

VISION 2050

A New York State Vision
for a Profitable, Regenerative, Equitable & Healthy
Food System Future by 2050

July 2022

CADE
Center for
Agricultural Development
& Entrepreneurship

Research contributions by:



Cornell **CALS**
College of Agriculture and Life Sciences



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TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	4
ACKNOWLEDGEMENTS.....	12
INTRODUCTION - Context for a 2050 Vision for New York’s Food System.....	13
METHODOLOGY AND LIMITATIONS - Whose Vision? And to What End?.....	18
CURRENT SNAPSHOT OF NEW YORK STATE FARM & FOOD SYSTEM - Where are we now?.....	22
Snapshot Part I: New York by the Numbers – A Review of the Literature.....	23
Snapshot Part II: New York Voices – Survey and Roundtable Stakeholder Perspectives on our Current Food System.....	50
THE VISION AND RECOMMENDATIONS - What is New York’s Vision for 2050? And how do we get there?.....	52
FROM VISION TO ACTION - Case studies on how we get there.....	90
Case Study - Beef.....	91
Case Study - Dry Beans.....	100
Case Study - Apples.....	114
Case Studies on Counties - Delaware, Otsego, Schoharie.....	124
APPENDICES	
New York State Agriculture and Food Policy Landscape.....	140
Definitions.....	148
Research instruments and participants.....	150

EXECUTIVE SUMMARY

By Carlena Ficano, PhD., CADE Board of Directors/Treasurer and Professor of Economics at Hartwick College; Phoebe Schreiner, CADE Executive Director; Anu Rangarajan, PhD, Cornell Small Farms Program Director, School of Integrative Plant Sciences, Cornell University.

New York has a proud agricultural history and all the elements for a thriving agricultural and food future –one that is profitable, regenerative, equitable, and healthy. And yet, snapshots of the status quo identify tremendous challenges throughout the food system that compromise our ability to realize such a food future: shrinking farmland due to economic and development pressures; rising climate challenges that impact agriculture from increased flooding to depleted soils; increasing numbers of retiring farmers without an adequate pipeline of successors; thinning agricultural labor supply; aspiring Black and Brown farmers who face overwhelming barriers to entry; decreasing capacity and inefficiencies in processing and distribution; hampered food system resilience in emergency contexts like COVID; and lack of healthy food access especially in marginalized communities.

These immense and staggering problems demand integrated, systems-based solutions that are

- driven and informed by a broad network of stakeholders, who possess experience-based understanding of the gaps, frictions, threats, strengths and opportunities within the food system,
- executed collaboratively across multiple sectors and in multiple regions of the State around a shared Vision, and
- coordinated, supported, and championed by State leaders who have the financial and other resources and the political reach to affect real change.



1 Map source: 2021 REDC Guidebook (https://regionalcouncils.ny.gov/sites/default/files/2021-05/2021REDCGuidebook_Final.pdf)

OUR GOAL

The purpose of Vision 2050 is to put forward a comprehensive stakeholder-informed Food System Vision for New York State for 2050—one that overcomes the challenges, addresses the gaps, faces the threats, and leverages the strengths and opportunities of the status quo, moving us, together, closer to realizing the profitable, regenerative, equitable, and healthy food future that we all want to see. Ultimately, we aspire for a food system that accelerates sustainable agricultural economic development; creates green jobs throughout the farm and food sector; increases food security and healthy food access; advances equity; and mitigates climate change.

Through the Vision 2050 process, we sought to understand the literature and communicate with diverse groups of stakeholders across the state in order to discern, detail and amplify a shared picture of a New York food system of 2050 that built ownership along the way. We believe that this clear articulation of a shared Vision is an important step towards setting the agenda for New York’s political leaders and informing the foundation of a State Plan.

Looking back across nearly three years of work, we are awed by the passion and commitment of the many individuals and groups already working to affect positive food system change. We are heartened by the consistency of message across those individuals and their willingness to engage honestly on points of friction that must be overcome as well as on shared goals and values. We are impressed by the many great ideas put forth by those with whom we spoke, ideas which came to form a first pass set of recommendations towards achieving our shared vision – not as separate groups but together, as an interdependent and integrated network supporting a better tomorrow. Let the problem solving begin!

OUR PROCESS/METHODOLOGY

With the help of New York’s leading research institutions and scholars specializing in agriculture, economics, climate change, and equity, our Vision 2050 Research Team collected input with which to articulate a shared New York food system Vision using the following primary and secondary research methods:

1) LITERATURE REVIEW

Our literature review includes scholarly research on core topics included in the Vision, more applied policy papers on neighboring State strategic plans, issue-specific advocacy agendas or white papers aligned with Vision 2050—such as on food system equity/food justice/food sovereignty writings, and a review of relevant U.S. Census of Agriculture data.

2) STATEWIDE FARMER SURVEY²

Cornell University researchers designed and fielded a statewide survey asking current and future farmers (18+) in New York (including farm owners, farm workers, or aspiring farmers who plan to own a farm) to share their perspective on the “top priorities for enhancing New York’s food production system to make it more resilient, profitable, equitable, and healthy by 2050” within each of 6 categories: supply chains and infrastructure, the health of our population, business development and management, new and beginning farmer development, market development, and stewardship of our natural resources. After selecting priorities, survey respondents were also asked to 1) provide any examples of current efforts and/or 2) identify barriers to advancing their priorities via open ended comment. The survey received 477 responses of which 322, representing 280 owner operators, 23 farm employees, and 19 aspiring farmers, were complete. Respondents came from every county, production sector, and size of operation. The survey was promoted through statewide press, social media, newsletters, and farmer listservs.

3) MULTI-SECTOR FOCUS GROUPS

The research team gathered qualitative data through digital focus group discussion around the following motivating questions, facilitated by Curtis Ogden, Senior Associate of the Interaction Institute for Social Change (MA), who co-facilitated the development of the Food Solutions New England network:

- Imagine it’s the year 2050 and we live in an equitable, resilient, profitable, and healthy food system. What would that look like? What would be different than what we see and experience right now (focus on one feature)?
- What do you see as opportunities to get there? Where should we be investing efforts?
- What significant barriers do you see/ experience to advancing the 2050 vision + any thoughts about how to address them?
- How might we better connect, align and coordinate AND SUSTAIN efforts?
- Who else should we include in the stakeholder engagement?
- How can we get others more excited about this effort?
- How can we improve this roundtable experience?

A total of 95 participants from across the food system³ attended 18 distinct focus groups of 3-9 people per group. Each focus group was designed to include a mix of stakeholders so that the process itself would break down silos, build greater cross-sector dialogue, enhance shared alignment, and help identify points of tension. Focus group invitations were promoted through digital and print press, social media, email newsletters of various food system agencies/networks, as well as through open calls in the focus groups themselves for additional recommendations on stakeholders to be invited.

² See Appendices for the survey tool. *To request access to the summary of survey results, please contact Phoebe Schreiner at phoebe@cadefarms.org.*

³ Focus group representation included agricultural producers (2 dairy producers and 5 other producers), commodity associations (3), agricultural agencies (18), meat processors (2), food hub operators (6), food business owners (2), food system buyers (3), nutritionists (2), land trust representatives (1), labor experts (1), agricultural researchers (8), fishery experts (2), food policy experts (7), climate experts (4), economic development specialists (5), funders and investors (5), racial justice and equity leaders (6), political leaders (3), and even teenagers who aspire to become future food system leaders and farmers (10). See Appendices for the complete list of stakeholders invited and those who participated. *To request access to the complete roundtable notes, please contact Phoebe Schreiner at phoebe@cadefarms.org.*

4) CASE STUDIES

To create sector specific case studies on beef, dried beans, and apples, as well as county case studies, the research team conducted literature reviews, secondary research, and key informant interviews.

In developing our methodology, we connected with representatives of New England Food Solutions who led the development of the multi-State “New England Food Vision” for 2060. We engaged one of the key stakeholders involved in the Vermont “Farm to Plate” Strategic Plan to learn about their good practices and lessons. We also referred to materials developed by the Rockefeller Foundation for their global Food System Vision Prize in designing our processes. Finally, the Vision 2050 Research Team (faculty and staff of Cornell University’s Dyson School, Cornell Small Farms Program, Columbia University, Hartwick College, and SUNY Cobleskill) helped to co-conceive and implement each aspect of the research, including developing the relevant data collection tools.

We recognize our methodology was by no means perfect. Our limited human and financial resources constrained the scope of work, and we had to adapt to the unexpected COVID19 pandemic which hampered our engagement strategies. Further, we acknowledge that CADE does not have a long track record as a Statewide convenor, and that earlier and more public outreach may have drawn more stakeholders into our discussions. We made particular efforts to be as inclusive as possible in our outreach and draw on what written materials we could access in our literature review, but we acknowledge that not all stakeholders had capacity or commitment to engage. Further, some efforts were underway during a parallel timeframe to inform state planning such as the [Western NY Food System Initiative](#) and development of the [Diversity and Racial Equity Working Group Report](#). With respect to the latter, with expressed permission and support from three members of the Working Group, we cross referenced their recommendations and quoted from their document with attribution to compliment and align agendas.

THE VISION THAT EMERGED

From the perspective of New York State stakeholders, and as illustrated in the graphic below, a profitable, regenerative, equitable, and healthy food system is one that

is integrated and interdependent; creates financial reward across the supply chain; enhances rather than compromises natural biocapacity; is inclusive, supporting fair treatment, access, opportunity, and advancement for all individuals; provides valued, culturally appropriate and accessible products that nurture healthy bodies and minds; and is supported by a network of stakeholders within and beyond its boundaries.

According to our stakeholders, realizing this vision involves coordinated thoughtful action in the areas of **CONSUMER VALUES**, **CONSUMER BEHAVIOR AND CONSUMPTION PATTERNS**, **PRODUCER MARKET INTERACTIONS**, **PRODUCER INTERACTIONS WITH OUR ENVIRONMENT**, **SUPPLY AND VALUE CHAIN STRUCTURE**, and **EQUITY** throughout the system.

WHAT DOES THIS LOOK LIKE? PROFITABLE, REGNERATIVE, EQUITABLE AND HEALTHY

Action Areas

CONSUMER VALUES.

Society has a high food system literacy, understanding how and where food is produced and the implications of that production. Consumers value regional food independence and regenerative local food production practices. Society perceives food as a public good and values public/private partnerships for food production and affordability.

CONSUMER BEHAVIOR / CONSUMPTION PATTERNS.

Local food consumption is the norm as evidenced by a significant increase*, through production and dietary changes as well as capacity expansion, in the amount of food consumed in New York that is sourced locally. Urban and rural consumers of all income levels are food secure, have access to healthy and culturally appropriate food, and enjoy a healthy balanced diet. More plant-based and less ultra-processed food is consumed. Farm-to-school is the norm.

PRODUCTION / MARKETS.

A significant increase* in the amount of viable New York State land is in agricultural production. Improved systems support farmland access and transition. More racial and ethnic diversity is present among farmers. Urban agriculture feeds communities. Farms operate on a level playing field relative to neighboring States. "True cost of food" pricing incorporates positive and negative externalities. Product innovation and heterogeneity honors and leverages regional/cultural differences and indigenous wisdom and heritage.

PRODUCTION / ECOLOGICAL.

A significant increase* in the amount of food that is produced using regenerative farm practices keeps soils healthy, reduces current GHG output and sequesters carbon. Improved on-farm management practices and selective use of antibiotics keep livestock healthy and antibiotic medicines effective in people. Farms are resilient to climate change. Climate justice, social justice, agricultural and economic development agendas align.

SUPPLY / VALUE CHAIN.

Supply chains are resilient. Distribution is local, reducing food miles. Efficient processing, aggregation and distribution systems, including in urban centers, support small farms through planning and coordination, increasing food affordability and farm profitability. New York farm and food businesses thrive, create green jobs, and sustain strong local economies. More collaboration and less competition is present.

EQUITY.

Black, Indigenous, and People of Color (BIPOC) and other underrepresented individuals have equal access to infrastructure, education, farmland, and capital. Prime farmland is protected and in use by a diverse population of stakeholders operating under a variety of ownership structures. Farmers and farm workers, including immigrant workers, are connected, visible, appreciated, and assured safety and security (i.e., health care, secure immigration status), and earn a living wage.

OVERARCHING ACTION AREA

STRUCTURE AND LEADERSHIP

Integrated and interdependent structure and leadership that facilitates a network of stakeholders within and beyond the food system boundaries to shape New York State's food system.

RECOMMENDATIONS

Support Northeast regional food independence and food systems development, aligned with regional neighbors in New England, PA, NJ

Develop a stakeholder informed New York Strategic Plan for ag and food systems development, building on this Vision, including setting 10, 20, 30 year targets and benchmarks to guide State policy, resource allocation, programs, and services—with a commitment to profitably feed more of New York's population with New York sourced food.

Sustain dialogue and strengthen collaboration among all stakeholders involved in the New York food systems to develop solutions holistically.

Enhance education among legislators and funders.

Demonstrate and celebrate New York State leadership!

**NOTE: The establishment of numerical targets is a crucial aspect of a State Strategic Planning Process and is recommended by this Vision 2050 document for the New York State food system. For example, the recently completed [New England Food Vision](#) set targets to have New England produce 50% of the food that is consumed in the region by 2060, based on land and production capacity, dietary trends, etc. Establishment of New York State targets was beyond the scope of the present analysis.*

Stakeholders provided countless concrete ideas to move us in the direction of Vision 2050. Recommendations drawn from the stakeholder ideas are summarized below. Please see the report, pages 56–89 for a full listing of the specific stakeholder ideas behind the recommendations as well as examples of where those recommendations were heard.

ACTION AREA

RECOMMENDATIONS

CONSUMER VALUES

Enhance food system literacy so consumers value local food production and nutrition

Create knowledge base and infrastructure needed to support a market demand for regenerative, “climate smart” produced products

CONSUMER BEHAVIOR/ CONSUMPTION PATTERNS

Expand farm to school/institution markets, with bid preferences for food sourced in New York

Recognize and leverage the connection between healthy food consumption and human health outcomes

PRODUCTION / MARKET

Conserve and protect farmland in perpetuity and preserve public green spaces for community as well as commercial food production

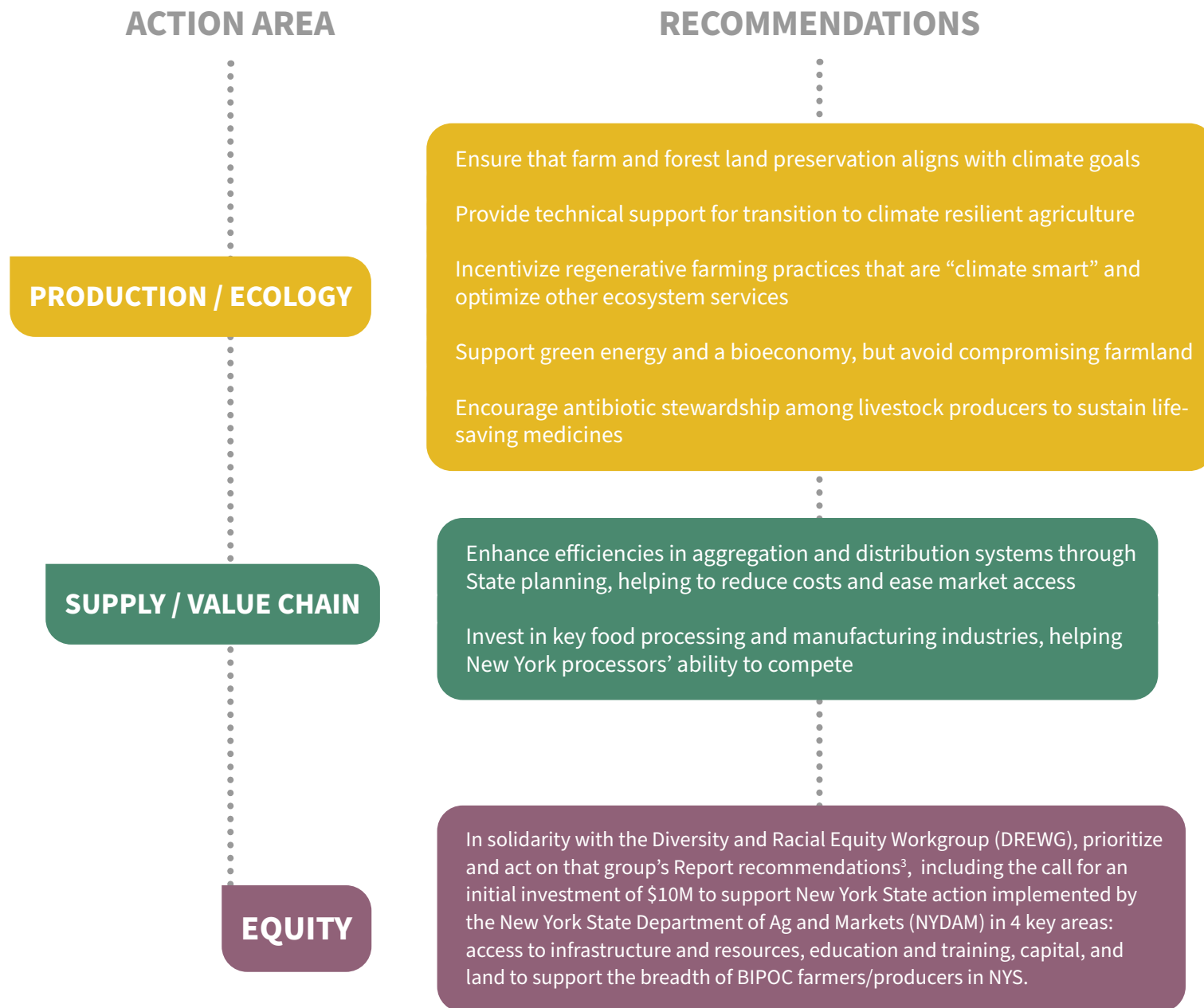
Encourage beginning farmers, and keep farmland affordable

Strengthen the food system workforce, addressing the need for reliable, qualified, and affordable labor that is also appropriately compensated with a living wage and benefits

Support controlled environment agriculture (CEA) to lengthen the growing season

Invest in key food sectors where New York has or can have a competitive edge

Support affordable health care to farm and food producers



3 New York State Government. (2021). (rep.). Diversity and Racial Equity Working Group Report (pp. 1–26). Agriculture and Markets.

ACKNOWLEDGEMENTS

By Phoebe Schreiner, CADE Executive Director.

CADE offers our most profound gratitude to those who were behind the idea of developing a New York State food system Vision—our fellow thought leaders who implicitly understood the need for dreaming a new future into being. We thank Ken Jaffe, Carlena Ficano, Tianna Kennedy, Walter Reisen, Caroline Lewis, Judy Pangman, Mark Davies, Christina Hunt-Wood, Erin Summerlee, Taier Perlman, Julie Suarez, Heidi Mouillesseaux-Kunzman, Curtis Ogden, and our friends at New England Food Solutions who spearheaded the New England Food Vision. We also thank those who early on shared their lessons learned from past and present endeavors similarly aligned, like Larry Van De Valk of Lead New York, Roy Steiner of the Food Initiative at the Rockefeller Foundation, and Betsy Rosenbluth of Vermont FEED and Vermont “Farm to Plate” State Strategic Plan. We thank CADE’s newer Board members Carlos Lenin Valery, Jr., Patricia Dapazo, Jim Hyland, Zaid Kurdieh, and Madalyn Warren who quickly embraced Vision 2050 after the process was underway.

We also graciously thank our Research Team partners including Cornell University’s Dyson School of Economics and Management faculty and staff, Miguel Gomez, PhD, Kristen Park, Rebecca Wasserman-Olin, Mauricio Guerra Funes, and Alethia Chan; Cornell Small Farms Program’s Anu Rangarajan, PhD, and Ryan Maher; Hartwick College’s Carlena Ficano, PhD; SUNY Cobleskill’s Jason Evans, PhD and Dr. S. Scott Ferguson, Professor and Executive Director, Institute for Rural Vitality; and Columbia University’s Jeffrey Potent, Adjunct Professor of International and Public Affairs. We thank CADE’s own project team—Curtis Ogden of the Interaction Institute for Social Change, Ken Jaffe, Heather Meehan, Kaitlyn Sirna, Rebecca Morgan, Wendy Hunt, and Curcio Printing—who helped pull the project together.

We offer our deepest gratitude to our funders, funding partners, and allies, including the Appalachian Regional Commission, Empire State Development, Southern Tier 8, the Mohawk Valley Regional Economic Development Council, the Community Foundation of Otsego County, the Scriven Foundation, Otsego Now, and The Workforce Development Board, Herkimer, Madison, and Oneida Counties, Inc.

Finally and most importantly, we thank all those who participated in the visioning processes—via key informant interviews, focus groups, and surveys—who put forward their own aspirations for creating a brighter tomorrow. We offer our special gratitude to Qiana Mickie and partners from Community Food Advocates, Vines, and Future Farmers of America who helped us organize our favorite focus group of all—a group of 9 teenagers who ARE our 2050 leaders of tomorrow.

We especially acknowledge New York State Assemblywoman Donna Lupardo, former State Senator Jen Metzger, and her former chief of staff Deborah Dewan for lending us their moral support and demonstrating that Albany is an eager partner to strengthen agricultural development and our future food system.

Disclaimer: The views and opinions expressed by the authors of this Vision do not necessarily reflect the official policies or positions of their institutions. CADE takes responsibility and apologizes for any factual errors, omissions, or inaccuracies. CADE and authors have endeavored to provide citations and references whenever possible.



INTRODUCTION

CONTEXT FOR A 2050 VISION FOR NEW YORK'S FOOD SYSTEM

By Phoebe Schreiner, CADE Executive Director; Carlana Ficano, PhD, CADE Board of Directors/Treasurer and Professor of Economics at Hartwick College; Ken Jaffe, MD, CADE Board of Directors and Owner, Slope Farms; Erin Summerlee, CADE Board of Directors/Chair and Director of Food & Health Network, Rural Health Network of South Central New York; Carlos Lenin Valery, Jr., CADE Board of Directors/Vice Chair and Farmer and Owner, Orinoco Cattle Products & Farms, LLC.

WHY A VISION?

New York has a proud agricultural history and all the elements for a thriving agricultural and food future—we are among the largest agricultural producers in the Northeast, second only to Pennsylvania, and we have water abundance, access to the Northeast’s largest population centers, and State political leaders and vibrant civil society coalitions that support agriculture.

And yet, despite New York’s rich agricultural assets and potential for economic growth, we also face tremendous challenges today—shrinking farmland due to economic and development pressures; rising climate challenges that impact agriculture from increased flooding to depleted soils; increasing numbers of retiring farmers without an adequate pipeline of successors; thinning agricultural labor supply; aspiring Black and Brown farmers who face overwhelming barriers to entry; decreasing capacity and inefficiencies in processing and distribution; hampered food system resilience in emergency contexts like COVID; and lack of healthy food access especially in marginalized communities.

Fortunately, New York has extraordinary leaders and networks working to address many of these specific challenges. We applaud, for example, recent efforts such as New York State Department of Agriculture and Markets’ (NYSDAM) [NYS Food Supply Resiliency Report](#) and the [Diversity and Equity Working Group Report](#), Grow NY’s [A Call for Innovation: New York’s Agrifood System](#), New York City’s [Good Food Purchasing Policy](#), and adoption of New York’s Climate Leadership and Community Protection Act (CLCPA).

But we also recognize that too often, efforts may be siloed, or even at times, competing—such as zero sum game debates raging between climate justice activists and cattle producers, or solar panel developers that will enhance green energy but may risk taking farmland out of production. In other cases, regional geographic boundaries created by the Regional Economic Development Councils (REDCs), while well-intentioned, can be part of the problem. For example, a regional effort to fill the need for more efficient food aggregation and distribution systems can cannibalize efforts in a neighboring region, creating potential to undermine both. With better State planning and coordination, we all win. *In other words, New York will benefit from planning holistically, weaving throughlines together.*

During our focus groups, the two most frequent comments or questions we fielded were—“we are so glad someone is finally doing this!” and “why CADE?”. These are a testimony to the desire by many to re-envision our food system, but also to understand CADE’s motivation and credibility in the space. Having worked for 30 years as a grassroots service provider supporting and responding to the struggles of small/mid-sized farms and supply/value chain businesses, we knew that their success rides not only on a savvy entrepreneur at the helm, but on recognizing and proactively addressing the systems and external weights bearing down on them. We believe we are at a historic moment for New York State. Heidi Mouillesseaux-Kunzman of Cornell University’s Department of Global Development, said it best:

New York currently has no state plan for agricultural and food systems development. This [Vision 2050] is an important first step in bringing stakeholders together to collaboratively conceptualize the future we want to see--a plan that supports livelihoods, food security, and care for our environment. Policy makers (and all New Yorkers) will benefit from a comprehensive, strategic plan to guide their work with clear benchmarks on how to get there. Having a plan is critical to getting where one wants to go quickly and effectively. Without a plan, New Yorkers might eventually get there, but it will likely take us much longer and, from a development perspective, the sooner, the better!

OUR GOAL

Our goal was to put forward an integrated, comprehensive Food System Vision for New York State by 2050—one that is profitable, regenerative, equitable, and healthy—aimed at setting the agenda for New York’s political leaders and informing the foundation of a State Plan. Ultimately, we aspire for a food system that accelerates sustainable agricultural economic development; creates green jobs throughout the farm and food sector; increases food security and healthy food access; advances equity, and mitigates climate change.

WHOSE VISION?

We knew it was mission critical to leverage the collective wisdom from all stakeholders with a footprint in the food system in our process so we could put forward a SHARED Vision that built ownership along the way. We used inclusive (though perhaps not perfect) processes to gather input, so that the vision would be representative. We believe that only together—with state and local government leaders, the private sector, farmers, civil society, and communities alike—can we realize accelerated economic growth in the agricultural sector, and create social, ecological, and public health multipliers.

WHAT WE HEARD!

We asked stakeholders across New York what they wanted for our food system's future and how it would be different from what we see today. Respondents from diverse political backgrounds and sectors offered a shared vision of an integrated New York State food system—

- with a level playing field that enables everyone to have a fair shot at starting and running a successful agribusiness that is ultimately profitable—for farms and supply chain businesses and their employees alike;
- that preserves farmland, keeps our water systems clean and rewards carbon sequestration practices that reduce greenhouse gas (GHG) emissions and mitigate climate change;
- that delivers valued, culturally appropriate, healthy, local food to all New Yorkers, not just the privileged; and
- that sustains local economies, human health, social justice, and ecological well-being.

Implicit in all of our conversations over 3 years was an understanding—that our decisions today affect our realities tomorrow, and that working together toward a united vision can accelerate our capacity to bring it into being.

WHAT IS A FOOD SYSTEM?

USDA describes local and regional food systems as “place-specific clusters of agricultural producers of all kinds—farmers, ranchers, fishers—along with consumers and institutions engaged in producing, processing, distributing, and selling foods.”

The Food and Agriculture Organization defines a sustainable food system as “a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. This means that it: is profitable throughout (economic sustainability); has broad-based benefits for society (social sustainability); and has a positive or neutral impact on the natural environment (environmental sustainability).”

Local food system producers offer wholesome food grown for taste and nutritional value, verses for long term storage and transportability. They contribute to a stable local economy, provide jobs, ecosystem services and help maintain rural character — essentially building the business and societal case for keeping land in agriculture versus other land uses not tied to maintaining and benefiting from healthy ecosystems.

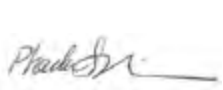
WHERE WE GO FROM HERE...

The time for change is now. Vision 2050 seeks to ignite New York's imagination of a stronger food system future and motivate the development of a concrete statewide plan to get us to a "new normal", premised on economic, social, ecological, and public health outcomes—and driven by the values of profitability, sustainability, equity, and health.

We invite New York's political leaders - Governor Hochul, our legislature, and NYSDAM - to use Vision 2050 as a compass for holistic, stakeholder-centered strategic planning, and as an informative guide to drive priorities in policy, programs, services, and resources over the next 5-10 years, to realize a new New York food system future by 2050.

Read on to learn about New York's Vision for 2050 and recommendations for getting there!

In solidarity,



Phoebe Schreiner
Executive Director



Erin Summerlee
Board Chair



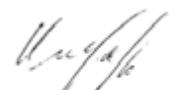
Carlena Ficano, PhD
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Carlos Lenin Valery, Jr.
Board Vice Chair



Patricia Dopazo
Board Secretary



Ken Jaffe, MD
Board Member

METHODOLOGY AND LIMITATIONS

WHOSE VISION? AND TO WHAT END?



By Kristen Park, Extension Associate, Dyson School of Applied Economics and Management, Cornell University; Rebecca Wasserman-Olin, Researcher, Dyson School of Applied Economics and Management, Cornell University; Carlena Ficano, PhD., CADE Board of Directors/ Treasurer and Professor of Economics at Hartwick College; Phoebe Schreiner, CADE Executive Director.”

Our aspiration was to put forward a Vision for New York’s food future, helping to inform a State Strategic Plan for agricultural and food system development. We endeavored to promote a Vision that was truly representative and informed by the voices of multiple stakeholders across the space, so it reflected the priorities of the many and built buy-in along the way. Our methodology was designed accordingly.

In developing the methodology, we also connected with representatives of New England Food Solutions who led the development of the multi-State “New England Food Vision” for 2060. We engaged one of the lead facilitators of the Vermont “Farm to Plate” Strategic Plan to learn about their good practices and lessons. We also referred to materials developed by the Rockefeller Foundation for their global Food System Vision Prize in designing our processes. Finally, the Vision 2050 Research Team (faculty and staff of Cornell University’s Dyson School, Cornell Small Farms Program, Columbia University, Hartwick College, and SUNY Cobleskill) helped to co-conceive and implement each aspect of the research, including developing the relevant data collection tools.

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We conducted a literature review, including scholarly research on core topics included in the Vision, more applied policy papers on neighboring state strategic plans, and issue-specific advocacy agendas or white papers aligned with Vision 2050—such as on food system equity/food justice/food sovereignty writings.

2) STATEWIDE FARMER SURVEY

The survey was designed for and fielded to current and future farmers (18+) in New York (including farm owners, farm workers, or aspiring farmers who plan to own a farm) by Cornell University researchers. The survey received 477 responses of which 322 representing 280 owner operators, 23 farm employees, and 19 aspiring farmers were complete. Respondents came from every county, production sector, and size of operation. The survey was promoted through statewide press, social media, newsletters, and farmer listservs.

RESPONDENT SOCIODEMOGRAPHIC CHARACTERISTICS: V2050 SURVEY VS NEW YORK CENSUS

	Gender			Race/Ethnicity			Age			Years Farming		Farm Income		
	M	F	OTH	W	NW	NR	18-35	36-55	56+	<10 yrs	10+ yrs	<\$10K	\$10-\$49K	>\$50K
V2050 Survey	50%	45%	5%	84%	6%	11%	19%	31%	51%	30%	68%	23%	31%	46%
Census of Ag-NY	61%	37%	–	97%	1%	–	10%	31%	57%	27%	72%	50%	23%	27%

Source: Authors calculations from survey results and USDA National Agricultural Statistics Service Census of Agriculture, 2017, selected state tables. Socio-demographic categories: M=male, F=female, OTH=non-binary or non-response; W=white, NW=nonwhite, NR=non-response. Percentages on V2050 survey may not add to 100% due to rounding

The survey asked respondents to share their perspective on the “top priorities for enhancing New York’s food production system to make it more resilient, profitable, equitable, and healthy by 2050.” Farmers were asked to identify priorities within each of 6 categories which include supply chains and infrastructure, the health of our population, business development and management, new and beginning farmer development, market development, and stewardship of our natural resources. After selecting priorities, survey respondents were also asked to 1) provide any examples of current efforts and/or 2) identify barriers to advancing their priorities via open ended comment.

See Appendices for the survey tool. To request access to the summary of survey results, please contact Phoebe Schreiner at phoebe@cadefarms.org.

3) MULTI-SECTOR FOCUS GROUPS

We gathered qualitative data through 18 digital focus groups of 3-9 people per group for a total of 95 participants from an invitation list of 244 individuals. Representatives included⁴ agricultural producers (2 dairy producers and 5 other producers), commodity associations (3), agricultural agencies (18), meat processors (2), food hub operators (6), food business owners (2), food system buyers (3), nutritionists (2), land trust representatives (1), labor experts (1), agricultural researchers (8), fishery experts (2), food policy experts (7), climate experts (4), economic development specialists (5), funders and investors (5), racial justice and equity leaders (6), political leaders (3), and even teenagers who aspire to become future food system leaders and farmers (10).

Focus group invitations were promoted through digital and print press, social media, email newsletters of various food system agencies/networks, as well as through open calls in the focus groups themselves for additional recommendations on stakeholders to be invited. Each focus group was designed to include a mix of stakeholders so that the process itself would break down silos, build greater cross-sector dialogue, enhance shared alignment, and help identify points of tension.



Left: Youth focus group, hosted December 23, 2021, with teen representatives from Community Food Advocates, Vines, and Future Farmers of America.

⁴ Individuals included in only one category, although many had roles overlapping multiple categories.

Focus group discussion around the following motivating questions were facilitated by Curtis Ogden, Senior Associate of the Interaction Institute for Social Change (MA), who co-facilitated the development of the Food Solutions New England network:

- Imagine it's the year 2050 and we live in an equitable, resilient, profitable, and healthy food system. What would that look like? What would be different than what we see and experience right now (focus on one feature)?
- What do you see as opportunities to get there? Where should we be investing efforts?
- What significant barriers do you see/ experience to advancing the 2050 vision + any thoughts about how to address them?
- How might we better connect, align and coordinate AND SUSTAIN efforts?
- Who else should we include in the stakeholder engagement?
- How can we get others more excited about this effort?
- How can we improve this roundtable experience?

See Appendices for the complete list of stakeholders invited and those who participated. To request access to the complete roundtable notes, please contact Phoebe Schreiner at phoebe@cadefarms.org.

4) CASE STUDIES

To create sector specific case studies on beef, dried beans, and apples, as well as county case studies, the research team conducted literature reviews, secondary research, key informant interviews, and, in the case of county case studies, primary research methods including surveys and focus groups.

We recognize our methodology was by no means perfect. Our limited human and financial resources constrained the scope of work, and we had to adapt to the unexpected COVID19 pandemic which hampered our engagement strategies. Further, we acknowledge that CADE does not have a long time track record as a statewide convenor, and that earlier and more public outreach may have drawn more stakeholders into our discussions. We made particular efforts to be as inclusive as possible in our outreach and draw on what written materials we could access in our literature review, but we acknowledge that not all stakeholders had capacity or commitment to engage. Further, some efforts were underway during a parallel timeframe to inform state planning such as the [Western NY Food System Initiative](#) and development of the [Diversity and Racial Equity Working Group Report](#). With respect to the latter, with expressed permission of four members of the Working Group, we cross referenced their recommendations and quoted from their document with attribution to compliment and align agendas.



CURRENT SNAPSHOT OF NEW YORK STATE FARM & FOOD SYSTEM

WHERE ARE WE NOW?

Snapshot Part I: New York by the Numbers

A Review of the Literature

By Kristen Park, Extension Associate, Dyson School of Applied Economics and Management, Cornell University; Miguel Gomez, PhD., Robert G. Tobin Professor, Dyson School of Applied Economics and Management, Cornell University.

With 34.7% of the population within the region, New York has 26% of the region's farms, 36.6% of the land in farms, and 31.6% of the market value sold of the Northeast states.

As one of the largest and more productive states in the Northeast,⁵ New York plays a large regional food role that is second only to Pennsylvania in terms of production value. New York, however, has a disproportionately larger population compared to its farmland resources and food manufacturing facilities that constrains food self-sufficiency. In light of the growing population and the concurrent pressures on agriculture: narrow profit margins, competing land use demands, and climate change, research demonstrates New York's need for a strategy to increase its agricultural food production to feed in-state consumers, export foods/commodities that it produces competitively and import those in which it does not produce competitively.

1.1 OUR OUTPUT – NEW YORK AGRICULTURAL FOOD PRODUCTION

New York State is fortunate to produce many different commodities, having farms that produce dairy, fruits and vegetables, field crops, livestock products, wine grapes, and maple syrup, and more.

Several farm sectors are experiencing significant growth in sales, including corn, soybeans, wine grapes, and maple syrup, while others are experiencing stagnating production or even production losses, such as dairy, aquaculture, juice grapes, potatoes, and cabbages. New York growers are in danger of not being able to respond to changing consumer interests and society's food needs.

5 New York is part of the Northeast, defined here to include New England, New York, Pennsylvania, and New Jersey.

Table 1. Production of Selected New York Food Commodities

	2007	2012	2017	% change
Industry:	Market value, \$1,000			
Dairy	2,377,987	2,417,398	2,528,282	6.3
Livestock & Poultry	407,686	672,253	686,030	68.3
Aquaculture	20,417	18,036	13,187	-35.4
Fruit	363,295	307,644	399,803	10.0
Vegetables, incl potatoes, not incl greenhouse	338,037	364,135	378,658	12.0
Crops produced in greenhouses, under cover	17,944	29,496	41,075	128.9
Grains, dry beans, oilseeds	315,647	855,891	571,706	81.1
Maple syrup	7,504	13,520	25,975	246.1
Industry:	Production, million lbs (unless otherwise stated)			
Dairy	12,071	13,164	14,777	22.4
Fruit	1,716	9,536	1,679	-2.2
Vegetables, incl potatoes, not incl greenhouse	2,404	2041	1,527	-36.51
Maple syrup, 1,000 gallons	224	360	760	239.3
Industry:	Farms and Land in production, acres			
Dairy	5,683	5,427	4,648	-18.2
Livestock & Poultry	9,481	9,741	10,674	12.6
Aquaculture	127	90	105	-17.3
Fruit	2,686	2,629	2,666	-0.7
Vegetables, incl potatoes, not incl greenhouse	3,192	3,467	3,544	11.02

	2007	2012	2017	% change
Industry:	Farms			
Crops produced in greenhouses, under cover	221	506	769	248.0
Grains, dry beans, oilseeds	5,249	7,938	6,213	18.4
Maple syrup	1,313	1,460	1,675	27.6
Industry:	Land in production, acres (unless otherwise stated)			
Fruit	100,035	93,661	89,763	-10.3
Vegetables, incl potatoes, not incl greenhouse	160,596	135,997	124,859	-22.31
Grains, dry beans, oilseeds, acres planted	2,010	2,150	1,960	-2.5
Maple syrup, # of taps	1,342,165	2,064,864	2,749,512	104.9

Source: USDA, Census of Agriculture, various years

1.1.1 NEW YORK PRODUCTION TRENDS VS CONSUMPTION PATTERNS

Some very large and important New York agricultural commodities have been declining in production and sales, a reaction to larger U.S. consumption trends. Per capita consumption of fluid milk has been declining for decades although consumption of many dairy products, such as cheeses and yogurt, has been growing. In addition, grape juice consumption declined 30.0% from 2007-2017.

