

FoodMap NY

Leveraging Private-Sector Innovation
and Investment for Food Security

FINAL PROJECT REPORT

Supply Chain & Infrastructure

November 2024



Center for
Sustainable Business



Mother Cabrini
HEALTH FOUNDATION

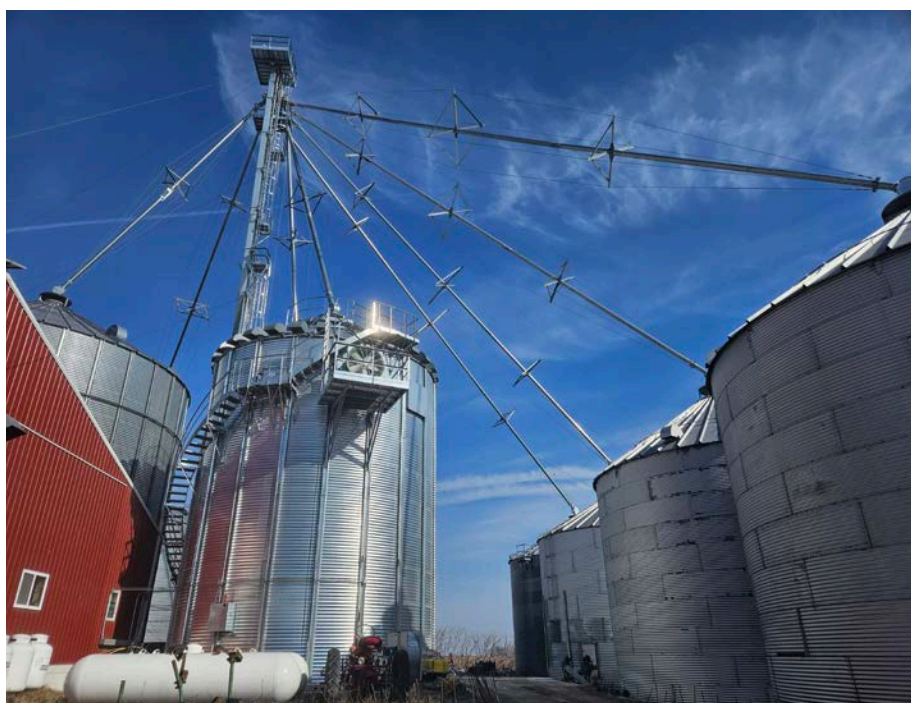


Cornell
SC Johnson College of Business
CENTER FOR SUSTAINABLE GLOBAL ENTERPRISE

Supply Chain & Infrastructure¹

PART 1

Farm Connect - Building Middle of the Supply Chain Infrastructure for Minimally Processed Vegetables



PREPARED BY:

The Center for Agricultural Development and Entrepreneurship (CADE) is a community of agricultural entrepreneurs and specialists working to build a vibrant food system, in which locally owned agricultural businesses thrive and consumers are nourished by healthy, sustainably produced food. Founded in 1991, CADE's mission is to increase the number and diversity of viable farm enterprises and related businesses across the supply chain in New York through technical assistance, education, mentoring, network-weaving, partnerships, advocacy, and research. cadefarms.org.

Farmhouse Consulting (FHC) is based in the Hudson Valley of NY. FHC has significant experience in the production and sale of food products across multiple sales channels. With a focus on farm and food business they help businesses reach both their sales goals and their mission goals.



As public food procurement policies have shifted to incentivizing the sourcing of NY products, there is a historic market opportunity for produce to become more accessible if the supply chain can be strengthened. NYS's values-based food procurement incentive programs represent a \$500M opportunity. The possibility of reaching children with food insecurity with value-added and locally processed products that are eligible under NYS incentive programs is a game changer.

Farm Connect is a collaborative project between two businesses—Headwater Food Hub (HFH) and George's Farm Products (GFP)—both uniquely positioned to take advantage of these market incentives. Farm Connect is looking for funding of \$1.9M in order to build the necessary infrastructure to capitalize on the opportunity. With current combined sales of \$16M, an expected yearly revenue increase of 30% over the next 3 years, and a 10% gross margin target, this project would have a payback period of 3 to 4 years. Since Farm Connect is aligned with many state and federal initiatives on local food procurement, feeding the food insecure vis-a-vis farm to school programs will make it a strong candidate for grants, reducing the payback period.

Introduction

The global agricultural system produces enough food each year to feed every person on Earth plus one billion more, yet globally and within the United States people go hungry every day. Food insecurity will not be solved by producing more food, rather it is a complex, multidimensional problem that includes: corporate consolidation; global/local markets; supply chain fractures; food waste; poverty; historic redlining that limits food access; food policy; federal subsidies that reward industrial farm practices, market consolidation, and highly processed foods; and the true cost of food. Our current food system hinders the supply of nutritious food to low income communities at the same time that it pushes farms and food workers into a race to the bottom on pricing, suppressing rural communities. There is no simple answer to this problem, and the macro view can be discouraging; however, we continue to see communities, and public and private sectors, advocating for a more equitable food system—one that advances nutrition security for all at a fair price for farms and food businesses.

To this end, and as part of FoodMap NY, NYU Stern in partnership with CADE and Farmhouse Consulting undertook research and analysis to identify opportunities for private sector interventions and investments in NY's food system to enhance food and nutrition security, specifically with an eye towards the Supply Chain and Infrastructure. Aligned with NYU Stern's landscape analysis, our research suggests that gaps in the supply chain and infrastructure—the system of producing and delivering a product (including aggregation, processing, storing, packaging, and distribution)—create barriers in delivering nutritious food to vulnerable communities; moreover, this creates a tremendous opportunity for public, private, philanthropic, and nonprofit agencies to work together to bridge that gap, particularly with targeted capital investment.

With the goal of finding an actionable, investment-ready case study within the supply chain and infrastructure—**CADE identified a business case for minimally processed produce as a food sector known for critical nutrition. Our focus was to work with businesses with the experience and leadership that could close these supply chain gaps and enhance infrastructure, ultimately to ensure vulnerable communities can access nutritious produce.** The intent was to give investors the opportunity to align their capital with businesses striving to make an impact in NY's complex food supply chain.



Why Minimally Processed Produce

Produce is one of the most important sources of nutrition for human health. A diet rich in vegetables and fruits can lower blood pressure, reduce the risk of heart disease and stroke, prevent some types of cancer, lower risk of eye and digestive problems, and have a positive effect upon blood sugar.² For children in particular, healthy eating is important for proper growth and development, and to prevent a range of damaging health conditions.³ Recognizing that low-income communities suffer from poorer health outcomes, access to fresh produce and a diet rich in vegetables and fruits is critical to supporting nutrition security. Food security in a region depends on three factors: does the region produce enough food for its people, is the food supply stable (i.e., robust enough to weather droughts or emergencies/pandemics), and do people have physical and economic access to food.⁴ In NYS, the food supply is abundant and stable, but access and affordability are the problem.

Produce Consumption Patterns

The US Dietary Guidelines recommends daily intake of produce to be 2½ - 3½ cups of vegetables each day for adult women and men, respectively. Children should consume 2/3 to 4 cups depending on age, sex, height, and weight. Yet only 1 in 10 adults and less than 12% of children consume enough vegetables.⁵ The largest cause of the disparity in meeting CDC recommendations for vegetable intake was poverty.⁶ Eleven percent of adults in the highest household income category eat sufficient vegetables, compared with only 7% among adults at the poverty level.⁷



For children, eating healthy food is associated with improved cognitive function (especially memory), reduced school absenteeism, and improved mood.⁸ Yet most children do not consume sufficient nutrition; “empty calories” from added sugars and solid fats contribute to 40% of daily calories for children and adolescents ages 2–18 years, affecting the overall quality of their diets. Approximately half of these empty calories come from soda, fruit drinks, dairy desserts, grain desserts, pizza, and whole milk.⁹ Moreover, the CDC recognizes that schools are uniquely positioned to encourage healthy eating behaviors.¹⁰

As public food procurement policies have shifted to incentivizing the sourcing of NY products, there is a historic market opportunity for produce to become more accessible if the supply chain can be strengthened.

Market Trends

Produce is highly perishable and has a short shelf life, making it less accessible to low-income communities affected by food apartheid or food deserts. Minimally processed, pre-prepared, or ready-to-eat frozen or packaged vegetables can be a valuable solution for making these nutritious food products widely accessible—especially in public schools or food assistance/relief programs. In February–May 2024, CADE conducted primary research among school food authorities, and other institutional and wholesale buyers, in which 75% of the buyers said vegetables were their #1 need for NYS products, particularly for frozen or pre-cut produce.¹¹ As public food procurement policies have shifted to incentivizing the sourcing of NY products, there is a historic market opportunity for produce to become more accessible if the supply chain can be strengthened. NYS’s values-based incentive programs include [30% NYS Initiative](#), [No Student Goes Hungry Initiative](#), [NYC Good Food Purchasing](#), [Nourish NY](#), and [NY Grown & Certified](#), which represent a \$500M opportunity—see *figure 1*. The possibility of reaching children with food insecurity with value-added and locally processed products that are eligible under NYS incentive programs is a potential game changer.

