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The Feasibility of Operating a Tift County Fresh-Cut Produce Facility

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Purpose

This study examines the economic feasibility of constructing and operating a value-added fresh-cut produce facility in the Tift County area. The main focus will be on adding value to twelve different vegetable commodities. The industry has successfully added value to these vegetables through further preparation such as removing ends, peeling, chopping, washing, and packaging for consumer convenience. Value-added vegetables are often seen in the produce section of stores placed on a shrink-wrapped styrofoam sheet. This type of packaging increases the value received by the store, wholesaler, and farmer. However, the largest percentage of added value occurs in the packing component. Hence, the Tift County group has requested the Center for Agribusiness and Economic Development (CAED) research the feasibility of operating a value-added facility.

Introduction to Fresh-Cut Industry

The fresh-cut value-added industry has grown tremendously as consumers demand more convenience in prepared foods. Fresh-cut refers to fresh produce that has been washed, cut, packaged, or prepared in any way. Adding value to fresh produce through further preparing reduces consumer's food preparation time and activity. In exchange, consumers are willing to pay more for this convenience.

According to Mr. Jim Gorny, sales manager with International Fresh-Cut Produce Association, there is a lack of product information on the fresh-cut industry. Currently, the only source of information pertaining to this industry is from fresh-cut processors who are generally unwilling to share their proprietary information due to the sensitivity of the data. Large scan data companies, such as AC Nielsen and IRI, are starting to collect information on the fresh-cut industry; however, it is unavailable at this time. As supermarkets require more fresh-cut products to have a UPC, the availability of scan data will improve.

A number of large fresh-cut businesses operate out of the Atlanta metropolitan area (Table 1). Mr. Gorny considers the fresh-cut market to be mature, even though it is still growing. Current participants are very proactive and continually update product lines to meet market demands.

Given the lack of information and data on the fresh-cut market, the CAED has had to rely on numerous sources for information and data.

Table 1. Georgia Fresh-Cut Processors		
Company	**City**	**Fresh-Cut Products**
Do Ripe Cuts, Inc	Atlanta	Mainly onions, cabbage, bell peppers, carrots, and sliced and diced tomatoes
Fresh Advantage	Carrollton	Lettuce, onions, tomatoes, cabbage, peppers, celery, broccoli, cauliflower, carrots, radishes and parsley
Fresh Pack	Atlanta	Onions, carrots, peppers, and greens
Fresh Express	Morrow	Lettuce, cabbage, shredded carrots, sliced radishes, and salad mixes
Del Monte	Forest Park	Greens and fruit
Southeast Processing	Forest Park	All types
Taylor Farms Tennessee	Forest Park	Lettuce, cabbage, broccoli, carrots, celery, sweet potatoes, baking potatoes, kale, and greens
Tanimura and Antle	Jackson	Salad products
Salad Factory	Marietta	Salad products

Market Trends

Consumers have continued to increase their consumption of fresh fruit and vegetables and consider the quality of fresh produce as a principal factor in where they shop. Interestingly, grocery stores have seen fresh produce sales overtake meat sales, which are traditionally considered to be the supermarket's most important department. This increase in consumption is reflected in grocery store produce availability. In 1999, the typical supermarket carried an average of 431 produce items, up significantly from 173 in 1987. [1] Fresh-cut items like bagged salad, shredded broccoli, and microwave-ready fresh vegetables, as well as other specialty products, have fueled new product growth. For instance, fresh-cut produce has grown from non-existence in the early 1990's to an estimated 15% of average retail sales in 1999.

In addition to increased consumption, consumers are demanding fresh produce year-round and are willing to pay a higher prices. Given the demand for fresh produce and the greater number of produce items being offered, retailers are looking for relationships with suppliers that can provide a consistent, varied year-round fresh-cut product line.

Another change that has impacted the fresh produce market is the fact that consumers continue to increase the number of meals they eat away from home. For example, in 1999, the food service sector captured 48% of total food spending, up from 44% in 1992 and 40% in 1982. Retailers are responding to this decline in consumer food spending by offering ready-to-eat meals, referred to in the industry as retail Home-Meal-Replacements or Meal Solutions. As a result, consumers are spending less time preparing meals at home, with convenience becoming increasingly more important.

According to Ms. Lynn Heinze, Vice President of Information for the National Live Stock and Meat Board, two-thirds of consumers want products that are quick, easy, convenient, versatile, and appetizing. A prime example of consumers' demand for convenience products is

[1] U.S. Fresh Fruit and Vegetable Marketing, AER -795, Economic Research Service, USDA.

evident in the fact that 73% of the respondents in the National Pork Producers Council's 1998 *Kitchen Reports* use the microwave to prepare all or part of the evening meal on a daily basis, while only 70% reported using an oven/range.

Consumer Trends Summary

The following outline identifies five consumer trends and their impact on the fresh-cut industry:

1. Freshness - Freshness is interpreted as good quality (68% of survey respondents) and is a prime factor in the selection of products at the retail level. Consumers equate quality with freshness.

2. Variety - Consumers are demanding more variety. As consumers are exposed to different foods via travel and restaurants, they are demanding a wider variety of food products they can prepare at home (e.g. Mexican, Cajun, Chinese).

3. Convenience - The increase of women in the workforce, single-parent families, higher income, higher education, and busier schedules all have contributed to the demand for more convenient foods that save time in meal preparation (average time spent cooking and waiting).

    - Approximately two-thirds of dinner decisions are made the same day the meal is eaten.

    - Convenience is critical as the number of households that take less than 15 minutes to prepare a meal continues to increase.

    - At 4:00 pm, 40% of consumers do not know what they will prepare for dinner that night.

    - Approximately 68% of consumers say they will wait until the end of the day to decide what to prepare for dinner most or some of the time.

    - Fifty percent of consumers indicated they are willing to pay more for convenience foods.

4. Safety and nutrition – In a 1998 Fresh Trends Survey conducted by the Packer Magazine, bacterial contamination of produce was the major concern of consumers, 25%, replacing pesticide and chemical residues in previous years. Nutrition has become more important, especially to the aging baby-boomer population.

5. Consumers want high quality - safe, fresh produce year-around and they are willing to pay for it.

Technology Impacts on the Fresh-Cut Industry

1. Improvements in post-harvest technology and handling have led to increased quality, better product presentation, and lengthened of the shelf-life of fresh-cut produce. Now packaging allows consumers to readily see the product and reduce concerns over purchasing packaged produce.

2. Fresh-cut produce now includes additional ingredients such as salad dressing, cheese, and other food types eaten with fresh produce increasing the need for technology to ensure consistency and quality.

3. Fresh-cut products are usually cleaner than "raw" produce. Fresh-cut produce is generally washed two or more times before it is presented to the consumer, resulting in a cleaner product. Pesticides and other residues are washed away.

Retail Market Overview

The fresh-cut vegetable category has experienced phenomenal growth over the last 10 years. This category is the tenth fastest growing product category according to AC Nielsen's December 30, 2000 *Market Track*. Over the last year, the growth of this category has increased by 26% and accounts for $31,684,000 annually. It is anticipated that in 2003, the value-added category will account for roughly 15% of the fresh produce market.

Prior to the mid-1990's, the majority of fresh-cut produce was purchased by the food service sector. As a result of the aforementioned factors, retailers are continually responding to consumers' demand for more prepared foods by offering shoppers a choice in convenience and reduced preparation meal solutions. Industry research has found that between 62% and 84% of U.S. consumers have purchased fresh-cut vegetables. The percentage of consumers that purchase fresh-cut fruit is significantly lower, 42%[2]. Fresh-cut vegetables have moved past salads in annual sales and are expected to grow at a moderate rate over the next few years. A portion of the new growth in the fresh-cut vegetable market can be attributed to the introduction of new value-added products like peeled carrots, baby spinach, and slaws.

Studies have shown that per-capita expenditures on fresh vegetables tend to be higher for one and two person households and tend to increase with the age of the head of household. In the packaged salad market, consumption tends to increase with household income, households with dual incomes, and households headed by working women. For example, among consumers who purchased packaged salads at least twice a week, 65% had household incomes over $50,000, whereas, only 35% of the U.S. households have an annual income of $50,000.

Consumers who purchase fresh-cut vegetables do so frequently. Over 75% of consumers reported purchasing fresh-cut vegetables in FMI's 1998 Trends report, indicating that they

[2]Fresh-cut Produce, Ference Weicker and Company. http://www.fwco.com/produce.html

purchase fresh-cut vegetables at least once a month. An additional one-quarter of these consumers indicated they purchase value-added vegetables at least once a week.

Supermarket Data

The CAED conducted an in-depth interview with a regional produce manager for a national food retailer to collect information on fresh-cut sales and possible marketing opportunities. The results of the interview were very informative and provided valuable information. For instance, the most popular category of all of the fresh-cut and value-added vegetables is the bagged salad category. On a weekly basis, this fresh-cut vegetable category accounts for 10-15% of fresh produce retail sales. The packaged salads outpace all others such as packaged broccoli, cauliflower, assorted vegetables, packaged greens such as collards, turnips, and mustards, and peeled mini-carrots. Other fresh-cut items such as vegetable trays and fruit trays are also good sellers, especially during the holiday season.

The interview also revealed that unique or innovative packaging that prompts consumers to purchase more produce is a growing sector. Innovative packaging is effective in increasing sales as consumers purchased packed produce instead of bulk produce, leading to an increase in the product's total sales. Stores are continually striving to increase product sales; packaging is one method of achieving this goal.

To obtain a better understanding of the current market, the CAED obtained information from a national food retail chain with significant operations in Georgia. Sales volume data was collected for fresh-cut and value-added produce products. The information in Table 2 provides an estimate of Georgia's total market potential for specific fresh-cut products, excluding salads. The national supermarket chain's market share was used to estimate the remaining Georgia market for various fresh-cut products.

Excluding bagged salads, carrots dominate the fresh-cut retail food category. Of the 19 products listed, various cuts and package sizes of carrots accounted for nine of the fresh-cut products. Bagged collard greens and shrink-wrapped broccoli appear to be very popular and might provide a marketing opportunity.

These products are currently being produced and supplied to Georgia's supermarkets. According to the interview, there does not appear to be any product that is unavailable from current suppliers

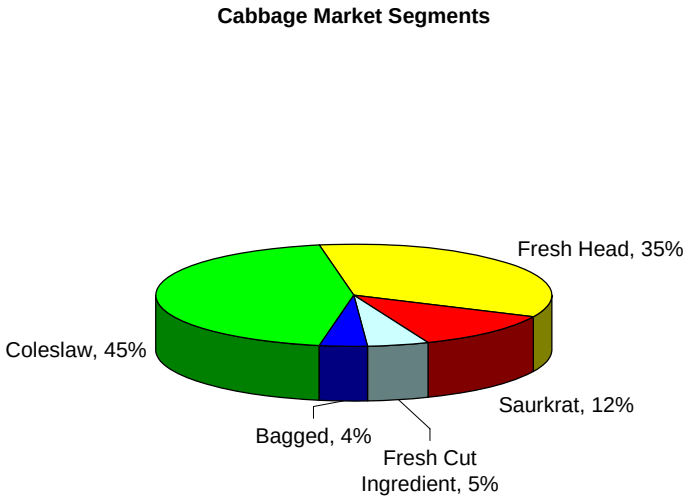
Table 2. Value-added Product Sales – Excludes Bagged Salads		
Product	**Estimated Georgia Retail Market Potential (lbs)**	**2001 Wholesale Price**
Carrots, baby peeled (1 lb)	2,134,937	$ 1.05/lb
Carrots, mini peeled (2 lbs)	921,743	$ 1.64/lb
Carrots, bagged (5 lbs)	770,501	$ 0.32/lb
Carrots, bagged (2 lbs)	680,354	$ 0.36/lb
Carrots, bagged (1 lb)	545,058	$ 0.41/lb
Collard greens, bagged (2 lbs)	470,039	$ 1.03/lb
Broccoli, shrink wrapped 14 ct	401,927	$ 1.90/4-pack
White sweet corn tray, 4 pack	329,434	$ 2.70/4-pack
Yellow sweet corn tray, 4 pack	267,769	$ 2.68/4-pack
Carrots, mini peeled (5 lbs)	181,352	$ 0.84/lb
Carrots, bagged (2 lbs)	127,215	$ 0.36/lb
Turnip Greens, bagged (1 lbs)	114,164	$ 1.54/lb
Carrots, bagged (5 lbs)	112,052	$ 0.32/lb
Radish, red (1 lb)	75,090	$ 0.89/lb
Carrots, mini peeled (6- 3.oz bags)	70,857	$ 1.35/lb
Broccoli florets (1 lb)	46,990	$ 1.42/lb
Sweet corn, bi color 4 pack tray	40,519	$ 2.54/4-pack
Cauliflower florets (3 lbs)	40,085	$ 0.52/lb
Mustard greens (1 lb)	32,802	$ 1.53/lb

Cabbage

After learning of the interest in a bagged cabbage product, the CAED did a more in-depth investigation of this market. According to USDA's 2002 Agricultural Outlook, the U.S. bagged cabbage market is considered to be a mature domestic market. The consumption of cabbage declined steadily over the past decade but has recently stabilized. The introduction of fresh-cut products containing cabbage, mainly coleslaw, has stopped the downward trend in cabbage consumption. The increase in cabbage consumption can also be attributed to the popularity of bagged salads. The prepared ready-to-eat salads contain shredded cabbage. This has resulted in a bump in cabbage consumption.

