of Georgia Agricultural data is the Farm Gate Value Report (FGVR), published annually by the CAED. Figure 1 highlights the total farm gate value summarized by sector for 2007. The chart shows that the poultry sector comprises nearly half of all the production value, with the remaining sectors demonstrating the rich diversity of Georgia's agricultural commodities.

Figure 1. Georgia Farm Gate Value Report, by Sector, 2007



Source: University of Georgia, Center for Agribusiness and Economic Development, 2007 Farm Gate Value Report.

[3] These trends are fairly similar throughout the United States for the time period in question. View the Economics Fact Sheet for the U.S. from the 2007 Ag Census at http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/economics.pdf for more details.

Ag Snapshots

According to *Ag Snapshots* (CAED, 2008) for 2007, Georgia's total farm gate value was $11.6 billion, with food and fiber production and directly related processing generating a total economic impact of $58.5 billion and creating more than 389 thousand jobs in 2007. Though the combined categories of vegetables, fruits, and nuts comprised only about 9% of total farm gate value, it amounted to over $1.1 billion of production, made up $2.85 billion of the total economic impact, and accounted for more than 25 thousand jobs. The diverse and fast growing sectors in Georgia agriculture include pecans, blueberries, peaches, onions, watermelons, and peppers.

Commodity Analysis

As a starting point for assessing the impact of locally grown produce, we begin with an analysis of specific Georgia commodities, considering the amount of current annual production (2007) and how that production compares to consumption.[4] From the data, we construct an approximation of what production would be if Georgians consumed the U.S. per capita average, calculated in both weight and dollar values (see Table 2 for details), and then a "utilization gap" or estimate of the production if Georgia produced all that it consumed based on the calculations (in pounds and in dollars). The end result is an approximation of what the potential "state shortage" (consumption > production) or "state surplus" (production > consumption) could be based on these consumption and production values. If there is a "state shortage" for a particular commodity, it indicates that Georgia may not be producing enough of that commodity to meet statewide consumption, as based on national consumption patterns. Although the figures provide only an approximation or outer bound, it gives an idea of what commodities are produced within the state but not at levels high enough to meet the entire annual consumption of Georgians.

The application of utilization gap calculations enables an exploration of the potential of these particular commodities as a source for additional direct or local sales and resulting revenue for producers and the overall economy of Georgia. For example, if all of the lettuce consumed by Georgians were produced and sold in the

[4] Estimated consumption was used because no specific figures exist for statewide consumption in Georgia at this level of detail. Because of this data limitation, we use per capita U.S. consumption and Georgia's population figures instead.

state, it could mean an additional $83.6 million of direct revenue or sales to producers in closing this gap[5]. If all of the carrots consumed by Georgians were produced and sold within the State, there could be an additional $12.8 million in direct revenue or sales. The net utilization gap (sum of positive and negative) for all of the commodities considered could add up to over $780 million if Georgia produced all that it consumed.

Table 3 highlights the commodities with shortages as developed in Table 2, the applicable per capita fresh consumption and total consumption, and the resulting proportion of production consumed as fresh. Only four of the commodities with shortages show a 100% fresh consumption proportion – lettuce, okra, pumpkins, and sweet potatoes, while other commodities show fresh proportions ranging from 21.7% (tomatoes) to 78.7% (strawberries). Analyzing the proportion of fresh consumption gives a further idea of the commodities that might have potential for more local consumption, since a fresh product might be assumed to be more readily purchased directly from the producer, and could result in greater direct-to-consumer sales.

Given the information in Tables 2 and 3, we have included the Georgia Organics Planting and Harvesting Calendars in the Appendix of this report, demonstrating how various commodities are planted and harvested throughout the year in Georgia. In addressing increased local direct purchases, the information in these calendars can prove quite valuable. For example, regarding carrots as mentioned above, the Annual Harvest Calendar shows that this vegetable is available from local farms in the 8 month peak season. Similarly, lettuce is available for purchase from local producers for a total of 10 months, including peak and season extension periods.

[5] Recall that this analysis assumes that sufficient production capacity exists to meet any suggested increases. The analysis presents a simplified view of production and consumption to highlight possible areas of potential, and does not rule out any particular commodity or commodity group as a local/direct sales opportunity.

Table 2. Comparison of Georgia and US Per Capita Fruit and Vegetable Consumption, 2007