Figure 1. Goal of NYS Value Based Food Procurement by 2027



The State of NY Vegetable Production & Supply Chain

In 2022, vegetable production in NY had sales of over \$500M, making it the 5th highest agriculture sector in the state,¹² and first in acres in vegetable production in the Northeast, compared with New England, Pennsylvania, New Jersey.¹³ When combined with fruits, tree nuts and berries the total number of farms reached 6,633 with sales over \$1,221M putting it directly behind milk as the state's biggest combined agricultural sectors.¹⁴ From 2017, the number of farmers in NY dropped by 8%, while total sales increased by 49%. In addition the value of food sold directly to retail markets, institutions and food hubs for local or regionally branded products increased by 48%.¹⁵ NY's leading vegetable and fruit commodities include apples, grapes, sweet corn, soybeans, snap beans, potatoes, cabbage heads, green peas, squash, pumpkins, cherries, onions, tomatoes, cucumber and cauliflower. NY's most productive regions for vegetables are the Hudson Valley, Lake Champlain, the Finger Lakes, and the Mohawk Valley.

Acreage in production to grow vegetables dropped 22% in NYS between 2007-2017, but the total market value increased 12% in the same period.¹⁶ This trend suggests vegetable farms are not incurring the necessary profits to increase production.¹⁷ Simultaneously, NYS has lost valuable infrastructure necessary to maintain its vegetable growers. According to a Farm Credit East report in 2014, "vegetable acreage decreased by 6%, in part due to a significant decline in vegetables grown for processing in New York."¹⁸ One example is Seneca Foods, a vegetable processor that moved its operations to Wisconsin in 2022. As demonstrated by the decline in small dairy farming, without farm profits, or processing infrastructure, growers will move to other areas of agriculture or leave farming altogether.¹⁹ The lack of infrastructure in NYS is well documented, including a lack of food production facilities that are locally owned.²⁰ In 2022, CADE brought stakeholders across the State together to build a consensus plan and roadmap for realizing a more profitable, regenerative, equitable, and healthy food system in NYS by 2050, captured by Vision 2050. [Vision 2050](#) echoed the processing industries' need for improved post-harvest infrastructure, product handling, and/or processing to find markets for their products.



Farm Connect

Farm Connect is a collaboration between Headwater Food Hub (HFH) and George's Farm Products (GFP)—two businesses with a shared mission of helping build a more resilient, equitable, and diversified food system. **Their goal is to establish a joint venture to develop diverse produce offerings for institutional markets—including fresh-cut, minimally processed, and ready-to-eat or recipe-ready products, thereby strengthening NYS's vegetable supply chain to feed low income communities with potential for scale to other wholesale markets in the longer term.**

Leadership

The two businesses are ideally positioned to lead this venture, as their collaboration capitalizes on their respective capabilities and areas of expertise. In 2022, they were both invited by Cornell Cooperative Extension to join a select group of food hubs from regions across NYS for the purpose of forming the NY Food Hub Collaborative, a current ongoing initiative, to strengthen food hub capacity, information-sharing, and good practices in running successful hubs.

Headwater Food Hub is a for-profit, certified BCorp that has been at the forefront of the vision of making the food system work for all. Headwater works to evolve the food system so good food is commonplace, with humanity and nature working in harmony. They are empowering producers, enabling sustainable choices, and growing the broader good food community. Working with over 200 New York State producers and processors across produce, proteins, and grocery, HFH focuses on innovative and economically viable models to help incorporate small and mid-sized producers into the broader marketplace of institutional food procurement with an evolving focus on developing products that support a regional food system under their Headwater Origins brand. The challenge of getting these products to markets across the state most effectively has catalyzed Headwater's efforts to develop last mile partners across NYS.

George's Farm Products (GFP) is a for-profit, third generation agribusiness based in Clinton, New York that has deep roots working with local farms. Established in 1951 as a wholesale produce packer and broker of green beans, they have grown to encompass multiple wholesale produce operations. Since 2002, GFP has managed the operations and sales efforts for Upstate New York Growers and Packers Cooperative (UNYGAP), a farmer-owned collaborative formed to facilitate greater access to large markets for 22 small and mid-sized family farms. With their role at UNYGAP, GFP has served as a go-to regional aggregator and packer of mixed fresh produce, providing much-needed cold storage solutions in the geographic center of New York State. GFP has strong, long-established relationships with entities throughout the regional food system, wholesale markets, and non-profit organizations, with a total reach to over 35 farmers.

Through their roles as industry leaders, GFP and HFH are frequently called upon to participate in conversations about food infrastructure, supply chain, equitable access to food, and other concepts related to the regional food system. These first-hand experiences include a wide range of settings and formats such as tours of food pantries and food hubs, onsite visits at farms and processing facilities, meetings with school food service directors, conferences with state and federal government agricultural officials, and workshops with non-profits. The nature of their businesses requires them to have their ears to the ground in order to fully understand grower, customer, and evolving community needs. It is through these conversations and practical industry experience that they have been able to participate in addressing some of the very pressing challenges and needs of the regional food system.

The Plan

Through the Farm Connect initiative, GFP and HFH intend to maximize the opportunities that current food system initiatives have created, including Executive Order 32 (Establishing State Agency Food Purchasing Goals for NYS Agricultural Products),²¹ but also seek investment that will enable them to build infrastructure capable of competing in the larger global marketplace. They firmly believe they are uniquely positioned to meaningfully impact the system for the long-term and that investment in Farm Connect will build the flexible infrastructure that is needed. The goal is to propel a multi-pronged solution to support greater food security and build strong rural small businesses at the foundation of Upstate NY communities.



Photo credit: Peter Martens, Seneca Grain & Bean

Farm Connect will build flexible production capacity in the minimally-processed category while addressing the challenges of marketing, selling, product development, and distribution into a complex marketplace. Their plan is to secure:

- \$1.55M for GFP Processing Kitchen. This investment will broaden production flexibility and capacity, providing the ability to quickly respond to changing market demands. These shifting market conditions – which result from both community needs and changes in growing patterns due to climate change – necessitate a NYS food production facility that is well equipped yet nimble enough to quickly adapt.
- \$358,100 for HFH as the Value Chain Coordinator to invest in sales support, marketing outreach and logistics execution in this complex global marketplace.



*Photo credit: Peter Martens,
Seneca Grain & Bean*

The Problem

As the global supply chain squeezes profits for the lowest people on the rung (small farmers, small businesses, food workers) and keeps prices high to create record profits (greedflation²²) for large corporations, those that are most vulnerable have the greatest need. Emergency food solutions and subsidies are critical as are long-term financially sustainable solutions. The complexity of the problem can be overwhelming, and finding workable, sustainable solutions is not easy. Farm Connect is focusing on specific problems within this complex dynamic: how to get more nutritious food to the food insecure, and how to support regional for-profit businesses that are the backbone of a diversified supply chain and vibrant communities.²³

The populations that are often in most need of nutritious food are frequently located in areas that are not profitable enough for larger corporations to serve. For example, last-mile delivery to remote rural locations or urban food deserts is often deemed inefficient by large-scale distributors and the farms they work with. For this reason, small-and-medium sized distributors that work with small and medium sized farms are absolutely essential to this part of the supply chain. Farms primarily want to grow and sell their products profitably. They don't have the capacity or expertise to provide value-added products or provide last-mile delivery.

Schools play an essential role in feeding children²⁴, "School meals are the main source of nutrition for nearly 30 million children each school day," said Deputy Under Secretary of Food, Nutrition, and Consumer Services Stacy Dean, yet their facilities and staffing limit them on what they can use; they can rarely access or utilize the freshest and most nutritious food. As an example, while schools are eager to include fresh potatoes into their regular meal plans, they often do not

have the kitchen staff needed to prepare the potatoes for cooking. In order to include fresh potatoes, schools need to receive them washed, cut to specific sizes, and delivered directly to their kitchen's receiving dock. By providing washed, quarter cut potatoes that are bagged in specific, recipe-ready quantities, schools are able to easily incorporate NYS potatoes in their menus.

In recognition of this significant hurdle in utilizing available fresh food, NYS Regional School Infrastructure Grants will provide \$50M to schools over the next five years. However, school food authorities have communicated to the leaders of this project the dire need for value-added products like pre-sliced fruit and recipe-ready vegetables that can be used in school kitchens with minimal training and limited yet highly varied kitchen capabilities.

In addition, Food Boxes play an important role in addressing food insecurity across New York State. Food banks and other non-profit organizations consistently communicate that in order for food boxes to be a well-received, long-term solution, they must be culturally appropriate and provide choice to recipients. The "one-size fits all" model does not factor in demographics, offer choice, earn the trust of recipients, or in most cases preserve the dignity of those in need.

The overall objective of this project was to look at minimally processed produce and find actionable, investment-ready projects to address food security within the supply chain and infrastructure elements of the food system. Our research, like the others in the NYU FoodMap project, clearly showed the need to bring nutritious food to those that are food insecure. Secondly, we looked for solutions that matched the needs articulated by NYS and the market knowledge of GFP and HFH. Public opinion has shifted to a preference for local, sustainably grown, healthful food. This shift, alongside federal and state policies that call for stronger regional food systems and encourage consumption of local foods within this system, has resulted in the creation of new marketplaces within NYS. Institutional procurement professionals are increasingly embracing their role of supporting the regional food system. This has not only rapidly shifted the market opportunities for NYS producers and processors, but created a business environment that requires institutional supply chain partners to remain nimble and quickly adapt to changing market requirements, particularly for minimally processed fresh fruits and vegetables.

