

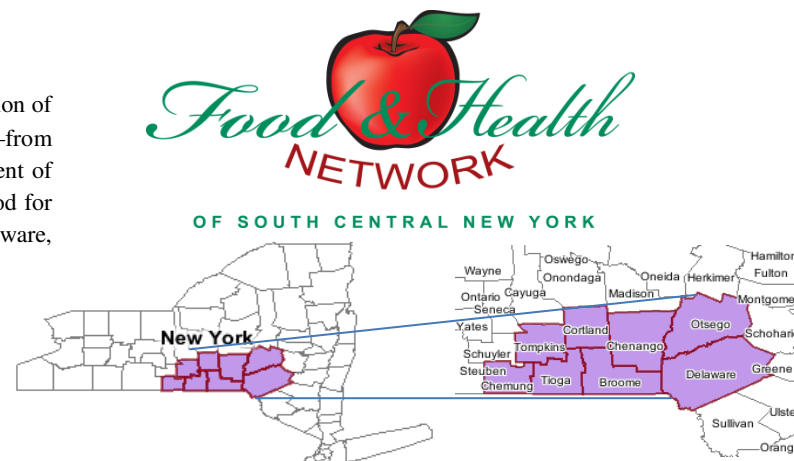


2012 Regional Food System Assessment for South Central New York



The Food and Health Network of South Central New York (FaHN) is a diverse collaboration of organizations and individuals working to develop a thriving, healthy, and food secure regional food system—from production, processing, distribution, to consumption and composting. The Network facilitates the development of practices, projects, and policies that lead to increased use of nutritious, sustainably, and locally produced food for residents of all income levels. FaHN serves eight counties: Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Tioga, and Tompkins.

This **2012 Regional Food System Assessment** is a service of the Food and Health Network. The Networks' 2011 Regional Food System Assessment was the first of its kind in the region. This 2012 update features new data and more information and insights.



What are people saying about the value of the Regional Food System Assessment for South Central NY?

I value the concept of the Regional Food System Assessment for South CNY as a “living document” that is being updated and revised with input from the community while providing a baseline for marking change. I find the discussions of water and composting issues an important component of the overall regional food system picture. The assessment will be further enhanced as local data are collected over time by community partners. This is an inspiring document that is useful for educating people about food systems, and it serves as a comprehensive model for other food assessment work around the state and elsewhere. Well done! *Susan Adair, Ph.D., Program Evaluation and Community Research, Syracuse, NY*

The Regional Food System Assessment is the missing link needed to understand the issues and complexities of our local food system. This should be a working document for municipal planners; food security, community health, and environmental advocates; and the general public. Our food system is very fragile, and this document assists us in identifying interdisciplinary approaches to strengthen our community well-being. *Ray Denniston, Special Project Coordinator for Food Service, Broome-Tioga Board of Cooperative Education Services (BOCES)*

The Broome County Health Department commends the Food and Health Network for creating the Regional Food System Assessment. The connection between our food system and our health is a very powerful one. The Food System Assessment is a unique and unprecedented planning tool that provides critical information and relative data on the important role the food system plays in fostering accessible, available, and healthy food. This education tool will undoubtedly provide valuable insight and assist with informing Broome County's community health assessment and community health improvement planning efforts. The Food System Assessment extends the opportunity to enrich public health's role of preventing chronic disease and promoting health through better nutrition." *Claudia Edwards, Director, Broome County Health Department*

The Food Bank of the Southern Tier has shared the FSA with its member agencies and other Food Banks in New York State. It has stimulated conversations about how the hunger-relief network can better connect with regional food resources and promote the health of our neighbors most

vulnerable to food insecurity. *Matt Griffin, Director of Agency Services & Programs, Food Bank of the Southern Tier*

The Food System Assessment has been tremendously helpful to me when putting together grant applications and policy briefs. One could spend hours searching for the most reliable sources of up to date statistics on food security rates, food stamp participation, and other food system indicators. Now I can get the information I need within a matter of minutes from the Food System Assessment, knowing that the information comes from trustworthy sources. *Amelia LoDolce, Sustainable Development Planner, City of Binghamton*

Thank you so much for your diligent work on this living document and the meaningful dialogue it is generating. The FaHN and Food System Assessment it has created are tremendous assets to our region. The visions and linked indicators presented will be invaluable as we work toward a more sustainable and vibrant farm and food system. Knowing where we are and identifying emerging trends and patterns are vital steps in that process. The open-ended inquiry this document represents is also useful in identifying gaps in existing data and indicators, helping shape future collection and advocacy efforts. I encourage anyone who is interested in the health and resilience of agriculture and food systems in our region to read this document and join the conversation it initiates. I look forward to working with the FaHN and others in the coming months and years in building on this shared asset, helping it continue to evolve as a responsive and dynamic tool for positive change in our region. Bravo! *Jeff Piestrak, Community Outreach & Engagement Specialist, Albert R. Mann Library, Cornell University*