Estimated 2007 Georgia Population (9,523,297) [1]	2007 Farm Gate Production (lbs) [2]	2007 Per Capita US Consumption (lbs) [3]	GA Equivalent Consumption (lbs) [4]	Utilization Gap (lbs) [5]	Average Price/lb [6]	Dollar Value of Utilization Gap [7]	State Shortage (Consumption > Production) or State Surplus (Production > Consumption)
Apples	1,561,707	49.85	474,781,558	(473,219,851.2)	$0.48	-$228,021,292	State Shortage
Broccoli	6,333,136	8.44	80,420,366	(74,087,229.5)	$0.63	-$46,921,542	State Shortage
Carrots	39,563,050	10.54	100,421,568	(60,858,518.9)	$0.21	-$12,759,165	State Shortage
Chile Peppers	9,187,181	6.09	58,005,140	(48,817,959.0)	$0.61	-$29,584,579	State Shortage
Grapes [8]	9,996,408	21.27	202,536,412	(192,540,004.6)	$0.98	-$189,183,300	State Shortage
Green/English Peas	526,450	2.97	28,312,897	(27,786,447.0)	$0.40	-$11,208,793	State Shortage
Lettuce [9]	244,950	29.95	285,192,674	(284,947,724.1)	$0.29	-$83,557,875	State Shortage
Okra	1,045,802	0.46	4,374,100	(3,328,298.7)	$0.71	-$2,360,743	State Shortage
Peaches	61,904,576	9.17	87,368,825	(25,464,249.8)	$0.73	-$18,580,462	State Shortage
Potatoes	12,905,750	124.71	1,187,662,840	(1,174,757,090.2)	$0.33	-$387,669,840	State Shortage
Pumpkin	14,244,500	5.28	50,306,833	(36,062,333.5)	$0.25	-$9,026,976	State Shortage
Spinach	9,979,750	2.77	26,415,575	(16,435,824.8)	$0.16	-$2,607,290	State Shortage
Strawberries	3,812,038	7.96	75,819,622	(72,007,584.9)	$1.34	-$96,684,715	State Shortage
Sweet potatoes	8,220,800	5.07	48,248,712	(40,027,911.7)	$0.50	-$20,021,497	State Shortage
Tomatoes	145,966,145	88.54	843,239,014	(697,272,869.2)	$0.34	-$237,215,022	State Shortage
Bell Peppers	237,426,082	9.37	89,264,946	148,161,135.7	$0.42	$62,485,335	State Surplus
Blackberries	2,256,375	0.10	906,321	1,350,053.6	$2.93	$3,949,485	State Surplus
Blueberries	18,328,983	0.97	9,255,944	9,073,038.7	$2.45	$22,187,672	State Surplus
Cabbage	300,805,125	8.93	85,067,391	215,737,733.8	$0.13	$28,771,813	State Surplus
Cantaloupe	129,944,455	9.59	91,313,196	38,631,258.8	$0.18	$7,077,499	State Surplus
Collard Greens	66,374,450	0.49	4,631,247	61,743,202.9	$0.31	$19,252,443	State Surplus
Cucumbers	266,872,426	9.88	94,107,268	172,765,158.0	$0.32	$55,897,408	State Surplus
Eggplant	46,996,818	0.84	8,017,190	38,979,628.2	$0.25	$9,832,591	State Surplus
Kale	10,214,750	0.34	3,210,887	7,003,863.4	$0.29	$2,049,002	State Surplus
Lima Beans	6,562,800	0.41	3,879,182	2,683,618.5	$0.54	$1,445,322	State Surplus
Mustard Greens	35,082,750	0.40	3,809,075	31,273,675.3	$0.31	$9,642,761	State Surplus
Onions	348,286,860	20.96	199,566,723	148,720,137.3	$0.47	$70,196,152	State Surplus
Pecans	128,007,137	0.44	4,222,370	123,784,767.1	$1.00	$124,260,732	State Surplus
Snap beans	93,923,008	7.68	73,164,375	20,758,632.8	$0.31	$6,503,423	State Surplus
Squash	76,614,325	4.15	39,527,582	37,086,743.1	$0.34	$12,777,330	State Surplus
Sweet corn	449,334,153	25.18	239,772,696	209,561,456.8	$0.21	$43,739,717	State Surplus
Turnip greens	74,386,500	0.39	3,703,718	70,682,781.7	$0.31	$21,918,599	State Surplus
Watermelon	1,245,225,500	14.42	137,353,533	1,107,871,966.5	$0.08	$93,065,966	State Surplus
Net Value of Utilization Gap						-$780,349,838	

[1] Source: 2010 Georgia County Guide, Center for Agribusiness and Economic Development, February 2010. [2] Source: 2007 Georgia Farm Gate Value Report, Center for Agribusiness and Economic Development, May 2008. [3] Data for fruit and vegetable consumption taken from USDA ERS Food Availability (Per Capita) Data System. [4] Value = Per capita consumption (Column 3) multiplied by Georgia population (9,523,297). [5] Utilization Gap = Farm Gate Production - Georgia Equivalent Consumption. [6] 2007 Georgia Farm Gate Value Report, Center for Agribusiness and Economic Development, May 2008. [7] Dollar Value of Utilization Gap = Utilization Gap multiplied by Average price /lb. [8] All types including muscadines. [9] Head and Romaine.

Table 3. Fresh Consumption as Share of Total Consumption for Commodities with State Shortages, 2007

Commodities with State Shortages*	Per Capita Fresh Consumption (lbs.)	Per Capita Total Consumption (lbs.)	% of Production Consumed Fresh
Apples	16.41	49.85	32.9%
Broccoli	5.64	8.44	66.8%
Carrots	8.06	10.54	76.4%
Grapes	8.02	21.27	37.7%
Lettuce	29.95	29.95	100.0%
Okra	0.46	0.46	100.0%
Peaches	4.47	9.17	48.7%
Potatoes	39.08	124.71	31.3%
Pumpkins	5.28	5.28	100.0%
Spinach	1.62	2.77	58.3%
Strawberries	6.27	7.96	78.7%
Sweet Potatoes	5.07	5.07	100.0%
Tomatoes	19.23	88.54	21.7%

Source: USDA ERS Food Availability (Per Capita) Data System for 2007. *Data on fresh consumption were not available for Chile Peppers and English Peas.

Developing Scenarios to Examine Impact

In addressing the question of the impact of locally grown produce in Georgia, it is important to note that the emphasis of this portion of the analysis is on examining impacts that take place utilizing the *local* distribution and marketing system, not a typical retail food chain which may or may not include truly local fruit and vegetable purchases. The examination is not to minimize the importance of the retail food chain and its distributional efficiencies and impact, but to point out that local sales present opportunities for economic impact and to begin to measure those impacts.

We will use information from the 2007 Ag Census as the starting point for quantifying the local food economic impact by analyzing direct-to-consumer sales, which constitutes a measurable portion of local sales. In the survey questionnaire to producers, producers are asked about the market value of agricultural products that are sold "directly to individuals for human consumption".[6] Figure 2 demonstrates the trends in these direct-to-consumer sales in Georgia between 1997 and 2002, showing the magnitude of direct sales in comparison to total farm sales.