Building the food infrastructure in NYS is especially important right now. In August 2023, Governor Kathy Hochul announced Executive Order 32 which requires that on or before the end of 2027, thirty percent of such State Agencies' food or food product purchases shall be NYS Food Products.²⁵ Agencies will be required to reach escalating target percentages yearly until that time. The order stipulates that the food must be both grown and processed in NYS to meet this requirement. Currently, there is not enough processing capacity in the state to meet demand, particularly for the middle market segment. Here are some of the additional recommendations from the NYS Council on Hunger and Food Policy 2023 Report²⁶:

- Facilitate the building of infrastructure
- Coordinate interagency initiatives promoting food and farm products
- Assist local farms and food businesses to succeed and grow
- Expand agricultural production and processing
- Eliminate statutory and legal barriers hindering development
- Ensure availability and expand access to an adequate supply of affordable, fresh, and nutritious food

The Farm Connect project has the potential to provide an ongoing, significant impact. Both GFP and HFH have successfully taken on projects in the past to address similar needs with lasting effect. In 2020, GFP participated in the USDA Food to Families initiative in an effort to help relieve the urgent food security problems related to the COVID pandemic. Through this program, GFP packed 360,949 boxes totaling 5.4 Million lbs of mixed fresh produce that year alone. GFP's emphasis on high-quality fresh produce was a source of pride. They have continued the program to present day, and it has expanded to include varied community boxes such as their recent food boxes for families with preschoolers. In 2021, in response to grower and customer needs, GFP opened a second location with a focus on NYS grown, minimally processed, and custom packed ready-to-eat produce. The purchase, renovation and outfitting of the new facility represented a \$1.2 M dollar investment and commitment to year-round production and processing of NYS produce. In 2023 they packed 405,779 cases representing 7.3 M lbs of produce and aggregated an additional 46,792 cases representing an additional 1.25 M lbs. GFP food boxes have made a significant impact on hunger in NYS for four years. As one of the only mid-tier processors in the state, GFP recognizes the need to expand capabilities and services; since the announcement of Executive Order 32, they have received a number of calls from state agencies requesting information about NYS processed food.

In 2023, Headwater was able to sell over 1.2 million pounds of NYS frozen vegetables from NYS producers, and with growing relationships with the Department of Education, the Department of Corrections, and Whole Foods Market, Headwater expects to increase this volume by two to three times over the next eighteen months. Headwater also implemented the Oracle Netsuite ERP system, representing a significant step in their technological capabilities. NetSuite provided them a 'Single Source of Truth,' allowing them to tie together financials, inventories, traceability, food safety, and demand planning. HFH now has the food safety, supplier transparency, and vendor reporting requirements to serve all institutional clients. The NetSuite capabilities have served as an increasing differentiator for HFH within this market.



CADE and Farmhouse Consulting facilitated this project featuring collaboration between GFP and HFH. Using the research from the FoodMap project and through multiple meetings, we worked together to go from case study to actionable plan. Thus, the Farm Connect vision was born: a project designed to address infrastructure needs in a flexible manner and expand supply chain coordination. Farm Connect would be an opportunity accelerator not just for GFP & HFH but throughout the NYS food middle supply chain.

Current Business Operations

GEORGE'S FARM PRODUCTS

Facility: 30,000 sq ft facility; 9,600 sq ft clean processing room; 8,000 sq ft additional packing space; 3,000 sq ft cold storage.

Employees: 27 FTEs with a seasonal increase based on harvest season; Utica is home to a leading Refugee Center, and GFP takes pride in a diverse workforce.

Overall business concepts: GFP specializes in NYS products; is well connected within the NYS agricultural community; has close ties to small mid-tier producers with strong ability to source product; is agile and capable of customized produce solutions to unique customer needs.

Gross Revenue: \$4 Million GFP; \$11 Million Upstate Growers & Packers Cooperative.

HEADWATER FOOD HUB

Facility: 12,000 warehouse and distribution center

Employees: 24 FTEs

Overall business concepts: HFH is the Supply Chain Coordinator innovating and coordinating values-based food programs across NYS and the Northeast. Through HFH's growing expertise in value-chain coordination, they are building and maintaining relationships, allowing information to flow, and operationalizing a regional good food system. HFH succeeds in this by focusing on product and program development; 'connecting the dots' between regional supplier capabilities and market requirements. HFH is focused on building an innovative, proprietary product portfolio that remains competitive in a multi-tiered distribution model, allowing maximum market penetration by utilizing existing logistics. HFH has been able to grow while controlling fixed costs by building strategic partnerships throughout the state, both for full truckload (FTL) and last-mile distribution, as well as offsite storage. This has allowed them to service the entire state while maintaining a high service level, all while investing in partnerships instead of infrastructure. Their continued focus on information technology, through NetSuite ERP, has been key to their success.

Gross Revenue: \$12M



Success Stories

Headwater Food Hub and George's Farm Products have a history of collaborating on successful projects including:

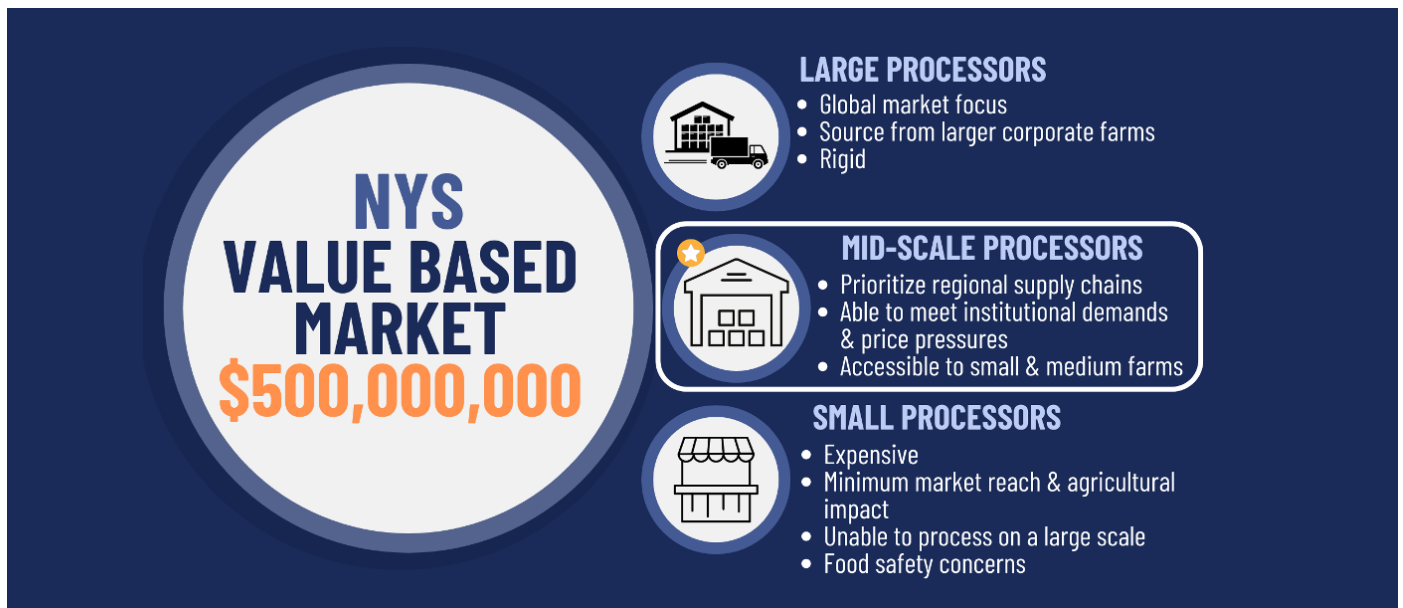
- Boys and Girls Club, providing 1220 cases and over 18,000 lbs of nutritious food to these programs.
- They are also in the process of launching a NYS single-serve, cut carrot coin. Based on current contracts and additional market research, they expect to process over 1.2MM lbs of NYS carrots this year for schools and institutions.

Projects like these will be further enhanced and expanded with funding to the Farm Connect project.

While GFP and HFH are currently working with schools to deliver such solutions, current and projected demand exceeds the current facility and supply chain infrastructure required to deliver to all schools in need.

The Solution: Farm Connect

Figure 2.



GFP and HFH seek to solidify the NYS supply chain and infrastructure, and maximize opportunities given current demand for value-added, minimally processed food. GFP will be the processing arm of the project, while HFH will act as Supply Chain Coordinator.