The peak in March cabbage consumption is attributed to the increased in corned beef and cabbage dishes in celebration of St. Patrick's Day. It is estimated that 14% of domestic cabbage is marketed during March. Ten percent of cabbage is marketed in December and February. Americans are consuming more cabbage now than in previous decades. During the 1970s-1990s, per capita cabbage consumption was estimated to be 8.05 pounds, but it has increased to 10.3 pounds in 2000. Bagged cabbage now generated $70 million dollars annually and accounts for 4% of the $2 billion bagged salad market.

Figure 1. Cabbage Market Segments



Consumers in the southern United states consumer significantly more cabbage than any other region. This may be attributed to the fact that 53% of African Americans live in this region and they consumer approximately 33% of whole fresh cabbage. Caucasians consume the vast majority of coleslaw products (85%) and sauerkraut (91%).

Herbs and Spices

In addition to bagged cabbage, there does appear to be an established market for herbs and spices. An in-depth interview with the regional produce manager revealed that there is a need for a local supplier of herbs and spices. The information in Table 3 provides insight into the most frequently purchased herb and spice products.

Table 3. Herb and Spices Sales 2001

Herbs & Spices	Units Sold	Wholesale Price
Cilantro, bunch	315,289 bunches	$0.61 bunch
Parsley, bunch	386,483 bunches	$0.68 bunch
Basil, carton	115,767 cartons	$0.65 carton
Garlic (2 lbs)	53,278 pounds	$1.27 pound
Garlic (2 oz)	15,705 pounds	$2.83 pound
Dill Weed (½ oz)	1,202 pounds	$20.69 pound
Rosemary (½ oz)	882 pounds	$21.94 pound
Sage (½ oz)	354 pounds	$21.96 pound
Oregano (½ oz)	198 pounds	$21.84 pound

Herb and spice prices range from about $0.61 per bunch for cilantro to about $22.00 per pound for oregano. These products might provide a niche market opportunity.

Food Service Market

The CAED called approximately 33 restaurants with multiple locations operating in Georgia. These restaurants included fast food and dining room-style establishments. The purpose of contacting these businesses was to identify any potential fresh-cut niche and/or under served market opportunities.

A number of fast food restaurants (i.e., Blimpies, Arby's, and Waffle House) were contacted to investigate niche opportunities. Franchised fast food restaurants are generally responsible for purchasing their own value-added produce products, meaning there is no single purchasing point or contact. Each individual franchise restaurant would have to be serviced individually. As a result, to service this market it would be necessary to establish many accounts with individual fast food restaurants or work through a large food service distributor such as Sysco. Partnering with a food service distributor would help to avoid additional marketing and transportation costs associated with supplying individual restaurants spread throughout the state or region.

In addition, the CAED talked extensively with Mr. Mike Meeley, COI Distributors (COI) who services Shoney's and Captain D's along with other food service accounts. Mr. Meeley indicated that his organization (he specifically) is responsible for purchasing the majority of Shoney's and Captain D's produce. Lettuce, tomatoes, cabbage, peppers, and cucumbers represent the majority of fresh produce purchased by COI. Currently, the vast majority of the produce they purchase is not fresh-cut. There is a shelf-life problem associated with transporting and preserving fresh-cut produce. The individual Shoney's and Captain D's stores he services actually cut their produce at the restaurant. For example, fresh tomatoes are delivered to both restaurant chain stores and then sliced and diced at the store to ensure a fresh product. They carry some fresh-cut products like shredded carrots, cubed radishes, and vacuum-packed baby carrots but these are purchased from a large, established produce facilities. As a matter of fact, the vegetables on the all-you-can-eat salad bar at Shoney's are prepared in the COI processing plant in Nashville, Georgia. Mr. Meeley indicated that these large operations are able to consistently supply various high quality products year-round. He also indicated that due to economies of scale, these processors have low prices and unless a niche market was identified, a new start-up fresh-cut operation would have to be price competitive.

Mr. Meeley indicated that most of the produce they purchase comes from California and very little is purchased locally. However, COI is very interested in purchasing local fresh produce. For example, COI would be interested in purchasing local bell peppers, strawberries, collard greens, kale, and cucumbers. These vegetables would need to be packed according to COI's specifications but would not require further preparation. Mr. Meeley was not really enthusiastic about fresh-cut or IQF opportunities. COI does not purchase any frozen vegetables and most of the fresh-cut vegetables are produced in their plant in Nashville. COI suggested existing fresh-cut operators may be willing to subcontract pre-preparation steps such as coring lettuce.

When questions about a fresh-cut facility in the Tift County area, Mr. Meeley and Mr. Rodney Elan, COI's distribution center director, agreed that the distance to distribution centers in Atlanta and Jacksonville would be a major concern. Once vegetables are prepared, the shelf life becomes compromised (refer to the fresh-cut produce problems section). The time lost in transporting prepared vegetables to Atlanta or Jacksonville distribution centers would reduce the products available shelf life and/or their desirability. This would be a major drawback from operating a facility out of the Tifton area. He indicated that the major fresh vegetable processors are located near retail distribution areas to reduce the loss of product shelf-life due to transport from a distant location. This conclusion is supported by the fact that the nine identified fresh-cut processors operating in Georgia are located in relatively close proximity to Atlanta (see Table 1).

Food Processor Markets

The CAED conducted an in-depth survey with a number of businesses involved in the value –added produce industry. A total of 125 interviews were done with various companies involved in the food industry (see Table 4). Food processors and brokers constitute the majority of the completed interviews. The survey results provide insight into the types and forms of vegetables different segments utilize. However, it is important to remember that these survey results reflect the responses of businesses operating in the southeastern United States that were willing to participate in the survey.

Table 4. Completed Surveys by Industry Segment

SIC	Description	Number of Completes	Number of Contacts	Completed Surveys	Do not Buy Vegetables
203304	Sauce Manufacturers	4	7	4	2
203502	Condiment and Sauce Manufacturers	2	13	2	9
209903	Food Processors and Manufacturers	34	302	34	213
514803	Food Brokers	26	165	29	69
514804	Fruit and Vegetable Brokers	45	312	45	160
581208	Restaurants	9	28	9	4
999999	Miscellaneous Food Companies	5	153	5	114
208701	Flavoring Extracts and Syrups	0	8	0	8
Total		**125**	**988**	**128**	**579**

The data presented in Tables 5 through 9 provide detailed information obtained from the survey. According to the results in Table 5, it appears that bell peppers and tomatoes are purchased by a higher percentage of food businesses than other produce. Only a handful of food businesses reported purchasing turnip and collard greens.

According to the survey results, there appears to be a limited market for frozen vegetables and pre-prepared vegetables among this market segment. These findings are consistent with the information obtained from COI. Table 5 reveals that these businesses do not typically buy pre-prepared fresh produce. Product quality concerns associated with pre-prepared produce might explain the lack of demand for these types of products. In addition, the majority of these food processors/brokers purchase fresh, unprepared produce, which they use to make their final products.

To obtain a better understanding of the various food business segments and their purchasing habits, the data was segmented by major business category to provide detailed information on the food processor and manufacturing industry (Table 7), fruit and vegetable brokers (Table 8), and food brokers (Table 9). The information provided in these tables reveals purchases of fresh, frozen, and prepared produce. The information in the following tables (5-9) reflects the information provided by surveyed businesses. Price and quantity information for fresh, frozen and prepared produce is presented in Table 10.

Table 5. Food Industry Total for All Food Processors (n=125)

	All (%)	Purchase Form - Fresh or Frozen (%)			Type of Value-added Preparation - Only Those Purchasing Finished Product (%)					
Produce	**Purchase**	**Fresh**	**Frozen**	**Both**	**Pre-Prepared**	**Sliced**	**Diced**	**Cubed**	**Satisfied with Supplier**	**Interest in New Supplier**
Cabbage	53% (66)	100% (66)	0%	0%	20% (13)	38% (5)	38% (5)	8% (1)	97% (64)	33% (22)
Spinach	40% (50)	74% (37)	18% (9)	6% (3)	46% (23)	0%	4% (1)	4% (1)	98% (49)	38% (19)
Collards	22% (28)	82% (23)	7% (2)	11% (3)	21% (6)	0%	0%	0%	100% (23)	36% (10)
Turnip Greens	16% (20)	85% (17)	10% (2)	5% (1)	20% (4)	0%	0%	0%	100% (17)	40% (8)
Jalapenos	51% (64)	81% (52)	5% (3)	5% (3)	17% (11)	27% (3)	27% (3)	0%	100% (52)	31% (20)
Cucumbers	50% (62)	100% (62)	0%	0%	3% (2)	50% (1)	50% (1)	0%	98% (61)	40% (25)
Yellow Squash	39% (49)	88% (43)	6% (3)	6% (3)	8% (4)	75% (3)	25% (1)	0%	100% (49)	39% (19)
Zucchini	42% (52)	96% (50)	0%	4% (2)	6% (3)	67% (2)	33% (1)	0%	98% (51)	38% (20)
Bell Peppers	68% (85)	86% (73)	5% (4)	2% (2)	14% (12)	8% (1)	42% (5)	0%	99% (84)	36% (31)
Eggplant	35% (44)	95% (42)	2% (1)	2% (1)	5% (2)	50% (1)	0%	0%	100% (44)	43% (19)
Tomatoes	61% (76)	89% (68)	0%	0%	18% (14)	7% (1)	14% (2)	0%	99% (75)	41% (31)
Brine Jal. Peppers	15% (19)	63% (12)	0%	0%	63% (7)	8% (1)	0%	0%	95% (18)	26% (5)

Among the companies surveyed, the majority of purchased produce is fresh and only a handful is pre-prepared. However, among those businesses that purchase pre-prepared produce, there appears to be an opportunity in that a third of those interviewed would consider a new supplier. This is interesting given that the businesses are generally satisfied with their current supplier. The willingness to explore new suppliers even though the businesses are satisfied with their current suppliers suggests that the market is highly competitive.

The information in Table 6 provides insight into the type of pre-prepared produce being purchased. It appears that chopping greens is the most common type of produce pre-prepared. Outside of chopping and trimming produce, condiment and sauce manufacturers apparently purchase highly prepared produce products (dehydrated and canned) for use in manufacturing their final product.

Table 6. Types of Pre-Prepared (multiple responses)

Value-added Preparation	Cabbage (n=5)	Spinach (n=12)	Collards (n=3)	Turnip Greens (n=2)	Jalapenos (n=6)	Bell Peppers (n=7)	Eggplant (n=2)	Tomatoes (n=6)
Shredded	5							
Chopped/Trimmed		10	5	4		2		
De-Stemmed		3						
IQF			1	1				
Washed, Whole Leaf		4	1					
Dehydrated/Dried					2	4		2
Powdered					2	1		1
Flaked					1	1		
Liquefied					1			
Breaded							1	
Canned								4
Pre-Washed			2					
Waxed								1
Paste								2

The results in Table 6 suggest chopping and trimming capabilities offer the most opportunity to sell pre-prepared products to the businesses interviewed.

The information in Table 7 only represents food processors and food manufacturers**.**

Table 7. Food Processors and Manufacturers (n=35)

	All (%)	Purchase Form - Fresh or Frozen				Type of Value-added Preparation - Only Those Purchasing Finished Product				
Produce	**Purchase**	**Fresh**	**Frozen**	**Both**	**Pre-Prepared**	**Sliced**	**Diced**	**Cubed**	**Sat. w/ Supplier**	**Interest in New Supplier**
Cabbage	44% (15)	100% (15)	0%	0%	33% (5)	20% (1)	40% (2)	20% (1)	100% (15)	7% (1)
Spinach	53% (16)	44% (7)	38% (6)	13% (2)	75% (12)	0%	8% (1)	0%	100% (16)	19% (3)
Collards	21% (7)	86% (6)	0%	14% (1)	43% (3)	0%	0%	0%	100% (7)	14% (1)
Turnip Greens	12% (4)	100% (4)	0%	0%	50% (2)	0%	0%	0%	100% (4)	25% (1)
Jalapenos	74% (25)	72% (18)	12% (3)	8% (2)	24% (6)	33% (2)	50% (3)	0%	100% (25)	24% (6)
Cucumbers	41% (14)	100% (14)	0%	0%	0%	NA	NA	NA	100% (14)	14% (2)
Yellow Squash	38% (13)	77% (10)	8% (1)	15% (2)	15% (2)	50% (1)	50% (1)	0%	100% (13)	23% (3)
Zucchini	41% (14)	93% (13)	7% (1)	0%	14 (2)	50% (1)	50% (1)	0%	100% (14)	14% (2)
Bell Peppers	76% (26)	65% (17)	15% (4)	8% (2)	27% (7)	0%	57% (4)	0%	100% (26)	19% (5)
Eggplant	35% (12)	83% (10)	8% (1)	8% (1)	17% (2)	50% (1)	0%	0%	100% (12)	8% (1)
Tomatoes	62% (21)	29% (18)	0%	0%	29% (6)	0%	0%	0%	95% (20)	24% (5)
Brine Jal. Peppers	24% (8)	50% (4)	0%	0%	88% (4)	57% (4)	14% (1)	0%	100% (8)	13% (1)

Food processors and manufacturers typically buy raw, not frozen, produce. This market segment appears to be more likely to purchase pre-prepared vegetables than other market segments. Nearly all the spinach purchased is pre-prepared, as are the brine jalapeno peppers. The greens category appears to offer an opportunity with regard to further preparing the produce.