The Regional Food System Assessment for South Central New York has been an invaluable tool in considering the important intersections of regional food production, health and food security. Most interesting and helpful from my perspective has been the side by side comparison of county data sets. It is fascinating and instructive to compare county data across the four food system components in the Assessment. At both the county and regional level this information provides a basis for action, advocacy and collaborative efforts to strengthen our regional food system and health. *Jack Salo, Executive Director, Rural Health Network of South Central New York*

THE EIGHT-COUNTY FOOD SYSTEM: STRENGTHS, PROMISING TRENDS, OPPORTUNITIES, AND CHALLENGES AT A GLANCE

Strengths and Promising Trends

Healthy Environments

- Sustainable nutrient management practices are improving, as indicated by nitrogen and phosphorus balances of inputs and outputs on farms. 50.1% of dairy and livestock farms reported practicing rotational or management-intensive grazing in 2007.
- 201 farms with 24,315 organic acres in the region generated \$10.3 million in sales of certified organic products in 2007.

Farm to Consumer Connections

- The value of agricultural products sold directly to consumers increased 59% from 2002 to 2007. While promising, this represents only \$11.29 per capita spent on direct purchases of food from local farms or farmers' markets in 2007, representing only 2% of total farm sales. There may be potential to increase this up to 10% and benefit many small farms.
- The number of Community Supported Agriculture (CSA) programs increased by 54%, from 26 CSAs in 2010 to 40 in 2012, due to growth in Chenango and Tompkins Counties. The number of community gardens in the region increased by 54% from 35 in 2010 to 54 in 2011. In 2011, 27 schools had educational gardens.

Economic Vitality

- Over \$370.5 million in agricultural products were sold in 2007, representing a 21% increase in farm income from 2002 to 2007. An additional \$351.2 million in earnings was generated in 2010 by the 21,473 people employed in the food system – either in agriculture, food services, or food manufacturing. This number of people working in the food system is in addition to the owners of family farms, processing plants, restaurants, and other food system business owners.
- 191 individuals participated in the region's beginning farmer training programs. This will help increase the number of relatively young farmers. The average age of farmers was 57.1 years in 2007.

Healthy People and Food Security

- Estimated Food Stamp (SNAP) participation rates for eligible residents increased from 46% in 2006 to 71% in 2012, resulting in an increase of 33,586 more people benefitting, from 53,952 residents in 2007 to 87,538 in 2012. In 2012, nearly 1 in 5 residents were estimated to be eligible for SNAP and nearly 1 in 7 residents used SNAP benefits. Grocery stores and farmers' markets received over \$11.5 million from SNAP in just 1 month in 2012.
- In 2011, 5,698 lbs. of donated venison was processed by approved processors for food banks, an increase of 38% from the previous year. Hunter awareness of this program and increased participation of processors could increase availability of this nutritious meat to reduce hunger. Nearly 1 million pounds of fresh produce are distributed to food banks in the region each year.
- Increased access to local foods by residents of all income levels: In 2011, 21 of 47 farmers' markets participated in EBT, with farmers receiving \$39,423 in EBT sales.

Challenges and Opportunities for Positive Change

Healthy Environments

- Only 23.4% of farms reported using conservation methods in 2007.
- Need to reverse the trend toward fallow land in the region: Acres in cropland decreased by 5.1% from 2002 to 2007.
- If and when hydraulic fracturing for natural gas is approved, state and municipal regulations need to be in place and enforced as a means to protect farmland, crops, livestock, and water quality from its potential adverse effects.
- 2009-2011 commitments for reduction of Total Maximum Daily Load of pollutants in the NYS section of the Chesapeake Bay Watershed have been at least 90% achieved for 6 out of 13 agricultural practices, with opportunity for improvement in 7 agricultural practices.
- Increases in home and institutional composting would benefit the environment.