Despite the decline in per capita consumption of fluid milk and the milk price volatility at the farm level, milk production in New York increased by 22.4% between 2007-2017. Yet that production increase only yielded an increase in farm market value of milk of 6.3%, significantly less than food inflation and inflation overall. In general, farmers receive a higher farm price when milk is used for fluid milk as opposed to other dairy products, therefore, the decreased use for fluid milk and the increased use for dairy products has negatively impacted farm milk profitability. The number of dairy farms decreased by 18.2% during this time.



Between 2007 and 2017, per capita consumption of grape juice decreased 30%. To bolster the New York grape juice industry impacted by this trend, a Concord grape summit led by the governor's office in 2018 resulted in 1) promotions to increase consumption of New York grape juice in schools⁶ and 2) development of a grape juice ingredient for New York winemakers made from Concord grapes.⁷ In addition, New York's Vineyard Improvement Program is cost-sharing the removal of under-performing concord vines and replanting with other grapes or agricultural crops.⁸



6 New York State Department of Agriculture and Markets. (2019). (rep.). 2019 Annual Report (pp. 1-37).

7 Welch's Global Ingredients Group. (2021, February 18). Welch's launches 'game-changing' ingredients for New York winemakers. New York Wine and Grape Foundation. Retrieved from <https://newyorkwines.org/welchs-launches-game-changing-ingredients-for-new-york-winemakers/>

8 New York State Department of Agriculture and Markets. (2019). (rep.). 2019 Annual Report (pp. 1-37).

Some New York industries have had declines despite growing consumption. Nutritional experts agree that U.S. consumers should improve their diet by consuming more fruits and vegetables. And U.S. consumption of fresh fruits and vegetables has slowly been increasing although consumption of processed fruits and vegetables has been declining. In New York, fruit production has remained level but value has increased less than the rate of inflation. Vegetable production has dropped 36% and value has also increased less than the rate of inflation. These trends suggest fruit and vegetable farms are not incurring the necessary profits to increase production.

If our population grows as anticipated to the year 2050 and if consumers increase their consumption of fruits and vegetables, the markets for fruits and vegetables, fresh and processed, would increase substantially. Yet New York would have lost valuable infrastructure necessary to maintain its fruit and vegetable growers. Without farm profits, growers will move into other areas of agriculture or leave farming altogether.

Although per capita consumption of fish and seafood in the United States remained constant 2007-2017, farmed aquaculture market value in New York declined 57% in 2007-2017.⁹

Most red meat per capita consumption in the United States has been slowly declining with a concurrent increase in chicken consumption. Production in New York, however, has been stable with little change in pounds slaughtered for beef consumption. Livestock production other than dairy and beef primarily includes poultry, swine, sheep, and goats. Numbers and market values of specialty livestock and their products are small but growing. Most of the livestock farms are relatively small and many sell through direct marketing channels. Farms have received good prices for corn and soybeans and acreage and market sales increased from 2007-2017. Sales for all grains, oilseeds, dry beans, and dry peas in New York increased 81% 2007-2017.

9 United States Department and Agriculture. Census of Agriculture, various years. *National Agricultural Statistics Service*

1.1.2 PRODUCTION OPPORTUNITIES

1.1.2.1 LIVESTOCK

Farmers indicate that New York's proximity to urban markets is a major advantage for livestock production. Additional advantages include a diverse population to support niche and specialty livestock, good transportation infrastructure, emerging marketing cooperatives, support for local meat marketing, research and education infrastructure, great agricultural infrastructure, land suitable for grazing, reasonable land costs, and access to fresh water.¹⁰

Important priorities from livestock farmers include insufficient slaughter and cut-up capacity,¹¹ advanced grazing and forage systems, herd/flock nutrition, health and biosecurity, breeding and genetics, market channels and value-added opportunities, and better production and business management.



¹⁰ Rangarajan, A. et al. (2018). Securing the Future of the New York State Livestock Industry (pp. 1–18). Cornell Small Farms Program.

¹¹ Rangarajan, A. et al. (2018). Securing the Future of the New York State Livestock Industry (pp. 1–18).

1.1.2.2 GRAINS, OILSEEDS, DRY BEANS, AND DRY PEAS

Farms growing grains or edible legumes often grow in conjunction with a variety of other commodities, including dairy, livestock, hay, or vegetables. The largest crop by value is corn (\$398 million) followed by soybeans (\$116 million) and wheat (\$33 million) in 2017. The dry bean industry is the subject of one of the three subject profiles contained in this report and is discussed separately there.

Although interest in small grains is growing, it is primarily from small farms using small grains as a rotation crop.

GrowNYC provides tools and resources that support small grain production primarily to support its market vendors' ability to sell bakery products using locally-sourced grains.¹²

New York enacted the Farm Brewery Law that includes requirements for licensed "farm breweries" to use a portion of ingredients produced within New York. Hop and Barley Evaluation and Inspection Research supports new varieties and methods for this growing beverage industry. Harvest New York of Cornell Cooperative Extension reported several barriers to improving the brewery supply chain. Matching quantity and quality is a concern for growers as well as breweries.¹³

1.1.2.3 MAPLE PRODUCTS

The New York State Maple Producers Association has invested in product development which has yielded several value-added products, including maple sugar, maple cotton candy, maple cream, maple soft drink, and others. A new product currently being developed is a maple chocolate.¹⁴ Cornell Maple Program has helped to develop new maple products to grow the \$30 million maple industry in New York State and boost rural economies.¹⁵

Value-added products have kept prices of syrup firm despite large increases in production using tubing and vacuum systems.

1.1.2.4 CONTROLLED ENVIRONMENT AGRICULTURE

Many New York farms engage in practices to protect sensitive crops and to lengthen the growing season. These practices can include protective hoop houses where crops are always covered to controlled environment agriculture (CEA) in greenhouses. New York City also has a number of urban greenhouses.

Investments in CEA are growing rapidly in number and in scale in the U.S. and globally. Although CEAs are more water efficient and produce on a smaller land footprint, not all CEAs are as carbon-saving as others. For example, greenhouse production costs of lettuce and leafy greens are currently significantly more than field production.

12 GrowNYC. (2022). GrowNYC grains. Retrieved from <https://www.grownyc.org/grains>.

13 Cornell University Cooperative Extension. (2017). New York State Brewery Supply Chain Analysis (Vol. 2, pp. 1–28). Harvest New York.

14 Ramanujan, K. (2021, March 25). NY Maple Producers Tap Cornell experts to diversify. *Cornell Chronicle*. Retrieved from <https://news.cornell.edu/stories/2021/03/ny-maple-producers-tap-cornell-experts-diversify>

15 Ramanujan, K. (2021, March 25). NY Maple Producers Tap Cornell experts to diversify. *Cornell Chronicle*.

According to Nicholson, et al. 2019, greenhouse lettuce production on the East Coast is still not cost competitive with California lettuce shipped east. Carbon-emissions are higher in greenhouse lettuce production in the Northeast compared to field production on the West Coast due to high energy consumption in the Northeast.¹⁶ In contrast, tomato CEA production costs are competitive with field production.¹⁷

The majority of CEA investments in the Northeast appear to be in leafy greens despite the fact that greenhouses for leafy greens are more expensive to build compared to tomato, cucumber and pepper greenhouses.¹⁸ Interests in food safety in leafy greens, improving supply chain resilience in areas outside of California, and a lack of competition from Canada might be driving factors.¹⁹

Future developments in CEA include berry production. New York berry growers have not been able to capture benefits from an increasing demand for berries. A short growing season and soils that are not well suited to some berries result in most berries being imported from other states or countries. A potential solution for New York growers is to invest in protected environments for berry production. The U.K. overcomes some of their climate disadvantages and produces an estimated 85% of its berries under protection.²⁰ In New York, Mastronardi, one of the largest greenhouse vegetable producers in North America, recently started producing greenhouse strawberries.

Research has also been underway to determine whether and how current growing conditions in CEA affect the nutrient values of these crops versus those grown under conventional and organic farming conditions.



16 Nicholson, C.F. K. Harbick, M. I. Gómez and N. S. Mattson (2019). An Economic and Environmental Comparison of Conventional and Controlled Environment Agriculture (CEA) Supply Chains for Leaf Lettuce to US Cities. In Aktas, E. and Bourlakis, M. (Eds) Food Supply Chains in Cities: Modern Tools for Circularity and Sustainability

17 Tasgal, P. (2021, January 11). Behind the Greens: Why hydroponic lettuce is not competitive yet. Ag Funder News. Retrieved from <https://agfundernews.com/behind-the-greens-why-hydroponic-lettuce-is-not-competitive-yet.html>

18 Tasgal, P. (2021, August 10). Why lettuce greenhouse sector's growth is focused in the U.S. The Packer. Retrieved from <https://www.thepacker.com/opinion/why-lettuce-greenhouse-sectors-growth-focused-us>

19 Krishnan, S. (2020, December 25). Controlled environment agriculture: Growing beyond the hype. Agritecture. Retrieved from <https://www.agritecture.com/blog/2020/12/2/controlled-environment-agriculture-growing-beyond-the-hype>

20 Allmanhall. (2021, December 17). Overview of the strawberry industry. Retrieved from <https://allmanhall.co.uk/blog/overview-of-the-strawberry-industry-in-the-uk>

1.1.2.5 ORGANIC AGRICULTURE

The number of certified organic farms in New York has been growing and these farms produced agricultural commodities on over 323,081 acres of farmland in 2019.²¹

Despite New York's organic sales and acreage, organic production represents only 4% of total farms and 5% of total acreage.

Eggs, milk, field crops, vegetables, and maple syrup have driven most of the growth in organic sales. Milk alone contributes 41% of organic farm sales in 2019. Livestock sales represents a very small share of organic sales, which declined 2014-2019.



21 DiNapoli, T. (2019). A Profile of Agriculture in New York State. (pp. 1–12). Office of the New York State Comptroller.

1.1.2.6 URBAN AGRICULTURE

Urban farms contribute economic, nutritional, and cultural resources to their communities.

The many forms of urban agriculture can be categorized as either commercial or community-based.²² Commercial urban farms often act as social enterprises where production is paired with education, workforce training, or other social justice programming.²³ Regulation of farming activities in urban areas is a primary concern and limits several production factors, such as the ability to raise livestock, types and locations of temporary and permanent structures, water access, and on-farm sales.

Urban agriculture was one of the spaces where early discussions of racial equity in agriculture took place, and it is still a locus of racial justice work in New York farming (see for example [Op-ed: How Urban Agriculture Can Fight Racism in the Food System](#) | Civil Eats)



²² Hodgson, K., Caton Campbell, M., & Bailkey, M. (2011). *Urban agriculture: Growing healthy, sustainable places*. Chicago, IL: American Planning Association, Planning Advisory Service

²³ Vitiello, D. and Wolf-Powers, L. (2014). Growing food to grow cities: The potential of agriculture for economic and community development in the urban United States. *Community Development Journal*, 49(4), 508-523. doi:10.1093/cdj/bst087

1.2 OUR FOOD SYSTEM CHANNELS

New York farms sell the majority of their products to manufacturers, wholesalers (including food hubs), retailers such as grocery stores, specialty retailers, (butcher shops, produce markets, etc.), farm stores, restaurants, hospitals, schools, and others. They can also sell directly to consumers through farm stands, farmers markets, online websites, CSAs, and others. Large farms with sales staff or sales agents have the volume to be able to sell to larger retailers. Many smaller to medium size farms find opportunities to sell to wholesalers, smaller specialty retailers or farm stores or sell directly to the consumer. Each buyer type may need different product specifications, services, and delivery schedules. United States consumers spend roughly 50% of their food expenditures on food eaten at home and 50% on food eaten away from home. However, food services charge a larger gross margin than do retailers to pay for additional food preparation, labor, and services. Therefore, people consume roughly 70-75% of food by volume at home and 25-30% outside the home at restaurants, schools, hospitals, institutions, hotels and other accommodations, etc. Of the 70-75% of food consumed at home, about 80% is purchased from grocery stores, warehouse clubs, and supercenters.

Of the 25-30% of food consumed outside the home, about 80% is consumed through food services and drinking establishments, primarily restaurants.

Table 2. Where Consumers Get Their Food, by volume

	% of food consumed by volume
Grocery stores, warehouse clubs and supercenters	56%
Restaurants	24%
Other retailers, direct from the farm, donations	14%
Institutions, accommodations, etc	6%
Total	100%

Source: Cornell estimates

1.2.1 PROCESSORS AND MANUFACTURERS – POST FARMGATE INFRASTRUCTURE

Post farm-gate activities are extremely important for most farm products. Almost all farm products need additional handling or processing before becoming edible or saleable to consumers, and many New York farm products for human consumption, including grains for flours or beverages, dry beans, livestock meat, raw milk, and fruits and vegetables for juice, canning or freezing are sold to processors or manufacturers. Importantly, processing can also preserve seasonal production for future consumption.

New York food processors and manufacturers are numerous, although a number of plant closures a decade ago reduced that number, but they are less than half the size of the U.S. average facility by sales volume. Several industries cite a need for improved post-harvest infrastructure, product handling, and/or processing in order to find markets for their products.

The dairy processing industry is the largest food processing industry with over twice the sales as the next largest, bakeries and tortillas. The dairy processing industry is closely aligned and integrated with the dairy production community and buys raw ingredients, primarily fluid milk, mostly within 240 miles from the plants. Almost all milk produced on dairy farms in New York must be pasteurized and is, therefore, sold to a handler or processor. The exception being some milk that is processed on the farm. One reason dairy farms have survived is the increased consumption of many dairy products, such as cheese and yogurt. However, farmers receive a lower farm price when milk is used for dairy products as opposed to fluid milk.

- Fluid milk is roughly 22% of the total milk equivalent used for all dairy products. This is down from 30% in 2007
- The milk equivalent needed to make dairy products increased from 429.6 to 510.9 pounds per capita, an increase of 18.9%
- It took roughly 5 pounds of milk-fat milk equivalents to make 1 pound of processed product.²⁴

Beyond dairy, important priorities for livestock farmers include sufficient slaughter and cut-up capacity,²⁵ and a needs assessment for the New York aquaculture industry in 2021 included priorities in infrastructure development in logistics, cold storage, processing, and feed.²⁶ Seafood wild capture is not included under aquaculture, but a 2017 roundtable identified similar needs.²⁷

In the apple industry, farms have found greater profits producing apples for fresh market consumption. This has led some apple processors searching for enough apples for their plants.

Other needs often heard from growers include innovative logistics to handle small amounts of product from dispersed geographies. Small to medium-size farms need help assembling products so they can be efficiently handled, graded, packaged, and transported to buyers.

In general, manufacturing industries with declining sales between 2012-2017 may not be positioned to purchase as many New York-grown products as they have in the past. These industries include fruit and vegetable, meat slaughter and processing, and soft drink manufacturers. Similar to dairy, fruit and vegetable processors buy raw ingredients from farms close to the plant, as most products for canning and freezing start to deteriorate within hours of being harvested.

Improvements in access to raw ingredients, transportation, cold storage, and other supply chain factors may improve New York processors' ability to compete.

1.2.2 WHOLESALERS

Wholesalers purchase, store, break apart shipments and consolidate products for customer orders. They also increasingly perform value-added functions that are well suited to being performed close to market demand, such as break-bulk and repackaging products, cut up fruits and salads, and specialty cuts for foodservice. Most wholesalers are located in urban areas to serve a dense population of customers; therefore, farms and manufacturers selling products to wholesalers usually have to arrange transportation from the farm or plant to the wholesaler.

24 United States Department of Agriculture. (2020, January). State Data. Economic Research Service. Retrieved from <https://data.nal.usda.gov/dataset/food-availability-capita-data-system>

25 United States Department of Agriculture. (2020, January). State Data. Economic Research Service.

26 Forbes, E. (2021). New York Aquaculture Needs Assessment Report 2021 (pp. 1–14). *Sea Grant New York*

27 Ciaramella, M. NY Seafood Roundtable: NY Sea Grant Facilitate Activity Summary and Full Report. *Sea Grant New York*

Industries where numbers of establishments are declining but sales are increasing may be experiencing consolidation, such as in some New York specialty wholesale industries. New York wholesalers experiencing sales growth below or just equal to the rate of inflation were in dairy, poultry, fresh fruit and vegetable, “other” grocery products.

1.2.3 SPECIALIZED WHOLESALERS – FOOD HUBS

Food hubs are specialized wholesalers that have the obligation to retain and/or maintain the local or regional identity of its food products and to market the products in a manner that benefits their farm clients. They are generally much smaller than the average wholesaler and purchase from small to medium size farms. Food hubs have struggled to breakeven. They tend to provide many product and post-harvest services, education, and training to their farmer base in addition to their sales and marketing services.

Factors that have helped food hubs be successful are expertise in logistics and close proximity to a critical number of suppliers (farms) and demand (urban areas).²⁸

1.2.4 RETAIL

Grocery retailers and warehouses and supercenters sell the majority of food that consumers eat. But New York growers frequently are not large enough to sell directly to these retailers.

The retailers have requirements for delivery to their distribution centers as well as requirements for product specifications. Retailers use price as a major competitive lever against each other, and consumers reward those retailers with low prices. And as retailers grow, delivery and product requirements will continue. Technology companies are developing online platforms to enable grocery wholesalers and retailers to increase their purchases of local brands which will transport directly to retailers.²⁹



28 Brannen, S. (2013). Hudson Valley Food Hubs Initiative: Research Findings and Recommendations. (pp. 1–184). *The New World Foundation: Local Economies Project*.

29 Camron, V. (2021, March 4). Private label, e-commerce Drive UNFI's record Q2 Net Sales. *Supermarket News*. Retrieved from <https://www.supermarket-news.com/retail-financial/private-label-e-commerce-drive-unfi-s-record-q2-net-sales>

While these platforms might help facilitate supplier-buyer connections, logistics of product assembly, quality assurance, and trucking will be needed and provided by the supplier.

In New York, the number of grocery stores rose just over 25% between 2007 and 2017, while the number of warehouses and supercenters rose 163%. Store sales increased about 35% from grocery stores and 109% from warehouses and supercenters respectively. Sales on a “per store basis” increased 7% and decreased -20% respectively.

1.2.5 FARM SALES DIRECT TO CONSUMERS AND INSTITUTIONS

Direct-to-consumer sales increased 187.5% between 2007-2017 according to the census.³⁰ The number of farms reporting direct sales were up 6.7% since 2007 but that number declined from 2012 to 2017. Some reasons for this may be direct-marketing farms grew larger, with some farms now selling more wholesale, or fewer farms are selling direct.

According to the Farmers Market Federation of New York, farmers and farmers market managers have reported declining participation and sales. Oversaturation of farmers markets is one possibility. A recent study suggests that consumers perceive farmers markets to be more expensive than retail.³¹

In 2020 during the COVID-19 pandemic, demand for product from local farms, especially for meat, increased. Farms selling direct to the consumer increased their presence on the internet and increased their online selling capabilities. The addition of online ordering and sales fostered by the pandemic may create a radical change in direct to consumer sales.

Logistics with product quality and supply and distribution will still need to be met. Also in 2020, the Nourish NY program was started that reimbursed emergency food providers for their purchases of locally produced foods. The program also developed communications between farms with excess supply and food banks. The Nourish NY program received overwhelming support from the grower community and the emergency food providers and the program was signed into law in November 2021.

1.2.6 FARM-TO-SCHOOL/FARM-TO-INSTITUTIONS

Currently, about 40% of school districts are participating in New York State’s Farm-to-School Program which provides grants and other initiatives to help schools purchase products grown in New York. The New York 30% Lunch Initiative also subsidizes school lunches up to \$0.25 per meal for schools that purchased a minimum of 30% of their ingredients from New York farms or products containing a minimum of 51% New York-grown ingredients.

In 2020, these New York school districts spent \$2,442,060 for New York foods for school lunch programs.³²

A report in 2020 by the American Farmland Trust about the Farm-to-School program described the following challenges schools face in using local foods:³³

30 United States Department of Agriculture. (2019). (rep.). 2017 Census of Agriculture. (Vol. 1, pp. 1-820). *National Agriculture Statistic Service*.

31 Schmit, T. M., Roberta M. Severson, Jesse Strzok, and Jose Barros. (2018). Economic Contributions of the Apple Industry Supply Chain in New York State. Extension Bulletin EB 2018-03, Charles H. Dyson School and Applied Economics and Management. *Cornell University*.

32 Cornell University Cooperative Extension. (2020). 2020 Year in Review. (pp. 1-12). *Harvest New York*

33 Levy, S., McPeters, K. (2020). Growing Opportunity for Farm to School. (pp. 1-48). *American Farmland Trust*

COST

- New York's peak growing season doesn't coincide with the school year
- Schools' main vendors do not offer enough New York food products
- Farmers won't deliver to their school
- Challenges navigating procurement regulations that favor "least cost" options

FARMERS ALSO FACE CHALLENGES IN TRYING TO SELL TO SCHOOLS:³⁴

- they do not see announcements from schools requesting bids
- growing season for many products is often when schools are out of session
- complying with food safety standards may be onerous for some smaller producers.

The Farm-to-School program has strong leadership with networks of extension educators, nutrition groups and farm and ag organizations to work with school districts, farmers, and distributors to overcome the challenges facing school districts and producers.



1.3 OUR PRODUCTIVE RESOURCES THAT FEED THE SUPPLY CHAIN –

Two trends stand out when looking at New York's productive resources, the loss of farmland and the increase in the number of producers. Even as New York experiences a decline in the quantity of its farmland in production, producers are stepping up and are an important resource that will shape the future of New York agriculture. It is crucial that we nourish the state's resources and build profitable capacity to fully and sustainably support all components of the food system.

34 DiNapoli, T. (2016). Locally Grown: Farm-to-School Programs in New York State. (pp. 1–30). *Office of the New York State Comptroller*

Table 3. Productivity Snapshot of New York State

	2007	2012	2017	% chg
Farms	36,352	35,537	33,438	-8.0
# Producers: all producers	56,865	55,970	57,865	1.8
Land in farms	7,174,743	7,183,576	6,866,171	-4.3
Avg farm size	197	202	205	4.1
Total cropland¹	4,314,954	4,217,041	4,291,388	-0.5
Market value of ag products sold (\$1,000)	4,418,634	5,415,125	5,369,212	21.5
Avg market value of products sold per farm	121,551	152,380	160,572	32.1

¹ includes harvested cropland and other pasture and grazing land and other cropland

Source: USDA, Agriculture Census, multiple years

1.3.1 LOSS OF FARMLAND.

New York State has experienced a loss of production and capacity in the last 10 years.

Loss of land in farms was -4.3% or approximately 300,000 acres from 2007 to 2017, and farmland continues to be converted for development.

New York ranks 18th out of the 50 states in the percent of acres converted to development between 2001 and 2016,³⁵ although 5 out of the 9 Northeast states have even greater rates of farmland loss. In addition, output, measured by market value of production and adjusted for inflation, was stagnant between 2007-2017.

Therefore, New York State should explore policies, including improved incentives, to help increase food production and associated farm profitability, in turn improving the business case for land remaining in agriculture versus conversion to other land uses. Such policies may be targeted toward improving productivity on existing farm fields and pastures and advancing intensive farming methods such as controlled environment agriculture (CEA) to strategically supplement imports, domestic and international, to feed our population.

1.3.2 A GROWING NUMBER OF NEW PRODUCERS

The number of producers in New York has increased by 2% in the last 10 years (see Table 3). The increase in number includes new full-time farmers as well as some who maintain other, primary occupations outside of the farm. Many of those who have joined the farming sector will be those farming in 2050, as older farmers retire and younger generations of farming families leave farming.

Table 4. New and Beginning Farmers in New York State

	Total		New and beginning principal producer		% New and beginning	
EDR	Farms	Farm Acreage	Farms	Farm acreage	% Farms	% Farm acreage
NY State	33,438	6,866,171	8,406	1,080,501	25.1	15.7
Southern Tier	6,239	1,274,647	1,549	214,818	24.8	16.9
Finger Lakes	4,349	1,040,769	1,520	208,410	35.0	20.0
North Country	4,179	908,402	1,124	194,481	26.9	21.4
Capital	3,405	886,064	774	77,991	22.7	8.8
Western	4,603	834,927	1,101	115,464	23.9	13.8
Central	3,304	757,472	816	102,223	24.7	13.5
Mohawk	2,889	466,010	741	88,414	25.6	19.0
Mid-Hudson	2,246	317,039	608	73,641	27.1	23.2
Long Island	592	30,942	150	5,009	25.3	16.2
New York City	36	34	23	50	63.9	147.1

Source: USDA, 2017 Census of Agriculture

1.4 OUR CONSUMPTION PATTERNS

1.4.1 HEALTHY AND NUTRITIOUS FOOD

As measured by the USDA Economic Research Service, food insecurity in New York has declined from 12.5% of households in 2014-2016 to 10.5% in 2018-2020.³⁶ The recent COVID19 pandemic was a shock to food assistance providers, but it also revealed opportunities to create connections between food producers who were diverting food from some marketing channels and food assistance providers who were looking for additional suppliers to help supply an increase in demand.

1.4.2 CURRENT INTAKES VS PEOPLE AND PLANETARY HEALTHY DIET

A landmark project funded by the renowned, international medical journal The Lancet assessed the impact of various food production sectors on sustainability. The project determined that animal products have major impacts on greenhouse gas emissions, fruits and vegetables have major impacts on nitrogen and phosphorus applications, while staples have moderate effects on cropland and freshwater uses. The project then developed recommended diets to reconcile consumer nutrient needs and planetary sustainability needs.³⁷

Based on these diets, the project reported that G20 countries, of which the U.S. is one, consume more than 500% of the recommended red meat intake; over 200% of recommended sugar; over 200% of recommended eggs; and almost 150% more of recommended dairy foods. Consumption of nuts, legumes, fruit, vegetables, and fish are less than recommended amounts.

Consumer diets have proven difficult to change. USDA dietary recommendations have been encouraging increased consumption of fruit and vegetables, nuts, fish, and whole grains, and decreased consumption of red meats, dairy fats, and sugars, but efforts have been largely futile.

1.4.3 INDUSTRY NEEDS AND SELF RELIANCE

Studies have estimated the regional self-reliance of food crops in the Northeast, of which New York is a part (Griffin, et al. 2015, Griffin, et al. 2018). Griffin, et al. in 2015 define the ratio of plant-based foods produced in the study region to plant-based foods consumed as regional self-reliance. Their regional self-reliance estimate for the Northeast is 16% for plant-based foods and 36% for animal-based foods (Table 5).³⁸

36 United States Department of Agriculture. (2022, January). State Data. *Economic Research Service*. Retrieved from <https://data.ers.usda.gov/reports.aspx?StateFIPS=36&StateName=New+York&ID=17854>

37 Willett, W., et al. (2019). Food in the anthropocene: The eat-lancet commission on healthy diets from sustainable food systems. *The Lancet*, 393(10170), 447–492. [https://doi.org/10.1016/s0140-6736\(18\)31788-4](https://doi.org/10.1016/s0140-6736(18)31788-4)

38 Griffin, T., Conrad, Z., Peters, C., Ridberg, R., & Perry, E. T. (2015). The regional self- sufficiency of the Northeast food system. *Renewable Agriculture and Food Systems*, 30(4), 349–363. <https://doi.org/10.1017/S1742170514000027>

Table 5. Mean Production and Consumption of Foods in the Northeast Region (2001-2009)

Self-reliance category	Mean regional production (10⁶ kg)	Mean regional consumption (10⁶ kg)	Mean regional self-reliance (%)¹
Fruit	1,389	7,622	18
Vegetables	2,953	11,387	26
Food grains	115	14,627	7.9
Pulses ²	15	212	7.2
Oils ³	1,396	14,398	9.7
Sweeteners ⁴	290	3,752	7.7
Total Plant Based Products	11,535	71,0052	16
Dairy ⁵	13,043	17,079	76
Pork	388	2,552	15
Eggs ⁶	676	946	71
Shellfish	166	372	45
Turkey	187	622	30
Chicken	1,107	3,827	29
Fish	229	988	23
Lamb	12	69	17
Beef	717	4,426	16
Total Animal Based Products	1,836	3,431	36

1 Percent of regional consumption met by regional production, (production/consumption)*100

2 Dry beans and peas.

3 Corn, soybean and canola.

4 High-fructose corn syrup, glucose, honey, cane and beet sugar, maple syrup, molasses, refiners' syrup, sugarcane syrup, and sorgo.

5 Fluid milk equivalent

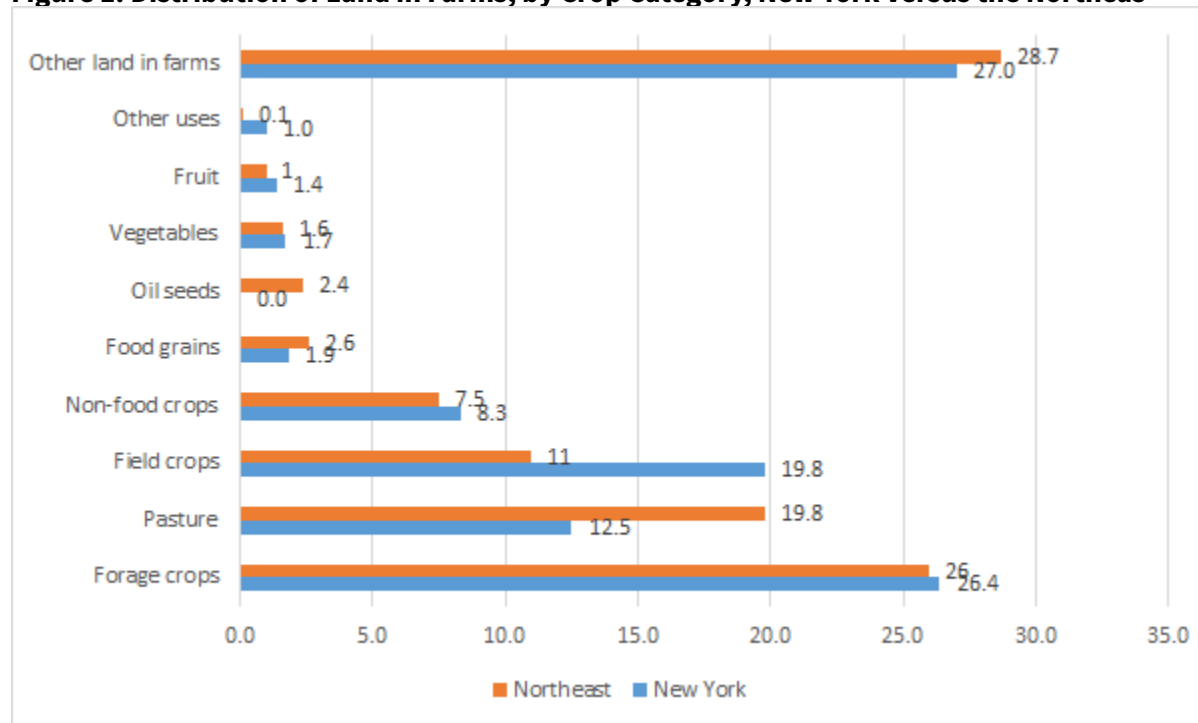
6 Chicken eggs/

Griffin, et al. 2014

Griffin, et al. (2018) also describe the Northeast's farmland base used to produce the crop and livestock described in Table 5. More than one half of farmland in the Northeast (57%) is used to support dairy and livestock production (forage crops, pasture, and field crops), and more than one quarter of current farmland is not in production (Figure 1). In New York, 59% of farmland is used to support dairy and livestock and more than a quarter is also unused. Because of these similarities in farmland distribution, it is likely that New York shares similar self-sufficiency in the products described in Table 5.

Increasing New York's self-sufficiency will likely require increases in yields on current farmland, increases in farmland, and/or reallocation of crops produced on current farmland. Does New York have the capacity to produce much more? Can it provide the profits needed for farms to increase their production of healthy foods?

Figure 1. Distribution of Land in Farms, by Crop Category, New York versus the Northeast



Note: Other land in farms includes woodland and wasteland not actually under cultivation or used for pasture or grazing, provided it was part of the farm operator's total operation as well as land with farmsteads, homes, buildings, livestock facilities, ponds, roads, etc.

Source: USDA 2017 Census of Agriculture and Griffin, et al. 2018

New York is growing apples and grapes competitively and has well-positioned industry infrastructures. Services and suppliers are within reach of growers, and education and workforce development infrastructure are available as well.

However, fruit production has high barriers to entry and exit as most fruits come from trees, vines, or bushes that take time to mature. The investment cost to expand or replace orchards or vineyards is high with little or no returns for the first few years as the plants are maturing.

New York has water and a more temperate climate to help weather drought and heat conditions that have recently affected growing regions on the West Coast and in the Midwest. Investments in tiling and irrigation to manage extreme weather events in New York may be much less costly than trying to find and conserve water in areas prone to drought.

1.5 OUR STRATEGIC CHALLENGES

We acknowledge the need to feed our people using our resources responsibly, ensuring healthy food is produced sustainably in a system that is diverse and equitable, providing profits to system members to ensure a sustainable business. To do so, we face many challenges.

1.5.1 PROFITABILITY

The Union of Concerned Scientists developed a food system scorecard that evaluates the overall health, sustainability, and equity of the food system in each state across the United States.³⁹ It uses 10 categories each composed of several criteria and ranks New York 14 out of the 50 states. While these criteria and New York State's rank along these criteria are important factors to address, none of the criteria consider farm profitability, which is the fundamental precondition to any farm's ability to sustain their business and feed our population in a manner that is healthy, sustainable, and equitable.

We need producers to increase their production to feed a growing population, but less than half of New York's producers have a positive net gain according to the latest ag census.

In fact, in each ag census year from 2007 to 2017 fewer farms had net gains (14,973 farms in 2017) than had net losses (18,465 farms in 2017), even though the average net cash farm income increased almost 32% between 2007 and 2017.

Who is doing better or worse? Small and mid-size farms struggle with cash sales and/or cash expenses. Some farms have additional farm-related enterprises that bring in additional income, such as custom work, cash rent, insurance payments, cooperative dividends, agriculture program payments, and agri-tourism.

³⁹ Union of Concerned Scientists. 50-state food system scorecard. (2018, June 20). Retrieved from <https://www.ucsusa.org/resources/50-state-food-system-scorecard>



1.5.2 LABOR

The problem most universally cited by growers is the acute need for reliable, qualified, and affordable labor.

According to the 2017 Census, U.S. fruit and tree nut farms have the highest cost of labor as a portion to total production expenses (45.6%) with vegetable and melon farms third (33.7%) after greenhouse, nursery, and floriculture (40.9%). Even dairy and field crop farms view labor as a challenge. Average labor expenses on dairy farms are 14.9% of expenses and for grains are 10.7%. A Cornell study reported an increase of total payroll of 7.8% from 2019-2020 on participating dairy farms while Farm Credit East reported increases of 6.8% and 10.1% for fruit and vegetable farms respectively for the same time period.⁴⁰

Although technology and automation have replaced some farm tasks, many cannot yet be automated or the automation is more expensive than labor. It is likely that New York farm viability will be greatly impacted by advances in technology and whether they can afford the new technologies.

⁴⁰ Wolf, C., R. Stup, and J. Karzes. (2022, January 6). Effects of NY overtime laws on agricultural production costs and competitiveness. Cornell Agricultural Workforce Development. Retrieved from <https://agworkforce.cals.cornell.edu/2021/12/07/effects-of-ny-overtime-laws-on-agricultural-production-costs-and-competitiveness/>

1.5.3 Diversity

New York producers are disproportionately male, white, and older, and they are less racially diverse than U.S. producers.

Farmer statistics, NY: average age=55.8; % female=37.8%; % racial minority=1.2%.

Farmer statistics, US: average age 57.5; % female=36.1%; racial minority=7.9%

In 2021 the New York State Department of Agriculture and Markets convened a Diversity and Racial Equity Workgroup that conducted six workshops on diversity in agriculture from November 2020 to March 2021.

The workgroup developed 21 specific recommendations under 4 key areas:

- Access to infrastructure and resources
- Access to education and training
- Access to capital
- Access to land

The Diversity and Racial Equity Workgroup has requested a \$10 million initial investment to execute the recommendations listed in their report.⁴¹

41 New York State Government. (2021). (rep.). Diversity and Racial Equity Working Group Report (pp. 1–26). *Agriculture and Markets*.



1.5.4 SUSTAINABILITY

Greenhouse gas emissions, increasing global temperatures, and climate change will impact our ability to increase production and productivity and feed our planet. Specific climate change predictions affecting New York production include:

- changes in seasonal precipitation in the northeast that will occur in winter and spring
- mild winters that may cause an early break in dormancy and variability in late freezes.

A 2019 U.S. farm survey “Sustainability Research Results 2019” supported by Trust in Food, reported some of the many barriers to adopting sustainability measures by farmers.

Being able to achieve financial benefits is the most important factor for farmers as they evaluate on-farm sustainability measures. Also, few farmers know their carbon footprint. In addition, farmers say their definition of sustainability varies from consumers’ definition.⁴²

Scientists are trying to rethink the way we manage our agro ecosystem. Recommendations to manage the increased variability and extreme events include 1) keeping healthy soils and 2) improving the diversity in our farms.⁴³

Supporting renewable energy production on farms has been a priority for New York State. Between 2007-2017, the number of farms with solar energy systems grew 1,498.1% to 2,493 farms. Despite tremendous growth, as of the 2017 ag census, solar was being used by only 7.4% of all New York farms, although several more were added 2018-2020. Farms with wind turbines grew 744.8%.