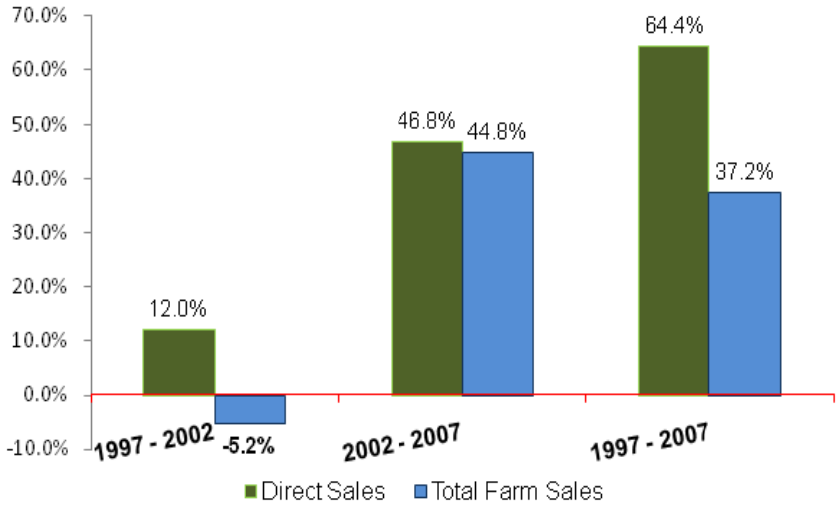
[6] This is defined by the National Agricultural Statistics Service (NASS) as representing agricultural products produced and sold directly to individuals for human consumption from roadside stands, farmer's markets, pick-your-own sites, etc. This figure excludes the non-edible products but includes livestock sales. It also excludes sales of agricultural products by vertically integrated operations through their own processing and marketing operations. See Appendix B of Ag Census Report Form.

Between 1997 and 2002, total farm sales declined but direct sales showed an increase. Direct sales to consumers have increased faster than total agricultural sales, increasing by 64% and 37% respectively from 1997 to 2007 based on agricultural census data. That trend is consistent with the national picture where the corresponding numbers are 105% and 48% due mainly to large increases in direct sales in the Far West and Rocky Mountain states as reported in a recent USDA study (Diamond and Soto 2009). The authors suggested that the trend is attributable to the fact that an increasing number of farmers are using direct-to-consumer sales as a means to increase their share of consumer food expenditures. Other researchers have identified additional factors contributing to the trend, including the rise in consumer concerns about food safety and the source and freshness of food, the growth in farmers' markets (where producers can command higher prices as compared to sales to supermarkets or brokers), and the increasing popularity of pick-your-own operations. Other findings at the national level based on 2007 Ag Census data (Timmons and Wang 2010) show that direct sales to consumers in the U.S. increased 59% between 1997 and 2007 (in constant 2007 dollars).

Since the agricultural products referenced in the Ag Census are being sold directly to individuals for consumption and the data is readily available in summary form, we will use these figures as a beginning approximation of local direct sales as defined in this study. Other researchers have suggested that the data from the Ag Census represents the best available in measuring consumption of local food, one stating that "No other data source provides greater accuracy or insight about consumption of local food." (Timmons and Wang 2010)[7]. In addition, the Ag Census provides delineation of these sales by different types of farms, which enables us to separate the direct sales figures by those classified as "vegetable and melon farms" and "fruit and nut farms," also consistent with the goals of the study[8].

[7] See the appendices of this report for tables featuring data on direct sales from all U.S. states and comparison of Georgia to other southern states.
[8] The classification scheme is by North American Industry Classification System (NAICS). Details about this classification scheme may be found online at http://www.census.gov/eos/www/naics/.

Figure 2. Trends in Direct Sales As Compared to Total Farm Sales: Georgia, Value of Sales



The data from the Ag Census used for these scenarios include the total number of farms with direct sales, total number of farms with any sales, and the total dollar value of each type of sales. From this information is calculated the average direct sales per farm and the portion of total sales for both the U.S. and Georgia. Based on these figures, the following scenarios are developed:

- Scenario One: Economic impact of the direct sales from vegetable/melon ($5.2 million) and fruit/nut ($2.7 million) farm sales in Georgia as reported in 2007 Ag Census.
- Scenario Two: Potential economic impact of the direct sales from vegetable/melon and fruit/nut farms in Georgia in 2007 if the existing farms raised the amount of direct sales per year to the U.S average amount per farm as reported in the 2007 Ag Census.
- Scenario Three: Potential economic impact of the direct sales from vegetable/melon and fruit/nut farms in Georgia in 2007 if the existing farms raised the amount of direct sales per year to the U.S average percent of total sales as reported in the 2007Ag Census.

Findings reveal that there were 670 Georgia farms classified as vegetable/melon and fruit/nut farms which sold a total of $7.9 million in products directly to individuals for human consumption in 2007 (see Table 4). This amounts to an average of $15,426 for vegetable/melon farms and $7.910 for fruit/nut farms. Similar numbers for the U.S. average $18,669 and $20,038, respectively. The market value of agricultural products sold was $467.6

million for vegetable/melon farms and $191.4 million for fruit/nut farms. The direct sales portion of agricultural sales at these farms represented 1.11% for the vegetable/melon farms, compared to the U.S. average of 2.24%. With respect to fruit/nut farms, the Georgia direct sales portion represented 1.38% of all agricultural products sold in comparison to 1.87% at the national level.

Table 4. Profile of Direct Sales in Comparison with Total Ag Products Sold, Georgia and U.S., 2007

	Georgia Farms		United States Farms	
	Vegetable and Melon	Fruit and Nuts	Vegetable and Melon	Fruit and Nuts
Number of Farms with Direct Sales	337	335	17,961	17,161
Market Value of Direct Sales	$5,198,532	$2,649,714	$335,311,000	$343,878,000
Average Per Farm	$15,426	$7,910	$18,669	$20,038
Market Value of Ag. Products Sold	$467,641,379	$191,421,337	$14,975,322,000	$18,351,629,000
Direct % of Total	1.11%	1.38%	2.24%	1.87%

Source: 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors.