Table 8 contains data from fruit and vegetable brokers only. This market was explored to identify any potential markets that may exist.

Table 8. Fruit and Vegetable Brokers (n=45)

	All (%)	Purchase Form - Fresh or Frozen				Type of Value-added Preparation - Only Those Purchasing Finished Product				
Produce	**Purchase**	**Fresh**	**Frozen**	**Both**	**Pre-Prepared**	**Sliced**	**Diced**	**Cubed**	**Sat. w/ Supplier**	**Interest in New Supplier**
Cabbage	60% (27)	100% (27)	0%	0%	11% (3)	67% (2)	33% (1)	0%	96% (26)	63% (17)
Spinach	42% (19)	100% (19)	0%	0%	21% (4)	0%	0%	25% (1)	100% (19)	63% (12)
Collards	24% (11)	100% (11)	0%	0%	0%	NA	NA	NA	100% (11)	64% (7)
Turnip Greens	18% (8)	100% (8)	0%	0%	0%	NA	NA	NA	100% (8)	63% (5)
Jalapenos	42% (19)	100% (11)	0%	0%	0%	NA	NA	NA	100% (19)	53% (10)
Cucumbers	58% (26)	100% (14)	0%	0%	4% (1)	0%	0%	0%	100% (26)	65% (17)
Yellow Squash	47% (21)	100% (21)	0%	0%	0%	NA	NA	NA	100% (21)	57% (12)
Zucchini	49% (22)	100% (22)	0%	0%	0%	NA	NA	NA	100% (22)	68% (15)
Bell Peppers	67% (30)	100% (30)	0%	0%	0%	NA	NA	NA	97% (29)	60% (18)
Eggplant	44% (20)	100% (20)	0%	0%	0%	NA	NA	NA	100% (20)	65% (13)
Tomatoes	60% (27)	100% (27)	0%	0%	3% (1)	0%	0%	0%	100% (27)	67% (18)
Brine Jal. Peppers	11% (5)	100% (5)	0%	0%	3% (1)	0%	0%	0%	80% (4)	60% (3)

Overall, fruit and vegetable brokers do not deal with frozen or prepared vegetables. Therefore, this market does not appear to offer any potential for the proposed Tift area value-added facility.

Again, food brokers (Table 9) do not appear to offer a viable market for the proposed Tift area value-added facility.

Table 9. Food Brokers (n=26)

	All	Purchase Form - Fresh or Frozen				Type of Value-added Preparation - Only Those Purchasing Finished Product				
Produce	Purchase	Fresh	Frozen	Both	Pre-Prepared	Sliced	Diced	Cubed	Sat. w/ Supplier	Interest in New Supplier
Cabbage	44% (12)	100% (10)	0%	0%	0%	NA	NA	NA	90% (9)	20% (2)
Spinach	35% (89)	100% (19)	0%	0%	13% (1)	0%	0%	0%	88% (7)	25% (2)
Collards	22% (5)	100% (5	0%	0%	0%	NA	NA	NA	100% (5)	20% (1)
Turnip Gns	22% (5)	100% (5)	0%	0%	0%	NA	NA	NA	100% (5)	20% (1)
Jalapenos	35% (8)	100% (8)	0%	0%	0%	NA	NA	NA	100% (8	13% (1)
Cucumbers	48% (11)	100% (11)	0%	0%	0%	NA	NA	NA	91% (10)	36% (4)
Y. Squash	39% (9)	100% (9)	0%	0%	0%	NA	NA	NA	100% (9)	22% (2)
Zucchini	48% (11)	100% (11)	0%	0%	0%	NA	NA	NA	92% (10)	18% (2)
Bell Peppers	57% (13)	100% (13)	0%	0%	0%	NA	NA	NA	97% (13)	31% (4)
Eggplant	30% (7)	100% (7)	0%	0%	0%	NA	NA	NA	100% (7)	43% (3)
Tomatoes	43% (10)	100% (10)	0%	0%	3% (1)	0%	0%	0%	100% (10)	60% (6)
Brine Jal. Peppers	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 10 reveals the average quantity purchased and average price per pound paid for fresh, frozen and prepared produce. It is important to remember that the price and quantity data are expressed in averages, which are subject to extreme low and extreme high values. Each of the food businesses interviewed that purchase prepared cabbage, on average uses about 492,000 pounds of cabbage per month, paying about $.34 per pound. A smaller quantity of tomatoes is being purchased by these businesses at significantly lower price. It is important to note that the price and quantity data are expressed in averages and are impacted by extreme values.

Table 10. Average Quantity and Price Data by Produce Form						
	Pounds Purchased per Month			Price Per Pound		
Produce (n)	Fresh	Frozen	Prepared	Fresh	Frozen	Prepared
Cabbage (51)	311,105	NA	492,088	$0.25	NA	$0.34
Spinach (24)	375,729	4,429	93,667	$0.34	$0.56	$0.73
Tomatoes (49)	107,021	NA	46,067	$0.46	NA	$0.75
Cucumbers (45)	49,572	NA	26,250	$0.50	NA	$0.50
Jalapenos (39)	14,105	33,384	15,088	$0.58	$0.80	$0.93
Bell Peppers (55)	55,036	26,012	11,830	$0.68	$0.83	$1.77
Collards (17)	264,163	6,000	5,699	$0.32	$0.46	$1.30
Turnip Greens (12)	2,893	10,000	3,693	$0.24	$0.41	$0.30
Brine Jalapeno Peppers (8)	5,270	NA	2,793	$0.42	NA	$0.57
Zucchini (35)	321,505	NA	2,470	$0.54	NA	$1.29
Yellow Squash (33)	12,374	1,667	1,853	$0.54	$0.67	$0.84
Eggplant (29)	16,564	200	250	$0.48	$0.48	$0.49

The information presented in Table 10 indicated there is market potential for prepared vegetables. The prepared cabbage, spinach, tomatoes and cucumbers have largest market potential based on monthly purchase information. Consistent with the industry data presented earlier, prepared cabbage appears to be a significant niche market that might be exploited by the proposed value-added facility.

Again, it is important to remember that these survey results reflect the responses of businesses operating in the southeastern United States that were willing to participate in the survey.

Brine Jalapeno Peppers

The survey results indicate there is a potential for brine jalapeno peppers. Seven companies indicated that they purchase prepared brine jalapeno peppers. On average, these companies purchase 2,793 pounds of brine jalapenos per month, with quantities ranging from 20 to 25,000 pounds per month. This translates into 33,516 pounds annually per respondent. The survey revealed that these companies pay an average of $0.57 per pound for their prepared brine peppers. There does appear to me a niche market for brine jalapeno peppers. This is reiterated by the results of a 2000 food pack study, in which an existing vegetable value-added facility was experimenting with adding a line to process brine jalapeno peppers. The company estimated sales of 9,940 pounds of brine jalapenos per week (516,880 pounds annually) with a market value of $0.62 per pound. This translates into $320,466 annually. Based on the study results, the facility could realistically achieve this level of sales.

Quality and Shelf-Life Issues

Fresh-cut produce requires different handling and storage from traditional intact produce. Product deterioration is faster for fresh-cut produce due to the wounding that occurs as the product is handled and prepared. Fresh-cut produce may encounter visual problems resulting

from water loss, oxidative browning, and microbial contamination. When produce experiences a wound as a result of further preparation, the produce increases its production of ethylene and respiration, which may be linked to the product's wound healing process. The increase in ethylene can cause a host of problems ranging from accelerated membrane deterioration, toughening, undesirable flavor, aroma changes, and loss of vitamins. A wound provides microorganisms an entry point and may possibly increase the survival and growth of food-borne microorganisms. [3]

A major concern is the shelf life of the produce. Industry perception is that once produce has been prepared, its shelf life is decreased to about seven days. This means that there is an advantage to having the value-added preparation done around major markets or distribution centers. Once the produce is prepared and transported to a distribution facility, shelf-life becomes increasingly important. If one to two days are lost in transportation, the shelf-life is reduced by 30% to five days. This poses a problem to both retailers and food service businesses. For example, food scientists agree that sweet corn shelf-life after cutting is greatly diminished, leading to only four to six days shelf-life, depending on storage temperatures. This has major implications to retailers and necessitates frequent product delivery.

Safety Issues

An increasing concern for fresh-cut produce is its safety. The Center for Science and Public Interest (2000), ranked fresh produce the 4th largest cause of all food illness since 1990 followed by salad, seafood, eggs, and beef.

In response to consumer concerns about produce safety, major retailers (Albertson's, Safe Way, Kroger) and food service restaurants (Taco Bell, Burger King, McDonalds) have begun a program requiring their suppliers (growers and packers) to have independent third party inspections of their farms to certify that fruits and vegetables are being grown and harvested using Good Agricultural Practices (GAP). Likewise, the same customers require fresh-cut businesses to have a well designed and implemented Hazard Analysis and Critical Control Point (HACCP) food safety program implemented in their operations in order to do business. HACCP is a type of food safety management that concentrates prevention strategies or known hazards and the risks of them occurring at specific points in the produce handling chain. It is the best tool to minimize bacterial contamination of human pathogens in fresh-cut produce.

Consolidation Trends

In addition to the consumer-driven market trends, there have been organizational forces at work that directly impact the value-added produce industry. For instance, the industry has experienced consolidation at the processor, food service, food retail, and wholesale levels. There are now established slotting fees for some fresh-cut products in the retail food market and barriers to entry have become greater.

[3]Post Harvest Quality and Safety in Fresh-Cut Vegetables and Fruits, USDA.

Barriers to Entry

The fresh-cut industry is capital-intensive. For example, a bagged salad facility may require an investment in excess of $20 million for a value-added plant. The capital-intensive nature of fresh-cut value-added facilities acts as a barrier to entry. In 1999, there were 54 bagged salad operations in the United States. Even more revealing is that 76% of the bagged salad market was being supplied by two major operations. Mike Meeley with COI Foodservice reiterated the same trend by saying six major processors control approximately 80% of the value-added fresh produce market. This market is likely to become more concentrated as the larger processors continue to purchase smaller processors. As a result, the food service market, as with the retail food industry, is relying on fewer suppliers to increase efficiencies.

There are other opportunities for fresh-cut operations, especially in the area of fruits and more perishable fresh-cut produce like chopped onions and tomatoes. For these highly perishable products, regional processors are able to take advantage of their proximity to nearby markets.

Another barrier to entry is consistent supply and shelf space. Large grocery stores and wholesalers demand a one-year contract. In Georgia, vegetables cannot be produced year-round, so some issues may arise when seeking contracts with larger chains. In addition to year-long supplies, a surcharge may be added for shelf space availability at certain stores.

Retail Consolidation

The recent trend in retail consolidation has significantly impacted the retail/shipper relationship. Consolidation has increased the market share for larger grocery store chains. For instance, the four largest food retailers' market share has increased to 27% of grocery store sales in 1999, up from 18% in 1987. The top 20 food retailers now control 52% of grocery store sales, up from 39% in 1987. This is significant because supermarkets and grocery stores dominate fresh produce sales. These retail outlets sold 88% of all fresh produce compared to 5% for specialty food stores in 1997. As the number of supermarkets and grocery stores decline via mergers and acquisitions, the number of potential retail customers declines. The same trend in consolidation has occurred in the wholesale business as well as grocery-oriented wholesalers. Given the flurry of acquisitions and mergers, the four largest food service wholesalers accounted for 21% of the market.

As a result of food retailer consolidation, retailers are concerned with reducing procurement, marketing, and distribution costs by purchasing more volume directly from large shippers. The retailers' rationale is that they hope to gain greater efficiencies in procurement by cutting out "middlemen", thereby reducing per unit costs. Large retailers demand large volumes of consistent product to provide uniformity across all of their stores, typically handled by large shippers. To strengthen the relationship with large wholesalers that are able to provide large volumes of consistent product, retailers are offering preferential procurement agreements such as partnering, long-term agreements, and strategic alliances.

In response to this trend, grower-shippers are offering custom-pack and even custom-harvest services to retail buyers. In addition, grower-shippers are functioning more as brokers (or consolidators) for their customers, putting together a variety of products from a variety of growers in order to provide both one-stop shopping and efficiencies in transportation.