To maximize year-round production, GFP has targeted a diverse product offering, some of which are harvest focused. These would include fresh-cut, minimally processed, and ready-to-eat or recipe-ready products. Others, such as carrots, potatoes, onions, apples, cabbage, and hard squash, have longer storage potential, so they can be stored properly and processed year-round. Still, others will require immediate processing to a year-long, stable form; examples include sauces, soups, and purees, frozen after processing. This product diversity will bridge the gap between a brief harvest season and need for access to minimally processed NYS food year round. GFP will add additional equipment to their facility:

- Hot Fill Line
- Modified Atmosphere Tray Fill Line
- Produce Bagger Line (apples & potatoes)
- Freezer Storage
- Upgrades for additional processing lines
- Upgrades for food safety and worker safety

This will increase their capacity to

- 97,500 lbs per week of hot fill production
- 28,880 lbs per week of modified atmosphere tray sealing production
- 600,000 lbs per week of bulk bagging production
- 100,000 lbs of daily freezer storage space

Sales & Margins

- Sales revenue will increase by 50% + over the next 2 to 3 years
- Efficiency stacked with increased volume will increase gross margins for the overall business by 5% to 10% over the next 2 to 3 years

Headwater works regularly with 10-12 distributors in NYS, including other food hubs, regional distributors, and broadliners. Theirs is a two pronged strategic focus; both the development of good fit products for institutional food service as well as developing a broad network of last mile partners has helped Headwater rapidly increase market reach and has helped put them in a strong position to continue to scale rapidly.

HFH will add to their existing capacity:

- Marketing outreach via trade shows, marketing materials, packaging design
- Two new sales staff members
- Go-to-Market consultant
- Product development
- Business Analyst

This will increase their capacity to:

- Reach more customers, especially schools and the food insecure
- Offer new innovative packaging
- Develop new products based on market demand
- Find new customers and expand sales
- Rapidly scope opportunities, benchmark pricing and pack specs, and prioritize product development efforts within this flex facility

Sales & Margins

- Sales revenue 30% + over the next 2 to 3 years
- New markets will increase gross margins by 3% to 5% over the next 2 to 3 years



Budget

Farm Connect: Required Funding

COSTS	QUANTITY	UNIT PRICE	TOTAL
		Total Funds:	\$1,903,648
Budget: Flex Facility - George's Farm Products			
Equipment - TOTAL			\$1,026,952
Hot Fill Line			\$323,500
Filler – Semi-automatic foot pedal rated to run hot	1	\$100,000	\$100,000
Pipeline metal detection	1	\$35,000	\$35,000
Bag Sealer	1	\$17,000	\$17,000
Accumulation Table	1	\$3,500	\$3,500
Tray Cup Line			\$523,000
Horizontal forming and MAP sealing	1	\$250,000	\$250,000
Weigh scale -	1	\$185,000	\$185,000
case former & sealer	1	\$18,000	\$18,000
Mezzanine	1	\$20,000	\$20,000
Metal Detector - Conveyor	1	\$35,000	\$35,000
Batch code jet printer	1	\$15,000	\$15,000
Produce Bagger Line (apples potatoes)			\$167,000
Linear scale with bucket filler, floor hopper, and conveyor	1	\$150,000	\$150,000
Band Sealer	1	\$17,000	\$17,000
Other Equipment			\$13,452
20 Gallon Rolling Foamer	1	\$1,304	\$1,304
10 Gallon Rolling Sanitizer	1	\$1,108	\$1,108
Entry Way Door Sanitizing Unit	1	\$3,671	\$3,671
Wall Mounted Sanitation Stations	1	\$7,370	\$7,370
Contractual			\$205,500
Install - Hot Fill Line	1	\$64,700	\$64,700
Install - Tray Cup Line	1	\$104,600	\$104,600
Install - Produce Bagger Line	1	\$33,400	\$33,400
Installation of Sanitation Units	1	\$2,800	\$2,800
Construction			\$313,196
Epoxy Floor in Production Room	1	\$158,416	\$158,416
Panel Systems to Segregate Production Spaces	1	\$18,500	\$18,500
Lab Room built into Production Room	1	\$14,800	\$14,800
Air Conditioned Production Room	1	\$22,000	\$22,000
Freezer	1	\$99,480	\$99,480

COSTS	QUANTITY	UNIT PRICE	TOTAL
Value Chain Coordination-Headwater Food Hub			
Personnel			\$200,000
Sales Staff	2	\$70,000	\$140,000
Go-to-Market Consultant	1	\$60,000	\$60,000
Marketing			\$68,000
	1	\$68,000	\$68,000
Product Development			\$90,000
	1	\$90,000	\$90,000

Project Impact

Farm Connect has the potential to serve as a keystone project in helping the NYS food system remain nimble in the face of quickly evolving market requirements. The appropriately scaled flex facility and last mile distribution has the potential to benefit the highest number and most diverse set of growers, while allowing institutions to incorporate more regional food into their menu plans and to serve the food insecure with nutritious and culturally appropriate foods.

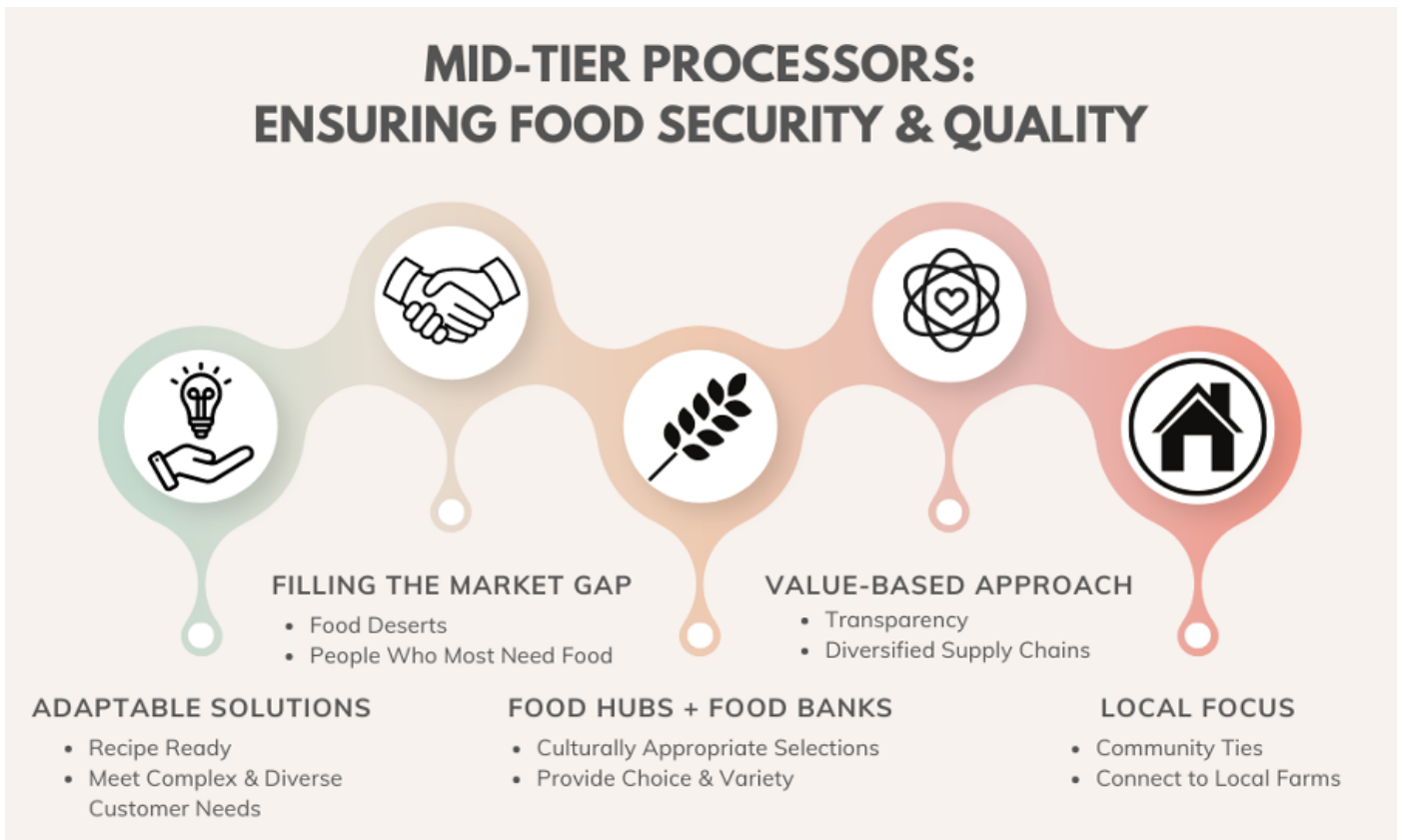


Figure 3. Mid-Tier Processors: Ensuring Food Security & Quality

- Expand production capacity in the mid-tier processing market to provide flexible, custom services to address various customer needs.
- Increased ability to work with small producers, providing them with access to value added market space, something larger processing entities do not have the flexibility to do.
- Enable NYS Food Spend dollars to be used on NYS farmers and businesses creating a net+ for the state economy.
- Bring infrastructure on line so that nutritious NYS food is available for key programs such as the NYS 30% Initiative, USDA's LFPA program, Nourish NY, and Governor Hochul's Executive Order 32. These initiatives aim to increase institutional food procurement in NYS to \$500M by 2027. Executive Order 32, which is a new initiative, accounts for approximately 80% of this total, and is expected to represent the most diverse set of demands across state agencies and institutions.
- Data from NYC's Good Food Purchasing program shows approximately \$25M spent on minimally processed Fresh Fruit and Vegetables between 2019-2022. With EO32, much of this spend is expected to shift to qualifying NYS products and processors as long as the product is available at competitive prices and consistent availability. Farm Connect will fill that gap.
- HFH and GFP, through the investment in Farm Connect, expect to see up to 50% growth over the next 2-3 years (representing approximately \$7.5M of additional annual revenue).