Scenario One

In scenario one, we examine the direct sales figures exactly as reported[9] by analyzing the economic impact resulting in employment, labor income, value added, and output. Tables 5 and 6 present highlights from the analysis for the two separate farm classification groups. The $5.2 million in sales from the vegetable and melon farms directly results in 37 jobs with $1.6 million in income and $1.7 million in value added to the Georgia economy. Considering multiplier effects, which includes both indirect and induced effects, the overall value in the economy is 76 jobs, $3.0 million in income, $4.2 million in value added, and $9.7 million in output. The $2.7 million in sales from the fruit and nut farms directly contributes 36 jobs with $764,867 in income and $1.0 million in value added to the Georgia economy. Considering complete multiplier effects, the overall economic importance of direct sales amounts to 56 jobs, $1.5 million in income, $2.2 million in value added, and $4.7 million in output/sales.

[9] Though this is presented as a "scenario," it is simply an analysis of the direct sales as reported in the Ag Census to assist in putting the following numbers into perspective.

Table 5. Economic Impact of Direct Sales from Vegetable and Melon Farms, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	37.0	$1,565,513	$1,678,329	$5,198,532
Indirect Effect	21.0	$762,792	$1,295,867	$2,314,282
Induced Effect	17.7	$680,807	$1,266,706	$2,150,450
Total Effect	75.7	$3,009,111	$4,240,902	$9,663,264

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

Table 6. Economic Impact of Direct Sales from Fruit and Nut Farms, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	36.0	$764,867	$1,020,845	$2,649,714
Indirect Effect	10.9	$379,882	$562,172	$1,006,359
Induced Effect	8.7	$334,413	$622,032	$1,055,898
Total Effect	55.5	$1,479,162	$2,205,049	$4,711,972

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

Scenario Two

In this scenario, we estimate the economic impact if Georgia farms with direct sales increased the level to the U.S. national average[10]. In this case, it would be a change from $15,426 per farm to $18,669 (+$3,243) for vegetable/melon farms and from $7,910 to $20,038 (+ 12,128) for fruit/nut farms, an increase of 21% and 153% respectively. Tables 7 and 8 show the resulting impact from this change for each classification group. This would result in direct sales in vegetable/melon farms increasing to a total of $6.3 million in output/sales and a total effect (including multiplier effects) of $11.7 million and fruit/nut farms increasing to a total of $6.7 million in output/sales and a total effect (including multiplier effects) of $11.9 million.[11]

Table 7. Potential Economic Impact of Direct Sales from Vegetable and Melon Farms at U.S. Average per Farm, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	44.8	$1,894,624	$2,031,157	$6,291,398
Indirect Effect	25.4	$923,150	$1,568,292	$2,800,802
Induced Effect	21.5	$823,930	$1,533,000	$2,602,531
Total Effect	91.6	$3,641,704	$5,132,450	$11,694,732

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

[10] A similar change in overall impact could occur with other types of changes. For example, if a greater number of farms sold the same average amount, there would still be an increase in the economic impact.

[11] This analysis does not estimate the potential loss of impact to other industries, such as retail food sales, because a consumer might substitute a directly sold product for one sold at retail.

Table 8. Potential Economic Impact of Direct Sales from Fruit and Nut Farms at U.S. Average per Farm, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	91.1	$1,937,732	$2,586,231	$6,712,845
Indirect Effect	27.6	$962,401	$1,424,220	$2,549,533
Induced Effect	22.0	$847,209	$1,575,869	$2,675,036
Total Effect	140.7	$3,747,342	$5,586,320	$11,937,413

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

Scenario Three

In the third scenario proposed, we estimate the impact if Georgia farms with direct sales increased to the same proportion of agricultural products sold as the U.S. average. In this case, it would be a change from 1.1% of all sales to 2.24% for vegetable/melon farms and from 1.38% to 1.87% for fruit/nut farms. In order to estimate this scenario, we apply the U.S. percentages to the respective Georgia sales figure. Tables 9 and 10 show the effects of these changes for each classification group. This would result in direct sales in vegetable/melon farms increasing to a total of $10.5 million in output/sales and a total effect (including multiplier effects) of $19.5 million and fruit/nut farms increasing to a total of $3.6 million in output/sales and a total effect (including multiplier effects) of $6.4 million.

Table 9. Potential Economic Impact of Direct Sales from Vegetable and Melon Farms at U.S. Direct Sales Rate, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	74.6	$3,153,264	$3,380,500	$10,470,913
Indirect Effect	42.2	$1,536,418	$2,610,143	$4,661,439
Induced Effect	35.7	$1,371,285	$2,551,408	$4,331,449
Total Effect	152.5	$6,060,967	$8,542,050	$19,463,800

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

Table 10. Potential Economic Impact of Direct Sales from Fruit and Nut Farms at U.S. Direct Sales Rate, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	48.7	$1,035,398	$1,381,914	$3,586,907
Indirect Effect	14.7	$514,245	$761,010	$1,362,304
Induced Effect	11.8	$452,693	$842,042	$1,429,365
Total Effect	75.2	$2,002,336	$2,984,966	$6,378,576

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

Using the Georgia Farm Gate Value Report for Assessing the Impact of Locally Grown

Each year, the University of Georgia's Center for Agribusiness and Economic Development publishes the Georgia Farm Gate Value Report (FGVR), a compilation of survey results from Georgia Cooperative Extension county agents and commodity specialists. The purpose of the publication is to provide annual county-level information for the value of all food and fiber commodities grown in the state of Georgia (Boatright and McKissick 2008). This unique source of agricultural data provides estimates different from other available resources, so it is likely that the Farm Gate Value report numbers will not match those from other sources.[12]

Given that there are the expected differences in the Ag Census and FGVR for 2007, we utilize the FGVR numbers as the starting point in additional scenarios to estimate the potential economic impact of local foods. The data is then analyzed applying proportions from the IMPLAN model to subtract the value of intermediate products (used as input into another product), which by definition would not represent a final, direct sale to a consumer.[13] This calculation represents an estimate of the final demand for the product, or sales for final use by the purchaser. To further refine the estimate, IMPLAN provides proportions of local (recall that by definition, this means the State of Georgia) final demand by households, government, inventories, and exports. In the case of fruit, melons, vegetables, and nuts, final demand is primarily split (on average) between households (73%) and exports (25%), with the small fraction left going to state and local governments (1%) and for inventories (1%). Since neither exports nor inventories represent a local purchase, we will examine only the fraction of the value that represents final demand by households and state government.

