

Business Development Model for Fruit and Vegetable Growers Entering New Markets

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This business model offers a template for fruit and vegetable growers to develop a plan that will aid the entry in to new markets and determine the need for post-harvest facilities. This place-based approach assesses common variables among growers and facilitates the development of localized food production nodes. Food production nodes serve as small cluster of production and processing that can lead to an interconnected and sustainable local food economy. The formation of production nodes is imperative to the transition local food activities from individual farms selling direct-to-consumer markets toward a network of strategic partners within supply chain relationships. ¹

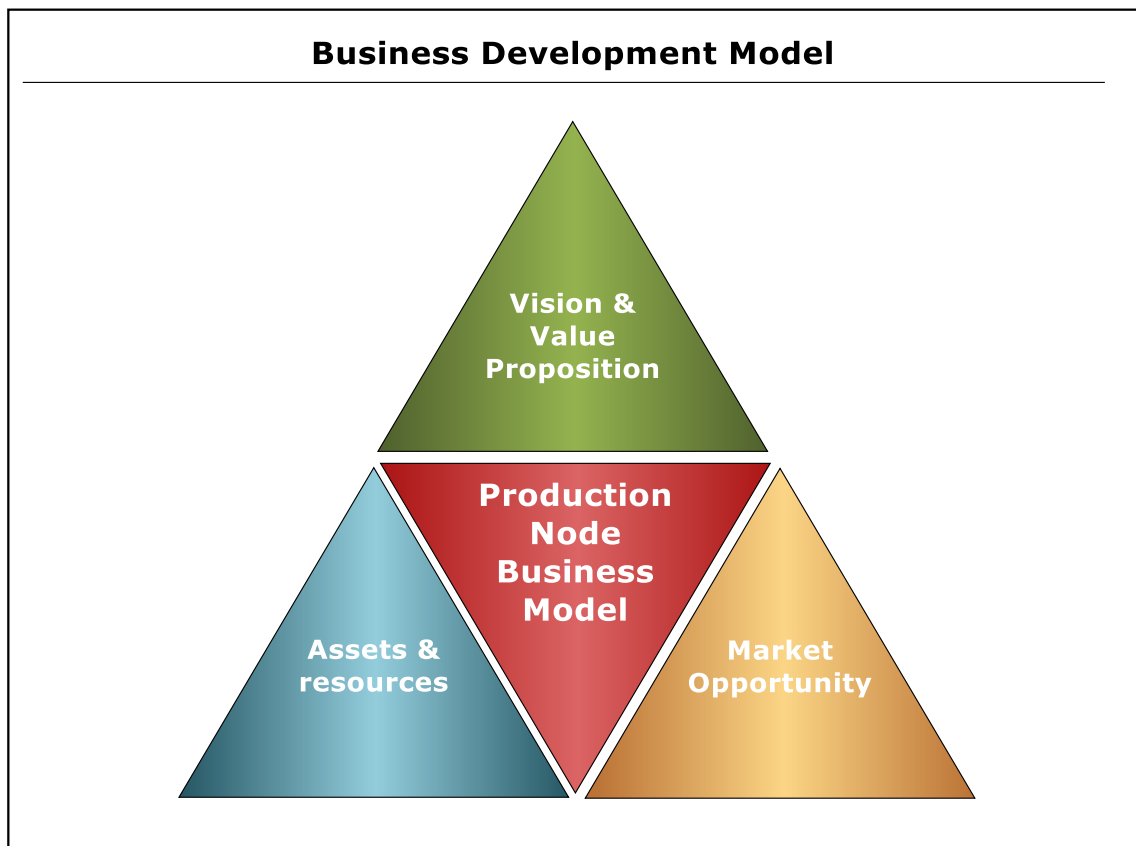
Farmers and food buyers often create food production nodes with producers who are in close proximity to one another in order to work collaboratively and utilize common food production infrastructure. The core infrastructure needed for successful food production node development include: season extension, training programs, washing, sorting, and packing facilities, food storage, local distribution capacity, and small retail and direct-to-consumer markets to meet local consumer demand.

Such an approach is appropriate in the development of production nodes and responds to specific needs. The potential exists to develop the necessary infrastructure to grow local foods in a way that is appropriate to the diverse growers and their communities. This business development model is presented in a series of overall steps, with questions provided to elicit the needs of the producers and their buyers. Following the model, we provide an example scenario based on the application of this model with a group of growers near Rolette, ND. The business modeling process begins by identifying the vision and mission of the core producers. These producers may choose to develop their processing strategies through any kind of legal organization including a sole proprietorship, partnership, cooperative, non-profit organization, or a limited liability company. However the organization may develop, it is essential to have a solid understanding and commitment to the group's vision, goals, and strategies.