Economic Vitality

- The number of farms decreased by 3.6% from 5,527 in 2002 to 5,328 in 2007.
- More young farmers, women, and minority principal farm operators are needed.
- In all counties, less than 50% of farms had high speed Internet access in 2007.
- Need for increased capacity of: slaughterhouses within 100 miles of farms; processors and distributors of local foods; and expansion of regional distribution hubs for win-win strategic partnerships with farms.
- Only 41% of all farms reported net gains in farm income in 2007. The number of mid-sized farms decreased by 12%. The market value of their ag products sold increased by only 1.4% from 2002-07. Mid-sized farms are central to increasing the supply of local food for residents and institutions.
- Average earnings for agricultural employees and food service employees are lower than the average for all employees in each county.
- There is opportunity to build on increasing public interest in the local foods movement to promote home gardening, canning, and freezing of locally grown food.

Healthy People and Food Security

- Over 1 in 5 children and 1 in 7 people regionwide were estimated to be food insecure in 2010. Over 1 in 3 middle school and high school students in the region were estimated to be overweight or obese in the 2008-10 school years.
- Strengthened community-wide and multi-sector coordinated actions can help reduce rates of diabetes and obesity and increase the percentage of residents with nutritious diets. Children's health can benefit from increased public support of school districts' wellness policies and efforts to provide children and youth with nutrient-rich food choices.

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Many thanks to all who served on the Food and Health Network's 2011 and/or 2012 Food System Assessment Task Force

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Photo Credits: CADE, Cayuga Compost, Chobani, Grazing Lands Conservation Initiative, Karen Hoffman, Groundswell, Lisa Bloodnick, Matt Griffin, Food Bank of the Southern Tier, Ely Margolis, Pam Moore, USDA-NRCS, Lauren Tonti, Rural Health Service Corps, Dylan Thomas, Town of Milford, Diane Albrecht



Introduction

As a fundamental element of our survival, food powerfully defines our lives in many seen and unseen ways. It solidifies our role as interdependent *community* members of humanity and Earth, connecting us to land and people we may never see. As such, our relationship with food has tremendous potential in shaping the wellbeing of all life.

Revived community food systems are helping realize this potential in positive ways nationwide. The sustainability—economic, social, and environmental—of local and regional food systems starkly contrasts with the adverse effects of the globalized food system that has developed over the past century. While increasing quantity and convenience, the globalized food system has in some ways sacrificed the quality of our food and the health of our economy, people, and land. These global problems are illustrated in the following ways: a damaged agricultural economy threatening the success of small and mid-scale farms, social injustice manifested in growing food insecurity and unfair agricultural labor practices, high rates of diet-related illness and food safety crises, and a polluted agricultural landscape that continues to shrink.

The promise of community food systems in repairing and preventing these consequences is growing more visible. These food systems meaningfully *connect* the production, processing, distribution, consumption, and post-consumption sectors as a means of ensuring economic, social, and environmental wellbeing. In a strong community food system, all consumers can easily access a grocery store, farmers' market, and CSA and—at a price fair for both them and the producer—acquire nutritious foodstuffs that were produced locally in a manner supporting the wellbeing of the environment and food system workers. This model builds community and ensures food security additionally through initiatives like community and home gardens.

“Eating is an agricultural act.” Wendell Berry

Our regional food system at a glance

Economic Vitality: 5,328 farms, farming 502,916 acres generated \$370,571,000 in 2007, up 21% from 2002. However, less than half of farms reported net gains in farm income in 2007. An additional \$351,191,813 in earnings in 2010 was generated by the 21,473 people employed in the food system – either in agriculture, food services, or food manufacturing. This number of people working in the food system is in addition to the owners of family farms, processing plants, restaurants, and other food system business owners.

Healthy Environments: 50.1% of livestock farms reported practicing rotational or management-intensive grazing in 2007. 23.4% of farms use conservation methods.

Farm to Consumer Connections: The value of agricultural products sold directly to consumers increased 59% from 2002 to 2007. The number of Community Supported Agriculture (CSA) programs increased by 54%, from 26 CSAs in 2010 to 40 in 2012.

Healthy People with Healthy Lifestyle Choices Only 1 of 8 counties meets the US goal of residents eating 5 or more servings of fruits and vegetables per day. 127,200 residents are reported to be obese—over 1 out of every 5 individuals. Over 1 out of every 3 middle and high school students in the region are either overweight or obese.

Healthy People with Food Security: Food banks distributed 1,873,327 lbs. of fresh produce to hunger relief agencies in 2010. An estimated 1 in 5 children and 1 in 7 residents regionwide were food insecure in 2010, a slight decrease from 2009. 71% of eligible individuals received SNAP (food stamp) benefits in 2012, up from 63% in 2009 and 46% in 2007.