Food Retailer Fees

Getting a product into a food retailer is not easy nor without cost. According to research in the bagged salad industry, there appears to be increasing pressure to pay fees to obtain shelf space. The average supermarket may carry upwards of 20,000 products with thousands of new food products introduced each year. This situation has caused retailers to move to multi-deck cases to better utilize linear space. As a result, shelf space competition has become more competitive and retailers have gained more negotiating power, giving rise to slotting and similar fees. A slotting fee is a lump sum payment, from a supplier to a retailer, for introducing a new product to consumers. A pay-to-stay fee is a fixed payment that keeps a product on the shelf. More traditional fees are also prevalent, such as per unit rebated or volume discounts. In addition, value-added suppliers are committing more resources to in-store merchandising programs targeted to the needs of individual retailers.

Fresh-cut produce is more susceptible to slotting fees than other fresh produce due to its nature. Fresh-cut produce items are more closely aligned with manufactured products than raw fresh produce in that they require year-round shelf space. Today's food retailers are attempting to operate the produce department using the same principles and procedures that are found in the dry grocery department, as evidenced by the growing use of performance guidelines, category management, and supply contracts. Contracts are viewed as essential risk-management tools to ensure the availability of a minimum amount of product. This is substantiated by the results of a bagged salad shipper survey conducted by International Fresh-Cut Association. The survey found that the majority of the interviewed companies reported paying slotting fees at the request of the food retailer or including them in their contract bid. The bagged salad shippers reported paying fees ranging from $10,000 for small chain accounts to $500,000 for a division of a multi-regional chain. Volume discounts range from $0.10 to $0.25 per carton of bagged salad. In addition, these firms reported that they sometimes pay advertising allowances and provide free products to new stores.

Fresh-Cut Market Conclusion

There appears to be three major markets for fresh-cut produce: food retailers, foodservice and food processors, and manufacturers. After analyzing information collected from each of the three identified markets, there does not appear to be a well-defined opportunity for the products being considered by the Tift area value-added facility.

The food retailer market is currently being serviced by a number of large fresh-cut food processors. Detailed conversations with food retailers did not reveal any underserved fresh-cut product categories that the proposed facility could service. To effectively compete in the fresh-cut market, the proposed facility would have to compete directly with large, established

processors by offering high quality products year-round and providing frequent product delivery, all at a competitive price. In addition, major food retailers are now requiring slotting fees for fresh-cut produce. Given these conditions, it appears this market is not viable for the proposed fresh-cut facility.

According to COI Distributors and in-depth surveys with various restaurants, there does not appear to be a significant amount of fresh-cut produce moving through the food service market, excluding lettuce. This market appears to buy fresh produce and process it on site. In addition, the CAED learned that most franchise operations are responsible for procuring their own produce with no central purchasing entity. These local franchise restaurants utilize local and national food distributors for their produce needs. The CAED was unable to identify any significant market potential for fresh-cut produce within this market segment. However, COI Distributors have expressed interest in purchasing locally grown and packaged produce for their customers. There appears to be limited potential in the herb and spice market; however, due to low volume, this market does not offer the potential for generating significant revenue.

A survey of 125 food manufacturers and brokers involved in food manufacturing suggests only a limited amount of pre-prepared fresh produce is being purchased. This stands to reason as these businesses purchase raw produce for use in manufacturing their final products. The CAED was unable to identify any significant market potential within this food business segment.

Finally, the location of the proposed facility has raised concerns. Location and distribution appear to be critical factors in the fresh-cut industry. Given shelf-life considerations, it appears that fresh-cut processors are located near major distribution centers. The time lost in transporting fresh-cut produce from remote locations to distribution centers can reduce shelf-life. The time lost transporting produce from South Georgia to the Atlanta or Jacksonville markets, unloading and reloading results in loss of critical shelf-life. The individuals surveyed indicated that the relative remoteness of the Tift area facility would result in the loss of a day of product shelf-life. The reasoning is that uncut produce can be transported and stored more easily and with less shrinkage than can pre-cut fresh produce from more remote locations.

Introduction to Salsa Industry

Consumers are becoming more adventuresome and trying unusual, fresh, ethnic, and regional foods. In addition, consumers' consumption of fresh produce is increasing as they attempt to eat healthier. This provides an ideal situation for the introduction of a unique, specialty salsa product. The creation of a fresh salsa product, both tomato and fruit based, combining unique ethnic flavors with fresh produce, could fit nicely into current market trends and offers a significant market opportunity.

There is no data available on the fresh salsa market so prepared salsa data will be used as a proxy. The prepared salsa data is considered a good proxy to represent fresh salsa in that they are similar products but differ by process types.

Target Market

Income is the driving factor in specialty food purchases as indicated by the fact that households earning more than $65,000 are 85% more likely to purchase specialty foods than less affluent households. Specialty food shoppers are more educated than the general population, with 51% having a college degree. Household size also influences specialty food purchases. Two-person households are more likely to purchase specialty foods than people who live alone or in larger households. However, household size, age, and even the presence of children, are not as significant characteristics of specialty food shopper as are income and education (The National Association for the Specialty Foods Trade, 1999).

The fresh salsa target market is the specialty food shopper. Typical fresh salsa consumers are affluent, live in the suburbs, and lead very health-conscious and food-oriented lifestyles. Most are married, own their homes, and have children. The urban elite, generally people older than 55, no children, and living at home, are the best purchasers, followed closely by the affluent urban, 25-44 year-old single professionals, who read food magazines (The National Association for the Specialty Foods Trade, 1999).

Competition

The total salsa market appears to be highly segmented with a number of companies offering a variety of products, both fresh and shelf-stable. Indirect competitors are Pace with 25.7% market share, Old El Paso with 23.8%, and Tostitos with 11.2%. Due to economies of scale and developed distribution channels, these established shelf-stable salsa producers are able to offer their products at a significantly lower price, putting new salsa producers at a huge disadvantage if they try to compete nationally (Snack and Food Wholesale Bakery, September 1998). New fresh salsa companies can be successful locally by focusing on regional preferences and loyalty though the competition is tough, with only an estimated one out of four salsa companies surviving more than two years (Snack and Food Wholesale Bakery, September 1998). In addition, by manufacturing a fresh product, start-up companies are not competing directly with large manufactures like Old El Paso.

Market Trends

Due to the lack of industry data on fresh salsa, a general salsa industry data is used as a proxy to measure market trends consumption patterns and estimate the market potential for a fresh salsa product in Georgia and the southeast. According to a 1999 article in the Florida Times-Union, salsa sales have been growing at a 10% rate over the past 10 years. Interestingly, in the mid 1990's, salsa sales surpassed America's favorite condiment ketchup, and are expected to approach $1 billion in 2000.

Away From Home (Restaurant) Market

The National Restaurant Association's Ethnic Food Study shows that solidly 90% of Americans have tried Mexican food, second in popularity only to Italian, while 85% eat it often

or at least occasionally. Such widespread acceptance is changing the direction of Mexican food. The shift is toward bolder, fresher, healthier, more authentic food, the degree determined by demographics and the type of eating establishment.

However, after contacting a number of Mexican restaurants, it was discovered that they have their own special recipes for salsa. It does not appear that there is a viable market for supplying Mexican-style restaurants with salsa products.

At-Home Market

According to a 1998 American Demographics article, two thirds (63%) of U.S. households purchase salsa, buying an average of one jar every month and a half. At first, the rapid growth of the salsa market was attributed to the increase in the Hispanic population. However, salsa producers suggest that the increase in the Hispanic population has not fueled the salsa market because most Hispanics prefer to produce their own salsa and that Hispanics constitute only a small percentage of their business.

Consumer trends are moving toward "real gourmet" products, not products that are mass produced and marketed as gourmet, further enhancing the market for an up-scale, fresh salsa product. A trend within this industry is the increased demand for high quality, specialty salsa (Specialty Shopping Forecast, 1998).

The traditional gourmet market is re-emerging as mainstream food retailers have flooded the market with imitation "gourmet" products. However, there appears to be a backlash as the quality and price of these mass-produced gourmet products have diminished. Gourmet products are expected to return to their roots: unique, upscale, and expensive. The food industry anticipated that gourmet products will re-acquire the price and quality levels they once held. In addition, specialty food stores will actively promote the exclusiveness of their products and consumers will treat themselves with these small indulgences.

The continued increase in salsa consumption can be attributed to five basic ideas:

- Increased demand for flavorful ethnic and exotic foods.
- Consumers' preferences have shifted toward fresh products.
- Consumers are trying to spice up or add flavor to compensate for the loss of fat in low- and non-fat foods.
- Dishes served with a condiment such as salsa are considered to have a greater value.
- Salty snack consumption, especially tortilla chips, is correlated with the use of salsa. Tortilla chip sales are expected to grow to $4 billion in 2001. [4]

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Table 11. Estimated Household At-Home Salsa Consumption					
State	**Households[1]**	**Percent Buying Salsa [2]**	**Annual Consumption[2]**	**Estimated Market Potential (lbs)/yr.**	**Estimated Revenue Potential**
Alabama	1,737,080	63	8 lbs.	8,754,883	$13,132,325
Florida	6,337,929	63	8 lbs.	31,943,162	$47,914,743
Georgia	***3,006,369***	***63***	***8 lbs.***	**15,152,100**	**$22,728,150**
N. Carolina	3,132,013	63	8 lbs.	15,785,346	$23,678,018
S. Carolina	1,533,854	63	8 lbs.	7,730,624	$11,595,936
Tennessee	2,232,905	63	8 lbs.	11,253,841	$16,880,762
Total	17,980,150	63	8 lbs.	90,619,956	$135,929,934
1 Census Bureau 2000 Estimate; 2 1998 American Demographics					

The information presented in Table 11 estimates that Georgians consume roughly 15 million pounds of salsa, worth $23 million dollars annually. Expanding the market to include the five surrounding states, consumption increases to 91 million pounds annually, worth $136 million. However, large food processors control 62.5% of the market. Pace (25.7%), Old El Paso (23.8%), and Tostitos (11.2%), dominates the salsa market.

Table 12. Estimated Household At-Home Salsa Consumption- Excluding Major Brand Market Share				
State	**Estimated Total Market Potential (lbs)/yr.**	**Attainable Market Share (%)**	**Revised Market Potential (lbs)/yr.**	**Estimated Revenue Potential**
Alabama	8,754,883	37.5	3,283,081	$4,924,622
Florida	31,943,162	37.5	11,978,686	$17,968,029
Georgia	**15,152,100**	**37.5**	**5,682,038**	**$8,523,056**
N. Carolina	15,785,346	37.5	5,919,505	$8,879,257
S. Carolina	7,730,624	37.5	2,898,984	$4,348,476
Tennessee	11,253,841	37.5	4,220,190	$6,330,286
Total	90,619,956	37.5	33,982,484	$50,973,725
1 Census Bureau 2000 Estimate; 2 1998 American Demographics				

The market potential, excluding the major brands market share, is significantly smaller. Georgia's salsa market potential has decreased from 15 million pounds annually to 5.7 million pounds annually. The estimated revenue potential has decreased to $8.5 million annually, down from $23 million annually, including the major brands. However, there is still a significant market for salsa in Georgia and the surrounding states.

Given the potential, it is important to remember that there are other smaller salsa companies competing for market share. According to an interview with a grocery chain buyer (American Demographic in 1998), he is approached by as many as 50 salsa makers annually. Of these products, he makes his purchase decision based not only on taste and demand, but the product's uniqueness in the marketplace. In addition, the grocery chain buyer indicated that he is always looking for new salsa products and has a turnover of about 20% annually as he strives to bring in new and unique products to spark category sales.

New Product Potential

Given the competition in the traditional tomato-based salsa market combined with consumers' willingness to try new products, new salsa products are emerging. Fruit-based salsas are quickly gaining popularity in the United States. The increased demand for fruit-based salsa products can be attributed to:

- An increased global interest in ethnic and novel foods, combined with increasingly daring consumers, eager for innovative new taste sensations.

- The need for "punchy" condiments to compensate for low-fat and low-calorie diets, resulting in an expanding willingness to experiment with new low-calorie yet highly flavorful foods.

- The fact that fruit-based salsas are an evolutionary, rather than a revolutionary new idea; they are not brand-new products that need to overcome typical marketing resistance to radical new concepts.

- As people travel and move around the world, they are exposed to a variety of new foods. The result is a more homogeneous palate, in part, because most developed countries are becoming less culturally distinct as ethnic foods become readily available. [5]

[5] Food Technology, Vol. 50, No. 1, January 1996

Table 13 outlines different types of fruit-based salsa products:

Table 13. Types of Salsa Available on the Market.