¹ Meter, Ken and Megan Philips Goldenberg. 2013. *Making Small Farms into Big Business: A Plan for Infrastructure Investments to Connect Small Farms in South Carolina to Local Markets*. Crossroads Resource Center. www.crcworks.org.

The model complements the visioning process by identifying the current and potential assets including: land, facilities, human resources; partners in technical assistance, funding, and marketing; and current operational strategies. This provides an understanding of the growers' capacity and potential for development.

The next area to examine the potential for production and the need for facilities is the market opportunity. This includes a quantitative snapshot of the defined trade area as well as a qualitative assessment of potential buyers and market partners that leads to the process of building customer relationships. For growers, identifying potential customers as their partner market is a critical strategic effort that happens perpetually as their businesses evolve and grow. By building these market partnerships, the growers should have a good sense of product demand and volume. The resulting assessment of the growers' vision, market opportunity, and assets will provide information necessary to build a production node business model.



The inner workings of the business model include revenue projections and operational plans. The projecting revenue section helps growers to identify clear strategies based on market demands to determine core and signature crops. A template is provided for some common fruit and vegetable crops grown in North Dakota. The template projects revenue based on the sales through direct-to-consumer and institutional market channels and can be modified overtime to

project future revenue as growers scale up production and navigate market segments.

The final section of the model helps growers determine operational needs and develop an operational plan. By utilizing the vision, assets, revenue projections, and resulting strategies, growers can explore their operational needs and set the goals necessary to initiate their business. Growers can consult a prepared equipment list for wash-pack, cold storage, commercial kitchens, and light processing facilities to prioritize their needs and determine the best route for developing infrastructure. The prioritization of equipment and infrastructure development will then lead to the process of drafting an operational plan for supplies, inventory, human resources, general operations, and management capacity.

When working through the model, it is important to note that these steps will not always be linear. There may be times it is appropriate to refine areas already completed in order to fully develop the certain steps. Keep in mind as a place-based business developments model, each scenario will be different and each step will initialize conversations that will likely continue to develop over time. It is recommended to keep thorough records and progress when working through this model, noting reasons for each decision or change in decisions.

Section 1: Business Modeling Process

1.0 Organize core group of growers dedicated to entering new markets.

1.1 Determine the characteristics of the core group:

- *Number.*
- *Proximity.*
- *Product mix.*

1.2 Assess current operational strategies:

- *Production techniques.*
- *Marketing strategies.*
- *Preferred trade area.*
- *Post-harvest handling needs.*
- *Excess product management.*

1.3 Map existing and potential assets.

- *Human resources.*
- *Facilities.*
- *Land base.*
- *Financial Resources.*

- *Partners & Resources for technical assistance for production and business.*

1.4 Identify vision for development and expansion by asking qualitative questions to evoke discussion.

- *What values drive business development?*
- *What potential buyers would you like to build partnership with?*
- *How would such partnerships benefit the business, the buyers, and the community?*
- *How do you envision scaling up and accessing new markets?*
- *How do you see collaboration with each other benefiting?*

2.0 Market Mapping

2.1 Examine the potential market.

- *Utilize the quantified local food consumption data for North Dakota Counties based on the preferred trade area to determine an estimated market potential for locally produced fruits and vegetables.*
- *Use data collected by the USDA Economic Research Service to determine where food dollars are spent in the region.*
- *This breakdown gives the producers insight into how to prioritize marketing strategies.*

2.2 Consider the potential to grow business through farmers markets, community supported agriculture, on farm sales, or other direct-to-consumer market channels.

- *Document the points that arise in discussion including market saturation, labor limitation, or other barriers.*

2.3 Identify potential institutional buyers within the trade area.

- *Schools*
See ND Farm to School Directory of Food Service at ndfarmtoschool.org/directory-of-farmers-and-food-service/ for a list of schools with interest in buying fruit and vegetables locally.
- *Restaurants*
Consider out independently or cooperatively owned restaurants that value community involvement or offer menus that utilize fresh produce or specialty products on a regular basis.
- *Retail grocers*

Consider independent or cooperatively owned grocers.

- *Other institutions*
Consider colleges, hotels, nursing homes, hospitals, or other institutions that offer food service options can be potential buyers.
- *Processors*
Are there food companies or food businesses (think Pride of Dakota) that would have interest in sourcing their product locally?