PART 2

Seneca Grain & Bean - Building Middle of the Supply Chain Infrastructure for Dry Beans



Beans are one of the most stable, affordable and nutritious food available to those with food insecurity, and are one of the most significant sources of nutritious food in emergency food and food bank programs. Because of global market pressure, the NY bean industry has been shrinking. Local food procurement incentives combined with market trends is presenting the NY bean industry with an opportunity to reverse this trend. Enormous potential exists to scale up production and unleash this premiere food security product, particularly with private sector investment in infrastructure and the supply chain—namely, among processors to clean, sort, dry, process, package, store, market, and sell the beans to markets that serve low income communities.

Seneca Grain & Bean is an innovator and leader in the NY bean industry. They are seeking funding of \$650K in order to build the infrastructure needed to continue to expand their business and financially benefit the farms they work with. With sales expected to continue to grow 30% yearly, the payback would be within 4 to 6 years. However, since Seneca Grain & Bean is aligned with many state and federal initiatives on local food procurement, feeding the food insecure, rural infrastructure and farm to school program they will be a strong candidate for grants, significantly reducing the payback period.

RESEARCH CONTRIBUTIONS FROM:

The Glynwood Center for Regional Food and Farming is a non-profit organization serving food and farming changemakers from New York's Hudson Valley and beyond. Glynwood's mission is to cultivate just and resilient regional food systems so that communities, farmers and the land thrive. glynwood.org.

The Colorado State University (CSU) Food Systems Institute is a catalyst for change, breaking down traditional barriers to drive holistic and systemic outcomes by bridging food systems research, engagement, and education. The Food Systems Institute is a place where all with a stake in food systems futures can join in creating solutions based in science and practice.

Beth Kennedy is a founder and operator in the food and beverage industry who has deep experience in building and growing brands across the food landscape.



Introduction

The global agricultural system produces enough food each year to feed every person on Earth plus one billion more, yet globally and within the United States people go hungry every day. Food insecurity will not be solved by producing more food, rather it is a complex, multidimensional problem that includes corporate consolidation, global and local markets, supply chain fractures, food waste, poverty, historic redlining that limits food access, food policy, and federal subsidies that reward industrial farm practices, market consolidation, and highly processed foods. Our current food system hinders the supply of nutritious food to low income communities at the same time it pushes farms and food workers into a race to the bottom on pricing, suppressing rural communities. There is no simple answer to this problem, and the macro view can be discouraging; however, we continue to see communities, and public and private sectors advocating for a more equitable food system—one that advances nutrition security for all, at a fair price for farms and food businesses.

To this end, and as part of FoodMap NY, NYU Stern in partnership with CADE, Farmhouse Consulting, Glynwood, and Colorado State University undertook research and analysis to identify opportunities for private sector interventions and investments in NY's food system to enhance food and nutrition security, specifically with an eye towards the Supply Chain and Infrastructure. Aligned with NYU Stern's landscape analysis, our research suggests that gaps in the supply chain and infrastructure—the system of producing and delivering a product (including aggregation, processing, storing, packaging, and distribution)—create barriers in delivering nutritious food to vulnerable communities; moreover, this creates a tremendous opportunity for public, private, philanthropic, and nonprofit agencies to work together to bridge that gap, particularly with targeted capital investment.

With the goal of finding an actionable, investment ready case study within the supply chain and infrastructure—**CADE identified a business case for dry beans as a food product known for critical nutrition. Our focus was to work with businesses with the experience and leadership that could close these supply chain gaps and enhance infrastructure, ultimately to ensure vulnerable communities can access nutritious food.** The intent was to give investors the opportunity to align their capital with businesses striving to make an impact in NY's complex food supply chain.



Why Beans

Beans are an affordable, important source of protein essential for human health with dietary fiber, complex carbohydrates, iron, zinc, B complex vitamins, essential amino acids, and naturally low in saturated fats.²⁷ Often used in emergency food programs because of high nutritional value and long shelf life, legumes have low GHG and water footprints compared to meat production, enrich soil through nitrogen fixation, and are environmentally sustainable.²⁸

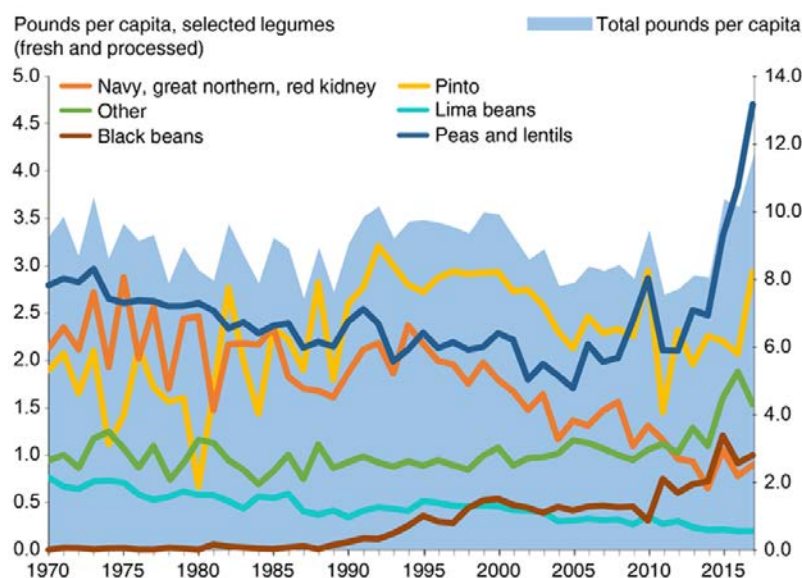
In addition to their nutritional benefits, daily legume consumption may have disease prevention benefits, specifically, preventing or managing obesity, metabolic syndrome, cardiovascular diseases, and colorectal cancer, as concluded by several meta-analyses.²⁹ Recognizing that low income communities suffer poorer health outcomes, a diet rich in affordable legumes can provide an important solution to nutrition insecurity. Bean dishes are also staples around the world, thus culturally appropriate to diverse communities.

As an added advantage, most bean and legume varieties are also cover crops that protect and improve soil health and sequester carbon, and are thus considered “regenerative” or climate-smart crops. Legumes have a much lower GHG and water footprint compared with meat and dairy products and are advocated as part of sustainable diets.³⁰

Bean Consumption Patterns

The US Dietary Guidelines recommends daily intake of beans at 1.5 cups or 37.5 grams,³¹ yet the average per capita US consumption of legumes is only 9.3 grams per day.³² According to a 2020 study, daily legume consumption in US adults is rare, as less than 5% of participants reported that they ate legumes each day; approximately one-third of participants did not consume legumes within a month.³³ However, Americans’ overall consumption of legumes has trended upward in recent years, reaching 11.7 pounds per person in 2017, up from 8.0 pounds per person in 2014.³⁴ Legume intake was significantly higher among those with a lower income to poverty level ratio, those with less than a high school education, Hispanics compared with other race categories (accounting for 33% of all dry bean consumption), and men compared with women.³⁵ Because legumes are less expensive than meat, low income households have reported affordability as their reason for consuming legumes.³⁶ Moreover, low-income consumers ate substantially more navy, lima, and pinto beans than those with greater means.³⁷ The lower price of legumes, especially during the winter months when other vegetables

Figure 4. U.S. legume consumption, 1970-2017



Source: USDA, Economic Research Service using ERS's Loss-Adjusted Food Availability data, a proxy for consumption.

were more expensive, play a role in legume consumption and may explain in part why legume consumers were more likely to be of lower socio-economic status.³⁸ In sum, while US bean consumption is low, it is increasing overall and is a critical staple for the food insecure.



Market Trends

Market channels for dry beans are largely bulk sales from “canners,” value-added food processors, wholesalers, food access programs, distributors and food hubs, and niche markets.

BULK SALES TO LARGE PROCESSORS

To sell to the large processors, or “canners” (such as Goya, Great Lakes, or Furmano’s), a producer/grower or handler/aggregator must have the ability to clean, store, manage sales, and ship tractor trailer loads. Beans for the NY processing market include black, kidney, light and dark reds, and cranberry beans. Experts from Farm to Plate Initiative of New York assert that 60% of NY dry beans are sold through canning markets.

WHOLESALE: FOOD ACCESS PROGRAMS & INSTITUTIONAL MARKETS

To reach wholesale markets—which includes sales through regional distributors, food hubs, institutions, or food access programs—the product must be packed to food grade standards (FSMA compliant) in 25 or 50 lb bags. For purposes of FoodMap NY’s focus on food insecurity, we will emphasize our analysis on food access programs and institutional markets.

Interviews conducted in 2022-23 by Glynwood with 8 food access programs in New York City and the Hudson Valley demonstrated strong demand for dry beans for both food pantry and meal programs. Although canned beans are plentiful through the Food Bank system, dry beans are often purchased through state incentive programs and other discretionary funds, and demand has grown as a result. Meal programs utilize bulk bags (25-50lb) versus pantries which utilize retail units of 1lb or 2lbs for home use. Demand varies based on demographics, with new immigrant households more likely to cook from scratch.