Name of Salsa	Main Ingredients	Recommended Main Dish (origin)
Compeche	Sour orange juice, chiles, garlic	Seafood (Veracruz)
Pineapple	Pineapple, chile, onion	Grilled pork, whitefish
Mango	Mango, chile, tamarind, shrimp, onion, garlic, fresh cilantro, red pepper	Grilled pork, chicken, crab meat, tuna (Caribbean)
Papaya	Papaya, black beans, red or green bell peppers, red onions, pineapple juice, lime juice, cilantro, cumin, chile	Grilled fish (Caribbean)
Fruity	Plums, onions, ginger, brown sugar, raisins, orange juice, coriander, vinegar, lemon juice, mint	Roasted meats (modified American Indian)
Banana	Banana, onion, ginger, brown sugar, lemon juice, vinegar, orange juice	Roasted or grilled game
Apricot-fig	Apricots, figs, raisins, onions, vinegar, almonds, ginger, red chile, lemon	Lamb (South Africa)
Quince	Quince, vinegar, lemon juice, sugar, ginger	Roast duck or goose
Grape	Seedless grapes, white cloves, ginger, red jalapeno peppers	Baked ham, turkey, roasted or grilled meat
Watermelon	Watermelon, cucumbers, red onion, carrot, vinegar, sugar, fresh mint, cilantro	Grilled shellfish (modified Southeast Asia)
Green apple	Granny Smith apples, white vinegar, lemon juice, oregano, chopped orange segments	Roasted or grilled chicken (American East Coast)
Orange	Naval orange, cucumber, red onion, red wine vinegar, orange juice, red chile, pepper, fresh mint	Fish (Morocco, North Africa)
Peach	Ripe or semi-ripe peaches, peppers, red onion, orange juice, lime juice, molasses, chile pepper, parsley, garlic	Grilled fish, roast (American)

Source: Food Technology, Vol. 50, No. 1, January 1996

Economic Feasibility of Fresh Cut Value-added Facility in Tift County, Georgia

This section investigates the costs and returns of operating a cabbage, salsa and brine pepper value-added preparation facility Tift County, Georgia. This economic analysis applies to full annual operation; it does not serve as a cash-flow, or start-up cost analysis. These figures cover a “normal” operating year including a “normal” sales year. The economic analysis is

provided to determine the true profit or loss potential of the proposed operation. Cash flow analysis is used to determine the feasibility of any particular financing plan.

Equipment costs for the cabbage operation include all necessary components for coring, cutting, washing, and packaging cabbage into 1" X 1" pieces for retail and food service outlets; dicing tomatoes, onions, peppers, and cilantro for salsa; and adding value both from the same facility. The equipment costs came from several different sources, including Urschel, CMI, Gates Automation, and World Cup. Fresh-cut vegetables begin the decay process the moment the membrane is broken. The facility will be kept between 35 and 40 degrees Fahrenheit to reduce spoilage. After preparation, a hopper directly bags the vegetables and laborers box them for transport. The equipment costs were collected from Urschel and CMI equipment manufacturers. The equipment used includes: receiving station, flume, Urschels, dryers, hoppers, baggers, front end loader, and refrigerated trucks. A detailed list can be seen in the appendix. Operating costs were also investigated for running the facility on a full-time basis.

The level of production coincides with yields provided by the local producers and the availability of machinery in the market place. Building size is sufficient to run all three scenarios together or the cabbage and salsa. The cabbage and salsa requires the refrigerated building, while the brine peppers can be prepared in a small metal outdoor building. The total size of the building is 40,000 refrigerated square feet.

Four different scenarios were calculated for this feasibility section. Each scenario operates at 85% capacity, which is based on normal production and is probably the highest level of capacity that can be used efficiently. The cabbage and salsa facility will operate 50 weeks per year, 6 days per week, while the brine peppers only operate during the pepper season, 22 week annually. Four types of product will be packaged: 1 lb. retail bags and 5 lb. food service bags of cabbage, 16 oz. containers of salsa, and brine pepper drums (284 pounds). The cost figure in the following sections are in totals and by production, tons or drums. The cabbage and salsa have figures per ton, while the peppers have figures per drum.

Capital Costs

The capital cost figures include all necessary equipment for receiving vegetables from the field, adding value, and distribution, with start-up estimated and added into the capital cost for each scenario. Table 14 summarizes these costs as the following: building/land, plant equipment, and working capital. Working capital is determined as three months of the total annual working capital required during an average year, plus start-up costs, which includes permits, electrical installation, and managerial fees. The size of the building was estimated to process both cabbage and salsa; for the single operations, the costs for the same size building were used to allow for expansion to include both operations. Due to the ease and limited expense of producing brine peppers they were investigated only as a stand alone, but can be added to either the cabbage or salsa line with the investment of only the operating materials. All three line use similar equipment.

Working capital is included in the capital costs. Working capital changes with the levels of production and are the resources used to support a business until that business begins to generate its own support, generally in the form of profits. Most working capital comes in the form of start-up, short-term loans. Enough capital is needed to cover expenses incurred by the business during the start-up phases and slow sales periods to remain in production. Working capital to cover two months of operation with no income produced, including payment to producers for the raw products and any debt payment that may be incurred is assumed.

Table 14. Capital Cost Comparison for Each Scenario

Cost Category	Cabbage Only	Salsa Only	Cabbage and Salsa	Brine Peppers
Building	$1,400,500	$1,412,500	$1,482,500	$42,000
Plant Equipment	$649,480	$432,864	$891,029	$70,834
Working Capital	$1,577,621	$785,032	$2,000,458	$239,328
Total	$3,627,601	$2,630,396	$4,373,987	$352,162

Total capital required ranged from $4.3 million for the combination facility to $350,000 for the brine pepper facility. The capital cost is the total estimated capital to be raised by the cooperative through equity and/or debt financing. See appendix pages 68, 75, 81 and 87 for details.

Fixed Costs

Total fixed costs are expenditures which will not change with production levels or time. Stated another way, costs remain the same, no matter if 1 ton or 1,000 tons are produced. Fixed costs are flat and consistent with the same costs occurring each period, whereas other costs are related to the level of output. Included in fixed cost are interest, depreciation, taxes and insurance, and administrative costs. Economic depreciation is used to cover physical deterioration and function obsolescence of equipment and/or regulations. The annualized cost of the internal capital and return on investment is built into the economic analysis. If helpful, depreciation can be thought of as the annual average principal debt payment occurring if a loan is structured for the entire capital costs for the anticipated useful life of the facility. Return on invested capital can be thought of as the average annual interest payment for a loan capitalized over the anticipated useful life of the facility. Fixed costs are equivalent for all scenarios since each uses the same equipment.

Salaried employees are considered “fixed” for this analysis since their costs are not easily changed with production levels. Administrative employees include: a manager, salesperson, bookkeeper, and a secretary. The manager, food scientist, and salesperson receive annual salaries of $75,000 and $50,000, respectively, with the potential for commissions. These people are responsible for scheduling delivery of raw and finished products, ordering input supplies, and creating contacts for direct sales, and ensure food safety. The administrative employees receive benefits. A part-time bookkeeper, with an estimated salary of $25,000, will be hired to assist the manager. The administrative employee for the brine peppers is a part time manager.

Table 15. Fixed Cost Comparison for Each Scenario				
Cost Category	**Cabbage Only**	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers**
Administrative Costs & Benefits	$325,000	$260,000	$390,000	$1,800
Taxes and Insurance	$20,500	$18,454	$23,735	$23,275
Depreciation-Building	$69,030	$69,750	$73,950	$1,850
Depreciation – Plant Equipment	$82,069	$51,123	$98,718	$8,691
Interest on Investment-Building and Start-Up Costs	$92,525	$93,125	$96,625	$2,100
Interest on Investment - Plant Equipment	$32,474	$21,643	$44,551	$3,542
Total Fixed Cost	**$621,597**	**$514,095**	**$727,580**	**$41,257**

Table 16. Fixed Cost Comparison for Each Scenario Per Ton				
Cost Category	**Cabbage Only**	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers***
Administrative Cost & Benefits	$6.44	$16.41	$5.51	$0.28
Taxes & Insurance	$102.12	$231.22	$90.55	$3.53
Depreciation – Building	$21.69	$62.03	$17.17	$0.28
Depreciation - Plant Equipment	$25.79	$45.47	$22.92	$1.32
Interest on Investment - Building/Start Up Costs	$29.07	$82.82	$22.44	$0.32
Interest on Investment - Plant Equipment	$10.20	$19.25	$10.34	$0.54
Total Fixed Cost	**$195.32**	**$457.20**	**$168.94**	**$6.25**
*Brine Peppers are per drum.				

As seen in Table 16, fixed cost per ton is lower for the combination unit due to shared equipment and building space. The salsa enterprise encompasses the highest fixed cost per prepared ton due to the lowest level of production for which the cost are spread. The brine pepper's fixed cost is per drum and equals $6.25. See appendix pages 67, 74, 80 and 86.

Direct Vegetable Cost

Purchase prices were obtained from the Center for Agribusiness and Economic Development 2002 Farmgate Report, using the price received by farmers in the Tift County area. The prices utilized are for fresh grade #1 quality vegetables. Research and marketing has shown that cull vegetables cannot be used in the production of fresh-cut vegetable items. Consumers expect prepared products to be made from un-blemished quality vegetables. Exceptions to this rule could be exploited with the use of some cull tomatoes and peppers, but for the purpose of this study only fresh market prices were used as direct payments to producers.

Shrink is also included to account for loss of weight due to coring and de-leafing cabbage (50%), and tipping and topping onions (45%). The shrinkage rates are reflected in the total tons

prepared. The facility had to purchase vegetables in excess of the actually tons prepared to account for shrink.

Table 17 indicates prices received by farmers, as reported in the Farmgate Report. These prices were chosen since they more closely reflect the actual prices received by farmers in the Tift County area.

Table 17. Direct Vegetable Prices				
Type	**Price/Ton**	**Price/Lb**	**Tons Needed**	**Total**
Cabbage	$200	$.10	6,365	$1,272,932
Tomatoes	$600	$.30	1,226	$735,435
Onions	$440	$.22	348	$152,934
Peppers	$660	$.33	14	$9,277
Jalapeno Peppers	$520	$.26	726	$377,520

Based on production yields provided by the applicant, enough vegetables are grown in the area to run the facility at an optimal level.

Direct Labor

Labor cost for this operation are based on recommendations from CMI and Urschel with some guidance provided by existing fresh-cut facilities in the Atlanta area, who wish to remain anonymous. Wages are set at $12 per hour to adhere to quality control, environmental, and training issues. To retain quality employees, the wage rate was suggested to be higher then the county average.

Table 18. Labor Cost Comparison for Each Scenario				
Cost Category	**Cabbage Only**	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers**
Labor Cost	$1,153,152	$194,688	$1,287,936	$114,048
Labor Cost Per Ton	$362.35	$173.14	$299.04	$17.28*
* Brine Peppers are per drum.				

Table 18 indicates the cabbage line requires significantly more labor, due to higher levels of production and seasonality. See appendix pages 72, 78, 84, and 89 for details.

Variable Costs

Other direct **v**ariable costs associated with this project include utilities, insurance, repairs, disposal, product insurance, marketing, interest on working capital, and operating costs. Positive relationships exist among prepared tons and variable costs, although this is not linear. An increase in prepared volume increases the variable costs. This is seen significantly in the utilities (electricity). Table 19 provides the different scenarios for variable cost. A detailed list of these costs can be seen in appendix page.

Table 19. Variable Cost Comparison for Each Scenario				
Cost Category	**Cabbage Only**	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers**
Variable Cost	$2,520,535	$703,864	$3,617,888	$435,159
Variable Cost Per Ton	$792.02	$625.96	$840.03	$65.93*
*Brine Peppers are per drum.				

Table 19 indicates that the variable cost per ton runs from $625 to $840. The largest component of these variable costs in all scenarios was the operating cost, which consists of cleaning and packaging supplies. Each doorway will have a hand washing unit and four inch puddle filled with cleaning solution to disinfect all entrants into the facility. The big issue with fresh cut products is cleanliness and germ control to produce a safe product. Lab tests are done frequently to check germ and bacteria levels. These quality control costs are a large component of variable cost. Appendix pages 67, 74, 80 and 86

Income

Income was derived by assuming the facility would run at 85% capacity per shift. The final products were sold at $1.00 retail and $2.75 food service for cabbage, and $1.25 for salsa. These prices were determined by the market analysis and wholesale data received from a large retailer database. Table 20 illustrates the income derived from the sale of all products.

Table 20. Income Based on Different Scenarios				
	Cabbage Only	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers**
Prepared Tons	2,387 & 796	1,124	4,307	6,600*
Price per Container	$1.00 & $2.75	$1.25	*$1.00, $2.75 & $1.25	$162
Income	$5,648,760	$2,811,120	$8,459,864	$1,068,408
Indicates price per product type: $1.00 = retail; $2.75=institutional; and $1.25=salsa, Brine Peppers are per drum.				

As seen in Table 20, income is based solely on the prices received from selling to retailers or the food service industry. However, the income above assumes that 100% of the final products are sold. This is not typical for any new operation and time needs to be considered before assuming entire products produced are sold.

Total Cost & Profit/Loss

Total costs per ton can be determined by adding variable (labor, direct vegetable, and operating cost) and fixed (administrative labor, depreciation, taxes, and insurance) costs. Table 21 provides the total profit/loss costs for each scenario. Table 22 illustrates the profit/loss per finished ton.