Despite the ability of solar arrays to produce renewable energy, thus lowering greenhouse emissions and helping New York achieve its climate goals by 2030, proposed large solar array projects have caused controversy among farmers and between farmers and neighbors. Using solar to achieve greenhouse gas reduction goals could require large swaths of cleared farmland for immense, land-intensive solar projects.⁴⁴ Several projects in New York and other states have been researching ways to place large arrays in strategic locations and to incorporate co-ag/solar production using greenspace under the arrays for grazing small livestock or producing suitable food or floral crops. However, despite research efforts to determine whether solar panels on farmland are compatible with producing food crops on the same acreage, at least one Delaware County-based producer reported that a landowner canceled his lease to make way for solar panels, meaning it may not have the support needed from producers. Respondents to a recent Cornell survey supported rooftop solar more than community solar or utility solar projects.⁴⁵

⁴² Trust in Food. (2019). Sustainability Research Report 2019 (pp. 1–18). *Farm Journal*.

⁴³ O’Connell, J. (2021). Understanding Climate Change and the Impact on Local Agriculture. *Cornell University*. Retrieved from https://vod.video.cornell.edu/media/Understanding+Climate+Change+January+22%2C+2021+Webinar+Recording/1_uwh0ve31.

⁴⁴ Friedlander, B. (2020, October 15). Zhang helps NYS to go solar, avoid land-use conflicts. *Cornell Chronicle*. Retrieved from <https://news.cornell.edu/stories/2020/10/zhang-helps-nys-go-solar-avoid-land-use-conflicts>

⁴⁵ Roberta S. Nilson, Richard C. Stedman, “Are big and small solar separate things?: The importance of scale in public support for solar energy development in upstate New York,” *Energy Research & Social Science*, Volume 86, 2022, 102449, ISSN 2214-6296, <https://doi.org/10.1016/j.erss.2021.102449>.



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SNAPSHOT PART II: NEW YORK VOICES – SURVEY AND ROUNDTABLE STAKEHOLDERS

PERSPECTIVES ON OUR CURRENT FOOD SYSTEM

By Carlena Ficano, PhD, CADE Board of Directors/Treasurer and Professor of Economics at Hartwick College; Phoebe Schreiner, CADE Executive Director.

The literature identified primary strategic challenges faced by the New York State food system, namely profitability, labor, diversity and ecological sustainability, that are driven by a host of market and non-market aspects of the status quo. Many of these same challenges were identified by food system stakeholder participants in facilitated focus group discussions and by New York farmers through a survey fielded by Cornell University on behalf of CADE.

Specifically, 61% of farmer survey respondents identified farmland preservation as a “top 3” priority while 45% identified soil and water health as such. High priority given to access to capital, institutional and other new market development, expanded infrastructure development, and more general strengthening of the agricultural sector spoke to profitability concerns among farmers. Finally, 60% of farmers identifying land transition as a priority and 47% citing better access to New York-grown products among all consumers underscores the need for more diversity among our consumers and producers. Importantly, in addition to the above, our farmer survey respondents overwhelmingly identified a lack of access to affordable health insurance as a primary gap in our food system status quo, and one that limits ag sector well-being.

Often in stark and impassioned terms, focus group participants including many non-producer food system stakeholders and a smaller number of small to mid-sized producers, articulated a similar view of the food system status quo. Specifically, they painted a picture of a New York food system that they perceive to be:

- **Financially strained**, where New York farms, especially small and moderate sized farms, struggle to survive and face fragmented, inefficient supply chains, high property taxes, over-regulation, and poor credit access that limit new farmer entry and erode existing farmer profitability.

- **Sourced elsewhere and unhealthy**, where New York farming is not valued by New York consumers, significant portions of New York farmland is not in agricultural production, and the majority of food consumed in New York is from other regions or countries; where over-processed, subsidized “cheap” food as the norm creates poor diets, heart disease, diabetes, and obesity; and where an overuse of antibiotics in livestock makes antibiotics less effective in people and animals.
- **Ecologically unsustainable**, where a number of conventional farm practices including some supported by federal subsidies that reward scale and highly industrialized practices create GHG outputs (i.e., open manure pits, excessive nitrogen fertilizer usage) and are pollutive, extractive, inhumane to animals, and degrading to soils; where food production, processing, packaging, and distribution relies heavily on petroleum inputs; where climate change causes flooding, crop rot, and pests that impact farmer net revenue; and where food system waste occurs at all stages of the system.
- **Inaccessible to many**, discriminatory and exploitive, where, on the consumption side, healthy, local food is a luxury for the privileged, while low income consumers and Black and brown communities face food apartheid; where, on the production side, 98.7% of New York farms are white owned⁴⁶, a legacy of discriminatory, racist lending practices toward Black and brown communities; where BIPOC farmers continue to experience explicit and implicit discrimination; where white-led farming organizations frequently do not meet the needs of BIPOC constituents; and where farm production relies on exploitation of cheap labor.

It is within this context and from this starting point that we present a shared vision for a New York food system of tomorrow that builds upon existing strengths, creates new capacity, acknowledges limitations and fundamental misalignments and fills the gaps identified across a broad group of stakeholders.

⁴⁶ According to the 2017 Agricultural Census, out of 57,865 farmers in New York State, only 139 are Black, 416 are Latinx, 129 are Asian, and 217 are Native American, totaling 901, or 1.6%.

THE VISION AND RECOMMENDATIONS

**WHAT IS NEW YORK'S VISION FOR 2050?
AND HOW DO WE GET THERE?**



By Phoebe Schreiner, CADE Executive Director; Carlena Ficano, PhD, CADE Board of Directors/Treasurer, and Professor of Economics at Hartwick College; Jeffrey Potent, Columbia University, Adjunct Professor of International and Public Affairs; Anu Rangarajan, PhD, Cornell Small Farms Program Director, School of Integrative Plant Sciences, Cornell University.

After three years of research and stakeholder engagement, we are delighted to put forward a summary of what stakeholders said they wanted to see for an integrated, comprehensive food system vision for New York State by 2050—one that is profitable, regenerative, equitable, and healthy—aimed at setting the agenda for New York’s political leaders and informing the foundation of a state plan. Ultimately, we aspire for a food system that accelerates sustainable agricultural economic development; creates green jobs throughout the farm and food sector; increases food security and healthy food access; advances equity, and mitigates climate change.

Almost universally, New York stakeholders want to see New York feed itself and for residents to value a local/regional food system. They want farms and supply chain businesses to thrive and adapt to new economic, climate, and market realities. They want our communities to be healthy and consume nutrient dense food that is produced by and available and accessible to people of all income levels.

The following represents Vision 2050 - what a profitable, regenerative, equitable, and healthy food system looks like to NYS stakeholders:



WHAT DOES THIS LOOK LIKE? PROFITABLE, REGNERATIVE, EQUITABLE AND HEALTHY

Action Areas

CONSUMER VALUES.

Society has a high food system literacy, understanding how and where food is produced and the implications of that production. Consumers value regional food independence and regenerative local food production practices. Society perceives food as a public good and values public/private partnerships for food production and affordability.

CONSUMER BEHAVIOR / CONSUMPTION PATTERNS.

Local food consumption is the norm as evidenced by a significant increase*, through production and dietary changes as well as capacity expansion, in the amount of food consumed in New York that is sourced locally. Urban and rural consumers of all income levels are food secure, have access to healthy and culturally appropriate food, and enjoy a healthy balanced diet. More plant-based and less ultra-processed food is consumed. Farm-to-school is the norm.

PRODUCTION / MARKETS.

A significant increase* in the amount of viable New York State land is in agricultural production. Improved systems support farmland access and transition. More racial and ethnic diversity is present among farmers. Urban agriculture feeds communities. Farms operate on a level playing field relative to neighboring States. "True cost of food" pricing incorporates positive and negative externalities. Product innovation and heterogeneity honors and leverages regional/cultural differences and indigenous wisdom and heritage.

PRODUCTION / ECOLOGICAL.

A significant increase* in the amount of food that is produced using regenerative farm practices keeps soils healthy, reduces current GHG output and sequesters carbon. Improved on-farm management practices and selective use of antibiotics keep livestock healthy and antibiotic medicines effective in people. Farms are resilient to climate change. Climate justice, social justice, agricultural and economic development agendas align.

SUPPLY / VALUE CHAIN.

Supply chains are resilient. Distribution is local, reducing food miles. Efficient processing, aggregation and distribution systems, including in urban centers, support small farms through planning and coordination, increasing food affordability and farm profitability. New York farm and food businesses thrive, create green jobs, and sustain strong local economies. More collaboration and less competition is present.

EQUITY.

Black, Indigenous, and People of Color (BIPOC) and other underrepresented individuals have equal access to infrastructure, education, farmland, and capital. Prime farmland is protected and in use by a diverse population of stakeholders operating under a variety of ownership structures. Farmers and farm workers, including immigrant workers, are connected, visible, appreciated, and assured safety and security (i.e., health care, secure immigration status), and earn a living wage.

OVERARCHING ACTION AREA



STRUCTURE AND LEADERSHIP

Integrated and interdependent structure and leadership that facilitates a network of stakeholders within and beyond the food system boundaries to shape New York State's food system.

RECOMMENDATIONS



Support Northeast regional food independence and food systems development, aligned with regional neighbors in New England, PA, NJ

Develop a stakeholder informed New York Strategic Plan for ag and food systems development, building on this Vision, including setting 10, 20, 30 year targets and benchmarks to guide State policy, resource allocation, programs, and services—with a commitment to profitably feed more of New York's population with New York sourced food.

Sustain dialogue and strengthen collaboration among all stakeholders involved in the New York food systems to develop solutions holistically.

Enhance education among legislators and funders.

Demonstrate and celebrate New York State leadership!

**NOTE: The establishment of numerical targets is a crucial aspect of a State Strategic Planning Process and is recommended by this Vision 2050 document for the New York State food system. For example, the recently completed [New England Food Vision](#) set targets to have New England produce 50% of the food that is consumed in the region by 2060, based on land and production capacity, dietary trends, etc. Establishment of New York State targets was beyond the scope of the present analysis.*

Stakeholders provided countless concrete ideas to move us in the direction of Vision 2050. Recommendations drawn from the stakeholder ideas are summarized below. Please see pages 58–89 for a full listing of the specific stakeholder ideas behind the recommendations as well as examples of where those recommendations were heard.



A ROAD MAP TO GET US TO VISION 2050

Recognizing the profound shifts and immense barriers that must be overcome – in consumer values and consumption patterns, in producer market and ecological interactions, in the nature of our supply chain, and in equity across that supply chain, and acknowledging the need for structure and leadership to guide those shifts and address those barriers, we are delighted to put forward recommendations that represent a roadmap for helping us reach this vision by 2050.

These recommendations and the corollary stakeholder ideas for implementation emerged from

- **our focus groups (in black text)**
- **the statewide farmer survey (in green text)**
- **the literature reviews (in red text)**
- **sector case studies (in orange text) compiled by our Cornell partners and**
- **directly from the Diversity and Racial Equity Working Group Report (in blue text).**

Note that in the two sections following our recommendations/road map, we include sector-based, and county-based case studies, enabling us to drill down more deeply in sectors and geographies to fulfill New York's potential. Read on!

STRUCTURES AND LEADERSHIP

RECOMMENDATIONS

Support Northeast regional food independence and food systems development, aligned with regional neighbors in New England, PA, and NJ

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- Create sustained, multi-state dialogue with Northeast neighbors on connecting supply chains and production targets, potentially leveraging Northeast Sustainable Agriculture Working Group (NESAWG) annual conferences as space for alignment

EXAMPLES OF WHERE WE HEARD THIS

“The regional self-reliance estimate for the Northeast is 16% for plant-based foods and 36% for animal-based foods”.

*“We need to connect urban and rural areas. We rely so heavily on other parts of the country with a climate deadline and fire and drought. We are well situated with water and climate. What we don’t have is big flat open areas that are so efficient in the West. We need to utilize perennial crops that can be on hilly landscapes, or have land that is minimally used and can be used more for staple crops for the region, in a way that sequesters carbon and encourages biodiversity. We can tie into urban areas and help boost healthy food for urban areas but also economies for capturing food dollars. **We need community ownership and a regional model of production.** A balance of ag production and community gardens. In urban areas—we can do community production. We need a new system that acknowledges all levels of production and contributes to resiliency.”*

“As one of the largest and more productive states in the Northeast,⁴⁷ New York plays a large regional food role that is second only to Pennsylvania in terms of production value. New York, however, has a disproportionately large population compared to its farmland resources and food manufacturing facilities that constrains food self-sufficiency.”

“About the issue of how to have a profitable food system—we are building too much on cheap food and benefiting fortune 500 companies who get subsidized. Fewer NY farmers can compete with PA and NJ farmers. We need to rethink subsidies, and create more economies of collaboration.”

“The COVID-19 pandemic brought many issues within processing to light. It revealed the inability to adapt when large facilities needed to close down and the dependency on these facilities to process meat in the US.”

Roundtable participants consistently identified as an area of opportunity collaboration between NY and other regional food system projects (e.g., New England states) as a means of learning from our neighbors’ experiences, past and present.

⁴⁷

New York is part of the Northeast, defined here to include New England, New York, Pennsylvania, and New Jersey

RECOMMENDATIONS

Develop a stakeholder informed NYS strategic plan for ag and food systems development, building on this Vision, including setting 10, 20, 30 year targets and benchmarks to guide state policy, resource allocation, programs, and services—with a commitment to profitably feed more of NY's population with NY sourced food.



STAKEHOLDER IDEAS FOR IMPLEMENTATION

- Use equity to guide state strategic planning, ensuring a prominent and equitable seat at the table for urban ag, BIPOC producers, youth, small farms, etc., to build trust
- Harmonize a food system and regenerative agricultural plan holistically and with an integrated systems approach aligned with relevant state policies, including with/on a NYS farm bill, the CLCPA, public procurement policy, land use policy, NY Health Act, farm wage and overtime policy, immigration policy, nutrition policy, economic development metrics that can recognize and reward human and soil health outcomes, public/private investment, healthcare, etc.

EXAMPLES OF WHERE WE HEARD THIS

*"In light of the growing population and the concurrent pressures on agriculture: narrow profit margins, competing land use demands, climate change, **research demonstrates New York's need for a strategy to increase its agricultural food production to feed in-state consumers, export foods/commodities that it produces competitively and import those in which it does not produce competitively.**"*

"What I would love to see for 2050—retail projects, public markets, custom butcher shops, a wholesale food market place that can tie back to small-scale producers. I'm interested in innovation, entrepreneurialism and collaboration that creates an ecosystem of businesses like distributors, processors, and food brands. Through economics of appropriate scale and collaborating businesses to replace large national businesses that dominate. I would love to see a thriving wholesale world but see it happen through an ecosystem of independently run small businesses, driven by collaborative networks."

"If the future of beef in the United States is centered around smaller portions of higher quality beef which is more climate friendly, then New York's current beef herd is well suited for this market demand."

"From a networking perspective, we've got people talking from different sides of New York, plus different sectors. We need information sharing."

"Farmers are saying - 'why are you criticizing us?' Hearing from farmers is crucial and using language that honors them as the backbone is important, and encouraging them to come together to make things better is what we have to do."

"NYS investment in agriculture is lacking. The State budget is \$170B, and agriculture gets \$80M. There is a lot of room for more State investment, whether to support aggregation in food hubs, investing in farms or farm production, or paying subsidies so communities can eat more healthily."

RECOMMENDATIONS

Sustain dialogue and strengthen collaboration among all stakeholders involved in the NYS food systems to develop solutions holistically

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Host food system summits every 3 years, potentially attached to NYS Ag Society annual events or by a food policy council network
- ▶ Create a committee or advisory council of political leaders, civil society, and ag sector, including BIPOC-led organizations, that build trust and connection, and supports/oversees alignment of state planning with regional, county, and municipal plans for holistic economic development strategies, leveraging strengths, threading supply chains, avoiding inefficiencies and duplication
- ▶ Create communication channels such as a web platform/listserv for transparent, statewide exchanges that is welcoming for all, and a communication list of BIPOC led organizations and agribusiness entrepreneurs
- ▶ Create an ambassador position to strengthen collaboration, building on LeadNY and similar to the New England model, that includes and prioritizes BIPOC voices and opportunities
- ▶ Learn from regional and global efforts and models, such as those presented at the UN Food Systems Summit

EXAMPLES OF WHERE WE HEARD THIS

“In NYS, we define economic development as job creation and capital investment. We need to value more than jobs and capital investment. How about if we measure a healthy economy not by an angel investor, but by having more healthy people and communities? Jennifer Wilkens at Cornell (now at Syracuse) did a study of how many NYS residents we could feed in NYS. What is the measure of a healthy food system? How might we attribute positive outcomes to primary care? Is there a measure of development for how we can expand and support food production and sustainability? How might we use a ‘food as medicine’ lens for health outcomes? What about climate and healthy land?”

“Let’s keep up these talks on NY’s food system. We need an industry wide conference and not just the Farm Bureau. It would be great to have NYS fund an annual conversation.”

“Nonprofits need to get out of their silos and work together. Too many people are doing the same thing and not joining forces.”

“I would love to see a statewide summit to breakdown silos like the climate vs dairy farmer debate about algae blooms. Or policy councils [fora] or...a web platform so everyone can comment. Could we have ongoing support or dialogue, like network of networks to get responses on the other side of the State or debate. But these conversations should be CONTINUAL.”

“REDC money goes toward grants, and they do a new thing without knowing who is doing what. Non collaboration is the issue. It’s not just nonprofits that are culpable. Grantors are culpable, especially government agencies. This is public money. Before giving out money to open a new food hub or commercial kitchen, help the business that is already operating in a different geography. This shows the need for larger coordination. These are the boulders. As a larger food system, we need to work through our silos.”

“Asset mapping is needed–stop investing in MORE, and understand what exists. We have food processors going out of business, while we know we need more food processing. We say there’s not enough distribution, but distributors go home with empty trucks. We need to know what’s available and talk to each other.”

“Asset mapping is so important. Somebody might say, ‘I’m thinking of opening a commercial kitchen in Troy–I see there’s one already so why don’t I talk to them?’ Funders could look at that and day, ‘why put another food hub here?’ We need coordinated efforts for key aspects of the food system.”

“New York farms sell the majority of their products to manufacturers, wholesalers (including food hubs), retailers such as grocery stores, specialty retailers, (butcher shops, produce markets, etc.), farm stores, restaurants, hospitals, schools, and others. They can also sell directly to consumers through farm stands, farmers markets, online websites, CSAs, and others. Large farms with sales staff or sales agents have the volume to be able to sell to larger retailers. Many smaller to medium size farms find opportunities to sell to wholesalers, smaller specialty retailers or farm stores or sell directly to the consumer. Each buyer type may need different product specifications, services, and delivery schedules.”

RECOMMENDATIONS

Enhance education among legislators and funders



STAKEHOLDER IDEAS FOR IMPLEMENTATION

► Strengthen knowledge among political leaders, philanthropists, etc., on the value of regenerative ag and food systems development in terms of economic, social, ecological, and health outcomes; the negative costs of industrialized practices at scale; need for funding directives that align with the needs and requests of food system stakeholders, including BIPOC needs; and on racial equity and food systems

EXAMPLES OF WHERE WE HEARD THIS

“Local town boards don’t know what they have in terms of farmer assets. We need a level of education and buy-in. Few legislators have farmer experience or mindsets. How are legislators going to support climate realities? There’s an uneven technical ability to protect farmland, and an uneven understanding of the ag community. We need more support from elected officials.”

“We need our policy makers to be our allies. We could organize farm visits or listening tours especially among farm workers. They can come to farm convenings and learn more. Or host a roundtable. Connect them to food policy councils or have them come together for NY Ag Society discussions. This needs to be brought to the top of their agenda, so it’s a shared agenda. They need to ask themselves, ‘where will you produce crops in 50 years based on climate change [projections]?’ We need to get talking.”

“I’d like to see access to blended capital—like private investment, grants, and low interest capital. Would be great to see the State and more organizations provide this, and blur the lines between profit and nonprofit. We need regulatory change.”

“Several farm sectors are experiencing significant growth in sales, including corn, soybeans, wine grapes, and maple syrup, while others are experiencing stagnating production or even production losses, such as dairy, aquaculture, juice grapes, potatoes, and cabbages. New York growers are in danger of not being able to respond to changing consumer interests and society’s food needs.”

“Ensur[e] that policies from the New York state government strengthen the agricultural sector.”

“Incompatibility between NYS right to farm laws and restrictive local building codes, a constant headache and limitation on growth for my business“

“Our perceptions of what is a fair price for food is distorted by subsidies and exploitation of land and labor.”

RECOMMENDATIONS

Demonstrate and celebrate NYS leadership!

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Demonstrate national leadership in redefining NY's food system, becoming a national model for a resilient, equitable food system that delivers social and economic outcomes
- ▶ Leverage the moment of COVID19 supply chain disruptions, encouraging consumers to keep up the trend of buying locally

EXAMPLES OF WHERE WE HEARD THIS

*"What is the 'true cost of food' in the US? We have a value-destroying system of \$2 trillion. We can change the indicators that take into account the real benefits of healthy, sustainably produced food. **If we do that in NY, we can do that in the whole world.** We have to change how we buy food, taking that into account."*

"For this vision, start with the legislature and governor's office, but also invite everyone together for ongoing conversations is important—to stay involved in the longer term."

"Thank goodness somebody is asking for all of these perspectives."



CONSUMER VALUES

RECOMMENDATIONS

Enhance food system literacy so consumers value local food production and nutrition

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Run public education campaigns (print, billboards, social media, podcasts, Youtube series, etc.) to shift public narratives on the value of local food production; 1) why purchasing NY sourced/produced products matters in driving local economies, nutrition, food miles, etc.; 2) the true social and environmental cost of the current food system; 3) stories that illustrate the importance of cultural and racial diversity among farmers and the history of exclusion; and more! (ex: <https://www.farmingandfoodnarrative.org>)
- ▶ Make food systems education compulsory, potentially expanding on “ag in the classroom”
- ▶ Strengthen public education on nutrition and a balanced diet, recognizing that the least processed and “closest to the source” food has the highest nutrient density
- ▶ Embellish National Farmers’ Day for NY producers, perhaps encouraging public schools field trips to local farms or other activities that actively engage communities in honoring their local farmers and recognizing farming as a public/community service
- ▶ Encourage commercial buyers to advertise how much food they purchase that is sourced in NY
- ▶ Ensure ag education and training is informed by BIPOC experiences, recruit more BIPOC students and support support programs especially among other BIPOC-led organizations

EXAMPLES OF WHERE WE HEARD THIS

“Whether its the government dictating or getting companies to change behavior, or changes in consumer education—we just need people to want to buy local and understand why it matters.”

“We need more educated consumers about seafood produced here, and have appreciation for those products. Also from retailers - so they know what we have access to. There are underutilized species, but consumers don’t buy them because they don’t know them. The market is low so we need retailers to promote those. Buy and give appreciation in food levels from bottom to top. Affordable local species are available.”

“Grass-fed beef has been a rapidly growing product in recent years. While it still accounts for only a small portion of all beef sold, its market share has been growing quickly. With the current consumption trends and increased desire for environmentally friendly food, demand for grass-fed beef will most likely continue to increase.”

“I want to see an agriculturally literate population. I want for people to see and value it, understand what do labels and notations mean. Students by 2050—those kids in class will be in the industry. In technology and distribution. That’s not just about farms. We can change the face of food production—farming our waters, elevating, vertically growing, etc.”

“Consumer diets have proven difficult to change. USDA dietary recommendations have been encouraging increased consumption of fruit and vegetables, nuts, fish, and whole grains, and decreased consumption of red meats, dairy fats, and sugars, but efforts have been largely futile.”

“In a 2050 world, agriculture is understood and respected”

“We need to make food more affordable and educate consumers on healthy food. Yes, healthy food costs more, which is why we need to change the subsidy system.”

61% of survey respondents cited consumer education as a top 3 priority for market development.

“There is little to no BIPOC staff and faculty at New York State colleges and universities in the agriculture field. Standard agriculture curriculum is also not informed by BIPOC experiences. Most BIPOC students and trainees cannot afford unpaid training and internships. For the BIPOC students and trainees that can access training programs, there is little opportunity for them to enter viable farming careers.”

“The recent COVID19 pandemic was a shock to food assistance providers, but it also revealed opportunities to create connections between food producers who were diverting food from some marketing channels and food assistance providers who were looking for additional suppliers to help supply an increase in demand.”

RECOMMENDATIONS

Create knowledge base and infrastructure needed to support a market demand for regenerative, “climate smart” produced products



STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Create a measurable standard for regenerative, climate smart products, integrating it into NY Grown & Certified or other certification/standardization label
- ▶ Encourage bid preferences for “climate smart” food products among State institutions, or food programs like Nourish NY

EXAMPLES OF WHERE WE HEARD THIS

A 2019 U.S. farm survey “Sustainability Research Results 2019” supported by Trust in Food, reported some of the many barriers to adopting sustainability measures by farmers. Being able to achieve financial benefits is the most important factor for farmers as they evaluate on-farm sustainability measures. Also, few farmers know their carbon footprint. In addition, farmers say their definition of sustainability varies from consumers’ definition.

“When it comes to federal policy, large sale crop subsidies and insurance are creating an uneven playing field for the small grower. It destabilizes the local system in favor of large scale. They have huge water subsidies in the valleys, but the climate doesn’t support it. The federal government HAS to create a resilient food system.”

“Farmers do not receive any benefit from utilizing [regenerative agriculture] to sequester carbon and help the planet. There should be some reward or recognition put in place perhaps at the city level”

CONSUMER BEHAVIOR/ CONSUMPTION PATTERNS

RECOMMENDATIONS

Expand farm to school/institution markets, with bid preferences for food sourced in NYS

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Make farm to institution the norm among public schools/K-12, SUNY system, and other State institutions, prioritizing bid preferences for locally sourced, sustainably produced products over lowest price bid preferences
- ▶ Support institutional recipe development focused on nutrition and cultural food needs, and scratch cooking needs constraints (consider a kids taste test competition for best school recipe)
- ▶ Create a food tax for imported product during the product growing season in NYS (ex: tax imported strawberries during the NY strawberry season)
- ▶ Recognize that procurement rules and incentives privilege large vendors. To create a level playing field for smaller producers and businesses, consider bid preferences for small scale businesses to ensure equitable participation
- ▶ Improve Farm to School (F2S) distribution by requiring local distribution as part of NY Office of General Services (OGS) contracts signed with regional warehouses for school food commodity distribution

EXAMPLES OF WHERE WE HEARD THIS

“NYS regulates NYS farmers unlike any other state, yet the NYC schools buy cheap applesauce from Virginia. If NY growers are burdened by NYS regulations, NY institutions should be required to buy NY produced and processed food.”

“Many [Diversity and Racial Equity] workgroup members also expressed having little to no access to sell to institutions like schools, hospitals, etc.”

“It would help small farms if institutions and restaurants who have a commitment to buying local food go beyond small token purchases from local farms. Perhaps a program where they commit to buying a certain percentage from farms within a certain radius and can then advertise that/be on lists that show they are doing more than a token purchase.”

58% of survey respondents cited institutional purchasing as a top 3 priority for market development.

“How do we normalize local food buying? We could go past 30% and create even more incentives. Let’s bring SUNY universities and hospitals into the picture. We guarantee a price for corn bushels across NYS, so why can’t we create a fixed marketplace that farmers can rely on?”

A report in 2020 by the American Farmland Trust about the Farm-to-School program described a series of cost, production and logistics challenges faced by farmers trying to sell to schools.

RECOMMENDATIONS

Recognize and leverage the connection between healthy food consumption and human health outcomes

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Ensure emergency food programs and WIC/EBT incentives encourage access to NYS grown, fresh produce
- ▶ Encourage employers to adopt a benefit plan that includes incentives to purchase NYS grown fruits and vegetables, similar to a gym membership reimbursement
- ▶ Incorporate healthy food in insurance plans and primary care, and reinvest health savings back into agriculture aligned with [NY Health Act](#)
- ▶ Encourage institutional meal recipes endorsed by dietitians
- ▶ Leverage food traceability and new microbiome-based nutritional indicators to support informed consumer decision making (see [periodic table of food](#))

EXAMPLES OF WHERE WE HEARD THIS

47% of survey respondents identified access to local food as a top 3 priority for the health of our population while 39% listed WIC/EBT local food incentives and 38% listed emergency food program use of local food as priorities for local health.

“50-60% of diseases are diet related. If we shift healthcare costs for healthier people, it goes back to a food system that compensates farmers for the true price for food. We can align institutions with the true cost system perspective. Also BIPOC and food workers have food insecurity at twice the rate of others. Our procurement system for school meals is set up for the cheapest food. We have to pay more for our meals, it’s unethical.”

“Also in 2020, the Nourish NY program was started that reimbursed emergency food providers for their purchases of locally produced foods. The program also developed communications between farms with excess supply and food banks. The Nourish NY program received overwhelming support from the grower community and the emergency food providers and the program was signed into law in November 2021.”

“Emergency food plays into this food system conversation and future thinking in 2050. Let’s support affordable food as a long term solution for food security, without promoting an emergency food system as a bandaid.”



PRODUCTION / MARKET

RECOMMENDATIONS

Conserve and protect farmland in perpetuity and preserve public green spaces for community as well as commercial food production



STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Prioritize farmland conservation and affordability in regions surrounding urban centers, thereby keeping production and transportation costs low and protecting market access
- ▶ Avoid development projects that convert farmland for other land uses (which may include green energy developments)
- ▶ Lower land taxes to farmers, recognizing food production as a public good
- ▶ Educate and provide tools to town planning boards in rural communities on planning for sustainable agricultural economic development in the face of alternative development pressures from commercial developers
- ▶ Recognize that food production is not only the sphere of commercial agribusinesses, but to nourish communities. Increase designated public green spaces including in urban areas for community food production
- ▶ Address discrimination and other structural barriers preventing BIPOC farmland ownership

EXAMPLES OF WHERE WE HEARD THIS

61% of survey respondents identified the preservation of natural farmland as a top 3 priority within natural resource stewardship.

“New York State has experienced a loss of production and capacity in the last 10 years. Loss of land in farms was -4.3% or approximately 300,000 acres from 2007 to 2017, and farmland continues to be converted for development”

“Accessing land is one of the biggest hurdles BIPOC farmers in the Workgroup are continuously experiencing. Due to historical and ongoing discrimination, BIPOC farmers have experienced tremendous amounts of land loss; therefore, BIPOC farmers are less likely to inherit land and have little to no access to land ownership. BIPOC Workgroup members have cited not being able to purchase land in New York State even when they have the capital due to explicit discrimination. Members have cited that landowners are willing to take their appointments or calls but may not show up when it is time to speak to a BIPOC buyer.”

“We need people growing their own food where no one is hungry and there’s food for everyone. Where that’s part of the culture.”

“Urban agriculture was one of the spaces where early discussions of racial equity in agriculture took place, and it is still a locus of racial justice work in NYS farming (see for example <https://civileats.com/2020/07/10/op-ed-how-urban-agriculture-can-fight-racism-in-the-food-system/>)”

RECOMMENDATIONS

Encourage beginning farmers, and keep farmland affordable
(*Note that this recommendation has implications for equity as well.*)



STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Build pipelines of beginning farmers (including BIPOC) by getting ag education back into schools at all levels, including beyond traditional ag institutions (such as Minorities in Agriculture, Natural Resources, and Related Sciences or MANRRS), by partnerships between education and ag industry, and by changing the “farming as a last resort” narrative to recognize the STEM, business and logistics intersections (e.g., BOCES New Visions).
- ▶ Offer support for a farmer’s start-up period (e.g., student debt and other loan forgiveness, start-up grants, reinvestment of revenue during startup), especially addressing constraints faced by BIPOC producers
- ▶ Continue supporting farmland transition and matchmaking initiatives (like AFT’s Farmland for a new Generation) that help transition farmland to beginning farmers
- ▶ Enhance access to capital and alternative financing, especially among BIPOC producers who face disproportionate barriers
- ▶ Invest in regional ag agencies that provide beginning farmers with FREE business development/management support (technical, financial, legal); alternative ownership models; training on HR, workers comp, payroll, bookkeeping, inventory management/financial software, marketing and product development fundamentals, etc.
- ▶ Provide tax waivers or tax breaks for beginning farmers who purchase farmland
- ▶ Provide farm leases on public lands that can be converted to agricultural use, potentially replicating Agrarian Trust models

EXAMPLES OF WHERE WE HEARD THIS

“BIPOC farmers have lost 90% of their land over the past century.”

With the category of new farmer development, 60% of farmer respondents selected land transition incentives as a top priority and 50% selected access to capital, while 25%-30% selected alternative financing, and farm management training.

“A few key challenges exist for anyone who aspires to manage a grazing operation. Although land exists for grazing according to studies, purchasing land as a beginning farmer can be challenging. Land is often not publicly listed and often sold to a family member, friend, or other party before being offered to the general public. Once land is identified, many may lose the sale due to the length of time it takes to purchase with a USDA beginning farmer loan.”

“Offer more FREE education and training in module form and accessible to all”

“There’s a financial challenge of getting started and being stable. If you start a farm, you won’t have product to sell for two years. How can you support your family? How can we overcome these barriers? We need a starter fund at the beginning.”

“First, even if BIPOC producers can access land, which was frequently described as a cumbersome and discriminatory process, and then bear the often-cited egregious procedure of purchasing the land, they often have little funds left available for acquiring infrastructure. Urban gardeners that are not considered farmers have little to no access to federal infrastructure and resources designated for farmers.”

“In our County Ag & Farmland Protection Plan, there’s a lack of support for beginning farmers. The capital costs are so high and there’s no support in place for information or resources.”

“While many small farmers struggle with accessing capital, BIPOC farmers face a higher level of challenges due to historic discrimination. Workgroup members emphasized issues with loans due to ongoing discrimination from both government and non-government lenders. BIPOC farmers and food leaders are also cut out from certain grants and funding opportunities due to match requirements and not having access to base capital to qualify for loans. Grant funds can be restrictive, and many don’t cover operational costs, which are essential for BIPOC farms and organizations. “

“Consolidation in the industry is a problem. We need better anti-trust legislation and give subsidies to small guys, not 80% of big business.”

“...succession planning to non-family members as well as family members will be an important factor in affordability and future profitability. One grower interviewed suggested that a tax incentive is needed so that apple-growing businesses can be passed to an employee or other entity.”

“The number of producers in New York has increased by 2% in the last 10 years. The increase in number includes new full-time farmers as well as some who maintain other, primary occupations outside of the farm. Many of those who have joined the farming sector will be those farming in 2050, as older farmers retire and younger generations of farming families leave farming.”

RECOMMENDATIONS

Strengthen the food system workforce, addressing the need for reliable, qualified, and affordable labor that is also appropriately compensated with a living wage and benefits.

(Note that this recommendation has implications for equity as well.)

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Strengthen “ag in the classroom”, emphasizing the valuing of farming, farm and food workers
- ▶ Strengthen education on farming methods and technology for GHG reduction, carbon sequestration, and ecosystem co-benefits
- ▶ Honor farm and food work as a public/community service
- ▶ Connect education system and food system to build a pipeline of a future workforce, such as Board of Cooperative Education Services (BOCES) technical programs, after school programs, MANRRS, Future Farmers of America chapters
- ▶ Ensure farm and food workers have access to affordable health insurance at competitive rates

EXAMPLES OF WHERE WE HEARD THIS

“Our food system was built on slavery and takes advantage of Black and brown communities. We have lower wage farm and food workers. How can we make agriculture more equitable, and recognize migrants who come to this country fleeing climate change, and see them as a resource for stronger agriculture? They have a strong knowledge set. We need to look at them not as a burden but as an asset.”

“Our kids keep thinking they are too good for these jobs. We have to address the labor issue.”

“We need to make sure kids are prepared for agricultural jobs. People don’t know about all sectors of the industry. Whether for high school or college, we can support apprenticeships in industry jobs or on farms. We need to VALUE farming as well.”

“We have dairy processors saying ‘we can’t find labor’. So we have to build relationships with students and take them on a tour of those businesses. Students need to know careers exist. This is about education - we need liaisons to help students find their next career.”

“...BIPOC experiences need to be captured in training programs, educational environments, and institutional settings. Workgroup members emphasized that there is little to no BIPOC staff and faculty at New York State colleges and universities in the agriculture field. Standard agriculture curriculum is also not informed by BIPOC experiences. Most BIPOC students and trainees cannot afford unpaid training and internships. For the BIPOC students and trainees that can access training programs, there is little opportunity for them to enter viable farming careers.”

“Of our farm workers nationwide, half of them are undocumented. They want immigration reform so they can continue to work on farms. Farm workers want to work on farms. They are motivated and come from ag communities. We have to prioritize immigration reform. Some hope that with the reconciliation bill, that it can include immigration reform for farm workers. There’s no support for immigration in the Farm Modernization Act because it’s a long path for existing farm workers of 8-10 years, and mechanization leads to loss of jobs to farm workers. We need a path to regularization here. They don’t want to leave farms but are under risk of deportation when they leave the farm to go to church or the store. It’s a workforce that is satisfied with their work. That’s the number one topic spoken about by farm workers consistently. Documentation is first.”

The problem most universally cited by growers is the acute need for reliable, qualified, and affordable labor.

Only 17% of survey respondents cited a need for higher farm wages as a top priority. This speaks to an important unresolved tension between the farmer’s need for low cost labor and the farm worker’s need to earn a livable wage with appropriate benefits.

RECOMMENDATIONS

Support CEA to lengthen the growing season

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- Build public/private partnership investments (similar to broadband) to expand CEA, including urban greenhouses, making tomato, cucumber, strawberries, and pepper production more cost competitive

EXAMPLES OF WHERE WE HEARD THIS

“CEA facilities had big growth, not just as air farms in NYC or gardens. CEA at scale—like high tunnels or warehouse greenhouse systems. The more we use CEA to create year round volume, it will benefit all our growers.”

“Future developments in CEA include berry production. New York berry growers have not been able to capture benefits from an increasing demand for berries. A short growing season and soils that are not well suited to some berries result in most berries being imported from other states or countries. A potential solution for New York growers is to invest in protected environments for berry production. The U.K. overcomes some of their climate disadvantages and produces an estimated 85% of its berries under protection.⁴⁸ In New York, Mastronardi, one of the largest greenhouse vegetable producers in North America, recently started producing greenhouse strawberries.”

30% of survey respondents identified CEA as a top 3 priority in business development.