3.0 Develop Market Partnerships

3.1 Explore potential market partnerships by asking questions that elicit potential value propositions.

- *What customer segments does the group want to serve?*
- *What products would be of most value to these buyers?*
- *What products would our ideal buyers be most interested in sourcing locally?*
- *Are there buyers that we already have some relationship with?*
- *How could they benefit from building these relationships?*
- *How could their customers benefit from such partnerships?*

3.2 Build customer relationships by continuing conversations with potential buyers.

- *Identify types of products partners are most interested in sourcing locally.*
- *Explore how local products might complement current menu or product offerings and be a selling point to their customers.*
- *Identify the volume buyers use each week.*
- *Consider how that volume might vary throughout the year based on availability or menu changes.*
- *Consider kinds of products that require processing prior to use.*
- *Identify what kinds of products are suited in their whole, unprocessed form.*

3.3 Identify most advantageous market partners.

- *What relationships has the group established with customers?*
- *Are there key market partnerships that still need to be developed?*

- *Continue building relationships with market partners.*
- *Consider the type and quality of relationship expected from our customers.*
- *Keep list of other potential buyers to integrate in further years of expansion.*

3.4 Share vision of progress with other emerging production nodes and unique markets, especially other processors, restaurants, retailers, hubs, distributors who are dedicated to the expansion of local food and may be future players in regional collaborations.

4.0 Projecting Potential Revenue Streams

The revenue production includes a look at a potential product mix of fruits and vegetables for these producers. Prices for direct to consumer market channels were calculated using the North Dakota Farmer’s Market and Grower’s Association 2011 price list adjusting for inflation. The remaining 80% of retail grade product is sold to schools, restaurants and retail grocery stores at 65% of direct sale prices. It is assumed that half of the “Seconds” or “B” grade product (30% of total yield) is composted, fed to livestock, or saved for personal use. The other half is sold at 30% of direct sales prices.

4.1 Determine core product mix and production schedule.

- *Are there products that can serve as staples of your revenue?*
- *Are there products that will serve as specialty or signature items?*
- *Are there products that will take years before they are saleable?*

4.2 Calculate product revenue based on:

- *Acres planted per product*
- *Direct-to-Consumer Sales*
- *Institutional sales*
- *Use template to calculate future projections, increasing production as appropriate.²*

² Source Midwest Vegetable Production Guide for Commercial Growers, Vegetable Maturity Dates, Yields, and Storage by Ronald Smith, NDSU Extension 2010 Penn State Extension Strawberry Production retrieved at <http://extension.psu.edu/business/ag-alternatives/horticulture/fruits/strawberry-production>

	Lbs per Acre	Acres Planted	Yield	Price per Pound Direct-to-Consumer	Price per Pound Institutional Sale	(Yield x 20% Direct-to-Consumer) + (Yield x 80% Institutional Sale)
Asparagus	2000			\$2.50	\$1.63	
Beans	4000			\$2.25	\$1.46	
Broccoli	8400			\$3.30	\$2.15	
Cabbage	26000			\$1.15	\$0.75	
Cauliflower	22200			\$1.15	\$0.75	
Carrots	33750			\$1.70	\$1.11	
Cucumber	18000			\$1.15	\$0.75	
Garlic	5000			\$6.50	\$4.23	
Onions	26000			\$1.60	\$1.04	
Peas	4500			\$4.00	\$2.60	
Peppers	28000			\$4.50	\$2.93	
Potatoes	20000			\$1.50	\$0.98	
Spinach	12000			\$4.50	\$2.93	
Sweet Corn	9000			\$1.75	\$1.14	
Strawberries	10000			\$2.50	\$1.63	
Tomatoes	30000			\$2.50	\$1.63	
Total						

5.0 Determine Operational Needs

5.1 Consider the infrastructure needs for expansion based on product mix buyer needs.

John Hendrickson of The University of Wisconsin – Madison’s Center for Integrated Agricultural Systems estimates that for every acre of fruit and vegetable production, farmers require a minimum facility space³:

- *Greenhouse (for transplant production): 300 square feet per acre.*
- *Washing & Packing Area: 150 square feet per acre.*
- *Refrigerated Storage: 150 cubic feet per acre.*
- *Other post-harvest handling needs might include commercial kitchen and/or processing facilities.*

5.2 Identify and prioritize facility needs.

- *Be sure to consider existing infrastructure and assets such as under utilized commercial kitchens, existing buildings for renovation.*

³ Grower to grower: Creating a livelihood on a fresh market vegetable farm John Hendrickson, CIAS Outreach Specialist University of Wisconsin-Madison College of Agricultural and Life Sciences October, 2005.