As public food procurement policies have shifted to incentivizing the sourcing of NY products, there is an increased market opportunity for NY dry bean growers if the supply chain can be strengthened. New York’s incentive programs include [30% NYS Initiative](#) (Farm-to-School policy), [No Student Goes Hungry Initiative](#), [NYC Good Food Purchasing](#), [Nourish NY](#), and [NY Grown & Certified](#) represent a \$500M opportunity—see figure 1.

The potential for value-added and locally processed products that are eligible under NYS incentive programs is significant. Nationally there are innovative companies Bean Vivo (flavored beans in pouches), Cool Beans (frozen vegan wraps), Heyday Canning (uniquely flavored canned beans), Banza (bean pasta) creating value-added foods with dry beans. We are seeing some of this innovation in NY, Headwater Food Hub is offering New York Canned Black Beans and Dr. Ray Glan (Research Physiologist USDA & Professor, Dept of Food Science Cornell)

has developed a Yellow Bean Rotini from yellow beans that could be grown in NY. These are examples of foods that can use NY grown products and be part of these incentives programs. However, investment in the bean industry is crucial for infrastructure and supply.

SPECIALTY & NICHE MARKETS

This market has consumers that are willing to pay for the value of the product. Although relatively small, this market serves as an important feedback loop with consumers, to gauge consumer preferences and can provide important cash flow. This market has supported the development of heirloom and other bean varieties as growers experiment with new crops. GrowNYC Grains sold beans through their retail operation and reported a big demand for all bean types with increased sales annually. Although consumers were interested in heirloom varieties, black beans remained the continuous top selling variety.

Niche markets provide farmers more viable options for diversification, incentivize crop rotation, and offer early stage product innovation. There is current research on bean varieties that thrive in the Northeast, which increase the biodiversity of crops on farms.³⁹ Researchers can select for traits that will make harvest more efficient, and can select for attributes that consumers prefer such as texture and starch content.



FUTURE OUTLOOK

Consumption patterns are forecasted to increase. Global, national, and local campaigns by governments are encouraging their communities to consume more legumes; *Beans is How* is an ambitious campaign mobilized by the SDG2 Advocacy Hub to double the global consumption of beans by 2028.⁴⁰ The US government is pushing to double the USDA's current [Dietary Guidelines for Americans](#) of beans, peas or legumes per week, indicative of its recent research on easy-to-prepare, bean-based pastas that meet nutritional standards.⁴¹ NYC's Mayor recently announced his "Plant-Powered Carbon Challenge" campaign, inviting the private sector to reduce food-related carbon emissions by procuring more plant-based foods, including beans.⁴²

Even now, the market is responding to consumer demand for healthy sources of protein with a good value and environmental impact.⁴³ Besides the brands mentioned above, other dry bean brands like Farmers Direct, 1000 Springs Mill, Primary Beans and Bean Story are emphasizing organic, regenerative, taste, and mission based marketing.

The State of NY Bean Production & Supply Chain

NYS was once a national leader for bean production, particularly for kidney beans and black turtle beans, beginning in the 1830s. By the 1970s, production fell by 50%.⁴⁴ The decline was largely precipitated by farmers who transitioned to producing corn and soybeans for the commodity market. Today, while NY is a very small contributor to the total US dry bean production (<1% by acreage and <2% of farms), it leads the Northeast, including among New England states and neighboring New Jersey and Pennsylvania, representing 79% of the total dry bean farms primarily based in NY's Finger Lakes region.⁴⁵

Bean production, especially of darker colored beans, are ideally suited to NY's growing conditions. Proximity to end users within NY and among major East Coast markets represent the greatest competitive advantage for producers and processors in the state by reducing shipping costs, compared with beans coming from the Midwest and Great Plains states that represent the largest bean production centers in the US. Leveraging the transportation advantage in the context of national rising fuel costs, thus strengthens the economics of moving beans to NY consumers.

Despite NY's competitive advantage, capacity for bean production, and rising consumer demand, in just the last 20 years, production dropped by over 60%, limiting the supply. In partnership with CADE, Glynwood brought together 13 growers⁴⁶ for a focus group in Geneva NY on February 26th, 2024 with the goal of gaining a clearer understanding of the industry at the farm, supply chain, and market levels. Takeaways:

- Prices are depressed (10 year low)—they are controlled by brokers who act as intermediaries between the processors (canners) and the growers or aggregators, and are further depressed by competition from international/national commodity markets.
- Farmers carry the risk and have to order seed and plant before knowing the market demand; farmers hold inventory carrying additional interest; holding inventory is limited to 1 year and dry beans are difficult to insure in the Northeast.
- Difficult for dry beans to compete with the price of soybeans, growers will revert to growing soybeans.
- NYS lacks processing and co-packing capacity, although the “bones” are there (e.g., dormant facilities).
- NY Growers and handlers have very limited sales directly to NYS institutional markets.
- Growers and handlers do not have capacity for market development and sales.
- New emerging insect pressure (Mexican Bean beetle, no organic deterrents available).

This was only the latest of several efforts to explore the potential for expanding bean production in NY. In 2021-22, CADE in partnership with Cornell University's Small Farms Program undertook an examination of the potential for expanding bean production in NY finding that aging infrastructure was a principal obstacle for the industry, and that local and regional supply chains must be developed to move towards emerging bean markets.⁴⁷

While NY has the acreage and conditions to grow more beans, the lack of fully developed markets, underdeveloped supply chains and capital constraints, are creating barriers to getting this locally grown nutritional food to those that are food insecure.

Seneca Grain & Bean

With CADE's 33 year history of incubating and accelerating farm and food businesses across NY's supply chain, and knowledge of "key ingredients" that make up a successful business, we identified a combined farmer and cleaner/processor to participate in this case study—Seneca Grain & Bean (SG&B). One of only four cleaners/processors in NY, SG&B is owned and operated by Peter and Hanna Martens, a leader and innovator in the NY Organic bean market. Working with Peter, a plan emerged that could expand infrastructure and be part of the multifaceted solution for supplying nutritious food to vulnerable communities.

With a deep knowledge of the challenges facing NYS bean growers and with an eye towards market opportunities, Peter is looking to secure \$645,000 to build additional climate-controlled storage, add bulk storage bins, enhance food safety and worker safety, increase logistics capabilities, build on-site retail space, create a new marketing campaign and update his website and packaging. This expansion will allow both Peter and the regional farms he works with to take advantage of market opportunities.

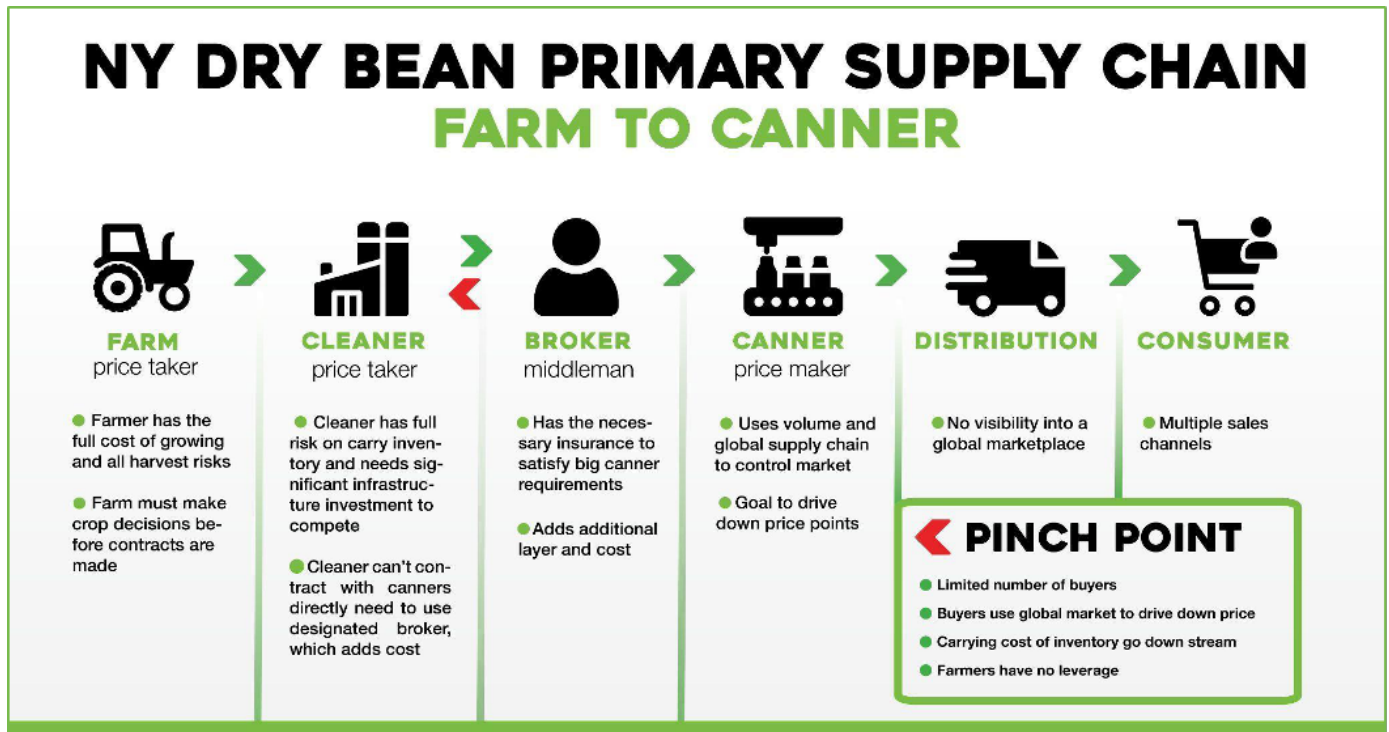
Besides the physical infrastructure investment, Peter has recognized that the global supply chain has pinched the farms and processors at the point of inventory carrying, shifting the carrying cost of inventory to the farm and decimating profit margins. Peter would like to see a source of low interest lines of credit (LOC) secured by the inventory to help NYS farmers weather the supply chain pinch, until the new opportunities in the market wrestle the leverage away from the few large buyers currently controlling the NY market. This fund could also help farms with bridge financing to fund government grants that require farms to spend capital before being reimbursed. A lending fund would help farmers retain profits and bridge government grant funding giving them time to expand into more profitable sales channels.