The resulting estimate of final demand for vegetables, melons, fruit, and nuts includes all methods of sales – from direct to consumer to wholesale to retail – therefore a scenario is developed to estimate the potential of capturing a particular portion of these sales as direct to consumers. For purposes of this analysis, we will estimate what capturing 5% of this total final demand as directly sold means to the Georgia economy. Because of the linear nature of the IMPLAN model, this may be further generalized as an interpretation of what ***each*** 5% increment of increased direct sales might mean to the economy and the potential retail value of these figures. See Table 11 for

[12] See "A Comparison of Agricultural Data Sources," page ii of the Georgia Farm Gate Value Report for more details on these comparisons. Each year's report is available online at http://www.caed.uga.edu/publications/annual.html.

13 The proportion of production value used for intermediate demand is derived from the IMPLAN database in order to obtain an estimate of final demand as follows. Total Production Value minus Intermediate Demand Value = Final Demand Value. Further calculations are made to determine what portion of that is sold to meet household and other final demand. Exports are excluded from this estimate because an export would not constitute a local sale.

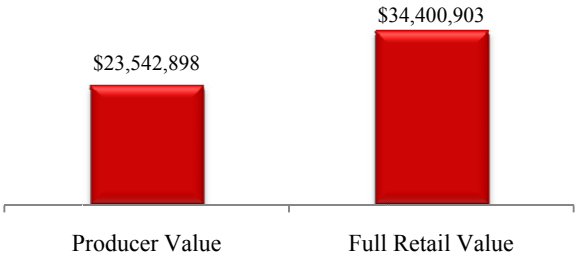
these calculations using 2007 figures for Georgia and Figure 3 for a representation of the range between producer and retail values.

Table 11. Estimates of Final Demand for Local Purchases, Georgia 2007

	2007		
	Vegetable and Melon	Fruit and Nuts	Total
Georgia Farm Gate Value	$894,853,190	$241,603,601	$1,136,456,791
Total Estimated Sales to Households*	$463,673,489	$7,184,472	$470,857,961
Capture 5% For Local Sales - Producer Value	23,183,674	359,224	$23,542,898
Retail Value of 5%**	33,862,074	538,829	$34,400,903

*This figure also includes a small proportion (~1%) shown in the model to be sold to State and Local Governments. According to the IMPLAN model user manual, these purchases can be both education and non-education related, including K-12 and public universities, police protection, and sanitation. **Full retail value would include costs for wholesale, transportation, etc. Actual prices received by producers for direct sales might fall somewhere between "producer prices" and full retail. The estimate of full retail value is based on the margin provided by the IMPLAN model. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997 and UGA/CAED Georgia Farm Gate Value Report 2007.

Figure 3. Producer and Full Retail Value* of Potential Local Sales of Vegetables, Melons, Fruit, and Nuts



*Full retail value would include costs for wholesale, transportation, and other costs to bring product to market. Actual prices received by producers for direct sales might fall somewhere between "producer value" and full retail.

Farm Gate Value Scenario

The scenario is best described as follows:

- The *potential* economic impact of the direct sales from vegetable/melon and fruit/nut farms in Georgia in 2007 for every 5% increase in consumer local purchases as a direct sale from the producer. This analysis includes the corresponding employment, income, value added, and output potential resulting from those sales.

As mentioned above, because of the linear nature of the IMPLAN model, this may be further generalized as an interpretation of what ***each*** 5% increment of consumer local direct sales might mean to the economy. Table 12

outlines the potential economic impact from each 5% of consumer local direct sales resulting from this scenario. The $23.5 million in sales from the farms directly results in 169.6 jobs with $7.1 million in income and $7.7 million in value added to the Georgia economy. Considering multiplier effects, which includes both indirect and induced effects, the overall value in the economy is 344.6 jobs, $13.6 million in income, $19.2 million in value added, and $43.7 million in output.

Table 12. Potential Economic Impact of 5% Increase in Local Direct Sales from Vegetable, Melons, Fruit and Nuts, Georgia 2007

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	169.6	$7,087,268	$7,652,913	$23,542,898
Indirect Effect	94.8	$3,446,306	$5,845,239	$10,438,985
Induced Effect	80.2	$3,080,045	$5,730,705	$9,728,842
Total Effect	344.6	$13,613,619	$19,228,860	$43,710,724

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture and Farm Gate Value Report, Center for Agribusiness and Economic Development, University of Georgia. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

Additional $10 Per Week Scenario

As you may recall, we referred to a study conducted in Virginia (Benson and Bendfelt 2007) that quantified the impact of each household in the state spending an additional $10 per week of their total food dollars on fresh local produce and farm-based Virginia products, regardless of where the sale takes place (i.e. not just those that are direct-to-consumer, but also at other venues like grocery stores that may sell local products). This simulation allows an exploration of what a relatively small change in consumer behavior and budget can mean to the community. A similar analysis for the State of Georgia shows that if each of over 3.7 million households in Georgia (2007 IMPLAN data) devoted $10 per week of their total food dollars–purchased from any source–to locally grown products, it could mean over $1.94 billion food dollars reinvested back into the State.

Summary of Findings

This study has provided an analysis of the potential economic impact of various scenarios describing how a change in local produce sales in Georgia might affect output, labor income, and value added. These views provide a framework for considering the direct impact of additional local produce purchases within the State and a benchmark for measuring how incremental changes might increase the economic importance of these sales. The 2007 Ag Census reported over $7 million in direct sales from vegetable/melon and fruit/nut farms. The first

scenario looked at these direct sales, which made an overall contribution to the economy of 132 jobs, $4.5 million in labor income, $6.4 million in value added, and $14.4 million in output.

In the next scenario, researchers analyzed the impact if Georgia farmers increased their average direct sales of fresh produce to the level found nationally. This scenario could result in an overall contribution of 232 jobs, $7.4 million in labor income, $10.7 million in value added, and $23.6 million in output. A similar scenario in which Georgia vegetable, melon, fruit, and nut farms increased the proportion of their direct fresh produce sales to the national average level could result in an overall contribution of 228 jobs, $8.1 million in labor income, $11.5 million in value added, and $25.8 million in output.