The Food and Health Network of South Central New York (FaHN) was founded on this opportunity and seeks to explore it through this regional food system assessment. The FaHN **Food System Assessment (FSA)** is a priority in the FaHN's 2012 work plan. Through this type of assessment, “communities examine the connections between production, distribution, consumption, and waste disposal and measure their impacts on the environment, human health, and livelihoods through a set of indicators over time.”¹ FaHN will update the FSA every year—with data updates for US Census of Agriculture data every five years—to measure progress, collect data on additional indicators as resources permit, and develop a comprehensive regional food system plan. The 2012 report is the first update of the FSA.

Goals of the 2012 FaHN FSA

- Update 2011 FSA measures with available data
- Establish baseline data for select “future indicators” included in the 2011 FSA that can be easily replicated and measure progress over time.
- Provide a user-friendly and visually appealing tool: for a) evidenced-based programmatic, municipal, and regional food system planning and evaluation that protects the viability and regional character of the eight-county region served by FaHN, and for b) education, that may be utilized by and for those both familiar and *unfamiliar* with food system concepts.
- Add value to partner initiatives through their ability to use the FSA in program development.
- Strengthen the vital connections between agricultural and rural interests with urban interests and other sectors of the food system.
- Provide a model that may serve other communities with limited resources that are interested in conducting food system assessments.

Regional Overview

County	Pop., 2010 ²	Sq. miles	Pop. density: people/sq. mile, 2010 ³	% of total pop. in poverty, 2009	% of children and youth < 18 yrs. in poverty, 2009 ⁴	% of racial minority pop., 2010 ⁵
Broome	200,600	707	284	16.3%	22.7%	11.9%
Chemung	88,830	408	218	15.8%	22.9%	10.6%
Chenango	50,830	894	56	15.5%	21.7%	3.2%
Cortland	49,336	500	99	17.8%	20.4%	4.8%
Delaware	47,980	1,446	33	15.4%	23.4%	6.0%
Otsego	62,259	1,003	62	16.4%	17.8%	6.1%
Tioga	51,125	519	99	11.3%	15.6%	3.0%
Tompkins	101,564	476	213	18.8%	15.9%	17.2%
Region	652,524	5,953	110	N/A	NYS: 20.2%	N/A

Our region is predominantly rural, though home to several small cities, the largest of which is the City of Binghamton with a population of 47,376.

Our regional food system extends beyond the boundaries of the eight counties covered by FaHN. This area also benefits from fruits and vegetables more easily grown in other parts of the state and in neighboring states: One study conducted for New York State suggests that “specialization could enable local and regional food systems to supply a large share of the state’s food needs,” and that it may be more realistic to think of local and regional food systems supplying certain foods, rather than certain geographic areas.⁶ As such, the FaHN FSA recognizes the food system’s *potential* to provide greater access to fresh, nutritious, and affordable food for all residents in South Central New York.

In this report, we do not aim to rigidly define local/regional food: Some define it as that which comes from within a 30-mile radius, others from within a 100-mile radius or the state. Rather, our use of the term local/regional food speaks to that which originates in a *community* food system in which food is produced, processed, distributed, and purchased within or closely bordering the FaHN region. It also recognizes that some food is best grown in other parts of the Northeast and Middle Atlantic states, which is part of a broader regional food system.

Food System Assessment Overview

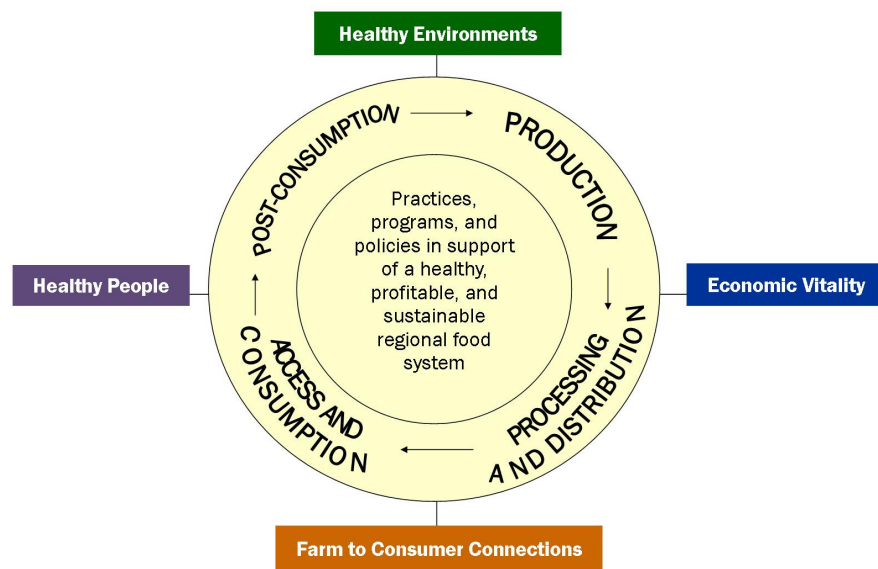
With several model assessments in mind, four broad vision statements were developed as a means for organizing the indicators in this FSA:⁷

Healthy Environments: Farmers use practices to maintain and restore agricultural productivity, biodiversity, and environmental quality for healthy soil, water, air, plants, and animals. Consumers reduce food waste and compost to foster healthy environments post-consumption.