- *Consult equipment lists to determine and priorities.*
- *Research accurate costs and estimates for your region.*

Item	Number Needed	Cost Per Each	Total Cost
Wet Cold Storage		\$12,000	
Dry Cold Storage		\$12,000	
Chilled Storage		\$12,000	
Barrel Root Washer		\$3,250	
Vegetable Wash Line		\$600	
Roller Conveyer 5'		\$500	
Roller Conveyer 10'		\$700	
Steel Sink		\$175	
Drying Rack		\$200	
Shelf		\$150	
Table		\$175	
Curtain		\$350	
Stock Tank		\$125	
Hand Wash Station		\$100	
Spin Drier - 5 Gallon		\$250	
Electrical		\$10,000	
Mechanical & Plumbing		\$20,000	
Dishwasher		\$3,200	
Triple Sink		\$600	
Hand Sink		\$100	
Stainless Steel Tables		\$1,250	
Vegetable Cutter		\$320	
Wedger		\$100	
Vegetable Slicer/Shredder		\$375	
Food Processor		\$1,900	
Dehydrator		\$5,400	
Refrigerator		\$900	
Freezer		\$900	
Blast Freezer		\$18,000	
Cooker/Canner		\$5,000	
Vacuum Sealer		\$600	
Digital Scales		\$600	
In Field Wash Station		\$1,200	

5.3 Discuss your location and why it is important (if at all).

- *Describe whether your vision includes a destination business where your customers will find you. Examples include a community kitchen, pumpkin patch, or U Pick*
- *Describe the physical needs of a location such as zoning or locations near specific physical resources.*

5.4 Discuss and document the components of the facility.

- *Determine if you will be building new, purchasing existing or leasing space.*
- *Describe any potential facilities that you have identified and verify zoning.*
- *List information such as price (lease rate, asking price or contractor bids), income production from unused portions of the property and any additional costs such as drafting fees, permits, utility deposits, etc.*
- *List the square footage, features included, and renovations/repairs needed. Also, discuss if the space is expandable for future use.*
- *Any listing reports or drawings of your facility should be included in the appendix of your business plan.*
- *List all equipment, furniture & fixtures or other assets owned and its fair market value. Typical items include automobiles, computers, desks/chairs, equipment, and tools.*
- *List all equipment, furniture & fixtures needed to operate the business, the potential source of that equipment and verified price or cost of the assets.*
- *Actual quotes or bids for the purchase of assets should be included in the appendix of the business plan as supporting documentation.*

6.0 Develop Operational Plan

6.1 Determine needs for human resources.

- *Analyze current and future labor capacity and needs.*
- *If employees are needed, list number of employees including the positions needed, the responsibilities of each position, and whether they are seasonal or year round.*
- *Consider any benefits offered to employees and the criteria set out to qualify for these benefits.*

6.2 Discuss general operations

- *Operations Layout Sketch*
- *Description of Production Processes*
- *Production Capacity of current facility*
- *Projected need for expanded production*

6.3 Breakdown of Direct Costs including:

- *Materials, Labor*

- *Production Overhead*
- *Quality Control Methods*
- *Environmental, Occupational Safety, and other Government Regulation.*

6.4 Articulate management capacity.

The management section is essential if you need to borrow money from a financial institution. This section should include one of two things:

- *Resume—Revise resume to focus on experience and skills most relevant to your farm’s operation.*
- *Biography – If you do not have a resume handy simply write a one or two paragraph biography highlighting relevant experience and skills.*

Section 2: Business Model for Rolette Area Growers

1.0 Organize core group of growers dedicated to entering new markets.

1.1 Determine the characteristics of the core group.

- *This group consists of four producers who grow a variety of fruits and vegetables on 9 acres of field and several high tunnels and greenhouses, all within a few miles of one another.*
- *They grow sweet corn, pumpkin, squash, tomatoes, peppers, onions, carrots, broccoli, beans, cabbage, garlic, celery, beets, asparagus, melons, and strawberries.*

1.2 Assess current operational strategies.

- *They all have access to high tunnels or greenhouses, have training in farm food safety, and have access to technical assistance. They have no access to post-harvest handling facilities.*
- *They have been selling together at three farmers markets within a 25-mile radius. One producer began a CSA in which produce was delivered to members in a larger town 40 miles away.*
- *Marketing depends mostly on word of mouth, some social media, and the North Dakota Farmers Market and Growers Association.*
- *Preferred trade area is within 30 miles of their farm, including the towns of Rolette, Rolla, Wolford, St. John, Dunseith, and Belcourt.*
- *Excess produce is preserved for personal use, used for livestock feed, or donated to food banks.*