Using the Center for Agribusiness and Economic Development's Farm Gate Value Report as the basis, an additional scenario estimated the economic changes that would occur with every 5% of consumer local purchases as a direct sale from the farmer/producer. Considering multiplier effects, the overall contribution for each 5% of local sales captured is approximately 345 jobs, $13.6 million in income, $19.2 million in value added, and $43.7 million in output. Recall that the methodology makes this result applicable for every 5% increment of consumer local purchases that might occur. Lastly, similar to a Virginia study, researchers found that if each of the approximately 3.7 million households in the State devoted $10 per week of their total food dollars to locally grown food products – from any source, not just direct from producers – there could be over $1.9 billion food dollars reinvested back into the state. The following table summarizes the total impacts for each scenario[14]:

Table 13. Summary of Total Economic Impact from Each Scenario

	TOTAL ECONOMIC IMPACT			
	(Number)	(Million)		
Description	**Employment**	**Labor Income**	**Value Added**	**Output**
Scenario 1: 2007 Ag Census Report	132	$4.5	$6.4	$14.4
Scenario 2: Increase to U.S. Avg. Sales per Farm	232	$7.4	$10.7	$23.6
Scenario 3: Increase to U.S. Proportion of Direct Sales	228	$8.1	$11.5	$25.8
Scenario 4: Capture 5% of Purchases as Direct Sales*	345	$13.6	$19.2	$43.7

*Because of the linear nature of the IMPLAN model, this would essentially translate to a figure for *each* 5% of consumer local purchases as direct sales as calculated under scenario four. Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture and Farm Gate Value Report, Center for Agribusiness and Economic Development, University of Georgia. Calculations by authors using Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, www.implan.com, 1997.

[14] No calculation was made for the total economic impact of households increasing local purchases by $10 per week because there is not enough information about those simulated purchases beyond the direct potential. Therefore, this category is not included in the table, which is a summary of total economic impacts of the other scenarios.

Considerations and Future Research

In light of the findings from this investigation, there are multiple aspects to consider in the pursuit of selling more local produce in Georgia. One consideration is to explore what motivates a consumer to buy directly from a producer or farmer. Some researchers have suggested that different customer groups value the attributes of local produce in diverse manners (Bond, Thilmany et al. 2008; Thilmany, Bond et al. 2008). In an earlier study, the same authors (Bond, Thilmany et al. 2006) developed some useful generalizations for direct purchasers of local produce, finding that they have similar preferences to other consumers in terms of quality, but value convenience, presentation and competitive prices somewhat differently. They suggest consideration of these differences in marketing depending on whether the goal is to increase patronage by existing customers or to gain new customers. In increasing patronage of current customers, they respond to differentiation of local produce – emphasizing production practice (i.e. organic) or other quality attributes – meeting the needs of these customers for "superior, nutritionally enhanced produce that is pest free and locally grown." Gaining new customers, those who might not typically purchase through direct channels, might require promotion that emphasizes safety attributes, attractive packaging and displays, and even semi-processed produce products to capitalize on the convenience needs of this group.

A USDA study found some of the reasons "Why Consumers Love to Buy Directly from Farmers" (Tropp, Ragland et al. 2008) as summarized in the following table:

Figure 4. Why Consumers Love to Buy Directly from Farmers, USDA

Some have examined the characteristics of those who purchase their produce direct through farmers markets (Zepeda 2009), again making the delineation between those who already shop there and those who might represent a new customer. Zepeda found that those who already shop farmers markets do so because of greater concerns about freshness, nutrition, the environment, farmers, and personal health. Factors such as the enjoyment and frequency of cooking, more than one adult in the household, and being religious increased the likelihood of that person becoming a farmer's market customer.

(Sharma and Strohbehn 2006) looked at another method of direct sales that may not be as frequently considered – restaurants or other foodservice outlets. Their analysis considered not only the costs to restaurants of buying local, but whether patrons would be willing to purchase local menu items at a slight price premium. Their findings suggest that they would be willing, and that producers can help foodservice operations promote the use of local food ingredients. Chefs of small gourmet, independently-owned restaurants are more likely to purchase local foods, with the largest obstacle to these purchases being a lack of information (Curtis and Cowee 2009).

Knowing that information is critical in marketing to consumers or to foodservice outlets, the CAED interactive website known as MarketMaker (www.marketmaker.uga.edu) and the Georgia Organics Directory (www.georgiaorganics.org) are two resources that can help to overcome informational hurdles in selling or purchasing local food products. In addition to these existing resources, there needs to be more research regarding purchases of local food in Georgia, including direct-to-consumer and through other methods. Future research efforts might include conducting an analysis similar to this study on other types of farm products, such as meat products or other likely direct-to-consumer products. In addition, because this methodology required the use of secondary data collected for other purposes, it would be meaningful to gather primary information about Georgia local or direct food sales. These primary research efforts might include surveys of farmers markets or other foodservice outlets, such as restaurants or institutions such as schools and colleges. A literature-review-based study of local food systems (Martinez, Hand et al. 2010) found several obstacles for market entry or expanding local food sales, including: constraints on capacity for small farmers and lack of distribution systems to move local products into mainstream sales outlets; inadequate research, education, and training in local food marketing; and limited knowledge of important regulations, such as food safety requirements. Future research efforts should be designed to tackle these barriers and/or promote awareness of existing resources to help alleviate them.

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Appendices

Table 14. Agricultural Census Total Farm and Direct Sales, 2002 and 2007, All States and U.S.