Economic Vitality: Profitable farms; win-win partnerships with slaughterhouses, processors and distributors of local foods; and just labor practices contribute to the region’s wealth through the triple bottom line of economic, community, and environmental health.

Farm to Consumer Connections: Locally produced food that is accessible and affordable is purchased by citizens and institutions through a variety of channels. Citizens have means of producing, preparing, and preserving their own food.

Healthy People: Residents are food secure with nutrient-dense diets, eat recommended amounts of fruits and vegetables, and have low rates of obesity and diabetes.



Process

The process for developing the FSA was designed to be inclusive and highly participatory as a means to engage and energize people in open discussions about the connections between all pieces of the regional food system. During its first year of development, a ten-member FaHN Task Force guided the development of the FSA. An additional 36 stakeholders were interviewed and offered suggestions to make this assessment as meaningful and useful as possible. The whole FaHN also offered substantive input and was responsible for reviewing the final draft report recommended by the Task Force.

The 2011 FSA was released at a full-day conference hosted by FaHN in Endicott, NY on National Food Day, October 24th, 2011. The FSA's first audience had the opportunity to discuss the report and to comment on possible future indicators and interventions unmentioned in the 2011 report. FaHN provided further opportunity for discussion and comment during its FSA Educational Series: From March-June 2012, FaHN devoted its two-hour monthly meeting to exploring each vision in the FSA, featuring presentations from notable interventions highlighted in the 2011 report.

For the 2012 FSA, the process mimicked that of the 2011 FSA. The Task Force convened for two meetings, key stakeholders and experts provided data and input, and the whole FaHN reviewed the final draft report recommended by the Task Force. The 2012 report was released at the Rural Health Network's Growing Health conference October 16-17, 2012 in Binghamton, NY.



Indicators

Food system stakeholders identified key indicators that best supported the visions of Healthy Environments, Economic Vitality, Farm to Consumer Connections, and Healthy People. Visions for the future and their related indicators and measures are the backbone of this assessment.

To the extent possible the indicators meet the following criteria:

- Reliable and credible source of data, with data regularly collected to determine trends
- Data publicly available and at the county level
- Measurable, valid, understandable, and relevant to the region

We placed strong emphasis on the availability of secondary data mainly due to limited resources for primary data collection. However, we recognize that data is powerful in shaping systems. If the current food system is broken, then the existing secondary data may not always be reflective of a strong community food system.

It is our hope that by recommending future measures, identified as such due to current unavailability of data, we may initiate the process of agency data collection that will more genuinely inform regional food system assessments. A streamlined approach to collection of data *at the source*, then made publicly available and easily accessible, will improve the ability of varied entities in the state to conduct food system assessments with limited resources.

The 2012 Task Force did elect to pursue some future measures identified in 2011. In the absence of quantitative data, qualitative information was used to expound on some future indicator ideas. In general, the 2012 report includes more narrative as a tool for humanizing the vision concepts; interpreting data; and explaining complex, nuanced subjects.

Format

The formatting of the 2011 report was revised for 2012 to better distinguish each facet of a vision and to better integrate the indicators/measures with the appropriate facets. In this report, the visions and indicators are numbered for easier reference. Much of the narrative content is now integrated with the data tables for flow and visual ease.

Assumptions and Limitations of this FSA

Food systems are intricate and dynamic entities. The interconnectedness of the food system means that some indicators may apply to more than one vision; additionally, many indicators relate to one another and evolve in meaning when viewed alongside related indicators.

While some indicators are related, some may be contradictory. For instance, maximizing food assistance may come at the expense of promoting healthy eating; similarly, promoting healthy eating may sacrifice the integrity of fair production practices (think of the migrant workers who harvest a great percentage of food sold in the United States but do not receive fair wages and work in unsafe environments). Tension also exists between the need for farmers to make a living by charging fair prices and the ability of all individuals, including those with limited incomes, to afford locally produced food.