⁴⁸ Allmanhall. (2021, December 17). Overview of the strawberry industry. Retrieved from <https://allmanhall.co.uk/blog/overview-of-the-strawberry-industry-in-the-uk>

RECOMMENDATIONS

Invest in key food sectors where NYS has or can have a competitive edge

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ See case studies and related recommendations for enhancing NY's beef, dried beans, and apple industries
- ▶ Explore food sector development for shelf-stable grains, related processing, storage, and distribution infrastructure (see Value Added Grain Project, NOFA Mid-Tier Value Chain Feasibility Study)
- ▶ Explore and invest in perennial "climate smart" crops such as nuts or mushrooms that can be grown in urban settings
- ▶ Enhance agritourism by promoting agriculture and beverage trails, farm day events, etc. through I LOVE NY

EXAMPLES OF WHERE WE HEARD THIS

"Multigenerational farmers get locked into practices they've done a long time or have insurance for. But if farmers want to transition to new or eco-friendly products (from dairy to chestnuts or hazelnuts), they can't do it without processing infrastructure or access to markets. NYS can offer funding for processing. Horizon is shutting down their dairy operations across the Northeast. We can help these farmers diversify."

Farmers indicate that New York's proximity to urban markets is a major advantage for livestock production. Additional advantages include a diverse population to support niche and specialty livestock, good transportation infrastructure, emerging marketing cooperatives, support for local meat marketing, research and education infrastructure, great agricultural infrastructure, land suitable for grazing, reasonable land costs, and access to fresh water.

"Consolidation in ag has negatively impacted the industry, whether in seed supplies, inputs, or distribution. Thinking ahead to 2050 is a more innovative economy in our food system, like incentivizing seed or biological companies to manage pests sustainably or in distribution. I want to see an innovative economy for food and farming. We could have an influx of cash to start up ventures so everyone can participate in a food system that makes money sustainably. How can we spark this innovation?"

54% of survey respondents identified farm diversification as a top 3 priority in business development.

GrowNYC provides tools and resources that support small grain production primarily to support its market vendors' ability to sell bakery products using locally-sourced grains.

New York's proximity to east coast markets...represents the greatest competitive advantage for dry bean producers and processors in the state by keeping freight costs lower relative to Midwest and Great Plain states. Despite the economies of scale among bean-leading states, the New York dry bean sector has the potential to build off this transportation advantage.

RECOMMENDATIONS

Support affordable health care to farm and food producers

(Note that this recommendation has implications for equity as well.)

STAKEHOLDER IDEAS FOR IMPLEMENTATION

► Offer affordable or free health insurance to all farmers, and farm and food workers, recognizing food production as a public service and food as a public good

EXAMPLES OF WHERE WE HEARD THIS

The most frequently selected top priority among farmers is affordable farmer healthcare (55%).

“Health care for farmers and our employees is cost prohibitive. Yes, the Affordable Care Act did a good job at getting premiums down, but being saddled with deductibles that are half your annual income means if anything goes wrong, you sink.”

“We need farmers to produce food and not be on food stamps themselves.”



PRODUCTION / ECOLOGY

RECOMMENDATIONS

Ensure that farm and forest land preservation aligns with climate goals

Stakeholder Ideas for Implementation

- ▶ Accelerate and incentivize easements, farmland and forest conservation initiatives, and other programs that promote soil health and water quality—all of which remove carbon from the atmosphere and deliver ecological benefits to communities
- ▶ Link easements to CLCPA long term GHG Ag and Forestry goals and payments to farmers for carbon services

EXAMPLES OF WHERE WE HEARD THIS

The most popular priority among farmers is preserving natural farmland (61%), followed by soil health and water quality (45%), on-farm energy production (36%), pasture based livestock (34%), adapt to climate change (33%), agroforestry (26%), and greenhouse gasses (17%).

“We have ambitious climate goals. The cheapest solutions are nature-based solutions. Agriculture can implement those. This can be our motivation to work in agroforestry by establishing trees, to increase food production and biodiversity. That’s a huge opportunity in NYS—to support innovation in agriculture and help rural economies—to achieve our goals.”

“I want to see a sustainable production system, where farmers are part of the climate solution and can benefit from carbon markets.”

“Despite New York’s organic sales and acreage, organic production represents only 4% of total farms and 5% of total acreage.”

RECOMMENDATIONS

Provide technical support for transition to climate resilient agriculture

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Educate producers and consumers alike on the benefits of regenerative “climate smart” farm practices that store carbon in soils and plants, a proven method of removing carbon from the atmosphere, thereby delivering ecological benefits to communities and making farmers and foresters the solution to the climate crisis
- ▶ Dispel public misconceptions on pasture-based livestock
- ▶ Provide Equitable access to research on innovative farming methods including low capital methods (ex Yestermorrow)

EXAMPLES OF WHERE WE HEARD THIS

“You can’t push farmers to change practices. Regenerative ag practices create products that sell at a higher price with fewer inputs. But they can’t compete unless they switch. If farmers see more of these practices, it can encourage a shift in the market place. Let’s help farmers make the switch—that can be something NYS can invest in!”

“Greenhouse gas emissions, increasing global temperatures, and climate change will impact our ability to increase production and productivity and feed our planet. Specific climate change predictions affecting NYS production include changes in seasonal precipitation in the Northeast that will occur in winter and spring and mild winters that may cause an early break in dormancy and variability in late freezes...Scientists are trying to rethink the way we manage our agro ecosystem. Recommendations to manage the increased variability and extreme events include 1) keeping healthy soils and 2) improving the diversity in our farms.”

“Grass-fed beef has been a rapidly growing product in recent years. While it still accounts for only a small portion of all beef sold, its market share has been growing quickly. With the current consumption trends and increased desire for environmentally friendly food, demand for grass-fed beef will most likely continue to increase...Additionally, the greenhouse gas emissions from grazing can vary widely depending on the management style. To be beneficial to the planet as well as meeting the expected future consumer demand, operators would need access to grazing education resources.”

“BIPOC workgroup members indicated not being able to participate and experiment in innovative and technological agricultural approaches due to the lack of resources. Many workgroup members indicated that BIPOC farms and enterprises need targeted support to scale up operations and include value-added production.”

“NYS should explore policies, including improved incentives, to help increase food production and associated farm profitability, in turn improving the business case for land remaining in agriculture versus conversion to other land uses. Such policies may be targeted toward improving productivity on existing farm fields and pastures and advancing intensive farming methods such as controlled environment agriculture (CEA) to strategically supplement imports, domestic and international, to feed our population.”

The most popular priorities for Stewardship of Natural Resources and Climate among farmers served is preserving natural farmland (61%) and soil health and water quality (45%).

RECOMMENDATIONS

Incentivize regenerative “climate smart” farm practices

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Invest in tiling and irrigation systems to help farmers manage extreme weather events
- ▶ Redirect and increase state and federal subsidies into sustainable agriculture (currently, estimated \$80M of \$170B state spending goes to ag) to pay economic multiplier dividends. This is especially timely given the current infrastructure bill.
- ▶ Introduce an incentive program that encourages farmers to adopt regenerative practices, like a “Payments for Ecosystem Services” system aligned with the CLCPA, requiring GHG polluters to pay NYS farmers and foresters to sequester their remaining 15% emissions after the polluters have reduced emissions by 85%

EXAMPLES OF WHERE WE HEARD THIS

“Farmers do not receive any benefit from utilizing [regenerative agricultural practices] to sequester carbon and help the planet.”

“A 2019 U.S. farm survey “Sustainability Research Results 2019” supported by Trust in Food, reported some of the many barriers to adopting sustainability measures by farmers. Being able to achieve financial benefits is the most important factor for farmers as they evaluate on-farm sustainability measures.”

“How can we make sustainable, resilient agriculture the norm? The water situation is being watched globally. Erosion is solved by cover cropping—using erosion control methods. Protecting water and soil makes a huge difference. I’d like to see more regulation on pesticides. Conventional producers don’t have bad intentions. They want to make a living. We need to consider how we can help farmers with soil health, protect our water, and our region.”

New York has water and a more temperate climate to help weather drought and heat conditions that have recently affected growing regions on the West Coast and in the Midwest. Investments in tiling and irrigation to manage extreme weather events in NY may be much less costly than trying to find and conserve water in areas prone to drought.

RECOMMENDATIONS

Support green energy and a bioeconomy, but avoid compromising farmland

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Ensure solar and other green energy development projects are properly sited in strategic locations that do not compromise farmland. Despite studies that show solar panels can be compatible with grazing small livestock in principle, farmland owners are in practice moving development sites out of production
- ▶ Expand the bioeconomy to fill the gap left by fossil fuel reduction (e.g., hemp packaging)

EXAMPLES OF WHERE WE HEARD THIS

“I worry about carbon offsets or corporations owning land so they can keep polluting. We can [better] move the mark if we transition acreage to new [climate smart] production methods.”

“Solar panels are needed, and there’s a need for 100,000 acres of farmland for our energy goals. That’s the challenging aspect. We need a solution where it’s not in competition with ag production. We need renewable energy, and energy use from solar, but it’s finding a delicate balance.”

“Push back on solar farms using prime farmland for construction.”

“Despite the ability of solar arrays to produce renewable energy, thus lowering greenhouse emissions and helping New York achieve its climate goals by 2030, proposed large solar array projects have caused controversy among farmers and between farmers and neighbors. Using solar to achieve greenhouse gas reduction goals could require large swaths of cleared farmland for immense, land-intensive solar projects.”

RECOMMENDATIONS

Encourage antibiotic stewardship among livestock producers to sustain life-saving medicines

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Invest in education programs to livestock producers on management practices and protocol (such as selective dry cow therapy [SDCT]) that can safely reduce antibiotic use in livestock, in response to the growing threat of antibiotic resistance
- ▶ Reframe the public narrative, recognizing livestock producers who are antibiotic stewards are part of the solution to the emerging public health crisis

EXAMPLES OF WHERE WE HEARD THIS

“NY State should target school food purchases of meat and dairy to farmers practicing improved antibiotic stewardship to help prevent antibiotic resistance. And the state should offer education to farmers across the state on programs like selective dry cow therapy that have been led by NY dairy farmers and veterinarians.”



SUPPLY / VALUE CHAIN

RECOMMENDATIONS

Enhance efficiencies in aggregation and distribution systems through State planning, helping to reduce costs and ease market access

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Prioritize planning and investment in supply chains, based on expert knowledge and data technology, prioritizing proximity to supply (farms) and demand (markets)
- ▶ Convene, encourage, and incentivize private sector collaboration/alignment vis-a-vis information sharing communications, logistics, cross docking, aggregation, transportation, and cold chain infrastructure (ex: food hub to food hub collaboration)
- ▶ Support innovative logistics to handle small quantities from dispersed geographies, since small/ mid-sized farms need help assembling product to be efficiently handled, graded, packaged, and transported to buyers

EXAMPLES OF WHERE WE HEARD THIS

“There are CCEs (Cornell Cooperative Extension offices) in every county. Why couldn’t we also have aggregation sites in every county equipped with cross docking and cold storage units, that will encourage more efficient distribution systems, which help smaller farms access markets and keep NY competitive in terms of economies of scale.”

“Building a real food system in NYS is not just throwing money. NYS funds things, and everyone grabs for the gold ring. We need to bring food hubs together. The question is how to build out networks of food hubs that makes sense, so we address food security and hunger in a more holistic way. Funds could be used more strategically. There’s \$3 million for ag and food systems projects from REDCs (Regional Economic Development Councils). If the State puts more effort into it [coordination, not making it all about money], it can help.”

“80% of the value of food is in transportation, storage, retail outlets, etc. We did studies on the potato sector. There are potatoes coming from elsewhere but they create jobs in wholesaling and trucking. They create value within NYS borders, even if the potato comes from Pennsylvania or New England.”

“In 2020 during the COVID19 pandemic, demand for product from local farms, especially for meat, increased. Farms selling direct to the consumer

increased their presence on the internet and increased their online selling capabilities. The addition of online ordering and sales fostered by the pandemic may create a radical change in direct to consumer sales. Logistics with product quality and supply and distribution will still need to be met.”

“We need coordinated statewide logistics to get food to urban areas. There used to be a train that goes to the city, but now it’s up to each farmer to bring food down. We need a statewide model and collaboration to fill in this gap.”

37% and 30% of all survey respondents selected aggregation and supply chain communication, respectively, as top 3 priorities, with even higher percentages of vegetable farmers (47% selected aggregation) and smaller farmers selecting these priorities.

“Make it easier for farmers to “ride-share” their produce so everyone does not have to shuttle their product around.”

“Other needs often heard from growers include innovative logistics to handle small amounts of product from dispersed geographies. Small to medium-size farms need help assembling products so they can be efficiently handled, graded, packaged, and transported to buyers.”

RECOMMENDATIONS

Invest in key food processing and manufacturing industries, helping NY processors' ability to compete

STAKEHOLDER IDEAS FOR IMPLEMENTATION

- ▶ Create a food systems business incentive grant program, aligned with Empire State Development, or create public/private partnerships (similar to expanding broadband)
- ▶ Invest in meat processing, creameries, and other value-added food processing or shared/cooperative post-harvest facilities, and other value chain nodes
- ▶ Ensure underserved/BIPOC producers have targeted support to access capital and infrastructure needed for value-added production

EXAMPLES OF WHERE WE HEARD THIS

"There are no fruit processors left in the Northeast. I couldn't run a processing plant that could compete with Michigan and Eastern Europe. I used to process 10,000 lbs of peaches in Canada then bring them back. We've lost the processing infrastructure here, and now the [fruit] farmers too. In the late 1990s, peaches saved my farm. I had organic apples but also cherries. The market WANTS American cherries and organic apples. During harvest time, I had a processing facility 3 weeks a year with a 60 person workforce. I used to hire teachers on summer vacation. I can't get a workforce now. Labor is the most difficult. I used to process Delmonte fruit in Canada, then everything went to Thailand where they can grow all year, and have cheap sugar and labor. I can't get a long term contract for organic apples beyond 1 year."

"NYS can produce anything. Look at the ornamental crop industry—there are more profits in trees, sod, etc., than in tomatoes. Capacity to sell to the consumers is the challenge. Someone needs to go to the existing processors and say, 'how are you doing?' It's better to support our existing processors than to start new ones. No yogurt producer in NY sources its fruit from NY. We need to find out where processors and wholesalers are at with the specs and price point, and plug into it. I'm part of the NYS Food Processors Association. Let's ask them what are their needs!"

"Mid-sized [meat] producers struggle to use either available processing option. Typically, they are too small for large facilities in Pennsylvania that process on a contract basis and too large to be handled by a single processor in New York at desired times of the year."

EXAMPLES OF WHERE WE HEARD THIS, *cont.*

“Meat processing facilities will help small scale farmers because they can produce. The land here is suitable for grazing in Central NY, and small farms could come back to life with these facilities.”

54% of survey respondents listed new processing facilities as a top 3 priority while 44% identified expanding processing capacity as such.

“Accessing USDA processing facilities is a bottleneck. Distribution systems, technology for cultivation, and cold storage have not been developed for small agriculture in New York State”

Post farm-gate activities are extremely important for most farm products. Almost all farm products need additional handling or processing before becoming edible or saleable to consumers, and many New York farm products for human consumption, including grains for flours or beverages, dry beans, livestock meat, raw milk, and fruits and vegetables for juice, canning or freezing are sold to processors or manufacturers. Importantly, processing can also preserve seasonal production for future consumption. New York food processors and manufacturers are numerous, although a number of plant closures a decade ago reduced that number, but they are less than half the size of the U.S. average facility by sales volume. Several industries cite a need for improved post-harvest infrastructure, product handling, and/or processing in order to find markets for their products.

“[Apple] Processors are demanding more fruit. There may be opportunities for growers to grow the desired varieties for this space at a competitive price for the processor. New technology that can help produce more quantity of fruit at less cost would be important to make is economically viable to producers.”

“Even if BIPOC producers can access land...they often have little funds left available for acquiring infrastructure. Urban gardeners that are not considered farmers have little to no access to federal infrastructure and resources designated for farmers...BIPOC farms and enterprises need targeted support to scale up operations and include value-added production.”

In general, manufacturing industries with declining sales between 2012-2017 may not be positioned to purchase as many New York-grown products as they have in the past. These industries include fruit and vegetable, meat slaughter and processing, and soft drink manufacturers. Similar to dairy, fruit and vegetable processors buy raw ingredients from farms close to the plant, as most product for canning and freezing starts to deteriorate within hours of being harvested.

Our recommendation in this area is in solidarity with the Diversity and Racial Equity Workgroup (DREWG) and their Report recommendations, including that Report's call for an initial investment of \$10M to support New York State Ag and Market (NYDAM) action in 4 key areas: access to infrastructure and resources, education and training, capital, and land. The Workgroup also called for the NYSDAM staff to commit to diversity and racial equity training to ensure staff is prepared to implement the recommendations with a racial equity lens. The full Diversity and Racial Equity Workgroup Report may be found at: (https://agriculture.ny.gov/system/files/documents/2021/08/diversityracialequityreport_1.pdf). Recommendations taken verbatim from the DREWG report are presented in the following pages.



EQUITY

ISSUE AREA FROM THE DREW REPORT

Access to Infrastructure and Resources



DREW REPORT RECOMMENDATION

- ▶ Provide funding to support innovative, technological, and regenerative agriculture practice, as well as funding for infrastructure to support scale-up and value-added production
- ▶ Continue partnership with Empire State Development to identify funds available for infrastructure and improving operations
- ▶ Encourage value chain coordination between urban and rural BIPOC growers that allows for infrastructure and resource sharing

EXAMPLES OF WHERE WE HEARD A SIMILAR MESSAGE: V2050 Alignment

“There are too many breaks in the food system. We lack distribution capacities that need to be repaired. Let’s rebuild the food system to be equitable and economically viable especially for small farms. Let’s build distribution networks, and build on small entrepreneur aspect of our communities.”

Swift action to remedy the situation including federal funding are in action. In addition, countless reports have investigated the issues in beef supply chains. Continued focus is needed to shift the industry to be more resilient to supply chain shocks, safer for workers, accessible and price competitive for small and mid sized farmers.”

“We implemented the Good Food Purchasing Program in NYC for municipalities to buy more local food using public dollars to support the local economy, racial equity, transparency, increasing nutrition, creating a valued workforce across the supply chain. It makes buyers more accountable. The purpose is to make more space for smaller vendors to compete for institutional contracts. That’s my lens. It also makes space in the market for smaller vendors and BIPOC producers to compete. The metrics from the 2017 ag census showed that racial disparity of farmers in NYS is egregious. We need to address why and how those metrics need to shift. We can focus on policy, investment, capital, and infrastructure to build more opportunities for those farmers, give more access to institutional markets. What emerged for BIPOC farmers is limited access to land. We need equitable distribution to land that is not so capitalistic. This vision needs to align, and come back to one of the things that needs to change.”

“We need more culturally appropriate food, and affordable food.”

ISSUE AREA FROM THE DREWG REPORT

Access to Education and Training

DREWG REPORT RECOMMENDATION

- Create a BIPOC agricultural training program, where funds are used to create paid internships, training opportunities, apprenticeships, and beyond. Capacity funds will also be made available to BIPOC-led farms and organizations that train and hire interns and graduates, and host apprentices. Develop networks for NYS employment opportunities in agriculture.
- Work with university agricultural departments to hire more BIPOC faculty and educators in agriculture and encourage establishing a racial equity framework in hiring. Ensure BIPOC farmers are getting paid speaking and teaching opportunities.
- Review agricultural education (FFA, AITC, Cornell, SUNY) curriculum to ensure that there is a BIPOC representation and a racial equity framework embedded, including language access. Partner with agricultural Historically Black Colleges and Universities, Minority Serving Institutions, Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) programs, and other BIPOC-led farms and educational organizations.
- Encourage pathways to recruit more BIPOC students in agriculture and support summer programs for early childhood and school age students.

**EXAMPLES OF WHERE WE HEARD A SIMILAR MESSAGE:
V2050 Alignment**

“We need a new generation of people in the fields and we need them to learn. Where are the 25 or 30 kids graduating with agronomy degrees? We are responsible to help kids learn and know what we do.”

“We need more heterogeneity in how we think about the food system, like in heritage food varieties and what’s on offer, and how we produce food incorporating indigenous practices.”

“There’s a dismal crisis of young farmers who don’t see it as a viable career path. Land access is an issue. We want to see a vision flourish with young diverse farmers coming up into the next generation, and have them define what a farming system can look like.”

“We need to amplify the power that’s already there, and leverage the expertise and agency that farmers and farm workers have, that are not currently amplified in the policy space. Policy is not a silver bullet. But the closer to policies we are, we can achieve something. Investing in power and expertise of our community stakeholders is what counts.”

ISSUE AREA FROM THE DREWG REPORT

Access to Capital



DREWG REPORT RECOMMENDATION

- ▶ Develop partnerships and structured conversations with lenders, including commercial banks and Farm Credit, and BIPOC producers to discuss outreach and lending practices to better serve BIPOC farmers.
- ▶ Provide funding for grant programming that covers operational costs.
- ▶ Partner with ESD [Empire State Development] to host technical assistance workshops in MWBE [minority and women owned business enterprises] certification and additional workshops on Grants Gateway.
- ▶ Broaden NYS' work in the procurement space to ensure BIPOC farmers can sell to institutions like schools, hospitals, etc., through value chain coordination.
- ▶ Ensure BIPOC and marginalized voices are included in the NY food supply working group.

Examples of Where We Heard a Similar Message:

"The issue of access to capital—it's also about access to AFFORDABLE capital. Using traditional funding methods, the debt is so big you can't be profitable. How might we use alternative capital, like through cooperative movements or sharing equipment?"

"I can see how much corn and soybeans get from subsidies, but not specialty crops that are healthy foods like fruits and vegetables and grains. We need funding for small and mid-sized farms and speciality crops. If we understand food as a public good, it changes how we subsidize school food, just like roads. Only in the farm sector do we not pay people enough. The government is subsidizing many aspects of our society like education. Thinking of food as a public good is the key."

"We need more people having access to land and a new generation of farmers and people of different backgrounds to access that, and also housing and healthcare. We need procurement policies that make it easier to procure food, and put it into law. That is what we want to do and where we're going."

ISSUE AREA FROM THE DREW REPORT

Access to Land

DREW REPORT RECOMMENDATION

- ▶ Encourage ESD to work with more BIPOC-led organizations to administer the Regional Revolving Loan Trust Fund to better serve BIPOC producers and business owners.
- ▶ Encourage the development of new and support existing urban land trusts to protect land that can be used to produce food in historically under-resourced communities. Engage community land trust stakeholders and revisit eligibility for the Land Trust grant program to ensure that urban land trusts can qualify.
- ▶ Collaborate with other state agencies and legal partners to ensure the NYS Anti-Discrimination Law is being upheld across NY, particularly the sale of farmland. Explore partnerships for legal support of Community Land Trusts and BIPOC producers.
- ▶ Provide funding to support the direct purchase of land.
- ▶ Develop an access to land toolkit that includes guidance on purchasing and protecting land.

Examples of Where We Heard a Similar Message: V2050 Alignment

“NY producers are disproportionately male, white, and older. Average age=55.8; % female=37.8%; % racial minority=1.2% Compared to U.S. producers, New York producers are also less diverse average age 57.5; % female=36.1%; racial minority=7.9%”

“I want to see more resources to encourage diversity in the food system. Farms are predominately white - we need to have diversity and communities of color farming.”

“Urban farms contribute economic, nutritional, and cultural resources to their communities. The many forms of urban agriculture can be categorized as either commercial or community-based.⁴⁹ Commercial urban farms often act as social enterprises where production is paired with education, workforce training, or other social justice programming.⁵⁰ Regulation of farming activities in urban areas is a primary concern and limits several production factors, such as the ability to raise livestock, types and locations of temporary and permanent structures, water access, and on-farm sales.”

“We haven’t addressed systemic racism in land access. We want to see large swaths of land farmed without barriers to entry and can include reparations for the past.”

“I want to see rematriation of indigenous food systems, and reparations for Black people, farm workers, and others harmed by our food system.”

⁴⁹ Hodgson, K., Caton Campbell, M., & Bailkey, M. (2011). Urban agriculture: Growing healthy, sustainable places. Chicago, IL: American Planning Association, Planning Advisory Service
⁵⁰ Vitiello, D. and Wolf-Powers, L. (2014). Growing food to grow cities: The potential of agriculture for economic and community development in the urban United States. Community Development Journal, 49(4), 508-523. doi:10.1093/cdj/bst087

ADDITIONAL RECOMMENDATIONS - DREWG REPORT RECOMMENDATION

- ▶ Build out a communication list of BIPOC farmers and BIPOC-led organizations.
- ▶ Establish an ongoing BIPOC advisory council to the Department [New York State Department of Agriculture and Markets] and share opportunities.
- ▶ Establish dedicated staff and communication channels to address BIPOC specific issues and needs to ensure BIPOC farmers and leaders feel safe, comfortable, and welcomed in New York's agricultural spaces.
- ▶ Evaluate AGM's [New York State Department of Agriculture and Markets] grant programs, social media, and media presence through a racial equity lens and evaluate how the Department can better ensure fair treatment, access, and opportunity in its program offerings and grants.

Examples of Where We Heard a Similar Message: V2050 Alignment

"Institutional racism is impacting our food system. Whose voices are absent at the table?"

"In 2050, we value local farming, imbued with pride. If we did, we would never allow immigrants to be treated this way or risk deportation. Today, undocumented people are vilified. In 2050, they and farming are valued."

"We need to shift away from nonprofit models of land access and look at this as a full rights approach. That people have the right to food, a human right to food. That informs policy and how we distribute available funds."

A pastoral scene with cows grazing in a field under a bright sun and blue sky with clouds.

FROM VISION TO ACTION

CASE STUDIES ON HOW WE GET THERE



Case Study - Beef

By Rebecca Wasserman-Olin, Researcher, Dyson School of Applied Economics and Management, Cornell University; Miguel Gomez, PhD., Robert G. Tobin Professor, Dyson School of Applied Economics and Management, Cornell University.

CSB1.WHAT'S AT STAKE?

With the COVID-19 pandemic shining a light on the fragility of the beef processing sector and the renewed focus on mitigating climate change, New York must think critically about how its beef industry will shift to adjust to the future. Critical thinking about how processing serves farmers and retailers alike as well as how the beef raised in the state contributes to greenhouse gas emissions will help shape what the industry should look like in 2050.

CSB2.CURRENT CONDITIONS

CSB2.1 CONSUMPTION

While a staple in the American diet, Americans have been eating less beef since the 1970s. Part of this decline is because of links to negative health impacts and chicken's gain in popularity. The link between red meat and health issues caused dietary guidelines and health experts to encourage eating beef less often, to seek out leaner cuts, and to consume smaller portion sizes.⁵¹ Additionally, "pink slime,"⁵² Mad Cow Disease,⁵³ and animal rights concerns have also created challenges for the beef industry. During this time there has been an increasing demand for USDA organic beef as well as grass-fed beef.⁵⁴ A growing concern for the environmental impact of our diets has caused many to think more critically about how much beef is incorporated in their diet and could greatly impact the demand for beef in New York.⁵⁵ While many factors contribute to current lower consumption in the United States compared to historical figures, it is still the second most consumed meat in the United State, and global demand also remains strong.⁵⁶

51 Zumpano, J. (2020, December 22). *Is Red Meat Bad for You?* Health Essentials from Cleveland Clinic. <https://health.clevelandclinic.org/eating-less-red-meat-good-family/>

52 Fassler, J. (2019, February 7). *ABC News called it "pink slime." Now, USDA says it can be labeled "ground beef."* The Counter. <https://thecounter.org/bpi-pink-slime-ground-beef-usda-reclassified/>

53 Center for Food Safety. (2021). *Issues | Mad Cow Disease*. Center for Food Safety. <https://www.centerforfoodsafety.org/issues/1040/mad-cow-disease/timeline-mad-cow-disease-outbreaks>

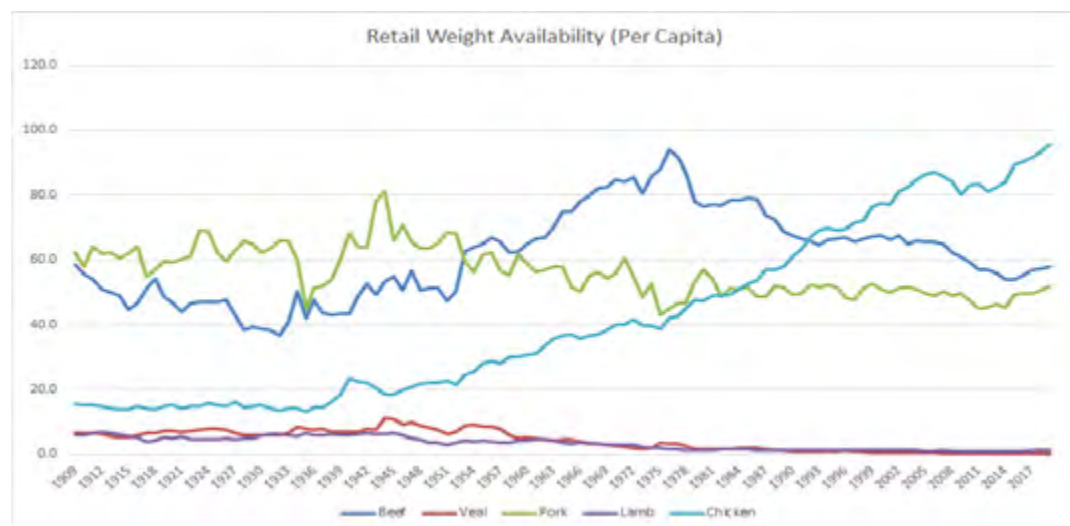
54 Renee Cheung, & McMahon, P. (2017). *The Market Potential for U.S. Grassfed Beef* (p. 58).

55 Matsumoto, N. (2019, August 13). *Is Grass-Fed Beef Really Better For The Planet? Here's The Science*. NPR.Org. <https://www.npr.org/sections/the-salt/2019/08/13/746576239/is-grass-fed-beef-really-better-for-the-planet-heres-the-science>

56 USDA. (2021). *Food Availability (Per Capita) Data System*. USDA ERS. <https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/>

Figure 1: Retail Weight Availability (per capita) by Meat Category

Source: USDA. (2021). Food Availability (Per Capita) Data System. USDA ERS.
<https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/>



CSB2.2 PRODUCTION

In 2021, the beef herd in New York State was estimated at 95,000 head. The herd size has been fluctuating between 80,000 to 110,000 during the past 20 years. According to the USDA 2017 agricultural census, 95% of farms that have beef have between 1-49 head with an average of 15 per farm in New York. Beef operations in New York tend to be smaller than other parts of the nation. In this report, the size of operations will be referred to as small (under 20 head), medium (20 to 99 head), and large (over 99). While beef is raised throughout the state, the Southern Tier and North Country regions contain the most animals. In the state, there are 986 head of cattle that are USDA Certified Organic.⁵⁷

⁵⁷ United States -- National Agricultural Statistics Service. (2017). *US Census of Agriculture*. USDA. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Rankings_of_Market_Value/New_York/

Table 1: NY Beef Herd Size, 2002-2017

Year	New York Beef Herd (Number)
2002	80,831
2007	103,620
2012	86,030
2017	109,914

Source: United States -- National Agricultural Statistics Service. (2017). US Census of Agriculture. USDA. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Rankings_of_Market_Value/New_York/

CSB2.3 PROCESSING

All beef that will be sold for resale (retail or wholesale) must pass through USDA inspected facilities. Beef designated for personal consumption or sold direct to the consumer can be processed at a custom exempt facility. New York State has about 34 processing facilities that are certified by the USDA as of 2018 and many more that fall under a custom exemption.

In addition, large New York producers take their animals to Pennsylvania to be processed at one of the large facilities there.

Pennsylvania houses three large processing facilities. The largest facility, owned by Cargill, can process 400,000 head per year.⁵⁸ Operating as an assembly line provides efficiencies which result in a lower price for processing than is available in New York State. These facilities process much of the cull dairy cattle and large Northeast feedlot beef operations as well as animals purchased at auction by the parent companies of the facilities.

The COVID-19 pandemic brought many issues within processing to light. It revealed the inability to adapt when large facilities needed to close down and the dependency on these facilities to process meat in the US. Swift action to remedy the situation including federal funding are in action. In addition, countless reports have investigated the issues in beef supply chains. Continued focus is needed to shift the industry to be more resilient to supply chain shocks, safer for workers, accessible and price competitive for small and mid sized farmers.

CSB2.4 WHAT ABOUT DAIRY BEEF?

As dairy cows age, their milk productivity declines, and eventually they are sold and turned into dairy beef. The meat that comes from these animals is typically turned into ground beef and is sold at a lower wholesale price than ground beef from beef herds. Since we cannot speak separately about dairy beef from the rest of the dairy industry, we will not focus on it in this report, but will mention it in certain sections.

CSB2.5 INDUSTRY CHALLENGES

As part of this project conversations with over 25 members of the beef industry throughout New York were conducted. These conversations were with farmers and retailers as well as institutional buyers and educational experts. The following sections are written based on the information gathered in those interviews.

⁵⁸ Hodge, B. (2016, December 29). *Farmer Tour of Cargill Meat Solutions*. Cornell Cooperative Extension - North Country Regional Ag Team. <https://ncrat.cce.cornell.edu/submission.php?id=618>

CSB2.5.1 WHAT SHOULD NEW YORK STATE HERDS LOOK LIKE

If the future of beef in the United States is centered around smaller portions of higher quality beef which is more climate friendly, then New York's current beef herd is well suited for this market demand.

The current herd mostly falls into three categories: grass-based systems, raising cattle for personal consumption, and smaller feedlot based operations.

Across the upstate region, it is common for residents to have a few head of cattle which they raise for their own consumption and informal sale to family, friends, and neighbors. With many processing facilities not being USDA inspected, these animals are well suited for the numerous custom exempt facilities throughout the state.

While most operations are small, there is a community of farmers with beef feedlots throughout the state. Although other parts of the country have lower costs of production, many of these New York farmers are finding ways to differentiate themselves. Many are embracing lower antibiotic use, animal welfare, and more time outside for the animals. They view themselves as continuing to adapt to a market in between your average supermarket product and a USDA Certified Organic or grass-fed product. While adapting their product, these farmers are struggling to make a profit when the cost of processing is high in the state, and if too high, they travel to Pennsylvania for the price and convenience that the large facilities can provide. These types of operations are adapting, but struggling to compete with states that have more robust beef sectors.

Grass-fed beef has been a rapidly growing product in recent years. While it still accounts for only a small portion of all beef sold, its market share has been growing quickly.

With the current consumption trends and increased desire for environmentally friendly food, demand for grass-fed beef will most likely continue to increase. As pointed out through modeling, there is a lot of grassland in New York State that could be used as cattle pasture.⁵⁹ This land could be used to increase the size of current grazing operations while also providing operations for new farmers who want to pursue grazing cattle.

Much of the potential grazing land would need financial investment to be used for grazing. Infrastructure such as water, exterior fencing, interior fencing, and winter housing is needed. Additionally, much of the forage provided by the land would need to be amended or replanted to ensure the cattle received the nutrition they need. These investments can be expensive and prohibitive to beginning farmers. Additionally, the greenhouse gas emissions from grazing can vary widely depending on the management style.

To be beneficial to the planet as well as meeting the expected future consumer demand, operators would need access to grazing education resources.

Many who are expanding find it difficult to find contiguous pieces of property. Operators end up piecing together land which is “close enough to each other” and hauling their animals between parcels. While doable, this can be time consuming and can limit the expansion of an operation.

While the land exists for a potential expansion of grass herds, more managers would be needed to run the operations. A few key challenges exist for anyone who aspires to manage a grazing operation. Although land exists for grazing according to studies, purchasing land as a beginning farmer can be challenging. Land is often not publicly listed and often sold to a family member, friend, or other party before being offered to the general public. Once land is identified, many may lose the sale due to the length of time it takes to purchase with a USDA beginning farmer loan.

⁵⁹ Thorn, A. M., Baker, M. J., & Peters, C. J. (2021). Estimating biological capacity for grass-finished ruminant meat production in New England and New York. *Agricultural Systems*, 189, 1–11. <https://doi.org/10.1016/j.agsy.2020.102958>

Programs such as the Minnesota beginning farmer tax break exist to help incentivize the sale of land to a beginning farmer,⁶⁰ but resources such as these aren't commonplace.

Independent programs such as the Dairy Grazing Apprenticeship aim to foster mentorships that will lead to farm transitions, but the original farmer must be dedicated to training a younger generation to take over and not primarily concerned with receiving top dollar for their operation.

The next challenge for a new beef operation is delayed revenue. If the operation raises an animal from birth to slaughter, it is likely 2.5 years before any revenue from a finished animal is received. To mitigate this issue, some will raise animals like sheep or hogs which can provide an income in the meantime. Raising someone else's cattle with your own herd on a custom basis is an option. Custom grazing is when someone signs a contract to raise someone else's animals for a predetermined amount of time. Compensation is typically provided on a per day & animal flat fee or based on a price per pound for the amount of weight the animal gained during the contract length. These agreements tend to be difficult to find and challenging to make a profit from for a novice grazer. Many also maintain off-farm jobs while establishing their operation or throughout depending on the size, but this can be grueling, especially if animals need to be moved daily to new pastures.

CSB2.5.2 PROCESSING FACILITIES

New York's animal processing industry has numerous challenges that vary from the farmer, processor, and middleman's perspectives.⁶¹

CSB2.5.2.1 THE FARMER

Farmers of all sizes who process beef in New York State face high processing costs and only a handful of New York farmers are large

enough to utilize the large processing facilities in Pennsylvania. However, while farmers of all sizes who process beef in New York State incur high processing costs, they face different challenges depending on their size and style of operation.

Operations with smaller numbers of cattle and who do not sell to retailers are served well through custom facilities throughout the state. While farmers may have complaints, they can usually find a facility that fits their needs. Those with many animals will reserve their slots very far in advance at USDA inspected facilities in New York and a few take their animals to a plant in Pennsylvania to take advantage of lower processing costs.

Mid-sized producers struggle to use either available processing option. Typically, they are too small for large facilities in Pennsylvania that process on a contract basis and too large to be handled by a single processor in New York at desired times of the year.

It isn't uncommon that farms will haul their animals to multiple processors throughout the state for slots which they reserved a year (or more) in advance, sell animals live to a middle man directly, or end up selling their live animals at auction to avoid the hassle of having their animals processed in New York.

Various solutions have been proposed and a few have been attempted, but none have yet solved the problems of price and access. Farms that have attempted to merge animals together and operate their own processing facilities have often not been successful. These businesses have faced issues relating to uniformity of size and quality across animals from the various operations. In addition, many have found it difficult to run a slaughter facility when they may not have experience in that industry. Initiatives like this that are successful have strict animal

⁶⁰ *Beginning Farmer Tax Credit*. (n.d.). MN Department of Agriculture. Retrieved October 7, 2021, from <https://www.mda.state.mn.us/bftc>
Center for Food Safety. (2021). *Issues | Mad Cow Disease*. Center for Food Safety.