	Total Farm Sales ($1,000)		Direct Sales ($1,000) (All Categories)		Direct % of Total	
	2007	2002	2007	2002	2007	2002
Alabama	$ 4,415,550	$ 3,264,949	$ 8,325	$ 8,039	0.189%	0.246%
Alaska	$ 57,019	$ 46,143	$ 1,682	$ 829	2.950%	1.797%
Arizona	$ 3,234,552	$ 2,395,447	$ 5,247	$ 3,911	0.162%	0.163%
Arkansas	$ 7,508,806	$ 4,950,397	$ 8,161	$ 5,674	0.109%	0.115%
California	$ 33,885,064	$ 25,737,173	$ 162,896	$ 114,356	0.481%	0.444%
Colorado	$ 6,061,134	$ 4,525,196	$ 22,584	$ 17,406	0.373%	0.385%
Connecticut	$ 551,553	$ 470,637	$ 29,752	$ 17,108	5.394%	3.635%
Delaware	$ 1,083,035	$ 618,853	$ 3,505	$ 2,856	0.324%	0.461%
Florida	$ 7,785,228	$ 6,242,272	$ 19,363	$ 12,370	0.249%	0.198%
Georgia	**$ 7,112,866**	**$ 4,911,752**	**$ 13,146**	**$ 8,958**	**0.185%**	**0.182%**
Hawaii	$ 513,626	$ 533,423	$ 8,657	$ 7,089	1.685%	1.329%
Idaho	$ 5,688,765	$ 3,908,262	$ 7,840	$ 5,889	0.138%	0.151%
Illinois	$ 13,329,107	$ 7,676,239	$ 25,893	$ 18,412	0.194%	0.240%
Indiana	$ 8,271,291	$ 4,783,158	$ 22,268	$ 17,968	0.269%	0.376%
Iowa	$ 20,418,096	$ 12,273,634	$ 16,506	$ 11,651	0.081%	0.095%
Kansas	$ 14,413,182	$ 8,746,244	$ 9,272	$ 9,001	0.064%	0.103%
Kentucky	$ 4,824,561	$ 3,080,080	$ 15,173	$ 10,497	0.314%	0.341%
Louisiana	$ 2,617,981	$ 1,815,803	$ 9,175	$ 4,897	0.350%	0.270%
Maine	$ 617,190	$ 463,603	$ 18,419	$ 11,237	2.984%	2.424%
Maryland	$ 1,835,090	$ 1,293,303	$ 21,220	$ 12,551	1.156%	0.970%
Massachusetts	$ 489,820	$ 384,314	$ 42,065	$ 31,315	8.588%	8.148%
Michigan	$ 5,753,219	$ 3,772,435	$ 58,923	$ 37,269	1.024%	0.988%
Minnesota	$ 13,180,466	$ 8,575,627	$ 34,667	$ 22,763	0.263%	0.265%
Mississippi	$ 4,876,781	$ 3,116,295	$ 9,659	$ 7,506	0.198%	0.241%
Missouri	$ 7,512,926	$ 4,983,255	$ 20,982	$ 14,712	0.279%	0.295%
Montana	$ 2,803,062	$ 1,882,114	$ 6,321	$ 4,523	0.226%	0.240%
Nebraska	$ 15,506,035	$ 9,703,657	$ 5,902	$ 4,015	0.038%	0.041%
Nevada	$ 513,269	$ 446,989	$ 1,074	$ 1,606	0.209%	0.359%
New Hampshire	$ 199,051	$ 144,835	$ 16,021	$ 10,420	8.049%	7.194%
New Jersey	$ 986,885	□□ 749,872	$ 30,106	$ 19,126	3.051%	2.551%
New Mexico	$ 2,175,080	$ 1,700,030	$ 11,193	$ 6,582	0.515%	0.387%
New York	$ 4,418,634	$ 3,117,834	$ 77,464	$ 59,724	1.753%	1.916%
North Carolina	$ 10,313,628	$ 6,961,686	$ 29,144	$ 17,245	0.283%	0.248%
North Dakota	$ 6,084,218	$ 3,233,366	$ 2,429	$ 1,765	0.040%	0.055%
Ohio	$ 7,070,212	$ 4,263,549	$ 54,270	$ 37,217	0.768%	0.873%
Oklahoma	$ 5,806,061	$ 4,456,404	$ 11,534	$ 3,735	0.199%	0.084%
Oregon	$ 4,386,143	$ 3,195,497	$ 56,362	$ 21,411	1.285%	0.670%
Pennsylvania	$ 5,808,803	$ 4,256,959	$ 75,893	$ 53,760	1.307%	1.263%
Rhode Island	$ 65,908	$ 55,546	$ 6,292	$ 3,697	9.547%	6.656%

	Total Farm Sales ($1,000)		Direct Sales ($1,000) (All Categories)		Direct % of Total	
	2007	2002	2007	2002	2007	2002
South Carolina	$ 2,352,681	$ 1,489,750	$ 12,660	$ 8,287	0.538%	0.556%
South Dakota	$ 6,570,450	$ 3,834,625	$ 6,158	$ 3,789	0.094%	0.099%
Tennessee	$ 2,617,394	$ 2,199,814	$ 15,380	$ 11,227	0.588%	0.510%
Texas	$ 21,001,074	$ 14,134,744	$ 38,696	$ 25,639	0.184%	0.181%
Utah	$ 1,415,678	$ 1,115,898	$ 10,098	$ 6,983	0.713%	0.626%
Vermont	$ 673,713	$ 473,065	$ 22,863	$ 9,567	3.394%	2.022%
Virginia	$ 2,906,188	$ 2,360,911	$ 28,878	$ 16,825	0.994%	0.713%
Washington	$ 6,792,856	$ 5,330,740	$ 43,537	$ 34,753	0.641%	0.652%
West Virginia	$ 591,665	$ 482,814	$ 7,097	$ 4,588	1.199%	0.950%
Wisconsin	$ 8,967,358	$ 5,623,275	$ 43,491	$ 29,072	0.485%	0.517%
Wyoming	$ 1,157,535	$ 863,887	$ 3,025	$ 2,381	0.261%	0.276%
United States	$ 297,220,491	$ 200,646,355	$ 1,211,270	$ 812,204	0.408%	0.405%

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture; calculations by authors.