We do not intend this document to provide answers to all of the possible questions that may develop when thinking about food system reform. Our indicators are not perfect. For example, much of the data pertaining to agriculture is from the US Census of Agriculture, which is conducted every five years. 2007 is the most current year for this census. Despite these and other limitations, such as possible undercounting of farms by the census, we hope this FSA will generate meaningful dialogue around what we need to do to achieve our ideal vision of a healthy regional food system.

With its power to generate interdisciplinary discussion, the FSA is a tool for ongoing learning. FaHN plans to eventually transform the FSA into a live, interactive engine through which information can flow through a participatory, collaborative framework. The intent is for future FaHN food system assessments to continually evolve to provide the most meaningful information possible on the topics and issues most relevant to and valued by stakeholders in our region. Key to achieving this is addressing indicators that identify specific needed interventions: These “on the ground” interventions help measure progress over time better than broad, framing indicators. More on this topic can be found in the “Next Steps” section on page 37.

Lastly, this region has an impressive and rich array of notable programs and practices that are helping to create a sustainable and vibrant regional farm and food system. This report is not intended to highlight all of the programs and practices, but rather note a few as examples.

It is important to review this FSA with these considerations. The most enlightening insights will surely come with an awareness of the many nuances of food systems and this report.



HEALTHY ENVIRONMENTS Overview of Visions and Related Indicators and Measures

<i>VISION</i>	<i>INDICATORS</i>	<i>MEASURES</i>
<i>VISION 1</i> Farmers steward the land and other natural resources in a way that maintains agricultural productivity, biodiversity, and environmental quality.	1.1 Farmers are adopting sustainable practices in all aspects of production.	<p>Cropland nitrogen and phosphorus balances (i.e., manure and fertilizer nutrients minus nutrients utilized by crops in a county) trend toward zero, often indicating a reduced risk of nutrient excess (and associated nutrient losses to water or air) or a reduced risk of nutrient deficiency (and associated losses in crop and livestock quality and productivity).</p> <p>Increase in number and percent of farms using conservation methods, such as no-till, limited tilling, nutrient management, filtering field runoff to remove chemicals, riparian buffers, and fencing animals to prevent them from entering streams, etc.</p> <p>Increase in number and percent of dairy and livestock farms practicing rotational or management-intensive grazing.</p> <p>Increase in number and percent of acres used for certified organic production.</p> <p>Increase in sales of certified organic products from local producers.</p> <p>Increase in number and percent of farms generating energy or electricity on the farm.</p>
	1.2 Farmers are adopting agricultural practices <i>consistent with</i> the soils, topography, geography, and climate of the region.	<p>Increase in number and percent of acres used for pasture or grazing, suggesting conversion of harvested cropland acres to pastureland and fallow land to land in production.</p>
<i>VISION 2</i> Food waste is minimized and diverted from the waste stream through the production of compost, which is then returned to the soil.	2.1 Institutions, schools, other facilities with food services, and households minimize food waste and engage in composting and compost education.	<p>Increase in pounds of food waste diverted from the waste stream to compost facilities.</p>
<i>VISION 3</i> Local, county, state, and federal policies and funding support this vision for a healthy environment.		<p>State and municipal regulations in place and enforced, as a means to protect farmland, crops, livestock, and water quality from the adverse effects of hydraulic fracturing for natural gas.</p>

HEALTHY ENVIRONMENTS through agricultural stewardship

VISION 1

Farmers steward the land and other natural resources in a way that maintains agricultural productivity, biodiversity, and environmental quality.

INDICATORS

1.1 Farmers are adopting sustainable practices in all aspects of production.

1.2 Farmers are adopting agricultural practices *consistent with* the soils, topography, geography, and climate of the region.



Riparian buffers protect water quality

Measure: ↑ # and % of acres used for pasture or grazing, suggesting conversion of harvested cropland to pastureland and fallow land to land in production.

Finding: 43,365 acres in the region were used for pasture or grazing in 2007,⁸ representing 8.6% of total acres of cropland on farms. This 2007 baseline data will be updated when 2012 US Census of Agriculture data is available.

County	Cropland acres on farms used for pasture or grazing	
	# of acres	% of total cropland acres
Broome	2,891	6.6%
Chemung	3,616	11.0%
Chenango	7,507	8.7%
Cortland	4,319	7.0%
Delaware	7,475	10.8%
Otsego	7,890	9.0%
Tioga	4,693	8.7%
Tompkins	3,974	5.9%
Region	43,365	8.6%

Measure: ↑ # and % of livestock farms practicing rotational or management-intensive grazing.