Table 21. Total Costs and Profit/Loss per Scenario				
Cost Category	**Cabbage Only**	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers**
Income	$5,648,760	$2,811,120	$8,459,864	$1,068,408
Direct Cost	$1,272,960	$905,982	$2,178,611	$384,780
Labor Cost	$1,153,152	$194,688	$1,287,936	$114,048
Variable Cost	$2,520,535	$703,864	$3,617,888	$435,159
Fixed Cost	$621,597	$514,095	$727,580	$41,257
Total Cost	$5,568,245	$2,318,630	$7,812,015	$975,244
Profit/Loss	$80,515	$492,490	$647,849	$93,164

Table 22. Total Costs and Profit/Loss per Ton				
Cost Category	**Cabbage Only**	**Salsa Only**	**Cabbage and Salsa**	**Brine Peppers***
Income	$1,775	$2,500	$1,964.28	$162
Direct Cost	$400	$805.71	$505.85	$58.30
Labor Cost	$362.35	$173.14	$299.04	$17.28
Variable Cost	$792.02	$625.96	$840.00	$65.93
Fixed Cost	$195.32	$457.20	$168.94	$6.25
Total Cost	$1,749.70	$2,062.02	$1,813.86	$147.76
Profit/Loss Per Ton	$25.30	$437.98	$150.42	$14.12
*Brine Peppers are per drum.				

Table 22 provides the breakeven figure per ton for the different scenarios. Each scenario is profitable with returns per ton greater than the season average price as recorded in the fresh vegetable market. If cull vegetables can be utilized in different aspects of the operation, profitability will increase. See appendix pages 67, 74, 80 and 86.

Sensitivity Analysis

Profit versus Budgeted Cost

In order to determine the potential viability and risk of a project, a sensitivity analysis is performed. The sensitivity analysis adjusts the budgeted cost by 5% increments to test profitability of the operation if cost increased.

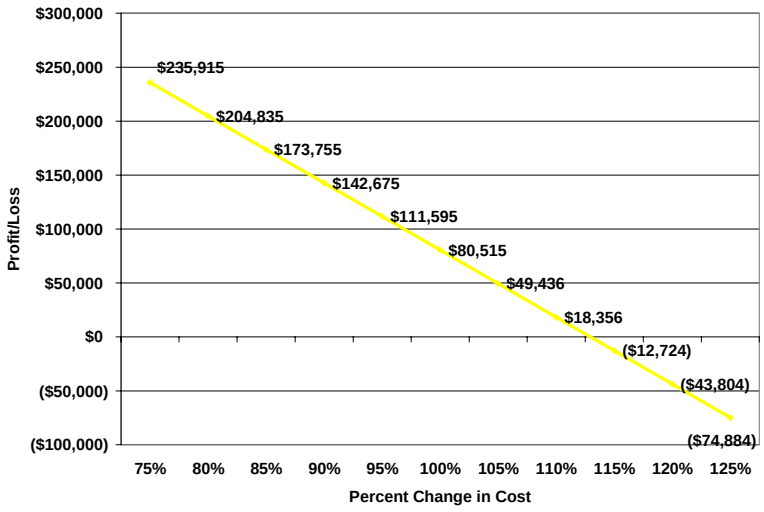
Budget numbers included operating expenses (utilities, taxes, labor, and supplies), fixed costs (interest on start-up cost, depreciation), and income from sales of the prepared vegetable. Total costs are subtracted from income, resulting in profit or loss. Each scenario will have a separate sensitivity graph.

This information is useful for decision planning and risk aversion, as costs are subject to change. Utilities for example, can fluctuate periodically through the year depending on supply of their inputs. The CAED suggests allowing for a 10-15% over budgeted cost for large projects.

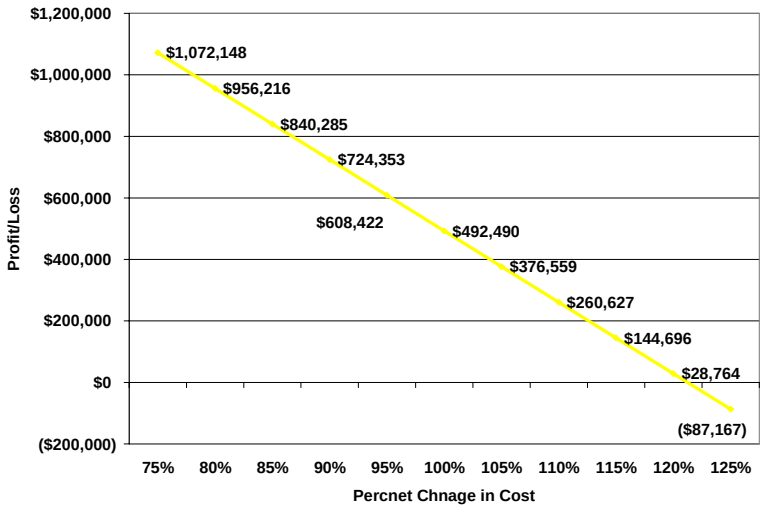
Often costs change after the start up of the business or the feasibility study is finalized. Therefore, to ensure all cost is covered, a buffer should be included.

Graphs 1 through 3 indicate the relationship between budgeted costs and profitability. The cost estimates are moved incrementally at 5% intervals to see the results on profitability and assess risk.

Graph 1. Change in Profit versus Change in Budgeted Cost, Cabbage

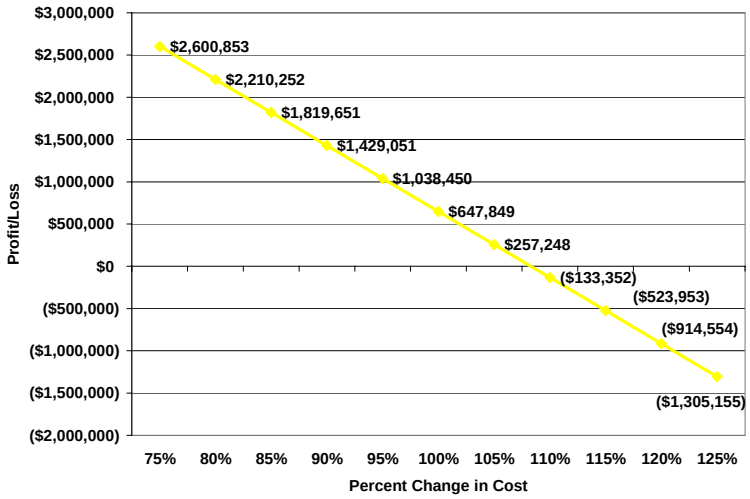


Graph 2. Change in Profit versus Change in Budgeted Cost, Salsa



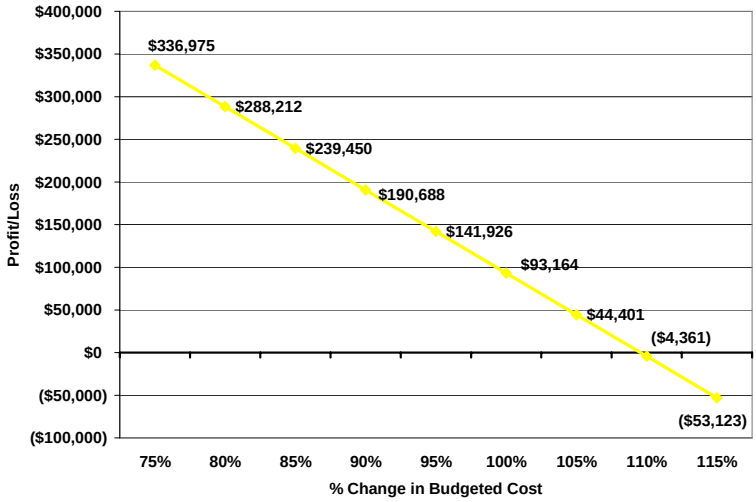
Graph 1 demonstrates that the scenario is profitable until costs are increased by 16%. Graph 2 indicates that the salsa scenario is feasible based on the budgeted cost but turn unprofitable at an increase of 22.5%.

Graph 3. Change in Profit versus Change in Budgeted Cost, Cabbage and Salsa



Graph 3 indicates risk exists if costs increase 8.5%. The monetary moves in Graph 3 are larger then the other scenarios creating the distortion between single scenario units and the combined unit.

Graph 4. Change in Profit versus Change in Budgeted Cost, Brine Peppers



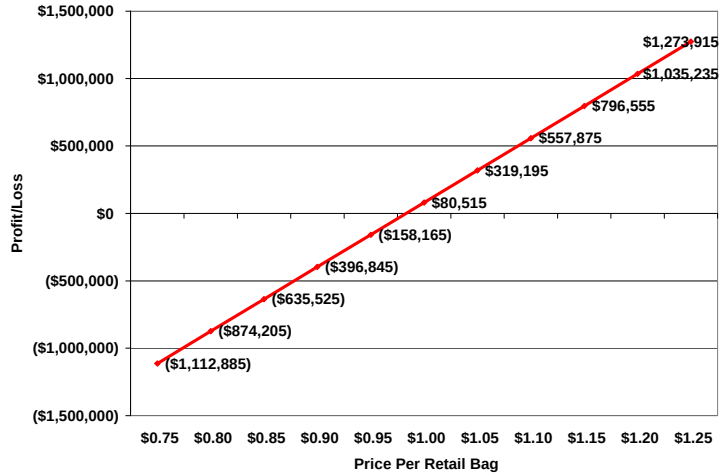
Graph 4 reveals that the brine peppers can withstand a 10% price increase and still breakeven.

Profit Versus Percent Over/Under Estimated Sales Price

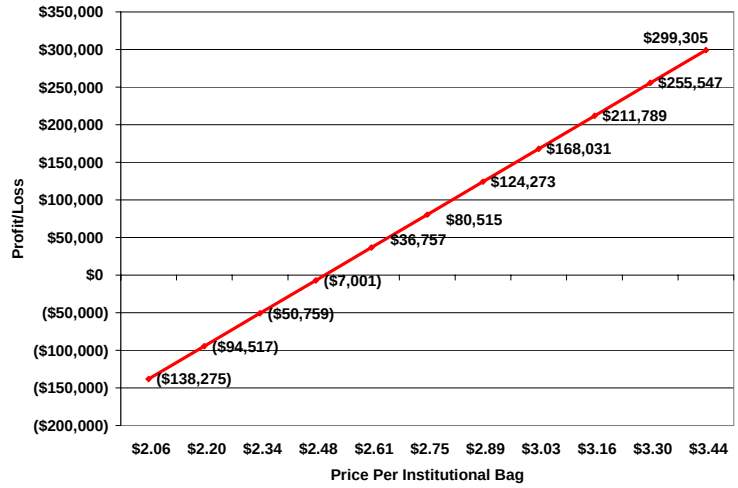
This section of the sensitivity analysis demonstrates how a change in the sales price of the prepared vegetables affects profitability. The obvious result is as prices decrease, profits decrease. New products are often offered at prices under competition products to gain market

share. In response, the competition may respond to new products by cutting their sales price. To understand the outcome of sales price shifts on profitability, Graphs 5-9 use a 5% change in sales prices to illustrate the sensitivity of profits to change in market conditions.

Graph 5. Profit versus Over/Under Estimated Sales Price of Retailed Size Cabbage



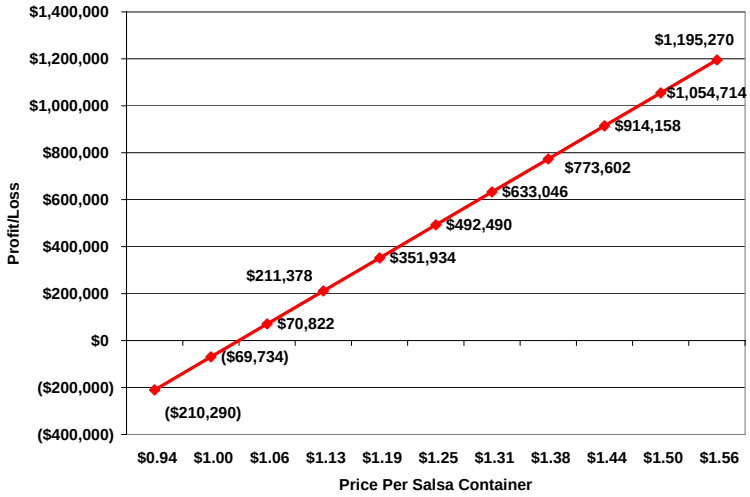
Graph 6. Profit versus Over/Under Estimated Sales of Institutionalized Cabbage



Graphs 5 and 6 represent sales from the cabbage line; both retail sized and institutional sized bag sales were examined. Graph 5 reveals that even a penny decrease in sales price will yield unprofitable results. This could possibly create an issue of riskiness, since income is based on selling 100% of the product prepared, at the current sales price of $1 per bag. If the scenario can not withstand a penny decrease in price, it will not be able to withstand any sales volume reduction either. Graph 6 indicates a similar circumstance that the scenario can not reduce the sale price by more than 1%, $ .0275, and still maintain a profit.