⁶¹ In this report middlemen are defined as businesses buying and selling beef who do not raise it and also do not sell it to the end consumer.

condition standards and employ people with experience in processing to manage the businesses.

Investors have spoken about building new mid-sized USDA inspected facilities in New York state to reduce processing cost and increase access, and some have investigated its viability. They have not been successful because of the cost to build, challenges with zoning, limited public investment available, or have not been viable once up and running. Additionally, as new facilities are built others close down so the state's total capacity is not significantly increased. Farmer organizations and individuals have tried to establish businesses that coordinate relationships between farmers and processing facilities, by connecting people with available slots, which has found short-term success. This temporary fix ensures that the processing capacity in the state is being used, but farmers still incur high hauling and processing costs. In the past, after farmers have paid for the service for a few years they feel they can find open slots themselves. While certain farmers may be able to do this for a while, it is not solving the large structural issues in the animal processing sector. None of these have been the solution that farmers, marketers, researchers, extension agents, or politicians have been searching for.

CSB2.5.2.2 THE PROCESSOR

Processing facilities are facing their own challenges which are threatening their future viability. Operators of many custom exempt facilities have stated that they are already running at capacity and do not see any reason to become USDA inspected and incur the cost that comes with the certification.

Other custom exempt processors state that they do not have the financial means to upgrade their facilities nor do they have the capacity to handle the extra paperwork that comes with being a USDA inspected facility.

The labor market is becoming tighter for all processing facilities. Those not offering \$20-\$25 per hour and at least partial benefits are not able to find skilled employees they are satisfied with. Even

those who are finding employees are having to provide substantial training and at times send them to courses. Some facilities report hiring more people than they expect to need, knowing that some will quit during the first few months once they learn the demands associated with the job. These investments in labor are contributing to the rising cost of processing in New York State. Finally, much like farmers, the age of those who own processing facilities is increasing. In a recent survey conducted by Cornell Cooperative Extension, many owners noted that they would like to retire, but don't have anyone to take over the business. This is especially true if the proprietor doesn't have a younger family member being groomed as the successor.

CSB2.5.2.3 MIDDLEMEN & SPECIALTY MEAT SELLERS

Many farmers in New York will raise calves to market weight and sell them live to a customer. These customers are similar to those who purchase animals from auctions but have direct relationships with the farmer raising the beef cattle. The customers then will have the animals slaughtered and will sell the meat. These customers can include butcher shops and businesses that sell meat under their label to restaurants or grocery stores. These middlemen often develop long term relationships with farmers, processors, and customers, helping those parties reduce the risk of finding an adequate market each year. In New York State, some of these businesses have origins at Hunt's Point and have been in the specialty meat industry for multiple generations.

While reserving processing slots a year in advance is a challenge for many farmers, middlemen are better equipped to cope with the current processing system in New York state. When pre-reserved dates are upcoming, these middlemen can reach out to the farmers they purchase from and buy animals that are ready to be processed when the reserved time slots arrive. The increased ability to "find" an animal which is ready to be processed makes them better suited to reserve dates ahead of time than farmers. With space in facilities limited, these types of businesses are reserving their preferred processing dates and with their preferred facilities far in advance.

A few factors that drive how facilities are selected include: relationships with processors who know how they want their animal broken down, proximity to value-added processing (such as producing hot dogs or aged beef), and access to refrigeration/cold storage facilities. Similar to mid-sized farmers, many of these specialty meat businesses must reserve slots at multiple processing facilities because they are too large to be handled by a single facility in New York while often also being too small to access the larger processors in Pennsylvania. Processing facilities for beef are spread throughout the state and the price of hauling can add up. For example, you may have an animal slaughtered at one location, held in cold storage until you are ready to sell the animal, transport them to a separate facility to be broken into individual cuts, and held in cold storage until sold to the customer. Those who created value-added products such as cured meats or hot dogs may also transport their animals or parts to an additional location. The price of transporting the animals to multiple facilities on top of the high cost to process animals in the state of New York is a large contributor as to why (non-dairy) beef from New York tends to be expensive. These types of businesses do see a need for more value-added facilities throughout the state. Many said they need to go out of state to find someone who will make hotdogs or other prepared products to their specifications and at a competitive price.

CSB2.5.2.4 CAN THE INDUSTRY SUPPORT A LARGER PROCESSING FACILITY?

This question, asked by many, doesn't have a clear-cut answer. Those who support the idea of adding a larger processing facility tout the economic development value for both processing and beef farming. Additionally, a larger facility would likely charge a lower fee than smaller facilities due to efficiencies of scale.

Building the facility, however, is just part of the infrastructure needed. Additional facilities needed include animal holding areas, freezer storage space, and value-added processing facilities necessary for the space to be utilized.

It is also difficult for a large facility to serve large and small customers at the same time while maintaining the efficiencies that come with scale.

Right now, many dairy beef and finished Angus beef are sold at auction and processed in Pennsylvania. In addition, a few large beef farms and buyers in the state also process their animals in Pennsylvania.

One way to help to build a facility which can be financially viable in New York is for these customers to shift their processing to stay in state.

To secure this, they would need proof that the quality of butchering/processing and the fees are competitive with their current facilities. Another option would be for producers in the state to scale and utilize the new processing capacity. During our interviews, producers were open to the idea of scaling up as long as there is a guaranteed market for their product or support from state agencies to incentivize the purchasing of their product. State institutional buying through school food programs may be an option for guaranteed markets, but the prices schools can currently spend on beef are much lower than most farmers sell their meat for.

Those for and against building a large facility agree that without strong support from the New York state government, a large processing facility won't be viable.

CSB2.5.3 RETAILING BEEF HIGHLIGHT: BOXED BEEF

Restaurants and retailers that offer New York beef are having success as well as facing challenges. Typically, beef is sold as "boxed beef" to retailers and restaurants. These boxes include uniform cuts of beef that are a specified weight which are standard across the industry. While some cuts of beef are plentiful on the animal, others (like tenderloins, hanger steaks, or briskets) make up a very small portion of the overall meat from the animal. When a customer purchases a box of tenderloins, this is typically the

tenderloin coming from many animals. Larger slaughter and cut-up operations can create “boxed beef” because of their scale. The majority of operations in New York don’t have the capacity to offer “boxed beef” based on the size of their individual herds. Additionally, select cuts sell out first and the lower end cuts are harder to move. To sell “boxed beef,” operations need to have access to cold storage for their products until the slow moving items are sold and robust sales teams market all of the cuts.

Many ask, “is there a way for smaller New York producers to offer their own boxed beef products?” Attempts have been made which have faced the challenge of demand for high end cuts outpacing sales of lower end cuts and ground beef. Without customers for all products, operators can face high storage and refrigeration costs and the need to cut prices to move products quickly so more animals can be processed. Cooperative marketing has also been frequently suggested. By selling together, New York farmers could gain access to markets which typically buy boxed beef. While a novel idea and one that has lately gained popularity through food hubs, they are faced with two challenges that other beef marketers face. The first challenge is the product cost. While marketing together can help open more markets, higher processing costs in New York State result in prices higher than products from other geographic regions. Additionally, maintaining the same quality and taste across all the products can be a challenge, especially for grass-fed beef. Customers expect every cut in the box to be similar in size, taste, and fattiness. When combining animals from multiple producers and marketing them together, this can be a challenge to achieve.

CSB2.5.4 CONSUMERS

As stated earlier, United States consumers have been eating less beef over the past 50 years, and those spoken with for this project expect this trend to continue. While historically our changing diet has been related to health recommendations, in the future,

the trend may continue from the environmental sustainability movement and climate change mitigation attempts. Beef has been identified by the public as a culprit. While specific research focuses on how the various types of beef production can be better or worse for the environment, there is a general consensus that eating beef causes more of an environmental footprint than eating other protein sources. From “cow farts” linked to increased methane in the atmosphere to methane released from manure pits, a common theme is that cows are bad for the environment.⁶²

While some point out that grass-based beef systems may be better for the environment than feedlot raised beef, the narrative remains that consumers should reduce overall beef consumption. Additional research on the life cycle greenhouse gas emissions of various beef production methods in climates like New York is needed to help inform consumers while making purchasing decisions.

Questions that still need exploring include looking at emissions throughout the whole lifecycle of the animal in order to compare what the environmental impact is of eating a steak from a regionally grass-fed animal compared to one from a large industrial meat operation in the Western United States. Information on emissions from these various systems in climates similar to New York’s would help tailor policy to help meet the New York Climate Leadership and Community Protection Act 2050 greenhouse gas goals.

Experts agree that a large shift in US diets to address foods which are seen as “unsustainable” is coming. Some restaurants have recently promoted their elimination or reduction of beef on their menu.

It is expected by those we interviewed that in the future the US consumer will eat less beef and that the meat we eat will be smaller portions and higher quality than what is currently being consumed.

⁶² Lemonick, S. (2017, September 29). *Scientists Underestimated How Bad Cow Farts Are*. Forbes. <https://www.forbes.com/sites/samlemonick/2017/09/29/scientists-underestimated-how-bad-cow-farts-are/>

Many also agree that beef will most likely not be totally removed from our diets. It is a staple which will likely have a role in diets in the US, but that role will be shifting in the future. While US diets are expected to change, some note that globally beef consumption may stay stable if not increase. An increased opportunity to export beef may exist in the future, but it will have to compete with strong international producers who at times can produce beef at a lower cost than the US and especially New York.

With the current shift in the narrative that encourages eating smaller beef portions less frequently, there are also new meat substitutes which will have an unknown, long-term impact on beef consumption. From mixed patties (such as beef and mushrooms) to plant-based burgers, a large number of alternatives to a beef burger have entered the market. Some market specifically to consumers who want to reduce their environmental impact. These companies' marketing strategy includes an analysis on the resources and emissions associated with their product compared to traditional beef burgers. Another possible future roadblock is lab grown meat. The pricing, marketing, labeling, and customer acceptance of lab-grown meat products could greatly impact farm-raised beef but is currently unknown.

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Case Study - Dry Beans

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WHAT'S AT STAKE

There has been an historic contraction across the dry bean sector in New York, from fewer farmers and processors to declining investment in land-grant research and breeding efforts in the state. Despite this trend, New York is clearly the leading agricultural economy in the Northeast region and in the case of dry beans, it is a leading producer and processor that is still positioned to serve local and regional markets.⁶³

Interest in building and strengthening connections between the New York dry bean sector and consumers derives in large part from the nutritional value of dry beans and how they support a healthy diet.

They are often advocated as a nutrient-dense, plant-based protein that is high in fiber and important micronutrients⁶⁴ and their nutritional benefits are clearly cited in US dietary guidelines.⁶⁵ They are also a relatively affordable and shelf-stable protein source, making them a staple product in emergency food assistance and food relief programs. However, New York dry beans have received relatively little attention within efforts to support local and regional food supply chains, lagging vegetables and animal-based proteins in the farm to table movement.

They are also a food-grade crop grown alongside and often in competition for acreage with other field crops, like soybeans.

While New York and Northeast consumers may be more amenable to eating dry beans in the future, especially as appetites for plant-based protein sources are expected to grow, dry beans are still not widely consumed⁶⁶ and daily consumption is well below recommendations.⁶⁷

The future shape and viability of the New York dry bean sector is expected to diverge from the past, where the industry was largely built on the production of red kidney beans, and depend upon New York's capacity to: 1) attract and support farmers in growing dry beans types that are suitable to their scale, equipment, and management systems; 2) build a visible identity for New York grown dry beans to support local and regional market opportunities, including direct-to-consumer, institutions, and food businesses creating value-added products, and; 3) develop strong leadership and strategic partnerships among stakeholders to support a local and regional supply chain and lead the industry towards these emerging market opportunities.

⁶³ Lopez, R.A., Jelliffe, J. and C. Laughton. (2020). Northeast Economic Engine. Farm Credit East.

⁶⁴ Messina, V. (2014). Nutritional and health benefits of dried beans. *The American Journal of Clinical Nutrition*, 100(suppl_1), 437S-442S. <https://doi.org/10.3945/ajcn.113.071472>

⁶⁵ U.S. Department of Agriculture and U.S. Department of Health and Human Services. (2020). Dietary Guidelines for Americans, 2020-2025. 9th Edition. Available at [DietaryGuidelines.gov](https://www.dietaryguidelines.gov).

⁶⁶ Perera, T., Russo, C., Takata, Y., & Bobe, G. (2020). Legume Consumption Patterns in US Adults: National Health and Nutrition Examination Survey (NHANES) 2011–2014 and Beans, Lentils, Peas (BLP) 2017 Survey. *Nutrients*, 12(5), 1237. <https://doi.org/10.3390/nu12051237>

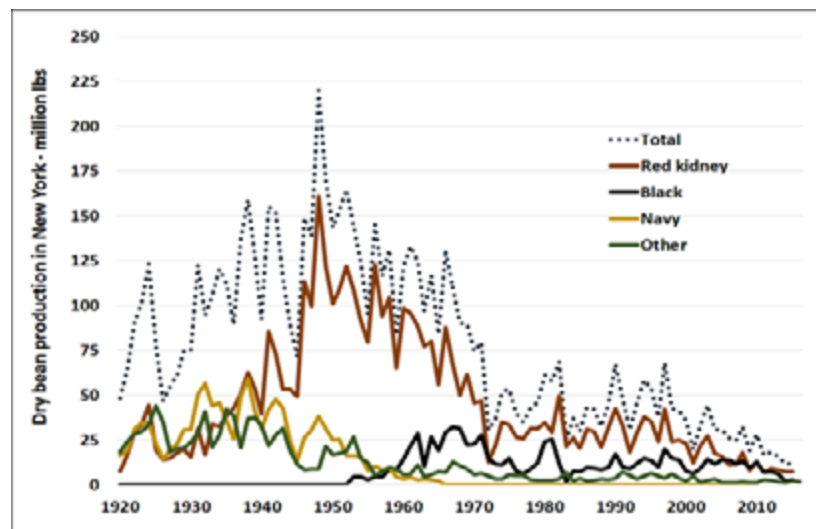
⁶⁷ USDA and USDHHS. (2020).

The information summarized in this report represents 26 interviews that included farmers, Cornell University faculty and research staff, Cornell Cooperative Extension educators, industry consultants, processors, distributors, food entrepreneurs and nonprofit organizations. The eleven farmers interviewed and/or that responded to a survey represented approximately 2,000 acres of dry beans, about 15% of the total dry bean acreage in the state, with a majority identifying as having a lot of experience growing dry beans. This report does not include perspectives from the canning industry in the state.

THE PLACE OF DRY BEANS IN NEW YORK

New York has a legacy in dry bean production, rooted in a historic land and farmer knowledge base. The state was once a national leader in dry bean production, and it is often cited as the origin of the US commercial dry bean industry beginning in 1830's.^{68 69} In 1950, NY had over 100,000 acres in dry beans and produced close to 150 million lbs, 70% of which were red kidney beans (Figure 1).^{70 71} Total production fell 50% by 1970 (75 million lbs), as red kidney production declined precipitously, and averaged 50 million lbs between 1970 and 1990.

Figure 1. Historic dry bean production in New York by class from 1920 – 2015. (USDA-ESMIS, 2021 and USDA-NASS, 2021)



68 Stone, J. L. (1903) Commercial bean growing in New York. Cornell University College of Agriculture and Agricultural Experiment Station. Extension Division. Bulletin 210. Available at http://reader.library.cornell.edu/docviewer/digital?id=chla6068875_6398_001#mode/1up

69 Andersen, Axel. (1965). USDA-ARS. Dry bean production in the Lake and Northeastern States. Agriculture Handbook, No 285. sg 1-32.

70 USDA Economics, Statistics, and Market Information Systems. (2021). Dry edible Beans. ERS Historic Dry Bean Acreage, Years 1909-2010. 01 May 2011 release. <https://usda.library.cornell.edu/concern/publications/pr76f340k?locale=en>

71 USDA National Agricultural Statistics Service. (2021). Annual Statistics Bulletin. New York Field Office. Census of Agriculture. Complete data available at https://www.nass.usda.gov/Statistics_by_State/New_York/Publications/Annual_Statistical_Bulletin/

More recent Census data from the last 20 years (1997-2017), shows NY continued to lose an average of 1,500 acres per year and produced 28 million lbs in 2017 on 13,000 acres, which is slightly greater than 2007 (Table 1).⁷² These changes in the NY dry bean sector contrast with the relative stability or growth in dry bean acres among states in the Grain Plains and Upper Midwest, including Michigan, Minnesota, and North Dakota. For example, Minnesota produced only 2 million lbs of red kidneys in 1980 and production increased dramatically over the next 30 years, reaching 90 million lbs in 2010.⁷³ Many generally consider New York's production declines over the last 20 to 30 years to be driven by a combination of factors: tighter markets with acreage growth and competition from other states, a shift in acreage to corn and soybeans, and hard production years with low yields driven by difficult weather conditions.

While the history of dry bean production in NY has been tied to the red kidney bean, many believe that the future will depend on NY's capacity to foster growth in other bean types.

Table 1. Statewide changes in dry edible bean farms, acres and yields from 1997-2017 (USDA NASS Ag Census, 2017)

	1997	2002	2007	2012	2017
Farms	452	306	143	90	91
Acres	43,492	32,520	16,218	9,642	12,619
Yields (million lbs)	70.6	44.5	24.8	20.0	28.1

Current NY production is dominated by two types, or classes, of dry beans - red kidney (light and dark reds) and black turtle soup (blacks). Recent data on dry bean production by class in NY is limited. Between 2006-2015, average red kidney production (10.1 million lbs) was slightly greater than blacks (8.6 million lbs) and these two types accounted for 90% of all the dry beans grown in the state.^{74 75} Other bean types, including pintos, small reds, and cranberries, accounted for the other 10% of production between 2006 and 2015, averaging 1.7 million lbs. Darker colored beans are better suited for NY's cool, moist growing conditions whereas lighter dry bean classes are susceptible to staining of the seed coat in NY climates.

72 USDA National Agricultural Statistics Service. (2017). Census of Agriculture. Complete data available at www.nass.usda.gov/AgCensus.

73 USDA ESMIS. (2021).

74 USDA ESMIS. (2021).

75 USDA NASS Annual Statistics Bulletin. (2021).

New York is strategically positioned to serve dry bean markets in the Northeast region.

While NY is a very small contributor to total US dry bean production (<1% by acreage and <2% of farms), it remains the leading producer among states in the Northeast.⁷⁶

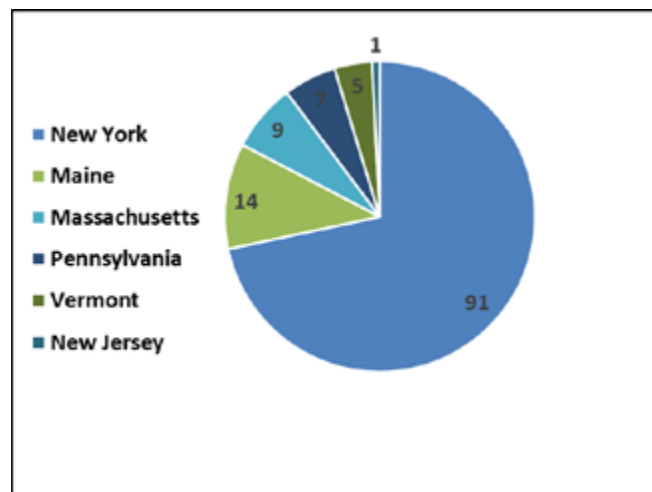
With 91 farms in 2017, it represented 79% of the dry bean farms in the Northeast region, including New England states and neighbors in NJ and PA (Figure 2). New York's regional importance in dry bean production follows its leadership in the production of other field crops except for Pennsylvania. For example, Pennsylvania has 74% more farms in soybeans with 56% more acreage when compared to NY. Many agree and emphasize that New York's proximity to east coast markets, from Boston to Baltimore, represents the greatest competitive advantage for producers and processors in the state by keeping freight costs lower relative to Midwest and Great Plain states. "We have survived because of the market on the East coast. The volume in other states makes it a very competitive market and transportation is our edge. Still, current markets won't take NY beans for more, they expect the same price as other beans." – Current dry bean processor.

Despite the economies of scale among bean-leading states, the NY dry bean sector has the potential to build off this transportation advantage, especially when considering a future where transportation bottlenecks and/or rising fuel prices are likely to increase the costs of moving beans to consumers. The future position, or "edge", of New York's dry bean sector may also depend on the ability to establish an identity and pricing structure that puts greater value on NY produced and processed beans.

⁷⁶ USDA NASS Census of Ag. (2017).

⁷⁷ USDA NASS Census of Ag. (2017).

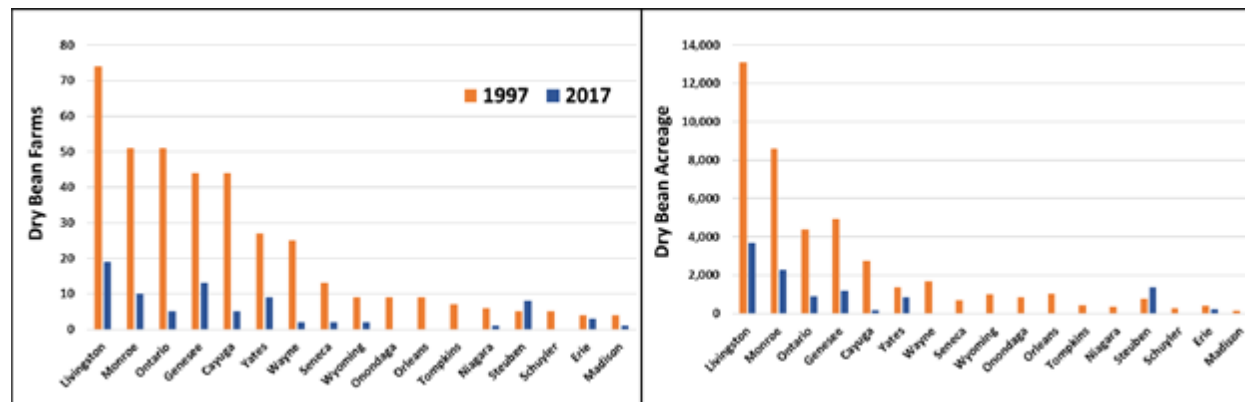
FIGURE 2. NUMBER OF FARMS PRODUCING DRY BEANS IN THE NORTHEAST REGION IN 2017 (USDA NASS AG CENSUS, 2017)



Dry bean farms are concentrated in the Finger Lakes. Dry bean acreage is centered, both historically and presently, in the Finger Lakes region of the state with three quarters of the acreage within six counties: Livingston (30%), Monroe (18%), Steuben (11%), Genesee (9%), Yates (7%), and Ontario (7%).⁷⁷ This production footprint previously included more acreage in the Finger Lakes and counties in Western NY and the Southern Tier (Figure 3). Across all counties, the decline in dry bean acreage over the last 20 years (1997-2017) is consistent with fewer farms producing beans (averaging 77% decline in farms and 71% decline in acres statewide). Steuben is an exception, where acreage increased 78% (764 to 1,360) while Cayuga and Ontario counties lost 90% of farms producing dry beans with a 79-94% loss in acreage. Any future growth in acreage is likely to occur within this historical production area and in proximity to existing processors. This concentration of dry bean acres also suggests that prospective dry bean farmers in counties with little or no acreage in dry beans will not have access to the same crop insurance programs.

FIGURE 3. CHANGES IN DRY BEAN FARMS AND ACREAGE BY NY COUNTY FROM 1997-2017.

(USDA NASS, 2017 Ag Census; based on all counties with data reported)



There are few processors, which are concentrated in areas of production. New York’s processing sector has experienced a similar contraction to production. Most dry beans produced in NY are sold to four NY-based processors for cleaning and sorting prior to distribution. Size and processing capacity varies by the processor and several processors are also growers with a long history (20+ years) of experience in the industry. Beans are sold through these processors who establish contracts with buyers, sometimes through brokers, and then directed into two primary product channels, canned beans and dry packed bags. A majority of NY processed beans, estimated at 50-75% in recent years, are sold for the canning industry, including canners in NY and PA and across the US, and a relatively small amount for export markets. Several processors cited emerging opportunities to sell in the dry packed market, where bulk beans are sold to distributors for packing into smaller, dry bags (1-2 lb).

New York’s processors shared that they have capacity to handle more beans if farmers planted more acreage though that capacity is dependent on the processor and the year. For some, the typical production year leaves plenty of storage room in the bins and they are processing less than half the beans they processed at their peak. However, conditions in 2020, which many cited as one of the best years for beans in recent years (e.g., beans at one processor were double the average), showed that when acreage and yields increase significantly, this processing capacity could be strained.

Processors identified several challenges as they look to the future and emphasized the need for more farmers and to maintain consistent acreage with farmers year after year.

When considering the prospect for growth in NY production, there was also some concern with maintaining or replacing old equipment and having adequate storage infrastructure. While some have recently expanded with capital investments and new technology (e.g., color sorter), having more consistent acreage and volume would help to justify new investments in aging systems for others.

DRY BEAN PRODUCTION: CURRENT CONDITIONS AND FUTURE DIRECTIONS

Future growth and development of the dry bean sector in NY will require attracting and supporting farmers in growing dry bean types that are suitable to their scale, equipment, and management systems. While dry beans have shown to be a relatively profitable crop, NY farmers face a range of production challenges and year to year variation in total planted acres is often related to the markets for other field crops, particularly soybean.

Future opportunities include: 1) increasing acres of direct harvested bean types among midsize to large scale farms to increase the availability of NY beans at scale; 2) expanding acreage for a rapidly growing market for organic; 3) supporting high value niche-market bean types for production on small farms.

New York dry beans are grown at a broad range of scales. For farms growing dry beans, average acreage ranged between 100-140 acres over the last 20 years.⁷⁸ Over 50% of farms grow beans on less than 100 acres and another 25% produce on 100-250 acres. There are a few farms in the state (4%) that grow more than 500 acres of dry beans, which account for almost 20% of the state's production. Farms that have recently added or trialed dry beans in the rotation can often start on small acreage, putting as little as 25 acres of dry beans into existing soybean acreage. This suggests that some farmers see opportunities to experiment with dry beans and diversify their rotation and markets.

Adequate crop rotations are critical to dry bean success. Dry beans do best on well-drained soils and are commonly grown in rotations that include corn, soybeans, small grains, hay, and some processed vegetable crops (e.g., potatoes). Dry beans mature earlier than soybeans which can allow for better winter wheat establishment after harvest. Fungal and bacterial diseases are a primary management concern; maintaining a 3-4 yr rotation

is a critical preventative strategy for managing disease. Farmers cite the consequence of using a tighter rotation and emerging disease issues, naming fields lost as being “beaned”, by growing too intensively with an inadequate rotation. General agronomic recommendations for producing dry beans in NY are widely available and updated annually (NYS-IPM, 2021) including guidance on variety selection, planting, monitoring and pest management practices.

Bean types have different management requirements, sensitivity to weather conditions, and equipment needs, which all have implications for supporting new growers. For example, red kidneys are a more difficult bean to grow, in part because it is a larger bean that is prone to shattering and not suitable for direct harvesting. Instead, plants first need to be pulled and windrowed before combining with custom harvesting equipment to maintain quality. Red kidney types are also generally weaker, shallow rooted plants that are less resilient and more susceptible to stress in the field, with additional time and labor investments, including several cultivations used to hill plants and facilitate pulling at harvest. Farmers that still produce red kidneys often have many years of experience and talk about the “knack” needed to grow them. For these reasons, despite the potential profitability of red kidneys (e.g., generally 40-50% higher price than black beans), there are clear challenges for farmers to start growing them. One farmer of light and dark red kidneys shared, “It has potential, but a lot have gotten out due to easier crops to grow even though they might not be as profitable. Equipment is hard to find if you want to start growing.” Farmers that add red kidney acreage are typically those that used to grow them and still have the equipment available while new red kidney growers benefit from some support from experienced farmers. It is clear that the scale of production is smaller and growth is incremental, as one farmer shared, “I know a new grower that picked up some acreage from an old grower who used to have 200 acres and is serving as a mentor to help him out. He put in about 25 or so acres and will add more this year.” In contrast, black beans and other similar small types can be direct harvested in a single pass with small modifications to more standard combine equipment, especially as newer, more

78 USDA NASS Census of Ag. (2017).

upright varieties become available. “I’ve been looking for a way to diversify from corn and soybean and I did not have to invest in any specialty equipment, that’s why black beans were appealing. Now I’m considering trialing some reds, see how it works”. - First year farmer of black beans.

Dry beans can be a very profitable crop for NY farmers with more risk and more intensive management than other field crops. Farmers growing dry beans often need to accept higher risks in return for greater potential profitability. “I try to encourage growers to grow beans, but the answer is they are too risky and too much work. Pull and thrash beans is a lot of work compared to just sitting in a grain combine.” - Farmer of black and red kidney beans. Year-to-year variation in yields is largely driven by weather conditions. For example, hot, dry summers can stress plants at flowering, or a wet fall makes for a difficult harvest and can affect plant dry down and bean quality. Farmers often cite some of the worst years as those with extended summer dry spells. When compared to soybeans, dry beans also require more field passes and inputs which leads to higher costs of production as well as added timeliness in management, especially for red kidneys.⁷⁹ While dry beans can offer higher value and greater profitability with less variable pricing,⁸⁰ their value and risks are increasingly measured against the market and policies associated with growing other field crops. For example, when soybean prices are low, farmers are more likely to shift some acreage to a dry bean crop, commonly black beans, where upright types can be harvested using similar equipment. Likewise, as soybean prices rise, farmers have looked for dry bean prices to be competitive and they are more likely to reduce their dry bean acreage. When black bean prices are not competitive with soybean farmers see less incentive to grow them. Many have associated declines in dry bean acreage, at least in part, to farmers transitioning acreage to field crops like soybeans. In

contrast to dry beans, the number of farms growing soybeans in NY has doubled from 1997 to 2017, from 1032 to 2055, and soybean acres have increased 163%.⁸¹

Growth in farm acreage will be driven by direct-harvested market classes already in production. There is greater potential to increase acreage for direct-harvested varieties as field crop growers look for alternative, higher value crops.

“We need more farmers growing beans. They need 1:1 training, to see the books and what goes into it, to show ways to reduce the cost of production and how it measures up, to see demonstrations on how it works. They think you need all this specialized equipment which is not true for direct harvested beans.” – Dry bean farmer and processor.

It is possible that some farm acreage in soybeans could be transitioned to direct harvested dry beans and managed with existing equipment and fit well into existing rotations. In 2017, there were over 2,000 farms growing soybeans in NY (total of 282,000 acres)⁸², which suggests that a small change in soybean acreage could have a significant effect on dry bean production in the state. The challenge will be in maintaining consistency in production from year to year where the fluctuation in production among some classes, like black beans, is highly dependent on corn and soybean markets.

Research on improved varieties that perform in the NY growing environment is a priority. Growers commonly cite the importance of seeing new bean varieties grown and tested under NY weather conditions. Breeding programs in “bean-leading” states (e.g., ND, MI, MN) continue to develop improved varieties based on several factors, including: 1) high yields; 2) upright architecture suited for direct harvest; 3) good traits for disease resistance, considering

79 Ontario Ministry of Agriculture, Food, and Rural Affairs. (2021). Publication 60. Field crop budgets. <http://www.omafr.gov.on.ca/english/busdev/facts/pub60.htm>

80 University of Minnesota, Center for Farm and Financial Management. (2020). FINBIN. Summary report by crop. <https://finbin.umn.edu/>

81 USDA NASS Census of Ag. (2017).

82 USDA NASS Census of Ag. (2017).

white mold and root rot; and 4) appropriate maturity with uniform dry down. Selections based on canning qualities, like texture and color retention, are also important. In NY, there is a history of annual variety trials, conducted by Cornell in Geneva, NY (<https://www.vegetables.cornell.edu/crops/processing-vegetable-research-and-extension-program/>), that compares new varieties alongside industry standards. The NY Dry Bean Grower Association identifies this type of research on variety selection for NY growing conditions as a top industry. One source of funding for this work, along with other priority areas identified by the association,⁸³ has remained constant but small over the last 15 years through a Dry Bean Endowment managed by Cornell CALS (established in 1988 with a range from 27K to 37K annually).

Many current dry bean farmers have shared that they are most interested in new and better varieties of the classes they currently grow (i.e., black, red kidney) rather than adding new classes of beans into their rotation. Growers have experience with the classes they have grown over time and new classes add layers of new management, from differences in-field management practices to the cleaning down of equipment, so there is little incentive for small volume crops without a well-established market. The same is true from the large processing perspective. While most processors handle multiple classes, a full clean down is required between varieties to segregate beans. Some farmers have found opportunities with other widely consumed types (e.g., pintos, small reds) and others have experimented with producing beans based on emerging markets (e.g., adzuki) while food business entrepreneurs are looking for local sources of other pulse crops not currently grown in the state (e.g., lupini, chickpeas). There are breeding efforts in NY which are working on niche market beans that are most likely to fit on very small acreage where farms can

respond to culinary trends and develop higher value markets, such as restaurants and catering.

The potential for and success with new classes at scale will depend on addressing the technical, agronomic challenges and supporting growth in acreage that justifies added management and handling costs for both farmers and processors.

Organic is a small sector of NY production with opportunity for continued growth. Over the last 10 years (data available from 2008 to 2019), the number of organic farms growing dry beans has grown 325% (from 4 to 17) and acreage has increased by 180% (314 to 803). Black beans are the dominant organic bean type (14 of 17 farms) representing 49% of harvested organic yields, followed by pintos (4 farms) at 30%. Organic dry beans remain a small percentage (<5%) of total bean production in the state, totaling 1.1 million lbs.⁸⁴ Based on the number of farms relative to acreage, organic dry beans are grown on small acreage (average of <50 acres) compared to conventionally managed dry beans. There are currently two certified organic processors in NY, both located in the Finger Lakes region of the state that are distributing organic beans in NY. From the farm perspective, the transition to organic dry beans needs to be part of an organic rotation, which commonly includes corn, soybean, and small grains. Organic weed control was often cited as a primary production challenge and future research in organic practices that is informed by lessons learned in organic soybean in NY and the Northeast may help support further organic adoption.^{85 86}

83 New York Dry Bean Industry Priority List. (2021). New York Dry Bean Growers Association.

84 USDA National Agricultural Statistics Service. (2019). Organic Survey. Complete data available at https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Organics/index.php

85 Liebert, J. A., & Ryan, M. R. (2017). High Planting Rates Improve Weed Suppression, Yield, and Profitability in Organically-Managed, No-till-Planted Soybean. *Weed Technology*, 31(4), 536–549. <https://doi.org/10.1017/wet.2017.35>

86 Ryan, M.R., Caldwell, B.A., Crowley, K., Liebert, J.A., Menalled, U., Pelzer, C.J., Pickard, L., & Wayman, S. (2021). Organic No-Till Planted Soybean Production. Sustainable Cropping Systems Lab. Cornell University, Ithaca, New York.

Dry bean production systems will need to adapt to a changing NY climate while advancing soil health goals. Dry beans, and especially red kidneys, are sensitive to weather stress.

Depressed crop yields in NY are often attributed to heat stress at the time of flowering, extended periods of summer drought, and excessively wet conditions that can both promote disease and affect dry down for harvest. These production risks could potentially intensify in the future with climate predictions for NY that include greater frequency of high rainfall events and summer droughts.⁸⁷ Added resilience to adverse weather extremes are largely seen to come from breeding research that can lead to improved varieties that are heat tolerant and where selected traits (i.e. disease resistance, uniform dry down, and upright architecture) can potentially help mitigate the effects of excess moisture (as summarized in <https://www.nimss.org/projects/view/mrp/outline/18720>). The adoption of soil health practices that improve drainage and conserve soil moisture, like strip tillage, may also contribute to greater resilience while reducing tillage passes. Strip tillage practices that target tillage to the planting zone are already used by some farmers for direct-harvested bean crops, and farmers report these practices have shown to alleviate compaction (where dry beans are especially sensitive), reduce surface soil erosion, increase drainage, and conserve soil moisture, while saving fuel costs.⁸⁸



⁸⁷ Wolfe, D. W., DeGaetano, A. T., Peck, G. M., Carey, M., Ziska, L. H., Lea-Cox, J., Kemanian, A. R., Hoffmann, M. P., & Hollinger, D. Y. (2018). Unique challenges and opportunities for northeastern US crop production in a changing climate. *Climatic Change*, 146(1–2), 231–245. <https://doi.org/10.1007/s10584-017-2109-7>

⁸⁸ Rangarajan, A. (2010). Optimizing reduced tillage for root, leafy, and organic vegetables grown in the Northeast. Sustainable Agriculture Research and Education Project. Final Report, Project. LNE06-45. <https://projects.sare.org/project-reports/lne06-245/>

LOCAL AND REGIONAL MARKET DEVELOPMENT: OPPORTUNITIES AND BOTTLENECKS

Trends in dry bean consumption suggest there has been a small increase in appetite for dry beans over the last 30 years. However, these changes in consumption and the potential for future markets are highly dependent on the type of bean (Figure 4)⁸⁹. For example, US black bean consumption has increased over 10 times since 1990 (from <1 to 1 lb per capita per year) while red kidney consumption has declined over the same time period (from 0.5 to 0.24 lbs). However, consumption of legumes, including beans, peas and lentils, is still well below recommended guidelines (e.g., adult men, current 1 cup per week vs 2-3 cups recommended).⁹⁰

There is optimism that beans grown in NY state can be elevated by trends in plant-based diets combined with growth in the movement towards supporting local and regional-based production. Opportunities include: 1) creating the supply chain for a New York branded dry packed retail market; 2) supporting programs and improving access to public institutions as they seek healthy, locally sourced farm products, especially farm-to-school pathways, and 3) responding to plant-based food trends and developing value-added bean products.