1.3 Map existing and potential assets.

- *Human resources are limited to the growers and their families. Selling at markets and managing production is a difficult balance. Combined resources total 3.5 full-time equivalents.*
- *Post-harvest handling facilities are limited to personal kitchens.*
- *One grower has a potential site for facility construction including water and electrical.*
- *Potential land base includes up to 30 acres of production.*
- *Potential funding sources include the North Dakota Department of Commerce Ag Product Utilization Commission, USDA Rural Development, ND Department of Agriculture.*
- *Technical assistance for production and business is available through Entrepreneurial Center for Horticulture, FARRMS, and Common Enterprise Development Corporation.*

1.4 Identify vision for development and expansion.

This group of four vegetable and fruit farmers are working together build and operate a washing, light processing, and packing operation for their products. Working together to leverage their collective economies of scale the growers will market their products through community-supported agriculture, farmer's markets, schools and restaurants.

2.0 Mapping the Potential Market

2.1 Examine the potential market.

County	Population (Estimated)	Local Produce Market Potential for At-Home	Local Produce Market Potential Away-from-Home	Total Local Fresh Produce Market Potential
Bottineau	6736	\$132,499	\$68,569	\$201,068
Rolette	14582	\$191,549	\$136,795	\$328,344
Towner	2317	\$46,133	\$24,048	\$70,181
McHenry	5922	\$101,551	\$54,373	\$155,924
Pierce	4451	\$76,564	\$39,978	\$116,542
Benson	6877	\$88,456	\$61,769	\$150,224
Area Total	40885	\$636,751	\$385,532	\$1,022,283

Using this data, we can determine an estimated market potential for locally produced fruits and vegetables of more than \$1 million exists in area. In Rolette County the estimated market of \$328,344 consists of \$191,549 for at-home consumer and \$136,795 for away-from-home consumption. Using data collected by USDA Economic Research Service,

we can break down further where food dollars are spent, 61.9% of food dollars spent for at-home consumption go to retail grocery stores.

Potential Market for Rolette Area Local Fresh Produce - At Home				
Food stores	Other stores	Home delivery and mail order	Farmers, manufacturers, and wholesalers	Total sales
61.9%	27.1%	3.6%	7.3%	100.0%
\$394,316	\$172,677	\$23,009	\$46,749	\$636,751

Breaking down food dollars spent for consumption outside the home restaurants take in 74.5% of all spending while schools and colleges account for just 6.8% of away from home food spending.

Potential Market for Rolette Area Local Fresh Produce - Away From Home						
Eating and drinking places	Hotels and motels	Retail stores, direct selling	Recreational places	Schools and colleges	All other	Total
74.5%	3.8%	3.6%	3.9%	6.8%	7.4%	100.0%
\$287,364	\$14,473	\$13,883	\$15,051	\$26,256	\$28,506	\$385,532

This breakdown gives the producers insight into how to prioritize marketing strategies and develop a network of market partners. While schools and colleges comprise a small portion of away from home spending, building those partnerships may align closely with the values held by the producers. They can maintain these farm-to-school connections while also building partnerships with area restaurants and grocers.

2.2 Consider the potential to grow business through direct-to-consumer market channels.

Current sales to farmers markets are at capacity in small markets. The opportunity to expand depends on extending the trade area west to Bottineau, south to Rugby, or east to Devils Lake. However, increasing the amount of time preparing for market would be reasonable only if additional planning could be supported by access to washing and storage facilities.

2.3 Identify potential institutional buyers within the trade area.

- *Schools:*

- *The Ojibwa Indian School used 10-15 pounds of peppers per week in the fall. It serves up to 800 meals a day. They have also discussed purchasing greens.*
- *Other interest has come from Dunseith and Wolford schools.*
- *The Wolford students have done farm tours at the farm and received donations of corn and celery.*
- *Restaurants:*
 - *A local restaurant in Rolla could utilize cabbage and carrots for coleslaw.*
 - *A Bar & Grill in Wolford could likely be a buyer of lettuce, tomatoes, potatoes, and other veggies to complement their Friday night steak dinners.*
 - *A café in Rolette currently purchases products from the growers when they can: tomatoes, peppers, potatoes, beets, carrots, and so on. Conversations with this buyer suggest ongoing interest in having extended access to product.*
- *Retail grocers:*
 - *Grocers in Dunseith and Rolla are potential buyers.*
 - *Other institutions include the nursing home, tribal college, hospital, and country clubs.*

3.0 Developing Market Partnerships

3.1 Explore potential market partnerships.

3.2 Build customer relationships by continuing conversations with potential buyers.

Future work with the growers and their market partners includes identifying core market partners, additional buyers, core products, and initiating purchasing agreements.