Finding: 50% of livestock farms in the region practiced rotational or management-intensive grazing in 2007.⁹ This baseline data will be updated when 2012 US Census of Agriculture data is available.

Livestock farms practicing rotational management	
# of farms	%
141	65%
88	62%
201	44%
135	51%
219	50%
185	42%
131	46%
132	62%
1,232	50.1%

Positive Impact of Grass-Fed Beef and Dairy Operations



Land in South Central New York best supports perennial forage crops because of our region's land slopes, soil depths, and soil types. As such, raising livestock primarily on hay crop and pasture is the method best-suited to our land for converting local plant energy into local food for consumption. Annually tilled crops such as corn for silage and grain or soybeans for grain are better suited for river valleys and less erodible soils. Furthermore, because land suited to the production of pasture-raised dairy and meat is more readily available, it is theoretically possible to feed more people who locally eat a *modest* amount of pasture-raised meat than would be possible on a diet containing conventional meat and dairy or even on a vegetarian diet.¹⁰ Furthermore, research increasingly proves that meat raised primarily on pasture and forage crops is a nutritious source of protein with fewer calories and grams of fat as well as higher amounts of heart-friendly omega-3 fatty acids than conventional meat. Currently, only 8.6 percent of cropland acres in our region are used for pasture or grazing; however, a promising 50.1 percent of livestock farms practice rotational or management-intensive grazing.

HEALTHY ENVIRONMENTS through agricultural stewardship

VISION 1

Farmers steward the land and other natural resources in a way that maintains agricultural productivity, biodiversity, and environmental quality.

INDICATORS

1.1 Farmers are adopting sustainable practices in all aspects of production.

1.2 Farmers are adopting agricultural practices *consistent with* the soils, topography, geography, and climate of the region.



Measure: Nutrient inputs and outputs approach a balanced zero lbs. /acre. Cropland nitrogen and phosphorus balances (i.e., manure and fertilizer nutrients minus nutrients utilized by crops in a county) trend toward zero, often indicating a reduced risk of nutrient excess (and associated nutrient losses to water or air) or a reduced risk of nutrient deficiency (and associated losses in crop and livestock quality and productivity). The result is improved air, soil and water quality, increased productivity, and economic vitality.

Promising Trend: Sustainable nutrient management practices appear to be improving, as indicated by nitrogen and phosphorus balances of inputs and outputs on farms. There was progress in each county from 2002 to 2007.¹¹

County	Nitrogen lbs./acre			Phosphorous lbs./acre	
	2002	2007		2002	2007
Broome	26.8	7.0		4.1	-1.4
Chemung	33.0	11.5		2.7	-1.2
Chenango	56.5	33.7		4.7	0.5
Cortland	67.3	45.7		9.0	1.2
Delaware	50.1	35.8		6.9	6.5
Otsego	70.6	36.0		6.3	1.1
Tioga	33.9	45.5		4.1	1.7
Tompkins	46.8	22.7		4.1	0.04
Region	N/A	N/A		N/A	N/A

Notable Interventions

Grazing Lands Conservation Initiative (GLCI): Through local, state, and national partnerships and on-the-ground coalitions, GLCI seeks to preserve grazing lands through improved management practices. GLCI is driven by agricultural producer, conservation, scientific, watershed, erosion control, and other environmental organizations and the voluntary participation of private landowners who own and manage grazing lands. GLCI emphasizes high quality technical assistance, expanded grazing lands research and education, and an informed public. The New York GLCI carries out this mission for our region. <http://www.glci.org/index.html#>

The Conservation Effects Assessment Project (CEAP) is a national effort by the Natural Resource Conservation Service division of the USDA to evaluate effects of conservation practices on croplands, grazing lands, wetlands, and wildlife. **The CEAP-Cropland Assessment on the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay region**, finds that adoption of conservation practices on cultivated cropland has reduced edge of field sediment loss by 55 percent, losses of nitrogen with surface run-off by 42 percent, losses of subsurface nitrogen flows by 31 percent, and losses of phosphorous by 41 percent in the Chesapeake Bay region. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENT/S/stelprdb1042078.pdf

Measure: ↑ # and % of farms using conservation methods, such as no-till, limited tilling, nutrient management, filtering field runoff to remove chemicals, riparian buffers, and fencing animals to prevent them from entering streams, etc. The result is healthier soils and improved water quality.

Findings: 23.4% of farms in the region used conservation methods in 2007. This data is self-reported on the US Census of Agriculture and measures processes rather than outcomes. As a consequence, this measure is perhaps not as reliable as nutrient outcomes measures.