The Problem

THE SUPPLY CHAIN

Despite nutritional value and growing market demand, NYS farms are transitioning away from dry beans. The following supply chain graph developed in conjunction with New York Edible Dry Bean Focus Group⁴⁸ illustrates the current market situation in NY. A few regional canners control the market price and farmers have no influence on pricing.

Figure 5. NY Dry Bean Primary Supply Chain



The farmer/cleaner in this case, SG&B, needs to contract with the canners through a designated broker then contract with the farmers. Once contracts are in place they need to receive, clean, and store the beans until the canners fulfill their contracts. The canners use the global supply chain to drive down pricing and control when they buy the beans, often dragging out their purchases and pushing inventory carrying costs to the farmer/cleaner. This race to the bottom on pricing and transactional relationship forces farms to make penny calculations on what to grow and what not to grow. NY Farms are price takers, beholden to the market; when the market for beans is low, they switch to other crops like soy or corn. The following charts show how tight the calculations can be for the farms.

Item	Year	CANNIER PRICE TO	PROCESSOR (SG&B)	PROCESSOR PRICE TO
		Processor	Margin*	Farmer
		per lb	per lb	per lb
Black Beans				
Organic	2023	\$0.85	\$0.09	\$0.76
Organic	2024	\$0.75	\$0.09	\$0.66
Soybeans**				
Organic	2024	bushel - 60 lbs \$21.00	per lb \$0.35	yield = 2x dry beans \$0.70

* includes - cleaning, overhead, profit, financing

** less inputs, easier to grow, less risk

Organic growers need .70 or higher to grow dry beans vs soybeans/corn

In 2024, SG&B had not signed any contract with canners to sell beans. A few farmers will grow on speculation, hoping the price increases.

PRICING PROPOSITION

As illustrated below, a six month carrying cost can wipe out any profits generated from the processing. A stable, low interest, flexible and efficient LOC fund that could offer low rates, secured by the bean inventory would help to de-risk the carrying costs of inventory, reduce the barriers for NY bean farms, and help to expand the NY bean market.

TO FARM	TO PROCESSOR	INVENTORY			INTEREST	LOC
# per lb	# per lb	Bean Class	lbs	Value	rate	interest only
\$0.70	\$0.80	Black	132,000	\$105,600	7.00%	\$616
\$0.72	\$0.82	Pinto	100,000	\$82,000	7.00%	\$478
\$1.00	\$1.10	Light Red Kidney	22,000	\$24,200	7.00%	\$141
\$1.20	\$1.30	Cranberry Bean	44,000	\$57,200	7.00%	\$334
\$1.20	\$1.30	Cannellini Bean	44,000	\$57,200	7.00%	\$334
\$0.72	\$0.82	Navy Bean	20,000	\$16,400	7.00%	\$96
\$0.90	\$1.00	Adzuki Bean	20,000	\$20,000	7.00%	\$117
			382,000	\$362,600		
			Margin	\$0.10	per month	\$2,115
			COG/OH	\$0.07	# months	6
			GP per lb	\$0.03	interest	\$12,691
			Gross profit	\$11,460		

Why This Solution

The overall objective of this project was to look at the dry bean industry in NY and find actionable and investment-ready projects that would address food security within the supply chain and infrastructure. In order for the NY dry bean market to rebound, crucial infrastructure is needed, spearheaded by a business with the necessary experience, leadership and relationships.

In 2023, SG&B contracted with 27 farms to provide a stable, above average price for dry edible beans and grains promoting more diverse and resilient crop rotations. They also provided local jobs; research shows that local agricultural businesses have an economic multiplier of 1.54, meaning for every dollar they generate, they add another \$0.54 to their local economy.⁴⁹

SG&B is at the leading edge of finding new markets and investing in critical infrastructure to help its community of growers manage the current supply chain bottlenecks. Peter Martens, as the owner/operator, is a young dynamic leader with a proven track record in growing new markets. CADE worked with him to evaluate his business and the market to build an actionable project. His overall business is growing 15% to 20% a year—a testimony to his sound business practices—and he needs the capital to expand his infrastructure in order to continue this trend. The plan to expand the climate control storage and auxiliary infrastructure will position his business to be the structural infrastructure that NY bean growers need to reach the markets that supply people who are food insecure.

SUCCESS STORY

SG&B has a track record of steady growth and expansion in small grains (wheat, oats, barley, rye), while their bean business has struggled. Although bean and grain crops are significantly different, the success of small grains provides lessons on how the NY bean industry can grow and succeed, especially at this moment of significant opportunity within NY.

Advocacy

Over the past two decades there have been a suite of interventions by public and private sector actors to develop and re-regionalize a “local grain economy,” led largely by organic growers who recognized the value of integrating small grains into multi-year rotations for the soil-building benefits they provide. By 2012, policy changes at the state level designed to increase the use of locally grown farm products within NY’s craft beverage industry as well as local procurement policies implemented by GrowNYC in 2009, helped spur a new local grain market.

Since 2009, GrowNYC Grains acted as a multi-sector value-chain coordinator and market developer by working along the supply chain to connect growers, processors (millers, maltsters, distillers), bakers, and chefs--sparking a rise in demand for local grains while helping ensure the crop supply and processing infrastructure are in place to meet that demand.⁵⁰

From 2015–2021, GrowNYC operated a series of retail stands at GrowNYC’s Greenmarkets across NYC, reaching a broad demographic of consumers. The “Grainstands” served as a test marketer, aggregator and reseller of regional grains, beans, and seed oils for 21 regional mills and processors representing crops from over 100 farms, introducing 57 new crops to the marketplace and provided consumer feedback on the development of more than 20 regionally adapted wheat varieties. After 7 years of groundwork to establish the market and educate consumers, several participating mills now have a solid customer base, brand recognition, and regional distribution.

The model has been used as a blueprint by other “regional grain projects” and can inform a strategy for the development of supply chains and markets for NYS and regionally grown dry beans. Note: Glynwood Grains & Staples has been engaged in research on a next phase iteration of the project, such as an “entity” focused on further market coordination which could accelerate the growth of the dry bean market, and tie into other goals such as Climate smart ag, etc.

Technology

Seeming small technology advances can have a big impact. New American Stone Mills introduced a new line of mills that open the door for smaller bakeries. These mills enabled bakers and small operators to grind their own grain increasing the demand for high quality NY grain. Allowing bakers direct access to whole grains enables them to skip the step of purchasing through a commercial mill for processing.

NYS 30% Initiative

As stated above, the NYS incentive programs are creating significant demand for all NY products. In the case of grains, these incentives were combined with the long running advocacy from groups like GrowNYC Grains and technology advances like the New American Stone Mills, which enabled the market to respond to the 30% initiative. For example, SG&B has one client purchasing 200 tons of wheat annually that is being used to bake pizza crust for NY schools.



Photo credit: Peter Martens, Seneca Grain & Bean

We believe the bean market would benefit from the same types of sustained advocacy and technology boost. Beans have some obstacles to overcome, like needing to be soaked and a long cooking time, but getting beans into more user-friendly forms like pouches and tetra packs, as well as continued product innovation (e.g., bean pasta) are crucial steps to expand the market for nutritious beans. Thinking differently is important too; as one farmer commented, “Can we get big pressure cookers in all the schools, so they can cook them faster?”.

Growing, harvesting, cleaning and storing beans are not easy tasks, but NY farmers can do all of these things. What they need are multiple sales channels that make it profitable to grow beans, so this nutritious regional food stays available for the food insecure.