3.3 Identify most advantageous market partners.

- *These growers see school buyers as potential partners, especially Dunseith that feeds students throughout the summer months. They intend to sell their best quality to the schools. They did this with Ojibwa school last fall, and they paid farmers market prices.*
- *These schools have a commitment to offering fresh products in their cafeterias and also integrate a component of food literacy through their farm-to-school programming.*

- *Schools can also be valuable market partnerships through on-farm education opportunities and events hosted by the growers.*
- *Another promising partner is the café in Rolette. They are active through social media, often highlighting their daily specials, salad bars, Sunday buffets, and holiday meals. They pride themselves on quality homestyle foods. Including the local source of their products purchased from the growers could offer additional value to both the growers and the café.*
- *Market partnerships with restaurants will help promote the community appreciation behind supporting local growers.*

3.4 Share vision of progress with other emerging production nodes and unique markets, especially other processors, restaurants, retailers, hubs, distributors who are dedicated to the expansion of local food and may be future players in regional collaborations.

4.0 Projecting Potential Revenue Streams

4.1 Determine core product mix and production schedule.

- *Cold storage items such as potatoes, carrots, beets, cabbage, squash, cauliflower, onions; High valued items such as asparagus, garlic, and strawberries can serve as core products.*
- *Products that will take years before they are saleable include juneberries, chokecherries, apples, plums, peaches, and sand cherries.*
- *Sweet corn, pumpkins, and heirloom tomatoes serve as signature items.*

4.2 Calculate product revenue :

Year 1 - 2016										
	Acres Planted	Yield	Yield - B Grade	Price per Pound			Total Revenue	Revenue by Market Channel		
				Direct	Indirect	B Grade		Direct	Indirect	B Grade
Asparagus*	0.25	500	150	\$2.50	\$1.63	\$0.75	\$686	\$175.00	\$455.00	\$56.25
Beans*	0.25	1000	300	\$2.25	\$1.46	\$0.68	\$1,235	\$315.00	\$819.00	\$101.25
Broccoli**	0.5	4200	1260	\$3.30	\$2.15	\$0.99	\$7,609	\$1,940.40	\$5,045.04	\$623.70
Cabbage*	0.25	6500	1950	\$1.15	\$0.75	\$0.35	\$4,104	\$1,046.50	\$2,720.90	\$336.38
Cauliflower**	0.5	11100	3330	\$1.15	\$0.75	\$0.35	\$7,008	\$1,787.10	\$4,646.46	\$574.43
Carrots**	0.25	8437.5	2531	\$1.70	\$1.11	\$0.51	\$7,875	\$2,008.13	\$5,221.13	\$645.47
Cucumber*	0.25	4500	1350	\$1.15	\$0.75	\$0.35	\$2,841	\$724.50	\$1,883.70	\$232.88
Garlic**	0.1	500	150	\$6.50	\$4.23	\$1.95	\$1,784	\$455.00	\$1,183.00	\$146.25
Onions*	0.4	10400	3120	\$1.60	\$1.04	\$0.48	\$9,135	\$2,329.60	\$6,056.96	\$748.80
Peas**	0.25	1125	338	\$4.00	\$2.60	\$1.20	\$2,471	\$630.00	\$1,638.00	\$202.50
Peppers*	0.5	14000	4200	\$4.50	\$2.93	\$1.35	\$34,587	\$8,820.00	\$22,932.00	\$2,835.00
Potatoes*	0.5	10000	3000	\$1.50	\$0.98	\$0.45	\$8,235	\$2,100.00	\$5,460.00	\$675.00
Spinach*	0.25	3000	900	\$4.50	\$2.93	\$1.35	\$7,412	\$1,890.00	\$4,914.00	\$607.50
Sweet Corn*	0.5	4500	1350	\$1.75	\$1.14	\$0.53	\$4,323	\$1,102.50	\$2,866.50	\$354.38
Strawberries***	0.5	5000	1500	\$2.50	\$1.63	\$0.75	\$6,863	\$1,750.00	\$4,550.00	\$562.50
Tomatoes*	0.5	15000	4500	\$2.50	\$1.63	\$0.75	\$20,588	\$5,250.00	\$13,650.00	\$1,687.50
	5.75	99763	29929				\$126,755	\$32,324	\$84,042	\$10,390