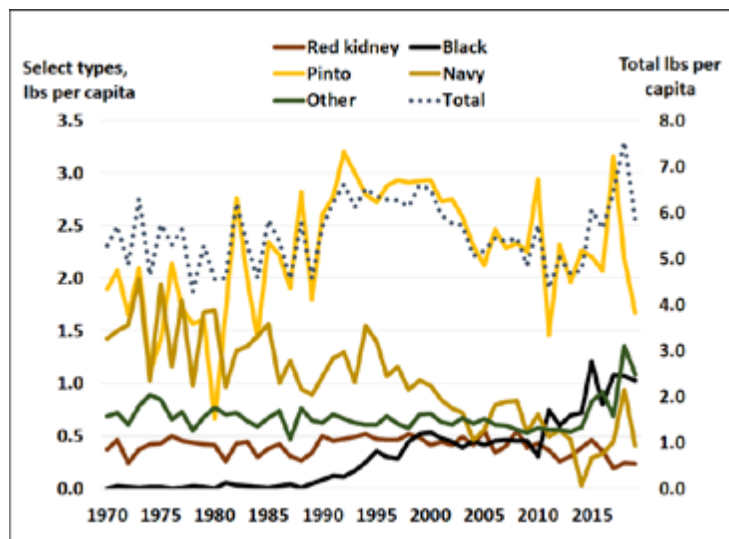


Figure 4. Estimates of US consumption¹ per capita for total dry beans and selected bean types from 1970 – 2019. ¹

Consumption based on per capita availability adjusted for loss. USDA – ERS 2021, Food Availability (Per Capita) Data System.

89 USDA Economic Research Service. (2021). Food availability (per capita) data system. Loss adjusted food availability. Vegetables. Last updated 09/23/20. <https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/>.

90 USDA and USDHHS. (2020).

How does dry bean consumption by New Yorkers compare to the scale of New York production? Historically, consumer appetite for dry beans has largely been satisfied with bean types that have not been widely grown in New York (e.g., pintos, navy beans; see Figure 4). Instead, New York production has been grounded in red kidneys and more recently black beans, which account for 4% and 18% of total dry bean consumption respectively.⁹¹ Where recent production data is available, between 2010 and 2015, New York produced an average of 8.7 million lbs of red kidneys, which is slightly greater than estimated New York consumption of 7.2 million lbs per year (based on US per capita consumption and New York population estimates).⁹² Over the same time, New York produced an average of 6.3 million lbs of black beans while consuming an estimated 14 million lbs.

Trends from 2019 data suggest that this appetite for black beans will grow into the future, with an estimated 20 million lbs consumed while red kidneys will be a smaller and declining proportion of the New York dry bean diet (4.6 million lbs consumed).

New York grown, dry pack beans could become a staple on market shelves.

There is clear interest and some movement among processors and local food distributors toward marketing a New York labeled or farm-branded dry bags for direct to consumer or direct to wholesale markets.

One dry bean farmer described the potential of this market opportunity to increase profitability, *“I don’t mind if my beans go out of state, I just don’t want my beans to leave the state and come back in and for others to take the value.”* This can involve New York produced and processed beans, originally packaged in wholesale bags (25-50lb), being sold to distributors and food hubs for packaging in smaller retail bags (1-2lb) with labor and equipment investments in bagging and handling. Farmers themselves could also potentially contract with processors to clean their beans while developing their own markets, though they would need to develop these relationships and either have the capacity to create retail bags for individual sales or sell larger volumes to wholesale buyers. Despite interest in building a retail market with a dry bagged label for New York beans, consumer demand for this product may face familiar challenges, as dry bean consumption is often linked to the convenience of a canned product and cooking time is often cited as a barrier to dry bean preparation.^{93 94} Building an identity for New York dry beans may contribute to greater consumer interest and markets. For example, some have tried to promote New York beans alongside local whole grains and flour (e.g., GrowNYC Grainstand, <https://www.grownyc.org/grains/wheretobuy>). It is unclear where wider, coordinated organizational leadership will come from and how a label(s) will develop to support this local market opportunity.

Dry beans can be a nutritious, shelf-stable product for public purchasing programs.

⁹¹ USDA ERS. (2021).

⁹² New York State Office of Information Technology Services. (2021). Annual Population Estimates for New York State and Counties. Beginning 1970. Data available at <https://data.ny.gov/Government-Finance/Annual-Population-Estimates-for-New-York-State-and-Counties/krt9-ym2k>

⁹³ Grand View Research. (2020). Canned legumes market size, share, industry report, 2020-2027. Retrieved from <https://www.grandviewresearch.com/industry-analysis/canned-legumes-market>

⁹⁴ Winham, D., Tisue, M., Palmer, S., Cichy, K., & Shelley, M. (2019). Dry bean preferences and attitudes among Midwest Hispanic and non-Hispanic white women. *Nutrients*, 11(1), 178. doi:10.3390/nu11010178

New York state funded institutions could have a significant role in developing future local supply chains for New York grown products,⁹⁵ especially for healthy shelf-stable foods like dry beans. State programs like the recent 30% Farm to School (F2S) Initiative (<http://www.cn.nysed.gov/content/30-farm-school-initiative>) which incentivizes New York food in school lunches, could open new markets for New York dry beans. In the current F2S program, schools that document the 30% New York food purchasing requirement receive reimbursements of 25 cents per meal (an increase from 6 cents per meal) and New York dry and canned beans are a qualifying product. Guidelines state that: 1) food be produced in New York State or 2) food be processed inside or outside New York and have over 51% of agricultural raw materials produced in New York. Dry beans are generally seen as a specialty menu option yet there is still some optimism that small changes in sourcing, especially in large districts (e.g., New York City) could have a profound impact on the volume of New York beans moving into schools. Based on the school meal program, dry beans could fit into two categories, either as a protein or as a legume/vegetable. As a protein, beans offer a plant-based option and one that is considerably cheaper than local beef while also serving those school districts that are trying to accommodate religious or culturally appropriate food options. Dry beans also have potential to help fulfill local sourcing goals in the vegetable category. One of the most cited challenges to using New York produce is the

seasonal nature of produce availability. Given their stable shelf life, dry beans are available year-round and could help gaps in availability by catering to times of year, like winter months, when it is otherwise hard to source locally.

Regardless of where they fit on the menu, beans are largely seen as contributing to healthy, nutritious school food in ongoing statewide

extension programming (i.e., Harvest NY) and coordinated advocacy efforts (e.g., NY Food for NY Kids, NY Coalition for Healthy School Food, Good Food Purchasing Program). Despite this potential opportunity, there are still considerable barriers to incorporating New York dry beans into public schools and other institutions. Based on a recent survey of school food directors that were successful in achieving the 30% goal, “student acceptability” of beans still limits their ability to get more beans on the menu.⁹⁶ Another barrier cited by school food directors and the one most cited in stakeholder conversations was that schools do not have the capacity, including resources, time, and training, to prepare a dry pack bean product.

Most schools source canned beans and their inability to get canned or pre-cooked New York beans, where New York beans are segregated from other sources, is seen as a major bottleneck. Widespread incorporation of New York beans into New York schools would require better coordination, strategic partnerships, and more investment to develop an easy-to-use New York bean product.

or this reason, combined with other hurdles in the procurement process, local distributors selling in the dry packed market currently view school districts as a relatively small market opportunity relative to potential retail channels for New York beans. While F2S initiatives have gained momentum in recent years, a more established public buyer of New York dry beans has been the New York State Department of Corrections (estimated volume of at least 150,000 lbs per year), though less is known about their procurement and handling process and more information is needed to understand how dry packed beans are prepared and served among institutions. There are also state-level investments in food relief and emergency assistance and growth in state-wide programs that support emergency distribution of New York grown

⁹⁵ Libman, K., Li, A., & Grace, C. (2016). *The Public Plate in New York State: Growing Health, Farms and Jobs with Local Food*. The New York Academy of Medicine.26.

⁹⁶ Bilinski, C., Bull, C., & O'Connor B. (2022). 30% NY Initiative: Opportunities, Barriers, and Pathways to Success. Cornell Cooperative Extension. Harvest NY. https://harvestny.cce.cornell.edu/uploads/doc_217.pdf

products to food banks (e.g., Nourish NY). Continued efforts to understand the current and potential scope of dry bean purchasing among public schools and other institutions could help lay the groundwork for clarifying this market opportunity, raise the profile of beans, and help establish connections between institutional buyers and sellers of available beans.

Plant-based food trends provide an opportunity for developing value-added bean products. Demand for plant-based foods is predicted to soar into the future, fueling innovation among food entrepreneurs and businesses, and New York grown dry beans are one potential source for new products. While consumer surveys show high preferences and recognition for dry beans among plant-based foods, alternative meat products are largely being developed through other protein sources, including soybean, wheat, and increasingly yellow peas.⁹⁷ Plant-forward foods with black bean ingredients are often in competition with and lag behind those based on wheat and soy. Food business entrepreneurs in New York and elsewhere are responding to changing tastes and consumer preferences by developing products (i.e., dips, snacks, pasta) that use beans and other legumes as key ingredients. Developing new value-added products using New York grown dry beans can provide ready-to-eat convenience and an alternative dietary fiber and protein source. However, product development is often closely linked to the distinct culinary traits of select beans or legumes and often there is little to no history of growing the desired types in the state (e.g., adzuki, chickpeas, lupini). The greatest near-term opportunities are in developing products from bean types already widely grown (e.g., black) while more foundational agronomic research and extension investments are needed to explore the potential of growing other specialty, niche beans or legumes under New York growing conditions.

SUMMARY

There is broad interest in developing a forward vision for the New York dry bean sector in the state and the Northeast region. The sector is small and highly concentrated, narrowed by region and bean class, but strategically positioned to serve Northeast markets and growing consumer demand for locally sourced farm and food products. While the history of the New York dry bean sector has centered on the red kidney bean, future production opportunities are largely tied to advancing varieties and management practices for direct harvested types, particularly black beans, that are suitable to New York growing conditions and support soil health goals while offering crop diversity and high value when integrated into existing field crop rotations. Maintaining consistency in these acres from year to year will be necessary to support further local processing investments. As a healthy, shelf-stable crop, building momentum for future local and regional market opportunities will continue to be rooted in advocacy efforts that center on the nutritional value of beans and promote dry beans as a healthy plant-based protein option. It will also require building a visible identity for New York grown dry beans to support local and regional market opportunities, including direct-to-consumer, institutions, and food businesses creating value-added products.

Renewed leadership, greater statewide coordination, and strategic partnerships among public and private stakeholders will all support the development of local and regional supply chains and lead the New York dry bean sector towards greater viability in the future.

⁹⁷ Good Food Institute. (2021). The plant protein landscape: Key ingredient sources for alternative proteins. <https://gfi.org/wp-content/uploads/2021/01/The-Plant-Protein-Landscape-Toolkit.pdf>. Available as video, 23 February 2021, <https://www.youtube.com/watch?v=ISxlXAnHDHs>

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Case Study - Apples



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WHAT'S AT STAKE

According to the New York Apple Association, apples are the second most consumed fruit in the U.S. behind bananas. Apples are widely consumed in America due to their availability, sweet taste, and affordability. The state of New York is the second leading apple producer in the country, and the state's apple industry consists of more than 600 commercial-sized growers who provide 8,000 direct rural jobs and 1.3 billion U.S. dollars in economic output.⁹⁸ According to the New York 2020 Agricultural Summary Bulletin, apples are the fifth most important agricultural product in the state in terms of market value.

As a local, low-cost supplier of healthy food, the New York state apple industry produces relevant and significant output that is vital to nourishing our future generations. Therefore, the profitability of this sector is important for the nutritional and economic well-being of our consumers.

APPLE INDUSTRY IN THE STATE OF NEW YORK - AN OVERVIEW

CONSUMPTION

United States consumers love apples. They consume about 45 pounds of apples and apple products per person per year.⁹⁹ The average consumer eats about 18 pounds of apples per year as fresh apples and the equivalent of 27 pounds of whole apples in the form of processed apples, such as apple juice. Apples are the second leading fresh fruit consumed in the U.S. behind bananas.¹⁰⁰ Berries and other high-quality fruits are strong competitors, especially as most fruits are now available year round.

The total per capita apple consumption has been steady over the past three decades, but processing apple consumption per capita, specifically apple juice, has been declining while fresh apple consumption has been rising slightly. In addition, supplies of apple juice, the leading processed product, have come primarily from imports which rose in the early 2000s but have been steady since.

98 Schmit, T. M., Roberta M. Severson, Jesse Strzok, and Jose Barros. (2018). Economic Contributions of the Apple Industry Supply Chain in New York State. Extension Bulletin EB 2018-03, Charles H. Dyson School and Applied Economics and Management. *Cornell University*

99 United States Department of Agriculture. (2021, July). Food availability (per capita) Data System. *Economic Research Service*. Retrieved from <https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/>

100 United States Department of Agriculture. (2021, July). Food availability (per capita) Data System. *Economic Research Service*. Retrieved from <https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/>

Roughly 20% of the apple juice consumed in the U.S. is produced here, the rest is imported.¹⁰¹ Conversely, fresh apple supplies have come from increases in domestic production as opposed to imports.

New York produces more apples than its population consumes. In 2019, New York produced 212% of the amount of fresh apples it consumes and 115% of the amount of apples it consumed as processed products. This means that New York sells a lot of its apples outside the state.

As a matter of fact, New York exports its apples up and down the Eastern seaboard and as far west as the Mississippi, as well as to some international customers. However, retailers and food service establishments in New York don't sell only New York apples; they sell apples produced from other growing areas as well. They do this because some regions, such as Washington, can produce apples at a lower cost. They do this also to reduce the risk of having too much supply coming from any one region and to increase the number of varieties, grades, and sizes demanded from their customers but which are not available from New York growers.

NEW YORK PRODUCTION

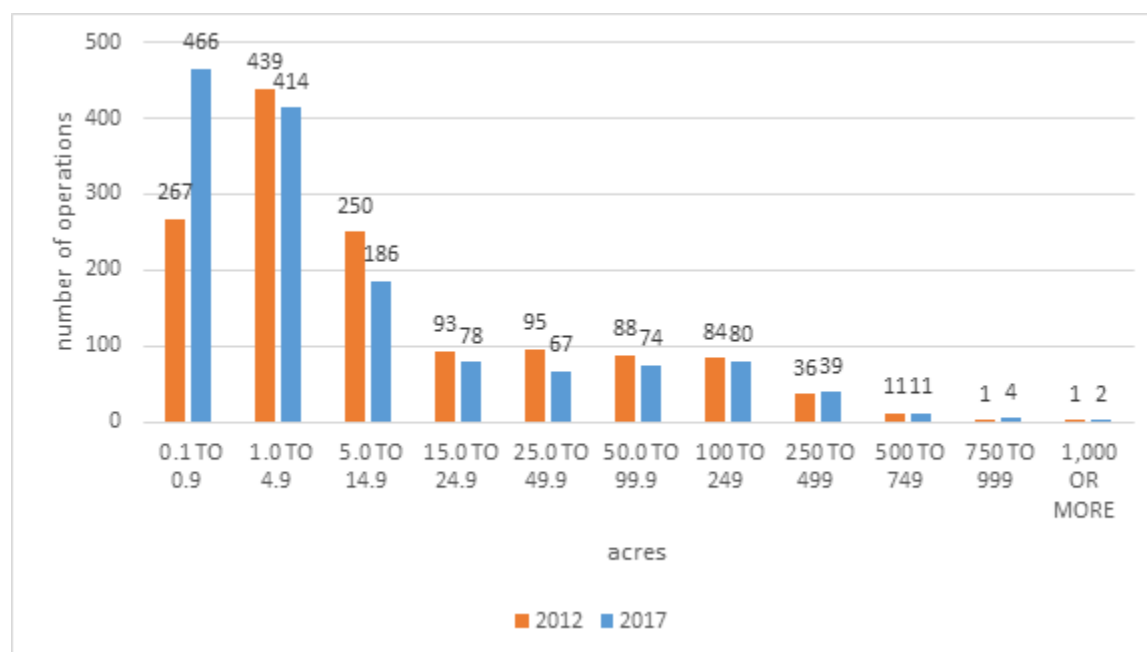
New York apple production has been stable 2007-2020. The value of that production, however, increased a remarkable 30% as growers added newer, premium-priced varieties and removed older varieties that are lower-priced. They have also been increasing their portion of fresh apples, which receive higher prices, and decreasing their portion of processing apples, which sell at significantly lower prices.

From 2012 to 2017, the number of farms growing apples on less than an acre grew (Figure 1). Since orchards of this size will not provide much income from apple sales at wholesale prices, these orchards may be part of multiple-enterprise operations, for sales of premium-priced organics, or for u-pick operations or other direct-to-consumer markets. Some of these new operations may be growing apple varieties used by hard cider makers.



¹⁰¹ United States Department of Agriculture. (2021, October). Fruit and Tree Nuts Yearbook Tables. *Economic Research Service*. Retrieved from <https://www.ers.usda.gov/data-products/fruit-and-tree-nuts-data/fruit-and-tree-nuts-yearbook-tables/#Noncitrus%20Fruit>

Figure 1. Number of Operations with Apples, by acres of apples.



Source: USDA, Agricultural Census, multiple years¹⁰²

ORGANIC APPLES

Ten percent of all retail apple sales in the U.S. on average are for organic apples, and about 94% of those organic apples are grown in Washington.¹⁰³ In 2019, the USDA Organic Census reported 43 farms growing apples organically in New York (Table 1). The harvested organic acreage was 130 acres, which produced 2.4 million pounds with a farm market value of \$1,628,654.¹⁰⁴ This was approximately 0.6% of the total New York apple farm market value.

¹⁰² United States Department of Agriculture. (2019). (rep.). 2017 Census of Agriculture. (Vol. 1, pp. 1–820). *National Agriculture Statistic Service*

¹⁰³ Offner, J. (2020, December 31). Organic apples still going strong. *The Packer*. Retrieved from <https://www.thepacker.com/news/organic/organic-apples-still-going-strong>

¹⁰⁴ United States Department of Agriculture. (2019). (rep.). 2017 Census of Agriculture. (Vol. 1, pp. 1–820). *National Agriculture Statistic Service*.

Table 1. New York Organic Apple Production

	2014	2019	Change
Farms	24	43	79.2
Harvested acres	161	130	-19.3
Market value (\$1,000)	704	1,629	131.4

Source: USDA, Agricultural Census, Organics Survey, multiple years.

MARKET CHANNELS

Sales of New York state apples in 2020 were \$328 million from production of 1,383 million pounds¹⁰⁵. Total market value for apples is usually between 6%-7% of total state agricultural sales and behind that of milk, cattle and calves, and corn.¹⁰⁶

Commercial growers sell most of their apples through two marketing channels, retailers and processors. Prices and margins are much greater for fresh apples; however, processors remain an important market. Apples sent to processors was \$82 million from the production of 699 million pounds. This was only 25% of total sales from 50% of total production.¹⁰⁷

Processors provide a market for apples that do not make the grades and sizes required by the fresh market, including those that do not meet color specifications or have surface blemishes from diseases, sunburn, or hail damage. New York apple producers are able to supply roughly 90-95% of the apples needed by New York processors. In addition, processors in Pennsylvania and Michigan provide good markets for New York producers.

A new niche market for apples is hard cider. However, the varieties preferred by hard cideries are very different from those grown for retail, juice, sauce, or regular cider.

The state is home to several processors, the biggest of which is Mott's, a subsidiary of Keurig Dr. Pepper. Mayer Bros. located in New York is reported to be the largest apple cider processor in North America. In addition to apple cider, they make and bottle lemonades, water, juices and sell under their own label or private label. Apples are also sold to processors to be transformed into frozen slices, bakery fillings, fresh slices, and more. According to a survey of apple producers by the New York Food Viability Institute (NYFVI) in 2020, producers reported opportunities seen in processing and value-added.¹⁰⁸

¹⁰⁵ United States Department of Agriculture. (2021). 2020 Agricultural Statistics Summary Bulletin, New York. *National Agriculture Statistic Service*. Retrieved from https://www.nass.usda.gov/Statistics_by_State/New_York/Publications/Annual_Statistical_Bulletin/index.php

¹⁰⁶ United States Department of Agriculture. (2019). (rep.). 2017 Census of Agriculture. (Vol. 1, pp. 1-820). *National Agriculture Statistic Service*.

¹⁰⁷ United States Department of Agriculture. (2021). 2020 Agricultural Statistics Summary Bulletin, New York. *National Agriculture Statistic Service*. Retrieved from https://www.nass.usda.gov/Statistics_by_State/New_York/Publications/Annual_Statistical_Bulletin/index.php

¹⁰⁸ New York Farm Viability Institute. (2021, January). 2020 Apple Growers Research Needs. Retrieved from <https://nyfvi.org/wp-content/uploads/2021/01/Apple-survey-with-notes-for-website.pdf>

CURRENT FINDINGS & DISCUSSION

Researchers interviewed members of the New York state apple industry, including growers, packers, and processors and members of the Cornell Cooperative Extension fruit teams. The report below summarizes the information from these interviews. While it does not represent the New York apple industry as a whole, it contains concepts that will be important if the industry chooses to develop a strategic plan.

PROFITABILITY

Profitability has been good for most apple growers in New York with good wholesale prices for fresh apples. The 2020 marketing year was positive for most growers in New York. Gala, Honeycrisp, and Fuji are important varieties and wholesale fresh fruit prices for these have continued to increase.

Profitability has been generally good for the following reasons:

- The proximity of New York state to the major east coast markets continues to sustain the apple industry. This proximity to the market presents a transportation cost advantage over Washington state growers who are among the largest apple producers in the country, and if this transportation cost remains high or continues to increase, this advantage will only keep growing.
- The cost to establish a new orchard is less in New York compared to Washington state, mainly due to the difference in cost of land.
- In general, higher density, narrow-canopy planting systems that establish or replace older orchards are more profitable and continue to be the preferred planting system in New York.
- Changing assortments of apple varieties to include newer and more profitable varieties for fresh consumption.

At an industry-wide level, there exist significant challenges that need to be addressed to ensure future prosperity:

1. Diminished labor pool and labor regulations

The major threat towards profitability both present and future is by far the diminished labor pool available to perform growing operations. New York state apple growers rely more and more on the Farm Worker Visa program, a program that needs to be overhauled to become less bureaucratic and cumbersome so as not to put farm operations, such as harvest, at risk.

Minimum wage increases and diminishing threshold in mandatory overtime have accelerated labor expenses. The 2015 Fruit Farm Business Summary, which consists primarily of apple producers, reported that labor costs (direct and indirect costs) averaged 47.9% of all operating expenses on New York apple farms. Some producers interviewed for this 2021 study reported that 70% of their farm operating cost is labor.

The apple growers express a need that the state of New York remains on similar terms concerning wage regulation vs. competing apple-growing states.¹⁰⁹

2. Farm Production

At the individual grower level, improvements in apple growing still represent a significant opportunity to increase profitability. Decisions about variety, rootstock, system and site are vital for optimal production and more research in these areas is needed.

3. Balancing Product Assortment

Apple consumption has been good; however, it may be possible to increase consumption even more considering the varied product forms available, such as fresh, juice, cider, applesauce, and slices. Innovation in breeding new apple varieties in New York to increase consumer demand has led to improved prices but not necessarily increased consumption. And innovations in other product forms, such as organics and processed products have been slower.

109 Note: AEWRs for apple states: MI=\$15.37; NY=\$15.56; PA=\$15.54; WA=\$17.41

Producing apples organically tends to be difficult in the Northeast. However, demand for organic apples is strong nationally as well as locally. Couple this with consumers' interest in locally produced foods, and organic apple production may represent a missed opportunity for the Northeast. Research on organic production would be needed.

Fresh fruit growers as well as retailers think that there are too many apple varieties in the market. The plethora of varieties from New York, Michigan, Washington, and countries of import may be confusing to the consumer and take up retail shelf space with diminishing returns.

4. Assets

Some packers believe the state may have too many older packing lines that are inefficient and that cannot pack the newer packaging requested by retailers. The packer segment may consolidate as older packers might decide to get rid of their lines.

5. Supply and Demand

Retailers have consolidated thereby reducing the number of procurement offices and buyers. With fewer buyers, growers (via packers) now have fewer market options than previous decades. In addition, having a large number of packers and sales agents may lead to highly competitive atmosphere to the detriment of growers. Some packers feel that New York may have too many packers, sales desks and brokers currently to balance the number of buyers.

There seems to be a growing concern regarding achieving a balance between supply and demand for fresh fruit. This has led to a decrease in pricing power and profit share for growers. Growers are expressing a need to form associations that can address future potential fruit over-supply. Cooperating farms, sales agencies, and shippers can provide critical information and communications that coordinate production with markets.

6. Organics

Organic apple production in New York continues to be a small niche segment in the state, composed mainly of small-scale operations. These growers have enjoyed the market opportunity for organics; however, due to the state's environmental high humidity, organic apple production on a large scale continues to be a challenge. But demand for organic apples is quite strong, and growers in Washington state continue to add organic acreage, while imports of organic apples have been growing.

7. Other

Growers are concerned that farm chemicals in the state of New York take longer to approve than competing states and therefore represent a cost disadvantage.

EQUITABLE:

Like farm owners in general, New York apple growers are older and primarily white males.

High costs for land, orchard establishment, and equipment create high barriers to entry. Due to the initial investment cost, currently, only family members, well-funded individuals and corporations can enter the apple-growing industry.

The history and desire of farming families to keep their farms in the family also creates a barrier of entry for those outside of the family farm.

Farm transition planning and innovation is critical for new operators not to be too burdened with debt. Therefore, succession planning to non-family members as well as family members will be an important factor in affordability and future profitability. One grower interviewed suggested that a tax incentive is needed so that apple-growing businesses can be passed to an employee or other entity.

In New York there are many small growers (1-3 acres orchard size) which creates a much more fragmented industry.

SUSTAINABILITY:

Climate change is becoming an important factor for apple growing in New York. Average temperatures keep increasing, and growers will have to adapt to greater volatility in blooming and harvest dates. Some growers believe to mitigate climate change impacts the optimum growing region in the state will be north of the US 104. The industry trend is to move closer to Lake Ontario to achieve optimal growing environmental conditions. One question faced by growers is, “Will the state of New York be able to maintain yields and cost as average temperatures in the future increase?”

Although some growers indicated they have land around them that could be put into production, some growers indicated that access to good planting sites will only keep getting scarcer. On the other hand, climate change can bring in some opportunities, for example, one grower believes a new optimal growing region will be in the northern region of upstate New York.

The state may be able to mitigate climate change impacts by diversifying growing regions within the state. Finding land, moving orchards and moving packing sheds would be costly.

NUTRITION:

Apples in general continue to carry a positive health connotation in terms of nutrition. Packaged, sliced apples continue to increase in sales as a healthy option item in kids’ lunch box items and as a side-item on fast food restaurants kids’ meals.

However, some organizations are criticizing the industry’s pesticide use in growing operations. The industry needs to ensure proper pesticide use and to protect the apple industry’s reputation for providing a nutritious food. Traditional growers have to develop a robust communication strategy for, as well as developing

alternatives to, pesticide use.

Organic apple growing keeps representing a differentiated value proposition versus traditional growing operation concerning chemical and pesticide use.

Opportunity for technology on future growing operations
As scarcity and cost of labor are major barriers towards current and future profitability for apple growers, strong and significant emphasis on technology development that can help perform manual operations should be made.

Intense precision apple growing is the most profitable apple orchard growing management system per acre and therefore should be used as a focus for innovation. The areas of focus for technology development should be directed towards: mechanization of pruning (narrow canopy maintenance), bud count automation, fruit count automation, chemical spraying, and harvesting automation.

CURRENT CONDITIONS FOR APPLE PROCESSORS

Demand for apple processed products has increased the last 2 years during the pandemic as consumers have increased their at home food consumption.

This higher demand along with high demand for fresh apples resulted in short supplies of processing apples during the 2021 harvest season.

INDUSTRY CHALLENGES FOR APPLE PROCESSORS

Processors are concerned about their source of apples as growers continue to increase their fresh apple production and migrate out of processing-type apples. High-density growing operations produce higher quality fruit and fewer available for processing. In addition, competition for process fruit of the desired varieties (Ida Red & Rome) is intense.

Prices for supplies have changed particularly for juice-apple buyers. But recent innovations in applesauce processing have allowed sauce processors to use the lower quality fruit purchased by juicers. This has allowed sauce processors to increase their supplies and lower their costs while buyers of apples for juice have experienced shorter supplies and higher prices.

One processor indicated reliable labor was a major challenge and that labor saving automation is needed in the processing industry within the plant.

Mechanical harvesting to clean out orchards rather than using labor could make it affordable for growers to sell processing apples. Modified production practices that reduce labor and investment costs may also enable growers to keep older orchards longer in order to produce “juice apples” with lower inputs.

Processors are demanding more fruit. There may be opportunities for growers to grow the desired varieties for this space at a competitive price for the processor. new technology that can help produce more quantity of fruit at less cost would be important to make it economically viable to producers.

SUMMARY & KEY TAKEAWAYS

Proximity to the large East coast market is what primarily sustains the apple industry in New York. The pillar that growers reflected on the most is profitability. The last years have been profitable to the industry due in large part to sustained F.O.B. wholesale prices and robust demand by end consumers. However, the most common threat to profitability and industry health cited by growers is labor cost and labor scarcity. Because labor cost represents such a high share of the total operational cost of running an orchard, continuous labor cost increases will erode the transportation cost advantage that the state relies on as a supplier of apples.

As growers migrate toward a more intensive growing system, the supply of fresh apples will continue to increase. As processors navigate a tight supply of processing apples, they may find a future oversupply of fresh apples.

Supermarket retailers have undergone consolidation and current conditions favor further consolidation. In response, apple packers and/or sales-desks will likely consolidate as well. As this happens, growers will face fewer packers to sell to, unless they participate in vertical integration with the packers.

There is a belief that there are too many apple varieties currently offered in the market, and that consumers and retailers do not know what to do with them, are not aware of their benefits, or are not willing to pay extra for them. Retailers may start consolidating and managing the assortment of varieties sold. Growers should best prepare for it.

In addition to the many apple varieties available currently, more varieties are in the breeders’ pipelines. Growers need to evaluate new varieties and the rootstock they need along with critical considerations of dropping underperforming varieties.

Smaller apple farms that may grow organic apples or produce older, heirloom or cider varieties for niche customers benefit from the presence of the larger commercial-scale industry. The commercial industry provides smaller farmers access to service

providers, farm input suppliers, a strong research and education system, and markets for their output.¹¹⁰

Discussions with growers suggest the industry should emphasize the following to ensure future livelihood of the industry:

- **Coordinated industry-wide investments in technology development that can help relieve dependence on manual labor specifically in automation and/or mechanization of horticultural operations that are currently performed by hand, such as counting, pruning, thinning, spraying and harvesting, among others. Automation will be the most feasible solution to mitigate against increasing labor cost. Labor regulation should also be on similar terms to competing apple growing states to ensure level playing field.**
- **Coordinated state industry-wide investment in reducing the use of pesticides and other agricultural chemicals to keep providing an even more nutritious and healthy fruit**
- **Coordinated market studies to help determine the apple varieties that will be popular with consumers in the following 2-3 decades**
- **Industry-wide supply management discussions (within legal limits) regarding over-saturation potential of fresh apples should be conducted without running risk of collusion to influence prices.**

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¹¹⁰ Schmit, T. M., Roberta M. Severson, Jesse Strzok, and Jose Barros. (2018). Economic Contributions of the Apple Industry Supply Chain in New York State. Extension Bulletin EB 2018-03, Charles H. Dyson School and Applied Economics and Management. *Cornell University*.

Case Studies on Counties - Delaware, Otsego, Schoharie

By Phoebe Schreiner, CADE Executive Director; Jeffrey Potent, Columbia University, Adjunct Professor of International and Public Affairs.

WHAT'S AT STAKE

In preparing this Vision, we set out not only to think holistically about the future of New York State agricultural and food system development, but also to consider how the Vision might be further implemented on the ground at the county level, and what that might mean for County Ag and Farmland Protection Plans, Regional Economic Development Council (REDC) plans, and other regional/local economic development efforts NOW as they consider pivots to shape the future. Simultaneously, we seek to create a model for planning that might be replicated in other counties and regions in how they might enhance new farm operations, production, processing, manufacturing, market share, labor force, farm transition, etc., at this time.

Our goal is to inform stakeholders in Otsego, Schoharie, and Delaware Counties (“the tri-county region”) on how to enhance agricultural and food system development, including pathways to scale production and transform the food supply chain so that it becomes a major foodshed for the Northeast by 2050, creates green jobs, increases food security and healthy food access, advances equity, and mitigates climate change. In other words, we seek to help this region move closer to realizing a profitable, regenerative, equitable, and healthy food future.



Agriculture boasts strong economic multipliers as local dollars from farm production, processing and distribution re-circulate in the local economy. According to recent analysis of the economic impact of agriculture on the New York State economy, every \$1 of agricultural output in the state generates an additional \$0.49 of non-agricultural output (multiplier of 1.49) through backwards linkages to agricultural suppliers and as a result of the spending in other sectors that is induced by wealth creation in the agricultural sector. Similarly, each agricultural job generates an additional 0.65 non agricultural jobs (multiplier of 1.65) and each dollar of agricultural labor income generates an additional \$1.05 of non-agricultural labor income (multiplier of 2.05).¹¹¹ Thus, maximized production will result in increased opportunities for agricultural support industries such as for input manufacturers, distributors, processing facilities and agritourism businesses and also for well outside of agriculture. We anticipate that the realization of the Vision presented in this document will measurably impact local wealth generation and long-term job growth, as well as other social, ecological, and health outcomes.

¹¹¹ Schmit, T.M. 2021. The Economic Contributions of Agriculture to the New York State Economy:2019. EB 2021-04, Charles H. Dyson School of Applied Economics & Management, Cornell University.

We selected Delaware, Otsego, and Schoharie Counties for our case study because they represent CADE’s “epi-center” of historic operations over 30 years with a sample of types of farms (albeit primarily small and mid-sized) and a mix of farmland topographies (valleys/mountains), soil types, and production types (livestock, crops, grains, etc.). Agriculture is already a mainstay of the local economies in this tri-county region, and their County governments and REDCs indicate that they prioritize agriculture/food systems development.

In this section, we will for the Delaware, Otsego, and Schoharie county region 1) outline the current status and conditions of agriculture and the local food system, 2) identify opportunities for strengthening ag and food systems development based on tri-county farmer driven priorities, and 3) put forward recommendations to County governments and REDCs to achieve at the County level the New York State Vision to become a more robust regional foodshed, increasing production, transforming the food supply chain, and educating consumers, while delivering on ecological and social outcomes that are regenerative, equitable, and healthy.

The data used to inform this section include key informant interviews, county-level USDA ag census data, and secondary research documents as well as county-level material drawn from the primary research conducted by Cornell University and our other research partners as part of the larger New York State Vision 2050 project. The latter include: farmer survey responses disaggregated by county,¹¹² relevant components from the sector briefs for beef, dried beans, and apples and relevant focus groups/roundtable results.

CURRENT CONDITIONS

First and foremost, we applaud the Delaware, Otsego, and Schoharie County governments and the REDCs for their efforts to advance and prioritize agricultural development through the adoption of county-level Agriculture and Farmland Protection Plans and REDC strategic plans for the Mohawk Valley and Southern Tier, respectively, that prioritize agriculture as an economic tool. It is clear that stakeholders are united in wanting to see agriculture and food businesses thrive, thereby strengthening economic and community-based multipliers. As reflected in the Southern Tier REDC’s Regional Vision, it has set aspirations to ‘Transform the Food and Agriculture Industry’ and become “a world-recognized leader in agriculture technology and serve as a key food supplier for the East Coast of the United States...[to] transform and grow agriculture and food production, processing, and distribution across the region, while also strengthening links to growing tourism and manufacturing industries.”¹¹³ The Mohawk Valley REDC recognizes Agribusiness and Food Systems as a regional priority, and noted in its most recent annual report, “While on the leading edge of game-changing technologies, we remain true to our agricultural roots, honoring a proud legacy dating back to our days as the ‘Breadbasket of the Revolution.’ Though still predominantly rural, the number of farms in our region has been steadily declining since 1963; with an 8% loss reported in the last USDA Census of Agriculture in 2017. It remains critical for the MVREDC to enable the viability of agricultural and agribusiness operations across the region in order to promote sustainable agriculture and strong food systems.”¹¹⁴

112 Responses were collected from 39 individuals in the tri-county region, out of a total of 322 individuals statewide, or 12% of the sample. Respondents from this region are over-represented in the sample, although the regional sub-sample is not necessarily a representative sample of farms in the region..

113 State of the Region: Southern Tier 2021 Annual Report, pg 6 (<https://regionalcouncils.ny.gov/sites/default/files/2021-07/SouthernTier2021AnnualReport.pdf>)

114 State of the Region: Mohawk Valley 2021 Annual Report, pg 12 (<https://regionalcouncils.ny.gov/sites/default/files/2021-07/MVREDCAnnualReport2021.pdf>)

The following is a brief sketch detailing areas where the tri-county region either mirrors or is distinct from New York agriculture more broadly, and also highlighting key distinctions among the counties within the tri-county region.

Table 1: Tri-County (Delaware, Otsego and Schoharie) Agricultural Statistics Relative to New York State

	Delaware County	Otsego County	Schoharie County	Tri-county Region	New York State
Farms (#)	689	880	541	2,110 (6% of NY)	33,438
Farms (acres)	140,225	154,634	99,819	394,678 (6% of NY)	6.9M
Farmland % of Land Area	15.2%	24.1%	25.1%	21.47%	22.8%
Farmland Gain or Loss, 2012-2017	-4%	-14%	+1%	-6%	-4%
Total Agricultural Sales	\$45.7M	\$56.2M	\$47.9M	\$149.8M (3% of NY)	\$5.7B
% Ag Sales Dairy	55%	46%	45%	48%	47%
% Ag Sales Cattle	13%	10%	10%	11%	8%
% Ag Sales Hay	18%	18%	19%	18%	7%
% Ag Sales Produce	3%	3%	11%	5%	15%
% Farms 1-49 acres	28%	27%	27%	28%	37%
% Farms 50-179 acres	32%	44%	40%	39%	35%
% Farms 180-1,000+ acres	40%	29%	32%	34%	28%
Mean Farm Net Revenue	\$15,435	\$23,545	\$32,062	\$23,081	\$42,876

Source: A Profile of Agriculture in New York State, 2019.¹¹⁵ Census of Agriculture County Profiles 2017, various counties.¹¹⁶

Recognizing that farmers and farmland are at the center of food production, it is notable that two of the three counties in the tri-county region have lost farmland, with the most notable loss of 14% in Otsego county. In contrast, Schoharie County gained 1% of farmland between 2012 and 2017. Also noteworthy is that while dairy, beef and hay dominate production across all three counties, Schoharie County has a relatively larger percentage of total sales in produce than do the other counties, more in line with the state average. Although

115 New York State Office of the Comptroller. (2019 August) A Profile of Agriculture in New York State. Retrieved from <https://www.osc.state.ny.us/files/reports/special-topics/pdf/agriculture-report-2019.pdf>

116 32

not necessarily causal, Schoharie also boasts the highest average level of net farm revenue of the three counties. Nonetheless, mean profitability in the region falls short of the State average in all counties. Finally, as is true across the State, a majority of farms in all three counties are small to mid-sized farms, underscoring the need for an efficient, well-developed and coordinated supply chain to aggregate and distribute small scale producer products to consumers in this rural region and across the State in order to enhance market access for farmers and expand profit margins.