The Solution: Middle Supply Chain Infrastructure

SENECA GRAIN & BEAN - OVERVIEW DESCRIPTION

- **Location** - SG&B is situated in an ideal location in Penn Yan, NY, surrounded by fertile farmland near the majority of NY’s bean growers, experienced farmers, and larger acreage.
- **Facility** - Currently 5,500 sq. ft. of production space, 7,200 sq. ft. of warehouse space, 100t of bulk storage and an additional 8000t of bulk storage at the farmyard. SG&B employs 3 people, not including family, and the 3 families involved farm approximately 1,900 acres.
- **Overall business concept** - SG&B is a certified organic cleaning, handling, and storage facility that can aggregate from multiple growers and sell crops through multiple market channels. Increasing the operational capacity of the facility will position SG&B for growth and take advantage of emerging market trends for local, regenerative and plant-based food crops to a diversity of market channels.
- **Product & services** - Clean, process, and market Certified Organic Grains & Legumes. Direct market and wholesale farm identified products (NY Grown & Certified).
- **Customer base** - Primarily bakeries and restaurants across New York & New England. Dry Beans are also sold to a large cannery in NYS and have been exported to Europe in the past. Both grains and dry beans also have a direct to consumer element.
- **Primary bean market** - A broker serving large canning operations. Although the price is low, the volume enables SG&B to spread its overhead and pursue the higher value markets.
- **Secondary market** - SG&B has direct sales of \$270,000.
- **Market position** - SG&B is a certified Organic NYS farm and processor that provides farm identified traceable products. They work with growers on multiple crop rotations providing above average markets for food grade beans, food grade grain, and seed grade grains and legumes. Their wide range of business activities help their growers find good prices even as markets move down. They are positioned to flip primary and secondary markets to give growers more leverage.

LEADERSHIP

Peter Martens has led his company to 15% to 20% in growth annually. He is encouraged by success with grains, and believes it is time to continue to invest in infrastructure as he expands his relationship in the supply chains. Although beans are lagging, he sees the opportunity and believes beans can experience the same type of growth as grains. He believes that the infrastructure he is building will be an opportunity building block that other companies/initiatives will need as the bean market expands. In order to have nutritious beans available for the food insecure, Peter needs an efficient, profitable business, so the farms can stay healthy and sustain inertia for expansion.

THE PLAN

SG&B would like to:

- Build an additional warehouse to expand their climate controlled storage
- Increase short term bulk storage with additional bins
- Add improved loading and unloading equipment to their bin storage infrastructure
- Bring on an automatic palletizer to increase output capacity
- Add a large volume "pre-cleaner" that removes the bulk of impurities prior to storage
- Update food safety by adding in-line metal detection
- Increase racking in the warehouse
- Interconnect to the new Microgrid⁵¹
- Post harvest conditioning (cleaning & drying) equipment

With \$645,000 in investment SG&B will be able to:

- Store approximately 500,000 lbs of additional beans and an additional 600 tons of grains
- Double the amount of bean growers they can work with from 9 to 18 farms and increase grain farms by more than 50% - from 20 farms to 32 farms
- Decrease overtime cost of having to continually move inventory
- Increase capacity to produce a greater volume of food-grade beans for new bean markets, including for school lunch, food security, and NYS buy local incentive programs.
- Maintain the yearly revenue trend of 30% growth while increasing direct sales revenue by 50% plus over the next two to three years.
- Increase overall profit margins with more direct sales.
- Direct sales have an increased margin of **38%** over wholesale sales.

Budget

Seneca Grain & Bean - Building Middle of the Supply Chain Infrastructure

ITEM	QUANTITY	UNIT PRICE	TOTAL REQUIRED
		Total Funds:	\$645,000
Budget: Task 1a - Seneca Grain & Bean			
Construction			\$448,300
Climate-Controlled Building	1	\$270,000	\$270,000
On Farm Retail/Wholesale Customer 20ft x 36ft	1	\$55,000	\$55,000
Utilities	1	\$15,000	\$15,000
Tree Removal	1	\$1,800	\$1,800
Long-term Bulk Storage Bins	1	\$79,000	\$79,000
Short-term Bulk Storage Bins with loading/unloading equipment	1	\$27,500	\$27,500
Equipment			\$179,000
Dust Management	1	\$11,000	\$11,000
Precleaner	1	\$32,000	\$32,000
Automatic Palletizer w/ additional infrastructure to set up	1	\$42,000	\$42,000
Microgrid - Interconnection to only	1	\$10,000	\$10,000
In-line Metal Detector	1	\$60,000	\$60,000
Racking in Warehouse	1	\$24,000	\$24,000
Contractual/Permitting			\$7,300
Engineering Services	1	\$7,000	\$7,000
Permitting	1	\$300	\$300
Other (specify)			\$4,900
Public Road upgrades to the facility	1	\$4,900	\$4,900
Indirect Charges			\$5,500
Promotions	1	\$2,600	\$2,600
Customer engagement	1	\$2,900	\$2,900

Part 1 Methodology

With support from NYU Stern, CADE, and FHC used the following primary and secondary research methods to inform this study:

1. **Literature Review** - we conducted a literature review on scholarly, federal (CDC, FDA, USDA), state, and other open source research on core topics (i.e., nutrition and bean production), as well as available institutional market data on NYS farm-to-school and NYC food purchasing.
2. **Buyer interviews and surveys** - CADE conducted primary research among 80 NYS food buyers, of which 43 were interviewed and 36 completed surveys. Buyers included 15 public school districts, 3 hospitals/senior centers, 2 emergency food purchasers, 4 colleges/universities, 8 food hubs, 4 distributors, 2 manufacturers, 24 wholesale grocery stores, and 18 restaurants. Buyers were identified through existing networks and relationships including CADE's buyer lists, cold outreach via desktop research, and buyer recommendations. Interviewees were asked about 12 procurement areas including needed NY products, minimum volume, specifications, certifications or other requirements, preference for values-based procurement, expected delivery schedule, price expectations, cycles of vendor contracts, how to join, how payments work, current suppliers and distributors, and perspectives on increasing procurement of local food for the long term.
3. **Farm Connect Case Study** - CADE and FHC conducted detailed strategic planning sessions with the owners and key employees at Headwater Food Hub and George's Farm Products. These weekly meetings drew on the deep research this project conducted and relied heavily on the experiences and direct conversations that the case study partners had with school food officials and participants within the food hub network.

Part 2 Methodology

With the help of research institutions and agricultural/food system specialists, CADE, FHC and Glynwood used the following primary and secondary research methods to inform this study:

- 1. Literature Review** - we conducted a literature review on scholarly, federal (CDC, FDA, USDA), state, and other open source research on core topics (i.e., nutrition and bean production), as well as available institutional market data on NYS farm to school and NYC food purchasing.
- 2. Farmer Focus Groups** - We gathered qualitative data through a focus group of 13 bean growers on February 26, 2024. Growers were recruited largely from an eight-county region in central/western New York that had been identified through USDA data showing counties with over 100 acres of production, and through a variety of outreach strategies; organizer contacts, outreach to peer networks; Cornell Extension Dry Bean program (Vegetable Program), New York Certified Organic (NYCO, NOFA-NY), NWNYS Dairy Livestock & Field Crops, NYS Dry Bean Council, and in-person recruiting at several producer meetings. Team members facilitated various portions of the meeting, including Becca Jablonski of Colorado State University and Cheryl Belinski of Harvest New York. The group was split into two groups for focused discussion. One group of conventional growers and the other organic. Independent consultant Michael Hurwitz and June Russell of Glynwood facilitated the conventional group and organic group, respectively. Eligible participants were screened with initial questions regarding whether participants were in a farm management decision-making role, and if they were currently growing or had grown dried beans in the last 3 years. Several growers who have the capacity and interest to grow dry beans for this market were also included.
- 3. Farmer Survey** - Colorado State University researchers took the lead on the survey design which was based primarily on USDA data on New York State dry-bean production. The survey received additional input from team members on the City Food Policy project, CADE, Glynwood and the NY Farm Viability Institute 2022 dry bean advisory group. The survey was distributed to 13 confirmed participants of the focus group as a pre-meeting questionnaire.
- 4. Food Access Program Interviews** - Conducted in 2022-2023 by Glynwood.
- 5. SG&B Case Study** - CADE and FHC conducted several key informant interviews with owner of Seneca Grain and Bean, Peter Martens, and drew on the focus group and survey results noted above.

- ¹ **Disclaimer:** *The purpose and scope of this feasibility study is to introduce the enterprise and provide a general idea and information on said project including its business operations, financial and marketing aspects. All the information included in this feasibility study is based on data/information gathered from various secondary and primary sources and based on certain assumptions. Although due care and diligence has been taken in compiling the document, the contained information may vary due to any change in the environment. The Center for Agricultural Development & Entrepreneurship does not assume any liability for any financial or other loss resulting from this Study. The prospective user of this document is encouraged to carry out their own due diligence necessary to making an informed decision.*
- ² Harvard School of Public Health, "[The Nutrition Source: Vegetables and Fruits](#)", The Nutrition Source.
- ³ CDC, "[Childhood Nutrition Facts](#)", August 2022.
- ⁴ Johns Hopkins Center for a Livable Future, "[Hunger and Food Insecurity](#)", 2016.
- ⁵ CDC, "[Only 1 in 10 Adults Get Enough Fruits or Vegetables](#)", February, 2021.
- ⁶ CDC, "[Fruit and Vegetable Consumption - United States, 2015](#)", November 2017.
- ⁷ CDC, "[Disparities in State-Specific Adult Fruit and Vegetable Consumption - US, 2015](#)", Nov 2017.
- ⁸ CDC, "[Childhood Nutrition Facts](#)", August 2022.
- ⁹ Ibid.
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- ⁵¹ SG&B is part of a large business project that is constructing a Microgrid to provide solar power as an alternative, secure and economically feasible energy source.