Graph 7 investigates the relationship of sales prices and profitability for the salsa line.

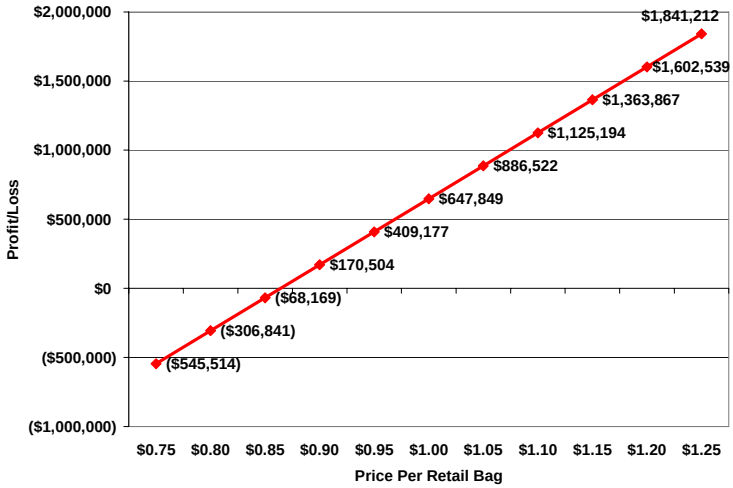
Graph 7. Profit versus Over/Under Estimated Sales Price, Salsa.



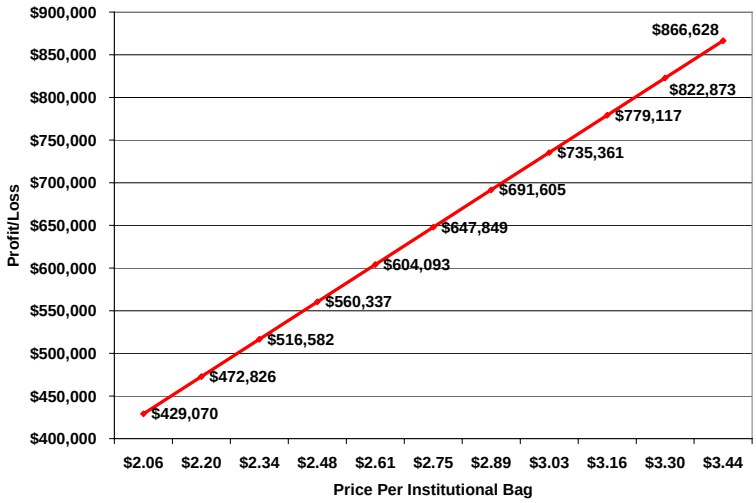
Graph 7 indicates the salsa operating line can reduce the sales price by $.21 per container or 17% and still remain profitable.

Graphs 8 through 10 investigate the relationship among prepared commodities and outcome of the combined unit.

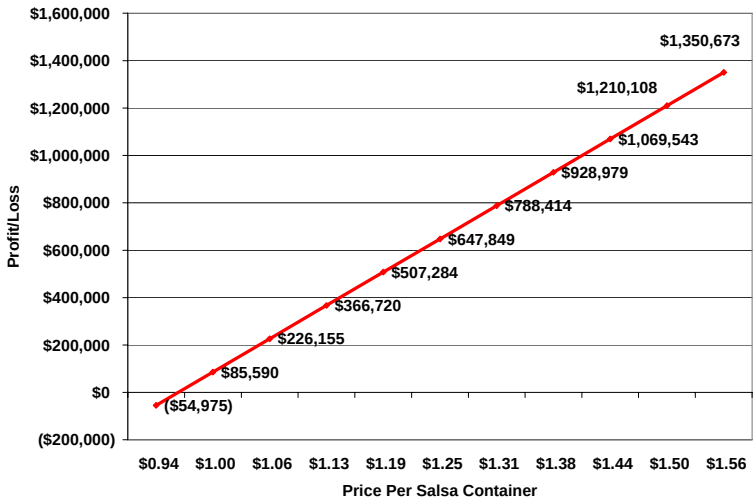
Graph 8. Profit versus Over/Under Estimated Sales Price, Retail Cabbage Combined Line.



Graph 9. Profit versus Over/Under Estimated Sales Price, Institutional Cabbage Combined Line.

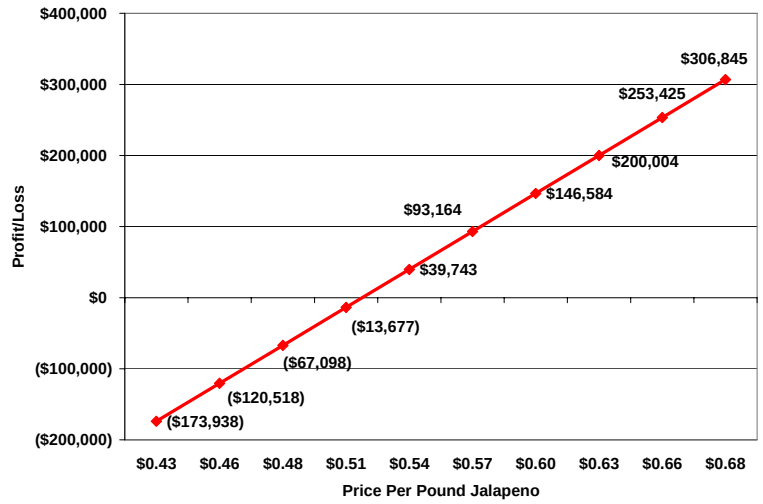


Graph 10. Profit versus Over/Under Estimated Sales Price, Salsa Combined Line



Graphs 8 through 10 indicate relatively the same outcome as the other graphs, a negative change in sales price by 1% with any of the cabbage products indicates how a scenario is unprofitable. This means a change in price between 1 cent for the retail cabbage and .005 cents per pound for the institutional cabbage, or $.025 cents total for the institutional sized cabbage. Graph 10 reveals the salsa price can be reduced by $.02 per package before reaching an unacceptable level.

Graph 11. Profit versus Over/Under Estimated Sales Price, Brine Peppers

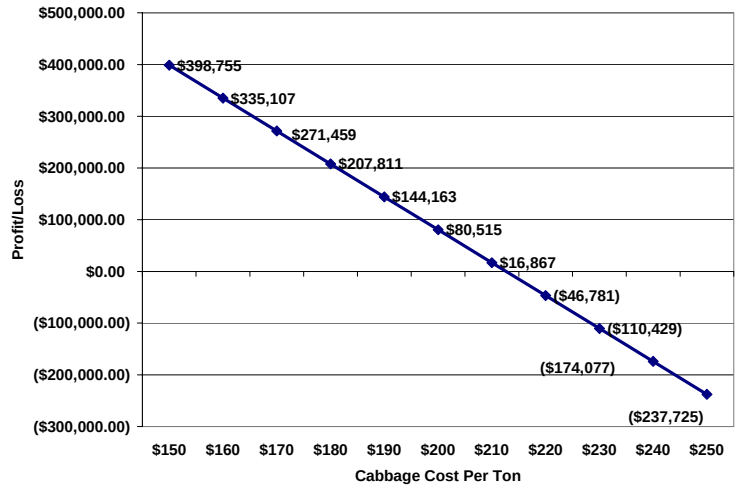


The brine pepper enterprise can sell jalapeno peppers for $.52 per pound and still breakeven.

Profit versus Change in Direct Vegetable Cost

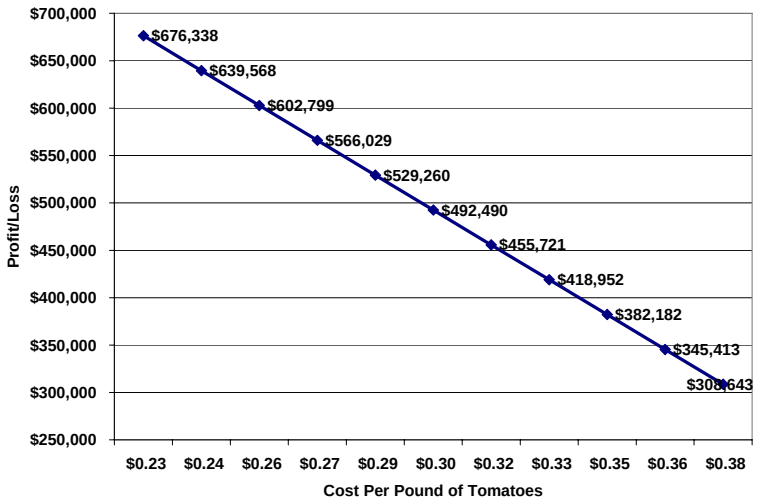
Graphs 12 through 16 indicate how a change in direct vegetable cost, or prices received by the producers affects profitability. The vegetable prices used are for fresh market produce and were taken from the Farmgate Report published by the CAE.

Graph 12. Profit versus Direct Cost, Cabbage



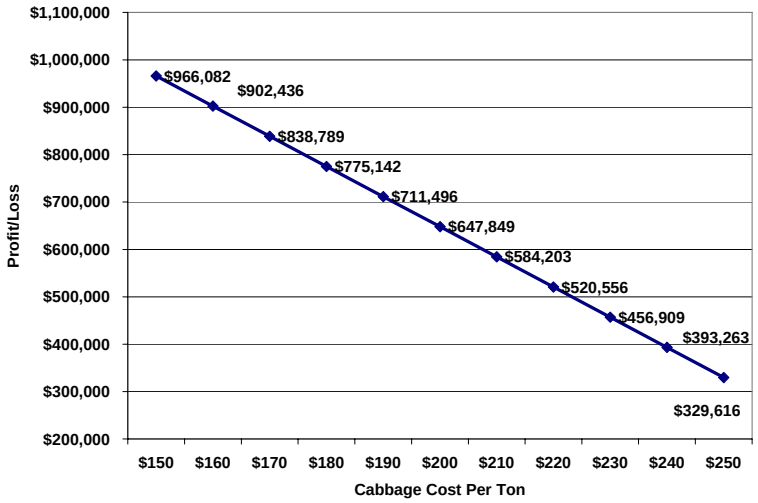
Graph 12 reveals that the facility can offer up to $216 per ton of raw cabbage before reaching an unprofitable level.

Graph 13. Profit versus Direct Cost, Salsa Line (Tomatoes)

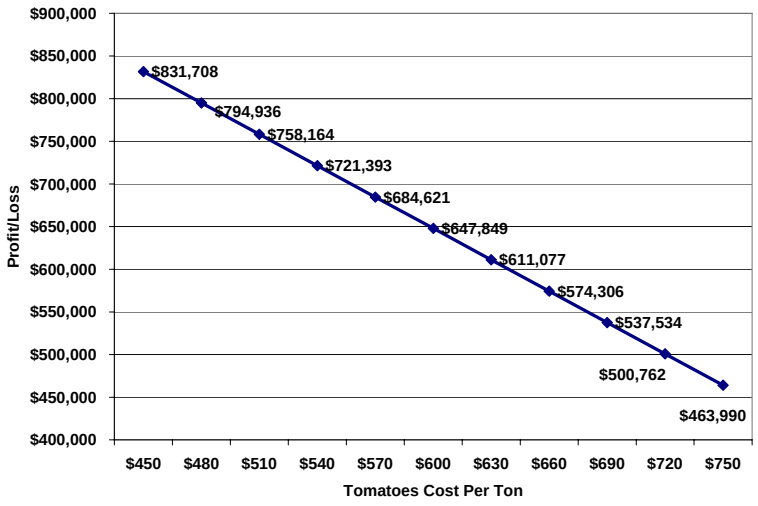


Graph 13 indicates that the facility can offer $.50 per pound or $1,002 per ton of tomatoes before becoming unprofitable.

Graph 14. Profit versus Direct Cost, Cabbage Combined Line

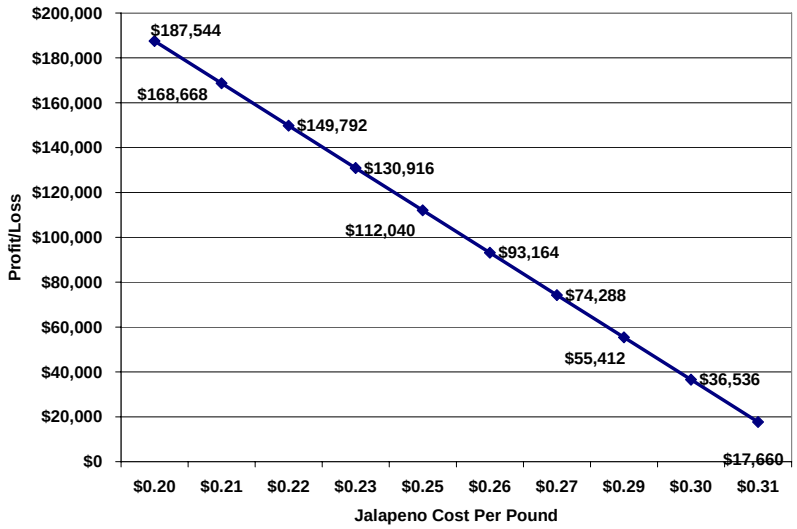


Graph 15. Profit versus Direct Cost, Salsa Combined Line



The combined facility can offer vegetable growers a maximum price of $302 per ton of cabbage and $1,128 per ton of tomatoes and still remain profitable.