Year 2 - 2017										
	Acres Planted	Yield	Yield - B Grade	Price per Pound			Total Revenue	Revenue by Market Channel		
				Direct	Indirect	B Grade		Direct	Indirect	B Grade
Asparagus*	0.25	500	150	\$2.50	\$1.63	\$0.75	\$686	\$175	\$455	\$56
Beans*	0.25	1000	300	\$2.25	\$1.46	\$0.68	\$1,235	\$315	\$819	\$101
Broccoli**	0.75	6300	1890	\$3.30	\$2.15	\$0.99	\$11,414	\$2,911	\$7,568	\$936
Cabbage*	0.25	6500	1950	\$1.15	\$0.75	\$0.35	\$4,104	\$1,047	\$2,721	\$336
Cauliflower**	0.75	16650	4995	\$1.15	\$0.75	\$0.35	\$10,512	\$2,681	\$6,970	\$862
Carrots**	0.5	16875	5063	\$1.70	\$1.11	\$0.51	\$15,749	\$4,016	\$10,442	\$1,291
Cucumber*	0.25	4500	1350	\$1.15	\$0.75	\$0.35	\$2,841	\$725	\$1,884	\$233
Garlic**	0.1	500	150	\$6.50	\$4.23	\$1.95	\$1,784	\$455	\$1,183	\$146
Onions*	0.4	10400	3120	\$1.60	\$1.04	\$0.48	\$9,135	\$2,330	\$6,057	\$749
Peas**	0.25	1125	338	\$4.00	\$2.60	\$1.20	\$2,471	\$630	\$1,638	\$203
Peppers*	0.5	14000	4200	\$4.50	\$2.93	\$1.35	\$34,587	\$8,820	\$22,932	\$2,835
Potatoes*	0.5	10000	3000	\$1.50	\$0.98	\$0.45	\$8,235	\$2,100	\$5,460	\$675
Spinach*	0.5	6000	1800	\$4.50	\$2.93	\$1.35	\$14,823	\$3,780	\$9,828	\$1,215
Sweet Corn*	0.5	4500	1350	\$1.75	\$1.14	\$0.53	\$4,323	\$1,103	\$2,867	\$354
Strawberries***	0.5	5000	1500	\$2.50	\$1.63	\$0.75	\$6,863	\$1,750	\$4,550	\$563
Tomatoes*	0.75	22500	6750	\$2.50	\$1.63	\$0.75	\$30,881	\$7,875	\$20,475	\$2,531
	7	126350	37905				\$159,644	\$40,711	\$105,848	\$13,086

Year 3 - 2018										
	Acres Planted	Yield	Yield - B Grade	Price per Pound			Total Revenue	Revenue by Market Channel		
				Direct	Indirect	B Grade		Direct	Indirect	B Grade
Asparagus*	0.25	500	150	\$2.50	\$1.63	\$0.75	\$686	\$175	\$455	\$56
Beans*	0.25	1000	300	\$2.25	\$1.46	\$0.68	\$1,235	\$315	\$819	\$101
Broccoli**	1	8400	2520	\$3.30	\$2.15	\$0.99	\$15,218	\$3,881	\$10,090	\$1,247
Cabbage*	0.25	6500	1950	\$1.15	\$0.75	\$0.35	\$4,104	\$1,047	\$2,721	\$336
Cauliflower**	1	22200	6660	\$1.15	\$0.75	\$0.35	\$14,016	\$3,574	\$9,293	\$1,149
Carrots**	0.5	16875	5063	\$1.70	\$1.11	\$0.51	\$15,749	\$4,016	\$10,442	\$1,291
Cucumber*	0.25	4500	1350	\$1.15	\$0.75	\$0.35	\$2,841	\$725	\$1,884	\$233
Garlic**	0.1	500	150	\$6.50	\$4.23	\$1.95	\$1,784	\$455	\$1,183	\$146
Onions*	0.4	10400	3120	\$1.60	\$1.04	\$0.48	\$9,135	\$2,330	\$6,057	\$749
Peas**	0.25	1125	338	\$4.00	\$2.60	\$1.20	\$2,471	\$630	\$1,638	\$203
Peppers*	0.75	21000	6300	\$4.50	\$2.93	\$1.35	\$51,881	\$13,230	\$34,398	\$4,253
Potatoes*	0.5	10000	3000	\$1.50	\$0.98	\$0.45	\$8,235	\$2,100	\$5,460	\$675
Spinach*	0.75	9000	2700	\$4.50	\$2.93	\$1.35	\$22,235	\$5,670	\$14,742	\$1,823
Sweet Corn*	0.5	4500	1350	\$1.75	\$1.14	\$0.53	\$4,323	\$1,103	\$2,867	\$354
Strawberries***	0.5	5000	1500	\$2.50	\$1.63	\$0.75	\$6,863	\$1,750	\$4,550	\$563
Tomatoes*	1	30000	9000	\$2.50	\$1.63	\$0.75	\$41,175	\$10,500	\$27,300	\$3,375
	8.25	151500	45450				\$201,951	\$51,499	\$133,898	\$16,553