VISION 2050 RECOMMENDATIONS WITH A REGIONAL FOCUS

With current conditions in mind, we are pleased to put forward the following recommendations to tri-county governments/planners and the Mohawk Valley/Southern Tier REDCs to guide near term regional shifts towards the longer term Statewide Vision. Accelerated regional agricultural development in production, green job creation, and supply chain build out—that also enhances social and ecological outcomes—will create a vibrant, profitable, regenerative, equitable, and healthy foodshed/food system for the tri-county region, for New York State and the Northeast. Ultimately, recommendations can be used to set stakeholder agendas, strategic planning, public/private partnerships for resource investment and allocation, etc.

Note that many overall recommendations from the Statewide Vision are crossed-referenced here. For those, we uplifted ideas for implementation that were particularly aligned with the characteristics of agriculture in the region and the priorities emphasized by tri-county farmers and focus group participants AND that are within the purview of County/REDC stakeholders. That means, for example, that “making food systems education compulsory in New York State” is an idea for implementation from the Statewide Vision, but not listed here, largely because it is within the power of State (not county or REDC) leadership. Moreover, in cases where the Statewide Vision recommendations were not emphasized among the tri-county stakeholders and therefore not duplicated here, we encourage stakeholders to nonetheless consider acting on them (especially themes on equity given that less than 1% of the region’s farms are currently BIPOC-owned and operated¹¹⁷). Finally, an overarching thread of the Statewide Vision was having an integrated food system; although this section of the document focuses on the tri-county region, we recognize that all regions are interdependent and that work in this region should be integrated into and informed by similar work to be done and already being done elsewhere in the State.

As with the Statewide Vision, these recommendations and the corollary stakeholder ideas for implementation in the areas of consumer values, consumer behavior and consumption patterns, production market and ecological interactions, and supply/value chain development emerged from tri-county participants in our focus groups (in black text), the statewide farmer survey disaggregated by the 3 counties (in green text), the literature reviews (in red text) and sector case studies (in orange text) compiled by our Cornell partners. Additionally, statements represented (in gray text) are comments from this author based upon review of published 2017 Census of Agriculture data for this region relative to New York State.

117 United States Department of Agriculture. (2017). County Profiles Delaware, Otsego and Schoharie Counties New York. National Agriculture Statistic Service. Retrieved from https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/

RECOMMENDATIONS

Enhance food system literacy so consumers value local food production and nutrition



IDEAS FOR IMPLEMENTATION

- ▶ Launch local campaigns to encourage residents to buy more local products and where to go for them (county stakeholders may consider applying for USDA's FMPP to promote direct-to-consumer market outreach)
- ▶ Encourage Farm-to-School programs (including after school programs like CROP) that create school gardens or organize school field trips to local farms to celebrate them and encourage learning among youth
- ▶ Replicate "New York Agriculture in the Classroom" curricula for pre-K through middle school teachers in partnership with CCE and other community educators, farmers and producers, volunteers, parents, and community partners to increase ag literacy
- ▶ Support and cross promote agritourism opportunities at the county/regional level (Family Farm Day, Taste of the Catskills, brewery/cidery/distillery beverage trails), leveraging I Love NY campaigns

EXAMPLES OF WHERE WE HEARD THIS

"Huge education is needed so consumers know where to get New York produced food. Most SUNY students are from downstate or out of state, and they are shocked to see what agriculture is. If they got information on agriculture, [they might] go to Hunt's Point or Green Markets [in New York City]. We're just one school but we can do this more widely across the state." -Focus group participant from Schoharie County

59% of tri-county survey respondents cited consumer education on the value of buying locally and regionally sourced products as a their first and highest priority for market development.

"My mom is an English teacher in the city. Kids are throwing away milk. They don't know where it comes from...We need to start with education." -Focus group participant from Delaware County

RECOMMENDATIONS

Create knowledge base and infrastructure needed to support a market demand for regenerative, “climate smart” produced products

IDEAS FOR IMPLEMENTATION

- Encourage public school (or other institutional) food purchasers to create bid preferences for local food AND food produced using regenerative practices, like a public school initiative in Tompkins County that prioritized bid preferences for school beef sourced from farms with reduced use of antibiotics

EXAMPLES OF WHERE WE HEARD THIS

“Being able to achieve financial benefits is the most important factor for farmers as they evaluate on-farm sustainability measures.”

“Running a small farm using regenerative practices is capital intensive. We have land, and use sustainable farming with diversified crops...I hope these [Vision 2050] talks can make farming accessible to everyone, not just ‘big ag.’” -Focus group respondent from Delaware County

CONSUMER BEHAVIOR / CONSUMPTION PATTERNS

RECOMMENDATIONS

Expand farm to school/institution markets, with bid preferences for food sourced in New York

IDEAS FOR IMPLEMENTATION

- ▶ Encourage tri-county public school districts to start Farm-to-School food purchasing programs under the New York 30% Lunch Initiative
- ▶ Encourage tri-county university and college leadership to prioritize purchasing of New York sourced food (SUNY Delhi, SUNY Oneonta, SUNY Cobleskill, Hartwick); consider incentives for purchasing, including “community” awards or positive press to recognize and sustain efforts
- ▶ Promote Nourish NY among tri-county food banks and pantries, which support purchase of products from New York farmers and dairy manufacturers for families in need

EXAMPLES OF WHERE WE HEARD THIS

46% of tri-county respondents said increasing use of NY grown food at public institutions (schools, senior centers, etc.) was a top 3 priority for market development.

In 2020, New York school districts spent a total of \$5,151,133 on NY food products. Of the total, Central New York and Mohawk Valley (combined) spent \$277,225, or 5%, and the Southern Tier spent \$1,923,208, or 37%.¹¹⁸

¹¹⁸ Cornell Cooperative Extension, Harvest NY, “30% NY Initiative: Opportunities, Barriers, and Pathways to Success”, January 2022, pages 31-32 (https://harvestny.cce.cornell.edu/uploads/doc_217.pdf).

RECOMMENDATIONS

Recognize and leverage the connection between healthy food consumption and human health outcomes

IDEAS FOR IMPLEMENTATION

- ▶ Promote the use of WIC/EBT at farmers markets to support local healthy food security, and encourage low income consumers where they can find local farmers markets
- ▶ Promote healthy food by encouraging nutrition/dietary standards among consumers, and promote recipes on preparing and cooking local food at farmers markets

EXAMPLES OF WHERE WE HEARD THIS

41% of tri-county respondents said providing incentives for WIC/EBT dollars to be spent on NY grown products was a top 3 priority for Health of our Population.

“We need to change the mindset of Americans to value healthy food. It’s not valued. Consumers need education. We pay insurance companies to protect our health, but health comes from the food we consume... We need to value the food system for health, not medical insurance. We compensate eating poorly with medical insurance.” -Focus group participant from Schoharie County

41% of tri-county respondents said expanding equitable access to healthy NY grown food for all New Yorkers was a top 3 priority in the “Health of our Population” category.

PRODUCTION / MARKET

RECOMMENDATIONS

Conserve and protect farmland in perpetuity and preserve public green spaces for community as well as commercial food production

IDEAS FOR IMPLEMENTATION

- Set county-level minimum targets for regaining farmland lost since the 2012 census in County Agriculture and Farmland Protection Plans, and additional targets to be achieved by 2030, 2040, and 2050 (align with encouraging beginning farmers—see next recommendation below)
- Encourage easements among farmland owners (i.e., sending out a mass mailer for farmland owners with contacts for easement support via Schoharie and Otsego Land Trusts or NYSDAM contacts)

RECOMMENDATIONS

Encourage beginning farmers, and keep farmland affordable

IDEAS FOR IMPLEMENTATION

- Set targets to increase new farms in operation to be achieved by 2030, 2040, and 2050 (aligned with farmland conservation targets recommended above)
- Build pipelines of beginning farmers through partnerships with key organizations (e.g., including urban ag programs) offering paid internships, apprenticeships, or on-farm exchange programs with/for DCMO and Capital Region BOCES, SUNY Cobleskill, MANNRS, FFA, GrowNYC, among others, with a commitment to diversity, equity, and inclusion

EXAMPLES OF WHERE WE HEARD THIS

56% of tri-county respondents noted preserving and protecting farmland from non-ag development as a top 3 priority for Stewardship of Natural Resources and Climate.

See Table 1, this section: “Recognizing that farmers and farmland are at the center of food production, it is notable that two of the three counties in the tri-county region have lost farmland, with the most notable loss of 14% in Otsego county.”

- ▶ Leverage Sustainability majors/ graduates from Hartwick College and SUNY Oneonta, connecting them to the rising community of farms/ag businesses using regenerative practices, creating new industry pipelines at the intersection of agriculture and climate mitigation
- ▶ Create a menu of “offerings” that make the County or Region enticing for potential new farmers, such as county mini-grants for beginning farmers to incentivize new farm businesses (requiring a sound business plan as part of the application) and town property tax breaks for farmers
- ▶ Invest in shared use equipment or facilities for farm businesses that encourage economies of collaboration, leveraging Empire State Development business incentive grants or county mini-grant programs (such as no/low till equipment that enhance regenerative practices)
- ▶ Encourage beginning farmers to explore cooperative ownership business models and operations to keep farming affordable
- ▶ Encourage retiring farmland owners to transition farmland to new farmers, or prepare for transition for multi-generation farmers, potentially organizing a mass mailing to farmland owners to connect with agencies (like CADE, AFT, CCE) that support this work

EXAMPLES OF WHERE WE HEARD THIS

62% of tri-county respondents said providing incentives for farm transition from retiring to new farmers was a top 3 priority while, 49% said improving access to capital for beginning farmers to purchase farmland was a top 3 priority, 36% said developing alternative farm financing strategies (angel investors, rent-to-own, etc.), and 33% said expanding farm link networks and systems that help farm seekers connect with land owners were top 3 their highest priorities for New and Beginning Farmer Development.

“About access to capital—it’s also access to affordable capital especially through traditional funding methods. Often, farmer debt is so big, you just can’t be profitable. Also, how farmers use capital [efficiently] is important, whether through cooperative movements or sharing equipment.” -Focus group respondent from Schoharie County

28% of tri-county respondents said supporting alternative models of farm ownership was a top 3 priority for Business Development and Management.

RECOMMENDATIONS

Strengthen the food system workforce, addressing the need for reliable, qualified, and affordable labor that is also appropriately compensated with a living wage and benefits.

IDEAS FOR IMPLEMENTATION

- ▶ Enhance agricultural and food system workforce development by creating internship/apprenticeship programs in farming, distribution (logistics/trucking), food processing (especially meat processing) with BOCES or SUNY Cobleskill, creating a future labor pipeline
- ▶ Consider opportunities for housing for farm workers (and beginning farmers), building on existing efforts to support rural housing for low and moderate income families like the NYS Affordable Housing Corporation's Affordable Home Ownership Development Program (AHOD Program)

EXAMPLES OF WHERE WE HEARD THIS

"We can redesign how we farm and what we're doing for housing for farm labor." Focus group respondent Schoharie County

"[there is a tension in] labor between a living wage [for farm workers] and profitability [for farmers]...it should be part of broader changes." Focus group respondent Schoharie County

"There's a need for shifting policy. We need a living wage, so people along the supply chain can make a living and food is affordable. We need to be shifting subsidies. Too many farms rely on free labor. It's not viable." Focus group respondent Schoharie County

"Agriculture is based on exploitation of labor. We haven't addressed systemic racism in land access. I want to see large swaths of land that they can farm without barriers to entry and can include reparations for the past." Focus group respondent Otsego County

RECOMMENDATIONS

Invest in key food sectors where New York has or can have a competitive edge

IDEAS FOR IMPLEMENTATION

► Explore public/private partnerships for expanding and investing in new and existing industries with high potential for growth that the tri-county region can produce based on growing consumer demand, such as grains, perhaps grass fed beef, and produce (see more above in food sector case studies, and below in supply/value chain recommendations)

EXAMPLES OF WHERE WE HEARD THIS

62% of tri-county respondents said supporting farm diversification to generate new income streams and reduce risk was a top 3 priority for Business Development and Management.

See Table 1, this section: Cattle operations represent 11% of agricultural sales in the tri-county region vs. 8% in the State.

“If the future of beef in the United States is centered around smaller portions of higher quality beef which is more climate friendly, then New York’s current beef herd is well suited for this market demand”

RECOMMENDATIONS

Support affordable health care to farm and food producers

IDEAS FOR IMPLEMENTATION

► Promote health services provided by the New York Center for Agricultural Medicine and Health (NYCAMH) for farmer/farmworker health needs

EXAMPLES OF WHERE WE HEARD THIS

46% of tri-county respondents said providing affordable health care options for farmers was a top 3 priority for Health of our Population.

PRODUCTION / ECOLOGY

RECOMMENDATIONS

Provide technical support for transition to climate resilient agriculture

IDEAS FOR IMPLEMENTATION

► Support agricultural service providers (like Soil & Water Conservation Districts/ SWCDs, CCE, CADE, WAC) to provide education and technical assistance to farmers on regenerative agricultural practices so that knowledge of practices and their benefits become more mainstream

EXAMPLES OF WHERE WE HEARD THIS

“49% of tri-county respondents said expanding pasture-based livestock grazing (including transitioning marginal crop land) was a top 3 priority for Stewardship of Natural Resources and Climate.”

“For 2050, I want to see healthy soils. For farms to produce money to keep going, they need soil health and nutrients [so their land can produce more food]. That’s the structure we need. We will fail without it. So if we do things in the right [regenerative] way, we create wealth. Wealth in good soils is like time with family. We have 2.5B more people to feed by 2050. We need organic, resilient practices, vertical farming, etc., to prepare for that.” -Focus group respondent from Delaware County

RECOMMENDATIONS

Incentivize regenerative farming practices that are “climate smart” and optimize other ecosystem services

IDEAS FOR IMPLEMENTATION

- Refer agricultural producers to USDA NRCS/EQIP grants or the SWCD Climate Resilient Farming Grant Program to aid farmers in transitioning practices
- Encourage public-run farmers markets to promote “climate smart” farms and farm products to consumers
- Educate consumers on the benefits of regenerative or “climate smart” food products, for people and planet alike
- Encourage public school (or other institutional) food purchasers to create bid preferences for local food AND food produced using regenerative practices

EXAMPLES OF WHERE WE HEARD THIS

“Running a small farm using regenerative practices is capital intensive. We have land, and use sustainable farming with diversified crops...I hope these [Vision 2050] talks can make farming accessible to everyone, not just ‘big ag.’” Focus group respondent from Delaware County

38% of tri-county respondents said improving on-farm water use management practices was a top 3 priority, and 31% said increasing adoption of soil health and water quality management practices (31%) was a top 3 priority for Stewardship of Natural Resources and Climate.

“Some people who don’t care about climate change—we can’t change their minds. But can we change minds to put sustainability over profitability? Can we scale up that idea? It need systems change, and it needs to be commitment at the top level.” -Focus group respondent from Otsego County

RECOMMENDATIONS

Support green energy and a bioeconomy, but avoid compromising farmland

IDEAS FOR IMPLEMENTATION

- ▶ Educate and provide tools to town planning boards on planning for sustainable agricultural economic development in the face of alternative development pressures from commercial developers
- ▶ Consider alternative sites to green energy developments targeting agricultural land

EXAMPLES OF WHERE WE HEARD THIS

“The State policy on the renewable energy push is a compromise. If they lease land at \$1,000 per acre [for solar developments], it takes it out of agriculture. Our State policy is not valuing agriculture. If it did, it would not be allowing solar panels on prime ag land.” -Focus group participant from Schoharie County

“[D]espite research efforts to determine whether solar panels on farmland are compatible with producing food crops on the same acreage, at least one Delaware County-based producer reported that a landowner canceled his lease to make way for solar panels, meaning it may not have the support needed from producers.”

SUPPLY / VALUE CHAIN

RECOMMENDATIONS

Enhance efficiencies in aggregation and distribution systems through State planning, helping to reduce costs and ease market access

IDEAS FOR IMPLEMENTATION

- ▶ Strengthen economies of collaboration, connecting existing businesses to aggregate and distribute (such as area CSAs), and invest in farm equipment or cold storage infrastructure that can be shared
- ▶ Avoid starting up new food hubs and distributors that can cannibalize similar businesses within the region or in nearby geographies, and work with existing ones outside the region that can pick up product and move it to other markets/regions within New York State

EXAMPLES OF WHERE WE HEARD THIS

“Regional logistics are so important. Even [for farms] working at different scales, we need to be working with food hubs and farms as a collaboration. We are doing food access work with local schools. These schools are small, but we can’t feed the bigger schools. We need the food hubs to aggregate [to access those markets]” -Focus group respondent from Delaware County

“We could use more resources toward coordination with other farmers to aggregate...There’s no room for all farm businesses to succeed when half are subsidized [representing the larger ones] and the other half not [the smaller ones].” -Focus group respondent from Delaware County

38% of tri-county respondents said expanding aggregation methods and facilities for NY grown products was a top 3 priority for Supply Chains and Infrastructure.

“As is true across the State, a majority of farms in all three counties are small to mid-sized farms, underscoring the need for an efficient, well-developed and coordinated supply chain to aggregate and distribute small scale producer products to consumers in this rural region and across the State in order to enhance farmer market access and expand profit margins.”

RECOMMENDATIONS

Invest in key food processing and manufacturing industries, helping New York processors' ability to compete

IDEAS FOR IMPLEMENTATION

- ▶ Ask ag/food producers of key sectors (such as beef and dairy producers, apple producers, vegetable producers, grain producers, etc.) what value-added processing or manufacturing industries are needed to support them to expand production or markets, and consider targeted investment in those needed processing and manufacturing businesses to incentivize new operations
- ▶ Develop public/private partnerships and investments with existing food processing and manufacturing businesses in the tri-county region that can expand operations to absorb more local agricultural products, especially meat processing facilities and creameries, as well as grain mills, fruit processors, cideries, breweries, distilleries, etc.
- ▶ Support farmers moving into value-added production and related shared-use facilities, which may include public/private partnership investments in infrastructure, equipment, operations, working capital, etc.
- ▶ Consider investing in businesses launching new processing facilities that demonstrate potential for launching new products in market demand

EXAMPLES OF WHERE WE HEARD THIS

"51% of tri-county respondents said supporting the development of value-added farm products was a top 3 priority for Market Development."

"67% of tri-county respondents said expanding processing capacity was a top 3 priority and 64% said establishing new processing facilities was a top 3 priority for Supply Chains and Infrastructure."

"Mid-sized producers struggle to use either available processing options. Typically, they are too small for large facilities in Pennsylvania that process on a contract basis and too large to be handled by a single processor in New York at desired times of the year"

"Meat processing facilities will help small scale farmers because they can produce. The land here is suitable for grazing in Central NY, and small farms could come back to life with these facilities." -Focus group respondent from Delaware County

"Improvements in access to raw ingredients, transportation, cold storage, and other supply chain factors may improve New York processors' ability to compete."

APPENDICES

NEW YORK STATE AGRICULTURE AND FOOD POLICY LANDSCAPE

By Alethia Chan, Research Assistant, Dyson School of Applied Economics and Management, Cornell University; Miguel Gomez, PhD., Robert G. Tobin Professor, Dyson School of Applied Economics and Management, Cornell University.

INTRODUCTION

Consisting of acres of farmland and a diverse farmer demographic, agriculture in New York has increasingly become crucial to the state's economy and the development of local New York communities. As of 2017, farms have contributed more than \$5.7 million in gross income to the state, representing around a 20% increase from a decade before. New York is a leading national producer of milk, apples, maple syrup, wine, and grapes, of which a majority are produced in the upstate Finger Lakes and central New York regions (DiNapoli, 2019). Agriculture is also a large economic contributor to non-agricultural industries. A study by Todd Schmit of Cornell's Dyson School found that for every \$1 in agricultural output an additional \$0.42 in non-agricultural related industries is generated upstream. Furthermore, every additional job in agriculture creates 0.73 more non-agricultural jobs (Schmit, 2016). Such a statistic highlights the significance of agriculture in both the state and larger United States' economies.

Beyond its economic contributions, agriculture also has significant implications on local community development. First, agriculture promotes local employment. The addition of jobs, particularly those that are available to rural communities, promotes revenue-generating opportunities, thereby making long-term economic viability a possibility for many community members. As of 2017, New York farms have employed more than 55,000 workers, more than 37% of which are female farmers, a percentage that is expected to grow in the coming years. A report by Duke Law found that every additional \$1 million in revenues earned by producers selling to local and regional communities 13 additional full-time jobs are generated (Gentry, 2013). Second, agriculture can serve

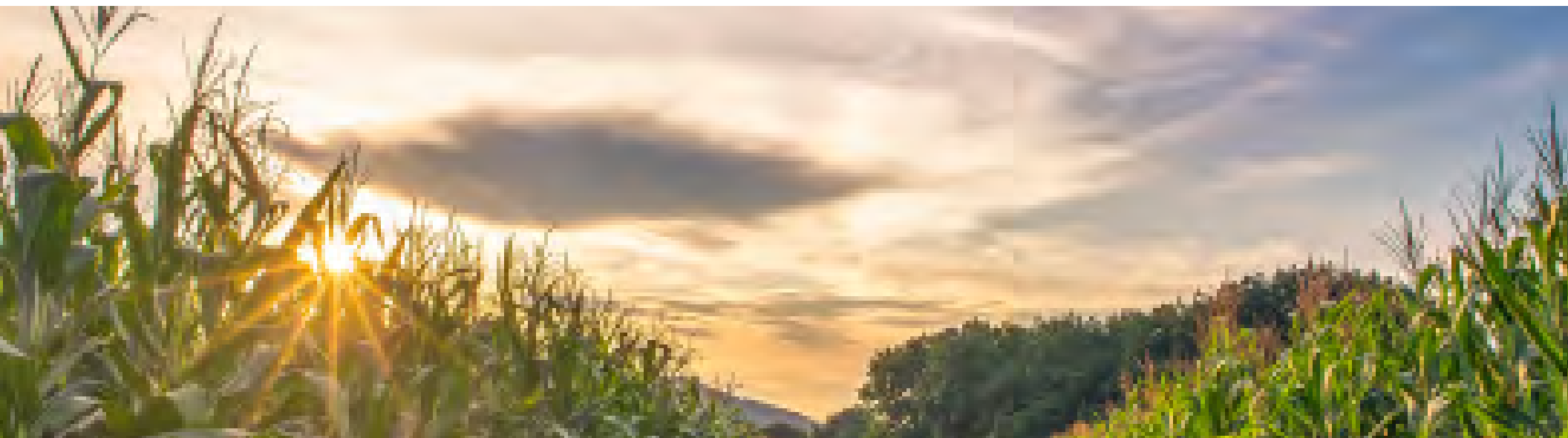
as the bridge connecting rural and urban markets, connecting consumers with local farmers, and ultimately promoting food security in local communities. In selling to local markets like farmers markets, agricultural communities can increase access to fresh, healthy foods. Many low-income urban areas are food deserts (indicating a lack of access to grocery stores or healthy foods), so increasing access to healthy, locally sourced foods are especially crucial in the development of low-income communities. Making such foods more accessible is crucial in reducing the risk of chronic diseases (diabetes, etc.) that are oftentimes prevalent in low-income communities (Gentry, 2013). Although many policies have been developed to aid in the establishment of community gardens or other new markets, much more needs to be done in ensuring food security in all regions.

Despite the significant contributions that agriculture has made to the economy and local community development, many barriers exist that prevent the current food system from being fully environmentally and economically sustainable and inclusive. One of the biggest issues threatening the long-term viability of agriculture is climate change, which is particularly harmful to the production of New York's top agricultural commodities. Whether privately-owned crop, pasture, or rangeland, almost half of New York lands are considered agricultural, many of which intersect and interact with important natural resources like water. Rising temperatures as a result of carbon emissions obstruct the growth and preservation of many of these natural resources. Even the slightest increase in temperatures can jeopardize milk production, crucial to the New York economy. Hotter environments also hinders growth for certain plants and fruit crops. A shorter winter

seasons also cuts short the maple tapping season essential to produce maple syrup, another top New York commodity (DiNapoli, 2019). As a result, given the importance of such natural resources to agriculture, resource conservation is a priority for many agricultural policy reforms.

Ensuring that the agricultural system is equitable for new farmers and people of color is also top of mind for many policy makers. The current New York farming population is aging: the average age of New York farmers has increased to 58 from 54 in 2007, and young farmers represent less than 9 percent of all New York farmers (DiNapoli, 2019). Whether it is in securing land or obtaining the necessary resources to sustain their farm, beginner farmers and ranchers face many barriers to entering agriculture. Because of these barriers, agriculture is increasingly becoming an aged profession. However, given the significant contributions of agriculture to the socioeconomic status of the state and country, it is essential that future generations keep agriculture alive with sustained involvement in the profession. These barriers don't only exist for new farmers – the BIPOC community has faced systemic barriers in agriculture for decades. While land ownership is a huge issue among this community, the current institutions and policies in place do not exist to serve the needs of the BIPOC community. Historical barriers have led to the BIPOC community representing 14 percent of the entire farmer population when they represent more than 40 percent of the state's population, a number that is expected to grow in the coming years (DiNapoli, 2019).

Even when first-generation and BIPOC farmers have entered the farming profession, it is often difficult to secure profitable markets to sell their goods or services to, which is an issue given the immense establishment costs associated with starting an agricultural business. Such markets have been further disrupted by the COVID-19 pandemic. With the closure of many downstream consumers like restaurants and hotels, many farms have suffered in sales. A recent survey of New York restaurants found that around 65% were likely to shut down this year, with New York City restaurants particularly hard hit due to restrictions on indoor dining (Smith, et al, 2020). As a result, many farmers had to find alternate markets to sell their goods to, but this was only a possibility for those with existing relationships in other retailer streams. The COVID-19 pandemic has cast a spotlight on the vulnerabilities of the New York State food supply chain and has underscored the importance of a sustainable, resilient food system. Thus, given the environmental and social barriers that permeate the food system, it is essential that current and future policies address these issues to make the food system sustainable, equitable, and profitable for all.



CURRENT LANDSCAPE

The current landscape of the New York State food system is evaluated from the perspective of four main areas, designated by the NY Vision 2050 Project initiated by CADE: environmental sustainability, equity for current & future farmers and food system businesses, profitability of farm and food businesses, and accessibility & nutrition. A brief scan of the policies and programs available within each area at federal and state levels is shown below.

ENVIRONMENTAL SUSTAINABILITY

Federal

- Agricultural Land Conservation Easement Program (ACEP): helps landowners protect, preserve, and enhance wetlands, grasslands, farms, and ranches through conservation easements that prevent the conversion of working lands to non-agricultural uses. In exchange, USDA's NRCS provides financial assistance to partners who purchase land easements
- Environmental Quality Incentives Program (EQIP): provides financial and technical assistance to farmers and forest managers to preserve natural resources like air, soil, water, and more. This is a large program that extends into other initiatives like the Conservation Innovation Grant, High Tunnel System Initiative, and Air Quality Initiative
- Conservation Reserve Program (CRP) + Conservation Reserve Enhancement Program (CREP): provides a financial incentive to farmers and ranchers to remove environmentally sensitive land from agricultural production and plant species that contribute positively to environmental health and quality. CREP is an extension of CRP that focuses on high-priority conservation issue areas identified by each state
- Conservation Stewardship Program: provides incentives to farmers and ranchers who adopt practices and conservation activities that improve existing conservation systems
-

- Regional Conservation Partnership Program (RCP): promotes value-added conservation activities carried out by the National Resources Conservation Service (NRCS) that address on-farm, watershed, and regional natural resource issues
- Biomass Crop Assistance Program: promotes the cultivation of high-potential bioenergy crops that are energy efficient biofuels and cropping systems that preserve natural resources

State

- Soil Health and Climate Resiliency Act: funded by the New York State Department of Agriculture and Markets; codifies standard soil health and soil health practices to inform policies in the future and formally establishes the Soil Health Initiative, Climate Resilient Farming Initiative, and a Research Initiative
- Food Donation and Food Scraps Law: funded by the New York State Department of Environmental Conservation; requires large generators of food scraps to donate all their excess edible food to recycle at an organics recycler if the organization is within 25 miles of one
- Agricultural Nonpoint Source Abatement and Control Program: funded by the New York State Department of Agriculture and Markets; funds projects related to nonpoint source abatement and control projects that encourage Agricultural Best Management Practice Systems that help mitigate nonpoint source pollution origination from agricultural sources
- Farmland Protection Program (implementation and planning grants): funded by the New York State Department of Agriculture and Markets; provides funds to state governments for conservation easement projects that protect viable agricultural land from non-agricultural use and farmland protection plans
- Agricultural Environmental Management Program (AEM): funded by the New York State Department of Agriculture and Markets; provides financial and non-financial assistance to farmers to encourage science-based decisions in natural resource protection and conservation

EQUITY FOR CURRENT & FUTURE FARMERS AND FOOD SYSTEM BUSINESSES

Federal

- Community Outreach and Assistance Partnership Program: provides traditionally underserved producers of high-priority commodities with training on financial management, crop insurance, marketing contracts, and other risk management tools
- CRP Transition Incentives Program (CRP-TIP): extension of the CRP wherein beginning and/or socially disadvantaged or veteran farmers are granted an additional two years of CRP rental payments in exchange for the use of sustainable grazing practices, resource-conserving cropping systems, or organic production
- Farm Labor Housing Direct Loans and Grants: provides financial assistance to migrant or seasonal domestic farm laborers to buy, build, or repair housing
- Migrant and Seasonal Agricultural Worker Protection Act (MSPA): establishes employment standards for wages, housing, transportation, disclosures, and recordkeeping to protect migrant and seasonal agricultural workers
- Outreach and Assistance for Socially Disadvantaged and Veteran Farmers and Ranchers Program (2501 Program): provides outreach and technical assistance for underserved producers interested in implementing sustainable operations within their farms and ranches
- Beginning Farmer and Rancher Development Program (BFRDP): supports land grant universities and other partnerships to implement training programs for beginning farmers and ranchers
- Down Payment Loan Program: financially supports partnerships between private lenders and USDA to help underserved farmers/ranchers (beginning, veteran, socially disadvantaged groups) purchase farmland or ranchland

- Young Farmer Grant Program: provides financial assistance and National Young Farmers Coalition membership to young and beginning farmers/ranchers to start and grow their agricultural businesses

State

- Farmworker Housing Program: funded by Homes and Community Renewal (HCR) in cooperation with a participating local loan administrator and the New York State Department of Health; provides low-cost loans to seasonal and year-round farmworkers to assist in the improvement or construction of housing
- Veteran Farmer Grant Fund: funded by New York State Empire State Development (ESD); helps veteran farmers improve the profitability of their farms through increasing agricultural diversification and sustainable agricultural practices
- New Farmers Grant Fund: funded by New York State Empire State Development (ESD); provides financial assistance to beginning farmers to help them produce agricultural products

PROFITABILITY OF FARM AND FOOD BUSINESSES

Federal

- Farmers Market and Local Food Promotion Program: provides financial assistance to support the growth of local and regional food businesses and increase presence in farmers markets to increase access to local agricultural products
- Farmers to Families Food Box Program: encourages distributors to purchase and distribute foods to food banks, community and faith-based organizations, and other nonprofits in response to the COVID-19 pandemic
- Federal-State Marketing Improvement Program: provides financial assistance to states to fund research and innovation that explores new market opportunities
- Rural Business Development Grants: supports technical assistance programs for small and emerging private businesses in rural areas

- Value Added Producer Grants: provides financial assistance to agricultural producers and producer-controlled entities to develop value-added businesses through enhanced marketing plans and feasibility studies

State

- Dairy Advancement Program: funded by the New York State Department of Agriculture and Markets and the New York State Department of Environmental Conservation; provides financial assistance to dairy farms to improve business planning/analysis, certification management, or designing new/remodeled facilities
- Farmers School Tax Credit: funded by the New York State Department of Taxation and Finance; provides credit on school district property taxes based on taxes paid and number of qualified acres

ACCESSIBILITY & NUTRITION

Federal

- Supplemental Nutrition Assistance Program (SNAP): provides an electronic benefit transfer card to eligible consumers to increase access to healthy foods
- Senior Farmers' Market Nutrition Program + WIC-FMNP: provides coupons for low-income seniors to easily access local fruits, vegetables, herb, and honey from farmers' markets, roadside stands, and CSA programs
- Healthy Food Financing Initiative: provides financial assistance in the form of grants and tax credits to support the growth of food retailers in underserved communities, thereby increasing access to food
- Gus Schumacher Nutrition Incentive Program (GusNIP): gives support to programs that provide a financial incentive for SNAP participants to buy fruits and vegetables
- Farm to School Program (F2S): provides financial assistance to support school meal programs that increase local food procurement and expand educational agriculture and gardening activities

- Community Food Projects Competitive Grants Program: provides financial assistance to programs that financially support the food needs of low-income people
- Emergency Food Assistance Program: provides nutritious food, selected based on their nutritional, cultural, and dietary needs of diverse communities, to food pantries and community kitchens

State

- Good Food Purchasing Program (GFPP): administered by the Center for Good Food Purchasing; standardizes sustainable and ethical sourcing and supply chain best practices to support food purchasers in making food purchasing decisions
- Food Retail Expansion to Support Health program (FRESH): funded by New York City Economic Development Corporation (EDC); provides financial and zoning incentives to select grocery store operators and developers to mitigate costs
- Shop Healthy (New York City): funded by New York City Department of Health; supports the supply and demand of healthy foods by encouraging food retailers to increase the stock and promotion of healthy foods
- Green Carts (New York City): funded by New York City Department of Health; creates mobile food vendors that source from local fresh fruits and vegetables within neighborhoods that have limited access to fresh produce
- Health Bucks (New York City): funded by New York City Department of Health; provides \$2 coupons to subsidize the purchase of fruits and vegetables at local markets by community members using SNAP
- Nourish New York: funded by New York State Department of Agriculture and Markets; provides financial assistance to emergency food providers to purchase surplus foods to deliver it to New York families struggling as a result of the COVID-19 pandemic

CHARACTERISTICS OF SUCCESS & INNOVATION

Successful implementation of food and agricultural policies have been able to create real, positive changes in the New York State food system. Such policies are united by similar characteristics that lead to their successes. In reviewing literature on existing policies and recommendations for future policies, we have identified five trends that shape the future of innovation within food and agricultural policy.

Collaboration with farmers and partnerships with organizations. Successful policies involve the targeted beneficiaries in the design and implementation process. This is essential in creating a program that effectively serves their needs. Oftentimes, this involves partnerships with private sector leaders and farmers themselves. Extensive collaboration and outreach should be conducted during the design phase to ensure that the policy solution addresses the needs of agricultural workers.

Consistency and specificity of vision/services. Successful policies address a specific issue and serve a narrow set of stakeholders. Focus groups should be held to determine the specific problem that serves as a basis to the policy, which should serve beneficiaries in close proximity. In line with the focused vision, communication of the program's goals should be consistent throughout the design and implementation of the policy.

Personalization of services. Successful policies integrate personalized services and mentorship for recipients. Mentorship is important in making sure that programs are tailored to the fit the specific needs of the stakeholders, and they also provide an avenue for feedback to ensure that the program continuously improves upon every iteration. Peer learning has increasingly become a popular alternative to 1:1 mentorship, as it provides a positive environment that encourages optimized learning and network that can be leveraged for future endeavors.

Robust evaluation process. Successful policies integrate evaluation throughout both the design phase and implementation and invite opportunities for stakeholders to provide feedback. Evaluation periods and re-assessments of the program based on an evaluation of feedback should be frequent. This is important to ensure that the program continuously meets the evolving needs of stakeholders. Evaluation metrics and quantifiable goals that are feasible and actionable (how are stakeholders involved benefitting from the program, is the program meeting their initial impact goal?) should be created.

Strong accountability measures. Successful policies ensure that there is transparency in how services and resources are delivered. This ensures that all aspects of the program are held accountable for their actions and are working towards shared goals.

Although much can be improved with the successful implementation of impactful programs and policies, the future of food and agriculture depends on the nature of innovation in the next couple of years.