Table 15. Value of Direct Sales ($1,000), Comparison of Georgia to Southern States and U.S. Average, 2007

National Rank	State	2007	% of Total sales in 2007	% of National Average Sales in 2007	2002	State Share of Southern States Total (as %)	State Average Relative to Southern States Average (as %)
37	**Alabama**	$8,325	0.7%	34.4%	$8,039	6.3%	56.8%
22	**Florida**	$19,363	1.6%	79.9%	$12,370	14.7%	132.0%
28	**Georgia**	$13,146	1.1%	54.3%	$8,958	10.0%	89.6%
27	**Kentucky**	$15,173	1.3%	62.6%	$10,497	11.5%	103.4%
35	**Louisiana**	$9,175	0.8%	37.9%	$4,897	6.9%	62.5%
33	**Mississippi**	$9,659	0.8%	39.9%	$7,506	7.3%	65.8%
14	**North Carolina**	$29,144	2.4%	120.3%	$17,245	22.1%	198.7%
29	**South Carolina**	$12,660	1.0%	52.3%	$8,287	9.6%	86.3%
26	**Tennessee**	$15,380	1.3%	63.5%	$11,227	11.6%	104.8%
	Total for Southern States	$132,025	10.9%		$89,026	100%	
	United States	$1,211,270			$812,204		
	National Average	$24,225					
	Southern State Average	$14,669					
	Southern State Average as % National Average	60.6%					
	Southern States as % of US total	10.9%					

Source: Based on data from 2007 U.S. Census of Agriculture, National Agricultural Statistics Services, U.S. Department of Agriculture; calculations by authors.

Figure 5. Georgia Organics Planting Calendar

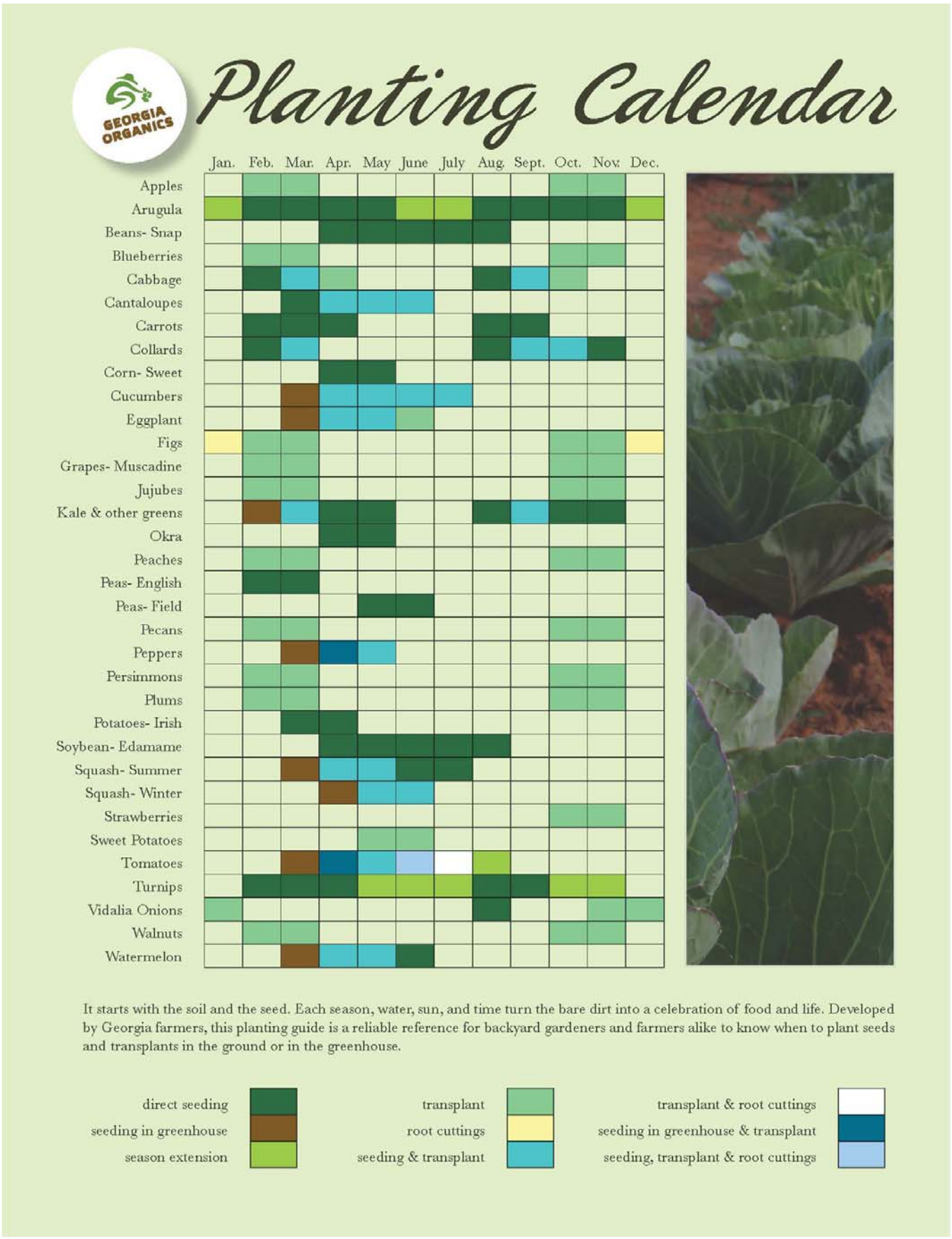

Figure 6. Georgia Organics Annual Harvest Calendar

The Center for Agribusiness & Economic Development

The Center for Agribusiness and Economic Development is a unit of the College of Agricultural and Environmental Sciences of the University of Georgia, combining the missions of research and extension. The Center has among its objectives:

> To provide feasibility and other short term studies for current or potential Georgia agribusiness firms and/or emerging food and fiber industries.
>
> To provide agricultural, natural resource, and demographic data for private and public decision makers.

To find out more, visit our Web site at: http://www.caed.uga.edu

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J. Scott Angle, Dean and Director