5.0 Determine Operational Needs

5.1 Consider the infrastructure needs for expansion based on product mix and buyer needs.

From the recommendations made by John Hendrickson of The University of Wisconsin – Madison’s Center for Integrated Agricultural Systems, it is estimated that the Rolette area growers current estimate of 9 acres of production will need approximately:

- *2,700 square feet of greenhouse.*
- *1,350 square feet of washing & packing space.*
- *1,350 cubic feet of refrigerated storage.*

5.2 Identify and prioritize facility needs.

With an existing access to 1500 square feet of greenhouse, the priority is adding the wash and pack facility and refrigerated storage. Depending on the development of market partnerships, growers will also want to explore the possibility of commercial kitchen space, but the additional capital and labor needs may prove prohibitive until efficient production and post-harvest handling processes are developed by year three or after.

5.3 Discuss your location and why it is important (if at all).

- *The location of the proposed facilities is to be at one of the growers’ farm. It will be close proximity for other growers and will one day serve as a destination site for agritourism and education.*

5.4 Discuss and document the components of the facility.

- *The entire facility would consist of a newly constructed 40x60 building with retail area, storage area, classroom, certified kitchen, and a cement slab with a picnic area for class visits to eat their picnic lunches.*
- *The growers envision a kitchen that can be utilized for washing, packing, and processing fruits and vegetables. The site does have water and they will be installing electric this spring. There is no concrete pad, but ideally the concrete will be heated.*
- *Estimated total startup costs are \$100,000, including existing land, buildings, and equipment valued at \$47,500. Additional capital need is estimated at \$52,500 providing:*
 - *\$10,000 for technical support including feasibility analysis, business planning, and facility design. This expense can be higher or lower depending on the complexity of the proposed business model, skills/experience of the growers, and access to*

supporting organizations that could provide technical assistance for free or discounted pricing.

- *\$17,500 for additional machinery and equipment.*
- *\$20,000 in operating capital.*
- *\$5,000 for wash-pack shed with Coolbot refrigerated storage.*

6.0 Develop Operational Plan (Work yet to be completed)

6.1 Determine needs for human resources.

- *For small operations, list number of employees including the positions needed, the responsibilities of each position, and include any persons identified to fill that position and their qualifications.*
- *For larger more complex businesses you will want to create a schedule of employees needed during the workweek. Include number of people needed to fill each position, hourly wage or monthly salary, and length of shifts needed to ensure full coverage.*
- *Note any positions that require special skill or are in high demand and are therefore hard to fill.*
- *Consider any benefits offered to employees and the criteria set out to qualify for these benefits.*
- *You may want to check with your local Job Service office to determine competitive wages, write job descriptions, and to get help with putting together an appropriate benefit package.*

6.2 Discuss general operations:

- *Hours of operation.*
- *Number of shifts throughout the production day.*
- *Other relevant information regarding business processes.*
- *Operations Layout Sketch.*
- *Description of Production Processes.*
- *Production Capacity of current facility.*
- *Any outsourcing of subassemblies, processes or parts.*

6.3 Breakdown of Direct Costs including:

- *Materials, Labor.*
- *Manufacturing Overhead.*
- *Quality Control Methods & Testing.*

- *Lean Systems Used or Kaisan Processes.*
- *Environmental, Occupational Safety, and other government regulation.*

6.4 Articulate management capacity.

The management section is essential if you need to borrow money from a financial institution. This section should include one of two things:

- *Resume—Revise resume to focus on experience and skills most relevant to your farm's operation.*
- *Biography – If you do not have a resume handy simply write a one or two paragraph biography highlighting relevant experience and skills.*