FOOD AND AGRICULTURAL POLICIES OVERVIEW

SUSTAINABILITY

Federal

- Agricultural Land Conservation Easement Program (ACEP)
- Agricultural Management Assistance Program (AMA)
- Biomass Crop Assistance Program
- Conservation Innovation Grant
- Conservation of Private Grazing Land Program
- Conservation Reserve Enhancement Program (CREP)
- Conservation Reserve Program (CRP)
- Conservation Stewardship Program
- Debt for Nature Program
- Emergency Forest Restoration Program (EFRP)
- Emergency Watershed Protection Program
- Environmental Quality Incentives Program (EQIP)
- Farm to School Program (F2S)
- Forest Stewardship Program (FSP)
- Grassland Reserve Program
- Grassroots Source Water Protection Program
- Grazing Lands Conservation Initiative
- Healthy Forests Reserve Program (HFRP)
- Land Trust Grants Program
- Landowner Incentive Program
- Landscape Scale Restoration Grants
- Regional Conservation Partnership Program (RCPP)
- Rural Energy for America Program (REAP)
- Soil Health and Income Protection Program (SHIPP)
- Wetlands Reserve Program
- Wildlife Habitat Incentives Program

State

- Agricultural Environmental Management Program (AEM)
- Agricultural Nonpoint Source Abatement and Control Program
- Climate Resilient Farming Program
- Dairy Advancement Program
- Environmental Farm Assistance & Resource Management Program
- Farmland Protection Implementation Grant

- Farmland Protection Planning Grant
- Food Donation Law
- Food Scraps Law
- Good Food Purchasing Program (GFPP)
- Grow to Learn – NYC
- National Grid Incentives
- Organics Program – NYC
- Soil Health and Climate Resiliency Act
- Watershed Agricultural Program – NYC

NUTRITION/HEALTH

Federal

- Healthy Food Financing Initiative
- Senior Farmers' Market Nutrition Program
- WIC Farmers' Market Nutrition Program
- Farm to School Program (F2S)
- Community Food Projects Competitive Grants Program
- Farmers to Families Food Box Program
- Supplemental Nutrition Assistance Program (SNAP)

State

- Emergency Food Assistance Program
- Good Food Purchasing Program (GFPP)
- Nourish New York
- Food Retail Expansion to Support Health Program (FRESH) – NYC
- Green Carts – NYC
- Health Bucks – NYC
- Shop Healthy – NYC
- Grow to Learn Initiative – NYC

DIVERSITY/EQUITY

Federal

- Agricultural Management Assistance Program (AMA)
- Community Outreach and Assistance Partnership Program
- CRP Transition Incentives Program (CRP-TIP)
- Farm Labor Housing Direct Loans and Grants

- Farmer Veteran Fellowship Fund
- Migrant and Seasonal Agricultural Worker Protection Act (MSPA)
- Outreach and Assistance for Socially Disadvantaged and Veteran Farmers and Ranchers Program (2501 Program)
- Socially Disadvantaged Groups Grant
- New Farmers Grant Fund
- Beginning Farmer and Rancher Development Program
- Farmers to Families Food Box Program
- Food Insecurity Nutrition Incentive Grant Program / Gus Schumacher Nutrition Incentive Program

State

- Farmworker Housing Program
- Veteran Farmer Grant Fund
- New Farmers Grant Fund

PROFITABILITY

Federal

- Beginning Farmer and Rancher Development Program
- Business and Industry Guaranteed Loan Program
- Community Food Projects Competitive Grants Program
- Community Outreach and Assistance Partnership Program
- Down Payment Loan Program
- Extension Risk Management Education Program (ERME)
- Farm to School Program (F2S)
- Farmers Market Promotion Program
- Farmers to Families Food Box Program
- Federal-State Marketing Improvement Program
- Food Insecurity Nutrition Incentive Grant Program / Gus Schumacher Nutrition Incentive Program
- Local Food Promotion Program
- Local Foods, Local Places Initiative
- Microloan Program
- Noninsured Crop Disaster Assistance Program
- Outreach and Assistance for Socially Disadvantaged and Veteran Farmers and Ranchers Program (2501 Program)
- Socially Disadvantaged Groups Grant
- Rural Business Development Grants

- Rural Cooperative Development Grants
- Rural Economic Development Grants
- Specialty Crop Block Grant
- Supplemental Nutrition Assistance Program (SNAP)
- Value Added Producer Grant
- Whole-Farm Revenue Protection Policy
- Young Farmer Grant Program

State

- Farmers School Tax Credit
- Investment Tax Credit
- John May Farm Safety Fund
- New Farmers Grant Fund
- Farm Viability Institute Dairy Profit Team Program
- Farm Viability Grant
- Focus Opportunity Grants
- NYS Consolidated Funding Application
- Good Agricultural Practices/Good Handling Practices Certification Assistance Program
- Rollover Protective Structure Retrofit Program
- Dairy Advancement Program
- Green Carts – NYC
- Good Food Purchasing Program (GFPP)
- Nourish New York
- Veteran Farmer Grant Fund

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DEFINITIONS

By Jeffrey Potent, Columbia University, Adjunct Professor of International and Public Affairs; Phoebe Schreiner, CADE Executive Director.

BIPOC: an acronym that stands for Black, Indigenous, and People of Color.

Diversity: Diversity includes all the ways in which people differ, and it encompasses all the varied characteristics that make one individual or group different from another. It is all-inclusive and recognizes everyone and every group as part of the diversity that should be valued and represented. Some of the main diversity characteristics considered in this report were sector or occupation (farmer, nutritionist, researcher, investor, food policy expert, etc.), race, gender, age, and region (i.e. New York City, Western New York, the North Country).¹¹⁹

Other Underrepresented Individuals: people who belong to minority groups historically denied access and/or suffered past or present discrimination or marginalization on the basis of ethnicity, religion, ability, sexual orientation, gender expression, race, or other status.

Farm: pursuant to USDA's definition, a farm is any place that produced and sold—or normally would have produced and sold—at least \$1,000 of agricultural products during a given year. USDA uses acres of crops and head of livestock to determine if a place with sales less than \$1,000 could normally produce and sell at least that amount.

Food System: New England Food Vision defines a food system as “how food is produced, consumed, and disposed of in all its material and social dimensions.”

USDA describes local and regional food systems as “place-specific clusters of agricultural producers of all kinds—farmers, ranchers, fishers—along with consumers and institutions engaged in producing, processing, distributing, and selling foods.”

The Food and Agriculture Organization (FAO) defines a sustainable food system as “a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised. This means that it: is profitable throughout (economic sustainability); has broad-based benefits for society (social sustainability); and has a positive or neutral impact on the natural environment (environmental sustainability).”

Local food system producers offer wholesome food grown for taste and nutritional value, verses for long term storage and transportability. They contribute to a stable local economy, provide jobs, ecosystem services and help maintain rural character — essentially building the business and societal case for keeping land in agriculture versus other land uses not tied to maintaining and benefiting from healthy ecosystems.

119 NYSDAM, “[Diversity and Racial Equity Working Group Report](#)”, page 5.

Locally Sourced Food: Defined as food sourced and produced in New York State. *Note: While the project team understands that robust local food systems are not constrained by jurisdictional boundaries, we have limited our focus to New York State so that this work can best aid state governmental agencies and trade associations in engaging in ongoing planning initiatives.*

Racial Equity: Equity is the guarantee of fair treatment, access, opportunity, and advancement for all individuals, while at the same time striving to identify and eliminate barriers that have prevented the full participation of BIPOC individuals. The principle of equity acknowledges that there are historically underserved and underrepresented racial groups and that fairness regarding these unbalanced conditions is needed to assist equality in providing effective opportunities to all groups.¹²⁰

Regenerative and Resilient Agriculture: Embraces a systems view of agriculture within the context of local ecosystems and human communities, employing practices that:

- Feed and nourish people
- Restore and protect the land, air, water and other species across the full product lifecycle
- Is resilient to climate change and other natural and human-caused disturbances, and helps to mitigate climate change
- Provides livelihoods and dignity for farmers, workers and rural communities

Sustainable Agriculture: legally defined in U.S. Code Title 7, Section 3103 means an integrated system of plant and animal production practices having a site-specific application that will over the long term:

- Satisfy human food and fiber needs.
- Enhance environmental quality and the natural resource base upon which the agricultural economy depends.
- Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
- Sustain the economic viability of farm operations.
- Enhance the quality of life for farmers and society as a whole.

120 NYSDAM, “Diversity and Racial Equity Working Group Report”, page 5.

Introduction

Priorities for Investment in the New York Farm and Food System

The goal of this survey is to hear what New York's current and future farmers believe should be top priorities for enhancing New York's food production system to make it more resilient, profitable, equitable, and healthy by 2050. Your input will guide the development of a Vision 2050 for NY Farm and Food Systems. The strategic recommendations for research, direct investments, and policy will be summarized and shared with NY and federal decision-makers and influencers.

The survey is expected to take 10-15 minutes to complete.

The survey is being conducted by Cornell University's Dyson School and Small Farms Program and is part of a larger project sponsored by the Center for Agricultural Development and Entrepreneurship (CADE). Information from this survey will be reported as a group and anonymously. For questions about this survey, contact Rebecca Wasserman-Olin at rdw224@cornell.edu. When you click the "arrow" button you will enter and participate in the survey. You may stop at any time.

Qualifying Questions

How old are you?

- ☐ Under 18
- ☐ 18-35
- ☐ 36-55
- ☐ 56-70
- ☐ 71 +

Please describes your current status. Please check only one.

- ☐ I own and operate a farm business
- ☐ I am employed on a farm (manager, employee, intern, etc.)
- ☐ I am NOT currently employed on a farm but aspire to be in the future
- ☐ None of the above

Do you intend to start your own farm business and if yes, how far in the future?

- ☐ No, I do not intend to own my own farm business
- ☐ Yes, within 5 years
- ☐ Yes, in 5 to 10 years
- ☐ Yes, in over 10 years from now

Where do you farm or aspire to farm?

- ☐ New York State
- ☐ Not in New York State

SECTION 1: PRIORITIZING ACTION STEPS

In this section, you will be asked to select up to your top three priorities in a number of

categories within the food and farming system in NY. After, you will be given the opportunity to provide examples of current initiatives and/or obstacles that are relevant to advancing your priorities.

Supply Chains and Infrastructure

What should be the HIGHEST PRIORITIES in statewide efforts to support **supply chains and infrastructure** in our food and farming system.
Please SELECT UP TO THREE.

- ☐ Improve communication systems from farm to retailers to expand the flow of NY farm products
- ☐ Establish new processing facilities (including for livestock, co-packing, canning, etc.)
- ☐ Expand processing capacity of current processing facilities (including for livestock, co-packing, canning, etc.)
- ☐ Expand aggregation methods and facilities for NY grown products (e.g. food hubs, new partnerships) to coordinate regional crop supply for larger buyers
- ☐ Improve coordination of product supply across farms to access larger buyers
- ☐ Invest in improved equipment and technology at processing facilities (including for livestock, co-packing, canning, etc.
- ☐ Establish new post-harvest storage infrastructure that is accessible to all farm scales
- ☐ Strengthen food safety traceability throughout all NY supply chains
- ☐ None of the above

Health of your Population

What should be the HIGHEST PRIORITIES in statewide efforts to support the **health of our population** through our food and farming system.

Please SELECT UP TO THREE.

- ☐ Provide incentives for WIC/EBT dollars to be spent on NY grown products
- ☐ Expand equitable access to healthy NY grown food for all New Yorkers
- ☐ Provide affordable health care options for farmers
- ☐ Strengthen food safety practices on farms
- ☐ Develop culturally-appropriate crops and food products for diverse NY communities
- ☐ Improve human nutritional value and flavor of common NY grown crops
- ☐ Support purchases of NY grown products by emergency food assistance programs
- ☐ Innovate healthy value-added foods using NY grown products
- ☐ None of the above

Business Development and Management

What should be the HIGHEST PRIORITIES in statewide efforts to support **business development and management** in our food and farming system.

Please SELECT UP TO THREE.

- ☐ Support alternative models of farm ownership
- ☐ Restructure government commodity support programs
- ☐ Develop a more skilled farm labor force through training and education
- ☐ Expand controlled environment agriculture (i.e., high tunnels, greenhouse, vertical farms)
- ☐ Promote the adoption of new technologies (drones, precision agriculture, IOT sensors, blockchain technology)
- ☐ Support farm diversification to generate new income streams and reduce risk
- ☐ Support increases in farm wages and benefits
- ☐ Expand insurance options for crops and livestock to manage risk
- ☐ None of the above

New and Beginning Farmer Development

What should be the HIGHEST PRIORITIES in statewide efforts to support **new and beginning farmer development** in our food and farming system.

Please SELECT UP TO THREE.

- ☐ Increase farm ownership opportunities to create a more diverse and inclusive farming population (BIPOC, women, LGBTQIA+)
- ☐ Improve access to capital for beginning farmers to purchase farmland and pay for start-up costs
- ☐ Develop alternative farm financing strategies (angel investors, rent-to-own, crowdfunding)
- ☐ Provide incentives for farm transition from retiring to new farmers
- ☐ Increase training for farm employees to advance to farm management and/or farm ownership
- ☐ Promote cooperative models of farm ownership
- ☐ Increase farm production and business management education and training
- ☐ Expand farm link networks and systems that help farm seekers connect with land owners leasing or selling farms
- ☐ None of the above

Market Development

What should be the HIGHEST PRIORITIES in statewide efforts to support **market development** in our food and farming system.

Please SELECT UP TO THREE.

- ☐ Support the development of value-added farm products
- ☐ Support farm transition to USDA certified organic production
- ☐ Support the growth of urban and peri-urban agriculture
- ☐ Modernize commodity grades, labels, and standards
- ☐ Support innovation in new and emerging crops
- ☐ Develop traceability standards to certify NY grown food in labels or products
- ☐ Develop new processes and products that serve to reduce food waste
- ☐ Educate consumers on the value of buying locally and regionally sourced products
- ☐ Increase use of NY grown food at public institutions (schools, senior centers, colleges, and hospitals)
- ☐ None of the above

Stewardship of Natural Resources and Climate

What should be the HIGHEST PRIORITIES in statewide efforts to support the **stewardship of natural resources and climate** in our food and farming system. Please SELECT UP TO THREE.

- ☐ Expand capacity for on-farm energy production (e.g., wind, solar, biofuels, anaerobic digestion, etc.)
- ☐ Expand agroforestry practices (maple production, log grown mushrooms, silvopasture, etc.)
- ☐ Mitigate greenhouse gas emissions (sequestering carbon on ag land, reducing greenhouse gases, etc.)
- ☐ Improve on-farm water use management practices
- ☐ Preserve and protect farmland from non-ag development
- ☐ Increase adoption of soil health and water quality management practices
- ☐ Expand pasture-based livestock grazing (including transitioning marginal crop land and underutilized grasslands, etc.)
- ☐ Support adaptation to climate change and weather extremes (e.g., frost damage, drought, severe storms, etc.)
- ☐ None of the above

SECTION 3: HIGH PRIORITIES-Opportunities and Barriers

Have we missed anything? Please let us know your priority(ies) for enhancing New York's food production system to make it more equitable, resilient, profitable, and healthy by 2050.

The categories above are listed below. Please list any effort (e.g. program, policy, investment, training) that you know of that could be used to advance these priorities in the future. Your responses are optional, although it will provide us with information and examples of useful strategies.

Market development

Stewardship of natural resources and climate

New and beginning farmer development

Business development and management

Health of our population

Supply chains and infrastructure

What current barriers make reform in each of your priority areas difficult? Your

responses are optional, although it will provide us with information and examples of important barriers to overcome.

Market development

Stewardship of natural resources and climate

Business development and management

New and beginning farmer development

Health of our population

Supply chains and infrastructure

Demographics

Where do you farm or work in New York State?

What is your gender?

- ☐ Female
- ☐ Male
- ☐ Not represented here
- ☐ I prefer not to answer

What is your racial identity? (You may select all that apply)

- ☐ American Indian/Alaska Native
- ☐ Asian
- ☐ Black/African American
- ☐ Hawaiian Native/Pacific Islander
- ☐ Hispanic/Latino
- ☐ White
- ☐ Not represented here
- ☐ I prefer not to answer

Approximately what percent of your household's income comes from farming?

- ☐ Less than 25%
- ☐ 25%-49%
- ☐ 50%-74%
- ☐ 75%-100%
- ☐ I prefer not to answer

How many years experience do you have working on a farm?

- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ 11 to 19
- ☐ 20+
- ☐ None

In 2019, how many total acres were in production on the farm that you own or work?
Please include rented acres.

- ☐ 1 to 4 acres
- ☐ 5 to 14
- ☐ 15 to 24
- ☐ 25 to 49
- ☐ 50 to 99
- ☐ 100 to 249
- ☐ 250 to 499
- ☐ 500 to 999
- ☐ 1,000 or more

What are the farm's primary enterprise(s)? You may select all that apply.

- ☐ Field crops (grains, oil seeds, beans, and peas)
- ☐ Hay
- ☐ Beef cattle
- ☐ Poultry (egg or meat)
- ☐ Pigs
- ☐ Sheep or goats (meat or fiber)
- ☐ Vegetables, melons, potatoes, sweet potatoes
- ☐ Berries
- ☐ Fruit and tree nuts
- ☐ Dairy
- ☐ Maple
- ☐ Mushrooms
- ☐ Beverage crops (grapes, grains, hops, cider apples)
- ☐ Aquaculture
- ☐ Nursery/greenhouse plants
- ☐ Other (please describe)

What are the primary farm enterprise(s) you plan to have on your farm? You may select all that apply.

- ☐ Field crops (grains, oil seeds, beans, and peas)
- ☐ Hay
- ☐ Beef cattle
- ☐ Poultry (egg or meat)
- ☐ Pigs
- ☐ Sheep or goats (meat or fiber)
- ☐ Vegetables, melons, potatoes, sweet potatoes
- ☐ Berries
- ☐ Fruit and tree nuts
- ☐ Dairy
- ☐ Maple
- ☐ Mushrooms
- ☐ Beverage crops (grapes, grains, hops, cider apples)
- ☐ Aquaculture
- ☐ Nursery/greenhouse plants
- ☐ Other (please describe)

What was the annual gross cash revenue of your farm in 2019? Gross cash revenue includes total revenue from products sold, payments from federal programs (including EQIP), and other farm related cash revenue.

- ☐ Less than \$10,000
- ☐ \$10,000 to \$49,999
- ☐ \$50,000 to \$149,999
- ☐ \$150,000 to \$349,999
- ☐ \$350,00 to \$499,000
- ☐ \$500,000 to \$999,999
- ☐ \$1,000,000 or more
- ☐ I prefer not to answer

Thank you for your insights!

If you would like to receive a copy of the VISION 2050 document, please provide your name and contact information below. This information will be recorded separately from your survey responses.

Name

Email Address

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STAKEHOLDER INVITEE/PARTICIPATION LIST FROM ROUNDTABLE FOCUS GROUPS

Vision 2050 Stakeholder Invitee List

F	Name	Affiliation	Notes
Invited:	244		
Invited and Registered:	76		
Participated:	95		
Ag Agency	Ariana Taylor Stanley	NSAC	Invited
Ag Agency	Elizabeth Wolters	NY Farm Bureau (NYFB)	Invited
Ag Agency	Jose Chapa	Justice for Farmworkers New York	Invited
Ag Agency	Leah Penniman	Soul Fire Farm	Invited
Ag Agency	Marilyn Wyman	CCE Schoharie Otsego	Invited
Ag Agency	Michael Gore	National Plant Breeders Association	Invited
Ag Agency	Selena Bryant	Northeast chapter of MANNRS	Invited
Ag Agency	Aric Aery	NYS Nursery and Landscape Association, Inc.	Invited and Registered
Ag Agency	Dr. Jan Nyrop	Cornell AgriTech in Geneva	Invited and Registered
Ag Agency	Dr. Olga Padilla-Zakou	NE Center for Food Entrepreneurship	Invited and Registered
Ag Agency	Elizabeth Madison	NYS Berry Growers Association	Invited and Registered
Ag Agency	Elizabeth Seme	Council of Agricultural Organizations	Invited and Registered
Ag Agency	Helen Thomas	NYS Maple Producers Association, Inc.	Invited and Registered
Ag Agency	Jean O'Toole	NY Beef Council	Invited and Registered
Ag Agency	Jennifer Huson	Dairy Farmers of American Northeast Area	Invited and Registered
Ag Agency	John Bartow	Empire State Forest Products Association (ESFPA)	Invited and Registered
Ag Agency	Judi Whittaker	NYS Agricultural Society	Invited and Registered
Ag Agency	Mark Fiegl	Empire Sheep Producers Association	Invited and Registered
Ag Agency	Marty Broccoli	CCE Educator, beef specialist	Invited and Registered
Ag Agency	Mike Mitchell	NYS Flower Industries, Inc.	Invited and Registered
Ag Agency	Paul Leone	NYS Brewers Association	Invited and Registered
Ag Agency	Rick Zimmerman	Northeast Agribusiness and Feed Alliance, Inc.	Invited and Registered
Ag Agency	Sam Filler	NY Wine and Grape Foundation	Invited and Registered
Ag Agency	Shari Lighthall	NY Association of Agricultural Educators - NYAAE	Invited and Registered
Ag Agency	Stacey Kazacos	NY Forest Owners Association NYFOA	Invited and Registered
Ag Agency	Steve Miller	Hop Growers of New York	Invited and Registered
Ag Agency	Susan McAleavy-Sarlund	Eastern Produce Council	Invited and Registered
Ag Agency	Todd Earling	Hudson Valley AgriBusiness Development Corp (HVADC)	Invited and Registered
Ag Agency	Tom Facer	Farm Fresh First	Invited and Registered
Ag Agency	Tom Overton	ProDairy	Invited and Registered
Ag Agency	Tonya VanSlyke	Northeast Dairy Producers Association	Invited and Registered
Ag Agency	Andrew Faust	Center for Bioregional Living	Participated
Ag Agency	Bari Zeiger	National Young Farmers Coalition	Participated
Ag Agency	Erika Rincon	National Young Farmers Coalition	Participated
Ag Agency	Heather Meehan	CADE/Amber Waves Farm	Participated
Ag Agency	Heidi Mouillesseaux-Kunzman	Cornell University's Department of Global Development	Participated
Ag Agency	Jeanette Marvin	NYS Agribusiness Association	Participated
Ag Agency	Jeff Piestrak	Cornell AgriTech	Participated
Ag Agency	Jeff Williams	NY Farm Bureau	Participated
Ag Agency	Julie Suarez	Cornell University	Participated
Ag Agency	June Russell	Glymwood	Participated
Ag Agency	Kate Vail	New York Agribusiness Association	Participated
Ag Agency	Katherine Gregory	NYS Food Processors Association	Participated
Ag Agency	Kristin M. Heltman-Weiss	Providence Farm Collective Western NY	Participated
Ag Agency	Larry Van Der Valk	Cornell LEAD	Participated
Ag Agency	Lauren Melodia	CADE (former)	Participated
Ag Agency	Phoebe Schreiner	CADE	Participated
Ag Agency	Ron Rosati	Rwanda Institute for Conservation Agriculture	Participated
Ag Agency	Bethany Wallis	Northeast Organic Farming Association NY	Participated
Ag Researcher	Daryl Nydam	Dyson School Cornell University	Invited

Vision 2050 Stakeholder Invitee List

F	Name	Affiliation	Notes
Invited:	244		
Invited and Registered:	76		
Participated:	95		
Ag Researcher	Catharine Young, Director of AgriTech Center of Excellence	AgriTech Cornell Univ (formerly State Senator)	Invited and Registered
Ag Researcher	Anu Rangarajan	Cornell Small Farms Program	Participated
Ag Researcher	Frank Ge	Dyson School Cornell University	Participated
Ag Researcher	Miguel Gomez	Dyson School Cornell University	Participated
Ag Researcher	Ryan Maher	Cornell Small Farms Program	Participated
Ag Researcher	Seth Browe	SUNY Institute for Rural Development/Cobleskill	Participated
Ag Researcher	Wythe Marshall	NYU Stern School of Business, Center for Sustainable Business, Food Health Invest NYC SDG	Participated
Ag Researcher	Zach Schuman	Hamilton College/Levitt Center/MVFAN	Participated
Ag Researcher	Mark Sorrells	The Cornell Small Grains Breeding & Genetics Program	Participated
Aquaculture	Emma Forbes	New York Sea Grant	Participated
Aquaculture	Michael Ciaramella	New York Sea Grant	Participated
Buyers	Annette Nielsen	Lenox Hill Teaching Kitchen	Invited
Buyers	Bridget O'Brian Woods	Buffalo Public School District	Invited
Buyers	Devin White	Hartwick Food Service	Invited
Buyers	Georgia Sullivan	Honest Weight Food Coop	Invited
Buyers	Anne Saxelby	Cheese buyer NYC	Invited and Registered
Buyers	Cheryl Billinski	Harvest NY	Invited and Registered
Buyers	David French	Lenox Hill Teaching Kitchen	Invited and Registered
Buyers	Fa-Tai Shieh	Food Citywide Procurement Operations	Invited and Registered
Buyers	Marla Guarino	Buffalo Niagara Medical Center, Farm to Institution Catalyst	Invited and Registered
Buyers	Betsy Skoda	Healthcare Without Harm Healthy Food in Healthcare	Participated
Buyers	Bob Lewis	Fulton Stall Market	Participated
Buyers	Mikaela Ruiz-Ramon	American Farmland Trust	Participated
Climate	Brian Steinmiller	NYS Agriculture and Markets	Invited
Climate	Peter Lehner	CLCPA Ag and Forestry Panel / Earth Justice	Invited
Climate	Peter Woodbury	Cornell Soil and Crops	Invited
Climate	Cynthia Rosenzweig	NASA Goddard Institute for Space Studies and Columbia University Earth Institute Center for Climate Systems Research	Invited and Registered
Climate	Walter E. Baethgen, PhD	Columbia University	Invited and Registered
Climate	Gay Nicholson	Sustainable Tompkins	Participated
Climate	Jen Grossman	National Resource Defence Council	Participated
Climate	Wes Gillingham	Catskill Mountain Keeper	Participated
Climate	Danny Lapin	Otsego County Conservation Association	Participated
Commodities	Brian Caldwell	NY Tree Crop Alliance	Invited
Commodities	Neil Mattson	Cornell - Horticulture	Invited
Commodities	Corey Moser	NYS Vegetable Growers Association	Invited and Registered
Commodities	Elizabeth Dyck	Organic Grains for the Northeast (OGRIN)	Invited and Registered
Commodities	Mary Howell Martins	Lakeview Organic Grains	Invited and Registered
Commodities	Mike Stanyard	Cornell Field and Crop	Invited and Registered
Commodities	Thor Oeschner	Farmer Ground Flour	Invited and Registered
Commodities	Colleen Klein	NYS Corn and Soybean Growers	Participated
Commodities	Rick Zimmerman	Northeast Ag and Feed Alliance	Participated
Commodities	Coleen Klein	NY Corn and Soybean Growers Association	Participated
Dairy	Doug Young	Spruce Haven Farm	Invited
Dairy	Jarek Rudin	Ronny Brook Dairy (recent college grad farm worker)	Invited
Dairy	Rob Noble	Noblehurst Farms	Participated
Dairy	Shannon Finn	Cowbella LLC	Participated
Distributors	Dana Stafford	Regional Access	Invited and Registered
Distributors	Tatiana Garcia Granados	The Common Market	Invited and Registered

Vision 2050 Stakeholder Invitee List

F	Name	Affiliation	Notes
Invited:	244		
Invited and Registered:	76		
Participated:	95		
Eco Dvt / Food System Dvt	Mark Macmullen	NYSDAM	Invited
Eco Dvt / Food System Dvt	Dorothy Richter	Southern Tier 8	Invited and Registered
Eco Dvt / Food System Dvt	<u>John J. Piseck, Jr.</u>	<u>Herkimer County Industrial Development Agency</u>	Invited and Registered
Eco Dvt / Food System Dvt	<u>Larkin Podsiedlik</u>	<u>CCE Madison</u>	Invited and Registered
Eco Dvt / Food System Dvt	Samina Raja	<u>http://www.buffalo.edu/news/experts/samina-raja-faculty-expert-food-access.html</u>	Invited and Registered
Eco Dvt / Food System Dvt	Julie Pacatte	Schoharie Economic Enterprise Corp – SEEC	Participated
Eco Dvt / Food System Dvt	Karen Simons	Hudson Varick Resources, Ltd	Participated
Eco Dvt / Food System Dvt	<u>Laura Biasillo</u>	<u>CCE Broome</u>	Participated
Eco Dvt / Food System Dvt	Sarah Salem	Hudson Valley Food System Coalition	Participated
Eco Dvt / Food System Dvt	Vicki Giarratano	Cornell University Food Systems	Participated
Farm & Production	Christina Hudson Kohler	Hudson Egg Farms, NY Farm Bureau	Invited
Farm & Production	Curtis Waterman	Onondaga Nation Farm	Invited
Farm & Production	Dennis Derryck	Corbin Hill	Invited
Farm & Production	Jose Inguinez	Lamont Fruit Farms	Invited
Farm & Production	Mary-Howell Martens	Lakeview Organic Grain	Invited
Farm & Production	Michael Kreher	Kreher farms	Invited
Farm & Production	Courtney Sutton-Grimes	Mace Chasm Farm	Invited and Registered
Farm & Production	Eleanor Blakesly-Drain	Berry Brook Farm	Invited and Registered
Farm & Production	Fred Lee	Lee Family Farm	Invited and Registered
Farm & Production	Karen Washington	Rise and Root Farm / Black Urban Growers Association / Black Farmer Fund	Invited and Registered
Farm & Production	Richard Giles	Lucky Dog Farm	Invited and Registered
Farm & Production	Suzanne Hunt		Invited and Registered
Farm & Production	Zaid Kurdieh	Norwich Meadows Farm	Invited and Registered
Farm & Production	Carlos Valery	Orinoco Farm	Participated
Farm & Production	Jim Barber	Barbers Farm	Participated
Farm & Production	Jim Bittner	Singer Orchards	Participated
Farm & Production	Kevin Maher	CrannMor/subsidiary Agroforestry Management	Participated
Farm & Production	Tatiana Orlov	Farmer, Mothers Out Front - moms for climate justice and regenerative ag	Participated
Food Business	Julia Van Loon	Slate Foods	Invited
Food Business	TBC	Wegmans	Invited
Food Business	Tim Griffin	Amy's Organics	Invited and Registered
Food Business	Christina-Hunt Wood	Muddy River Farm Brewery	Participated
Food Business	Ken Jaffe	Slope Farms	Participated
Food Hubs	Erin Wright	Capital Roots	Invited
Food Hubs	Bathany Munn	North Star Food Hub	Invited and Registered
Food Hubs	David Walczak	Eden Valley Growers	Invited and Registered
Food Hubs	George Billard	Fresh Catskills	Invited and Registered
Food Hubs	Jim Hyland	The Farm Bridge	Invited and Registered
Food Hubs	Liz Carollo		Invited and Registered
Food Hubs	Neil Miller	Hudson Valley Harvest	Invited and Registered
Food Hubs	Tyler Mobley	Green Market Co Food Hub	Invited and Registered
Food Hubs	Tianna Kennedy	607 CSA	Participated
Food Hubs	Amy Klien/Scott Fuller	Capital Roots	Participated
Food Hubs	Brian Reeves	Reeves Farm	Participated
Food Hubs	Chris Hartman	Headwaters Food Hub	Participated
Food Hubs	Donna Williams	Field Goods	Participated
Food Hubs	Myron Thurston III	CCE Oneida	Participated
Food Policy	Matt Potteiger	Co-author of Food Plan CNY	Invited
Food Policy	Nevin Cohen	Hunter College, Food Policy	Invited

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Food Policy	Samina Raja	University of Buffalo, School of Architecture and Planning	Invited and Registered
Food Policy	Susan Zimet	NYS Food and Anti-Hunger Policy	Invited and Registered
Food Policy	Adrianne Traub	Cortland County Food Policy Committee / Seven Valleys Health Coalition	Participated
Food Policy	Elaine Zhang	Emerson Hunger Fellow/ Seven Valleys Health Coalition	Participated
Food Policy	Gabrielle DiDomenico	Seven Valleys Health Coalition	Participated
Food Policy	Jonathan Brown	PACE University School of Law	Participated
Food Policy	Maura Ackerman	SOFSA	Participated
Food Policy	Nicole Sugarman	NESAWG	Participated
Food Policy	Steve Smith/Mari-Kate Mycek/Heather Devitt	MVFAN/MVEDD	Participated
Food Policy	Emmanuel Frimpong Boamah	University of Buffalo, School of Urban and Regional Planning	Invited and Registered
Global Food Systems	Annalina Kazickas	Winrock	Invited
Global Food Systems	Lorin Fries	Future Table/Rockefeller Vision Prize	Invited
Information Systems Infrastructure	Laura Adiletta	Farm Fare (http://www.farmfare.io/)	Invited
Investment / Funding	Bob Dandrew	Local Economies Project	Invited
Investment / Funding	David McGhee	9Partners Bridge	Invited
Investment / Funding	Jacob Israelow	Dirt Capital	Invited
Investment / Funding	Mary Ann Johnson	HVADC	Invited
Investment / Funding	Alexandra Lunt	Armonia LLC	Invited and Registered
Investment / Funding	Jennifer Goggins	Slow Food NYC	Invited and Registered
Investment / Funding	Kevin Egolf	Local Farms Fund	Invited and Registered
Investment / Funding	Tom Cosgrove	Farm Credit East	Invited and Registered
Investment / Funding	Claude Arpels	Slow Money NYC	Participated
Investment / Funding	David Grusenmeyer	NYFVI	Participated
Investment / Funding	Jeff Potent	Columbia University/Local Farm Fund	Participated
Investment / Funding	Roy Steiner	Food Initiative / Rockefeller Foundation	Participated
Investment / Funding	Beth Kinsman Gosch	Western New York Foundation	Participated
Labor	Mary Jo Dudley	Cornell Farm Worker Program	Participated
Land Trusts	Gabrielle Pererya	Northeast Farmers of Color Landtrust	Invited
Land Trusts	Stephanie Morningstar	Northeast Farmers of Color Landtrust	Invited
Land Trusts	Beth Myers	Scenic Hudson	Invited and Registered
Land Trusts	Samantha Levy	American Farmland Trust / NY branch	Participated
Political Leaders	Basil Seggos	DEP Commissioner Office	Invited
Political Leaders	David Knapp	Onondaga County Legislature and Agriculture Council	Invited
Political Leaders	Didi Barrett	NYS Assembly	Invited
Political Leaders	Gale Brewer	Manhattan Borough Pres	Invited
Political Leaders	George Edwards	NYC Department of Education/School Food	Invited
Political Leaders	George Korchowsky	NYS Department of State	Invited
Political Leaders	Jeffery Otto	NYC Department of City Planning	Invited
Political Leaders	Kate MacKenzie	Director of Food Policy for NYC Mayor	Invited
Political Leaders	Katherine Sacco	Urban Design Forum, Mayor's Office of Food Policy	Invited
Political Leaders	Kevin King	Governor's Office / Deputy Secretary Food and Agriculture	Invited
Political Leaders	Legislative Commission	Legislative Commission on Rural Resources	Invited
Political Leaders	Mandu Sen	NYC Mayor's Office of Food Policy	Invited
Political Leaders	Rachel May	NYS Senate District 53	Invited
Political Leaders	Richard Ball	Ag Commissioner NYSDAM	Invited
Political Leaders	Senator Hinchey	NYS Senate / Chair of Agriculture	Invited
Political Leaders	Fernando Tirado	Director of New Initiatives, Bureau of Bronx Neighborhood Health, Center for Health Equity and Community Wellness, NYC DOHMH	Invited and Registered

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Invited:	244		
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Political Leaders	Matthew Waskiewicz	NYC Department of City Planning	Invited and Registered
Political Leaders	Ryan Naatz	Watershed Agricultural Council	Invited and Registered
Political Leaders	Antonio Delgado	U.S. Representative for New York's 19th congressional district	Participated
Political Leaders	Assemblywoman Lupardo	NYS Assembly / Chair of Agriculture	Participated
Political Leaders	Mathew Waskiewicz	Office of City Planning Regional Development	Participated
Political Leaders	Chuck Schumer	NY Senator	Invited
Political Leaders	Kirsten Gillibrand	NY Senator	Invited
Racila Justice and Equity	Patrice Anthony Lockhart	Black Label Consulting, Board of Groundswell	Participated
Racila Justice and Equity	Evelyn Garcia	Lenox Hill Teaching Kitchen	Participated
Racila Justice and Equity	Stephanie Hsu	Farm to Institution	Participated
Racila Justice and Equity	Qiana Mickie	Just Foods	Participated
Racila Justice and Equity	Anna Lilia Araiza	Community Food Advocates' - Youth Leadership	Participated
Racila Justice and Equity	Ribka Getachew	Community Food Advocates - Good Food Campaign	Participated
REDC	Marion Terenzio/Stuart Fergusson	Regional Economic Development Council - Mohawk Valley / SUNY Cobleskill	Invited and Registered
REDC	Jennifer Gregory	Regional Economic Development Council - Southern Tier	Invited and Registered
Right to Food/Nutrition	Ann Darcy, RDN	New York State Academy of Nutrition and Dietetics (NYSAND)	Invited
Right to Food/Nutrition	Dr. Sam Fielding, DAOM, LAC	Alternative Medicine	Invited
Right to Food/Nutrition	Marla Guarino	Buffalo Niagara Medical Campus, Inc.	Invited
Right to Food/Nutrition	Smita Narula	Pace University	Invited
Right to Food/Nutrition	Ellie Wilson/Pam Cerrone	Price Chopper/NYS Council on Hunger & Food Policy	Participated
Right to Food/Nutrition	Mandeep K. Virk-Baker, PhD, MPH, N	SUNY Oneonta - Food and Nutrition	Participated
Slaughter / Meat Processing	Andrew Pomeroy	Trinity Meats	Invited and Registered
Slaughter / Meat Processing	Nathaniel Brandon	Steiners	Invited and Registered
Slaughter / Meat Processing	Serkan Cambudak/Hans Hass	Catskill Packing Co.	Invited and Registered
Slaughter / Meat Processing	Adam Tiberio	Tiberio Custom Meats	Participated
Slaughter / Meat Processing	Joshua	Trinity Meats	Participated
Suppliers	Elizabeth Malchoff	Empire Drip and Irrigation	Invited and Registered
Youth ag	Andrew Margon	Environmental Studies High School Hells Kitchen	Invited
Youth ag	Angela Mead	BT BOCES- Plant Science & Animal	Invited
Youth ag	Astrid Castillo	Youth Farm Project	Invited
Youth ag	Derek Hill	Future Farmers of America	Invited
Youth ag	Hope Townsend	VINES	Invited
Youth ag	Irene Hamburger	Stone Barn	Invited
Youth ag	Liz Aceles	Community Food Advocates - Youth Organizing	Invited
Youth ag	Michael Stamets	SUNY Broome Culinary	Invited
Youth ag	Mingla Charoenmuang	STATE 4-H Health Wellness & Food Systems Specialist	Invited
Youth ag	Neena Hussey	Mass Ave	Invited
Youth ag	Rachel Wax	Bronx Science with Food/Social Justice course	Invited
Youth ag	Renae Cairns	Teens for Food Justice	Invited and Registered
Youth ag	Katie Carpenter	NY Ag in the Classroom	Participated
Youth Ag	Jennifer Zhang	VINES	Participated
Youth Ag	Hannah-Rose Foote	FFA	Participated
Youth Ag	Marc Tommell Jr	FFA	Participated
Youth Ag	Ashley Yang	Community Food Advocates	Participated
Youth Ag	salma ibrahim	FFA	Participated
Youth Ag	Elizabeth Porsella	Community Food Advocates	Participated
Youth Ag	Evelyn Barron	VINES	Participated
Youth Ag	Robert Cooper	VINES	Participated
Youth Ag	Shivani Shah	Community Food Advocates	Participated

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	Henry Gordon Smith	Agritecture Consulting	Invited
		Mastronardi / Sunset Foods	Invited