Graph 16. Profit versus Direct Cost, Brine Pepper



Graph 16 indicates the purchase price for raw jalapeno can approach $.40 before making the operation unfeasible.

Organizational Structure and Alternative Financing Arrangements

New Generation Cooperatives

A marketing cooperative is one of the financing and ownership methods being considered for the value-added facility in Tift County, Georgia. The main purpose of this facility is to further process vegetables and return the added value to producers in the community. The recommended organizational structure would be to form a value-added vegetable cooperative of defined or selected membership, whereby members invest through the purchase of stock shares.

The basic concept of this new type of cooperative is producers capture profits occurring beyond the farm gate by owning and controlling the local businesses that are positioned to earn those profits. The motivation of new generation cooperatives is more offensive than defensive, by taking control of its own destiny and being proactive rather than reactive. The main emphasis in cooperatives of this type have been on value-added produce, niche marketing, and producer/members viewing themselves as producing a finished product rather than supplying a raw product.

This new type of producer cooperative is called a "New Generation Cooperative" (NGC), "closed cooperative," or "stock cooperative." NGCs combine solutions for financing and operating questions posed by new producer/owned operations. First, producers raise an initial portion of the investment and working capital cost through stock sales and the remaining capital can be raised through debt financing. Second, shares serve as a dual contract. Each shared owned provides the producer with both the obligation and the right to deliver to the cooperative. Likewise, the cooperative is obligated to accept delivery given quality standards are met. These delivery rights and obligations are transferable. Each member is still granted only one vote regardless of the number of shares owned. Thus, the NGC stock sale, properly structured, assures that the value-added venture will be financed AND has adequate supply to operate efficiently.

Producers tend to take greater interest in operations developed as a NGC cooperative since they are also investors. The typical amount of member equity required is 40 to 60% of the initial capital needed for the project. This gives potential lenders the security of sufficient producer commitment. Commercial banks have been the primary source of financing for the remaining 40-60% needed by new cooperatives. The USDA also has numerous financial programs that can assist cooperatives that meet certain criteria. Credit unions and the Farm Credit System have also actively lent funds to farmers for investment in new cooperatives. Other helpful support systems in the development of these new cooperatives include communities, regional economic development commissions, individual rural electric cooperatives, and university extension services.

The initial stock share price of an NGC is calculated by taking total capital cost needed to start the plant divided by the total number of tons of raw vegetables needed for a standard operating year. This will yield a share price for 100% financing by the producers. If producers

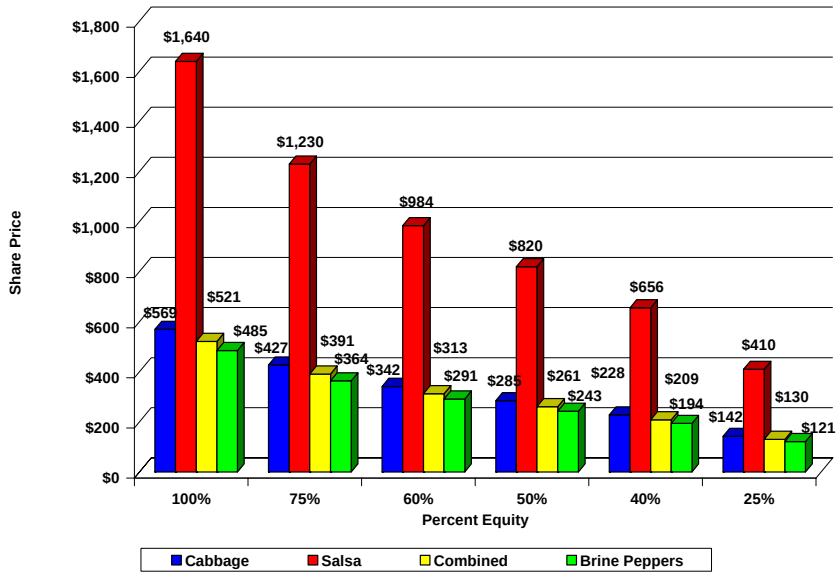
wish to lower their amount of equity, the share prices will drop accordingly to the amount financed outside the operation.

Graph 17 displays different initial share prices per ton of vegetable based on various levels of producer financing. For example, if producers were to raise all the capital needed, then each share would be priced at $521 for the combined facility. The calculations are total capital cost divided by tons needed. Each share represents one ton of vegetables to be supplied to the facility. Each share purchased requires a commitment to deliver one ton of raw product for the duration of the cooperative. However, the stock purchase price is paid once with the opportunity to receive returns annually.

NGCs retain many principles of traditional cooperatives: democratic control through a one member, one vote policy; distribution of excess earnings among members as patronage refunds or dividends; and a member-elected board of directors. The financing of NGCs allows the return of virtually all net earnings to members at year-end since members invest capital up-front. Future expansion is financed in the same way as original equity: members invest through the purchase of shares. In some instances, preferred shares may be offered to the community or general public. Issuing this non-voting stock is allowed under Georgia Cooperative law. This allows communities to support the project while keeping control in the hands of the members. Some advantages of the NGCs include the ability of producers to react quickly to opportunities or problems, the creation of wealth within a community, stability for producers, efficiency for adding value to produce through restricted membership, consideration of the interests of the community through a diverse set of stakeholders, and commitment to the quality of the product by both the producers and processor.

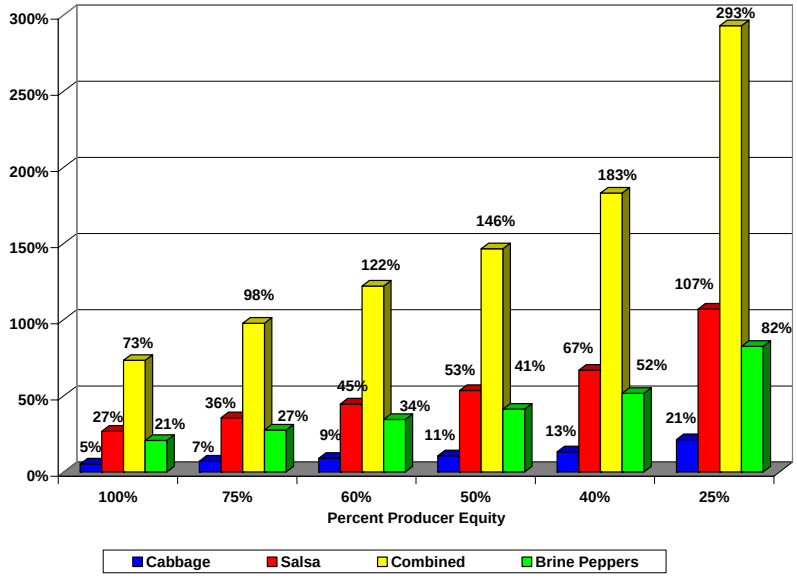
One of the keys to success of a NGC is producer commitment. Groups of producers must be motivated, determined, and committed. Other keys to success include public policy that supports cooperative formation, financial institutions willing to finance the cooperative, and consultants or facilitators to help producer groups through the process. These keys to success seem to be available in Tift County. Georgia vegetable producers have an opportunity to take ownership of a value-added facility and increase producer returns through the marketing of fresh-cut vegetable products.

Graph 17. Share Price per Ton for Each Scenario.



Any profits made from the business will be returned to the shareholders in a time-period to be determined by the cooperative's board of directors. The profit is split among the shareholders based on the number of shares each individual owns. Graph 18 indicates the percent return per share on an annual basis at the various producer financed levels.

Graph 18. Estimated Returns to the Various Financed Levels per Share



The combined value-added line yields the greatest return per share of stock. This is due to the efficiency assumed with a higher level of production, shared building, and equipment.

Impact Analysis

Impact analysis is a key component of any feasibility study. An impact analysis indicates the effect of a new venture on the local and state economy. Building and implementing a fresh cut facility in Georgia would impact the economy on two levels. The new plant would generate output as it begins selling finished products. These sales would, in turn, generate additional sales as the plant purchases inputs. The suppliers to the plant will increase the purchase of their inputs, thus increasing demand for those items. These increased sales will ripple through the economy. An input-output model will capture and quantify these effects.

The input-output model, IMPLAN (Impact Analysis for PLANning, Minnesota IMPLAN Group) was utilized for this project. IMPLAN can predict the effects of a new venture on output (sales), employment and tax revenue. IMPLAN models can be constructed for a state, a region or a county. Input-output models work by separating the economy into its various sectors, such as agriculture, construction, manufacturing and so on. An IMPLAN model will show each sector and industry in the specific region's economy. The model can capture how a change in one industry (for example, further vegetable preparation) will change output and employment in other industries. The changes in the initial industry (vegetable preparation) are labeled direct effects and the changes in the other industries are called indirect effects. The direct and indirect effects are summed to give the total economic impact.

The first scenario (Table 23) examines the cabbage line operation. The plant will have sales of $5,648,760. It will employ 44 people. Sales from the facility will increase economic activity by $4.54 million, bringing the actual total state impact of the plant to $10.2 million. In addition to 44 jobs at the plant, another 48 jobs would be created in Georgia. Finally, the plant will increase state and local tax revenue by $316,666.

Table 23. Impacts of the Value-added Cabbage Line

	Direct	**Indirect**	**Total**
Output	$5,648,760	$4,544,718	$10,193,478
Employment	44	48	95
Tax Revenue (State)	NA	NA	$316,666

The second scenario (Table 24) considered is the salsa line. This plant would have sales of $2,811,120. It would employment 9 people. In addition to its direct output, the plant will generate $1.95 million in additional sales. Thus, the total impact of the plant in Georgia will be $4.76 million. In terms of employment, a total of 29 new jobs will be created due to the plant, 9 actually at the plant and 20 in other various sectors. Tax revenues for the local and state government would rise by $138,679.

Table 24. Impacts of the Salsa Line			
	Direct	**Indirect**	**Total**
Output	$2,811,120	$1,955,479	$4,766,599
Employment	9	20	29
Tax Revenue (State)	NA	NA	$138,679

The third scenario (Table 25) examines a joint value-added line of cabbage and salsa. This would create sales of $8,459,864 and employment of 49 workers. A plant of this size would generate a total of $14.9 million in new sales for Georgia. A total of 117 new jobs would be created, 49 at the plant and 26 in other areas of commerce. State and local government tax revenues would increase by $439,974.

Table 25. Impacts of a Combined Value-added Cabbage and Salsa Facility			
	Direct	Indirect	Total
Output	$8,459,864	$6,473,667	$14,933,531
Employment	49	68	117
Tax Revenue (State)	NA	NA	$439,974

The fourth scenario (Table 26) investigates the brine pepper packing line. This would create sales of $1,068,408 and employment of 10 workers. A plant of this size would generate a total of $1.9 million in new sales for Georgia. A total of 18 new jobs would be created, 10 at the plant and 8 in other areas of commerce. State and local government tax revenues would increase by $53,473.

Table 26. Impacts of the Brine Peppers			
	Direct	Indirect	Total
Output	$1,068,408	$822,627	$1,891,035
Employment	10	8	18
Tax Revenue (State)	NA	NA	$53,473

Table 27 is designed to compare the total output, employment, and tax revenue increases of the different scenarios. One can see as plant capacity and run time increases, the size of the impacts also increase. This is due to the increase in sales by the plant.

Table 27. Comparison of Impacts for Various Sizes			
	Total Output	Total Employment	Total Tax Revenue
Cabbage Line	$10,193,478	92	$316,666
Salsa Line	$4,766,599	29	$138,679
Combined Lines	$14,933,531	117	$439,974
Brine Pepper	$1,891,035	18	$53,473

Conclusions

The economic analysis exhibits opportunities in the fresh cut industry if the final products can be delivered in a timely fashion to retailers. Market analysis indicates growth in consumption in fresh cut products in the Georgia area. Little market information was available for the brine peppers. Therefore it is unknown whether this ingredient market is growing, contracting or even a safe venture.

The cabbage packing line, although marginal, produced a slight profit if 100% of the finished goods are sold. There appear to be risk with the cabbage packing line in regards to sales price adjustments and raw product prices.

Salsa prospects are positive with many retailers mentioning high demand for fresh salsa products. The salsa line created substantial profits even with inputs priced at fresh market value. Again, this assumes 100% of the products are sold. Supply for fresh salsa currently does not match demand.

The combined unit, cabbage and salsa, covered costs and produced a return of 78% for 100% equity invested. However, this assumes all finished products produced are sold and budgeted costs remain consistent with the feasibility study.

Impact analysis for each scenario created positive benefits for Tift County and the Georgia economy. Employment ranged from 19 to 117 new workers in the Georgia economy depending on scenario. Increased tax revenues ranged from $53,000 to $439,000 in the state.

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:

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