# and % of farms using conservation methods, 2007 ¹²		
County	#	%
Broome	104	17.9%
Chemung	84	22.5%
Chenango	220	24.2%
Cortland	139	23.7%
Delaware	208	27.8%
Otsego	172	17.6%
Tioga	129	22.8%
Tompkins	188	32.0%
Region	1,244	23.4%

HEALTHY ENVIRONMENTS through agricultural stewardship

VISION 1

Farmers steward the land and other natural resources in a way that maintains agricultural productivity, biodiversity, and environmental quality.


INDICATORS

1.1 Farmers are adopting sustainable practices in all aspects of production.

1.2 Farmers are adopting agricultural practices *consistent with* the soils, topography, geography, and climate of the region.

A note about acres used for certified organic production:

The data from the US Census of Agriculture presented below may not include acres *leased* for organic farming. Primary data collection to determine leased acres results in a higher number and percent of acres used for organic production.

	Measure: ↑ # and % of acres used for certified organic production, 2007.¹³		Measure: ↑ sales of certified organic products from local producers. Findings: Certified organic farms in 7 counties sold a reported \$10.3 million in 2007.	Healthier soil, water, air, and increased biodiversity are some of the environmental benefits of certified organic farms.¹⁴ Organic agriculture aims to produce food in a way that supports soil fertility, reduces pest problems, reduces groundwater pollution due to synthetic pesticides and fertilizers, and mitigates the greenhouse effect and global warming by sequestering carbon in the soil. Organic farming does not use genetically engineered materials or irradiation. Certified animal products must come from livestock that had access to the outdoors, have not been treated with hormones or antibiotics, and have been fed on organic feed. Soil building practices such as crop rotations, inter-cropping, cover crops, recycling organic nutrient sources to fertilize crops, and minimum tillage are central to organic practices. These encourage soil fauna and flora and control soil erosion, thus improving soil conservation, formation, and structure and creating more stable systems. In turn, nutrient and energy cycling is increased and the retentive abilities of the soil for nutrients and water are enhanced, compensating for the non-use of chemical fertilizers. Certified organic is not the only option: Organic certification provides consumers with a readily accessible tool for identifying farms using verified best practices, particularly related to chemical inputs and soil health, but conservation is not limited to organic farms. A host of core conservation measures to protect natural resources are applicable for all farms, whether organic, conventional, large, small, or otherwise. It is also important to note that the cost of organic certification is prohibitive for some small farms that do employ organic practices. Farms make significant investments in conservation for reasons of efficiency, protection of local natural resources, neighbor relations, regulation, certification, etc., whether in cooperation with state and federal conservation agencies or completely on their own. Such conservation includes practices to manage/collect manure and runoff around farmsteads; recycle the collected manure for fertilizer; limit livestock access to streams; reduce tillage; cover crop; prevent and control pests with Integrated Pest Management (IPM); securely store farm fuels; maintain soil cover with pasture management. The list goes on. The Healthy Environments section of this assessment aims to benchmark these advances in conservation and their outcomes.	Measure: ↑ # and % of farms generating energy or electricity on the farm, 2007.¹⁵ Findings: 66 farms in the region generated energy or electricity on their farm in 2007. Some dairy farmers use “cow power,” converting cow manure into renewable energy with methane digesters that reduce the farms’ carbon footprints.	
	County	# acres				%
	Broome	928				2.1%
	Chemung	N/A				N/A
	Chenango	3,680				4.2%
	Cortland	3,860				6.3%
	Delaware	4,061				5.9%
	Otsego	3,385				3.8%
	Tioga	2,586				4.8%
	Tompkins	5,815				8.6%
	Region	24,315				4.8%

Sales		
\$322,000		
N/A		
\$967,000		
\$1,584,000		
\$101,000		
\$1,002,000		
\$1,098,000		
\$5,263,000		
\$10,337,000		

County	#	%
Broome	8	1.4%
Chemung	5	1.3%
Chenango	8	0.9%
Cortland	13	2.2%
Delaware	6	0.8%
Otsego	5	0.5%
Tioga	8	1.4%
Tompkins	13	2.2%
Region	66	1.2%

HEALTHY ENVIRONMENTS through agricultural stewardship

VISION 1

Farmers steward the land and other natural resources in a way that maintains agricultural productivity, biodiversity, and environmental quality.

INDICATORS

1.1 Farmers are adopting sustainable practices in all aspects of production.

1.2 Farmers are adopting agricultural practices *consistent with* the soils, topography, geography, and climate of the region.

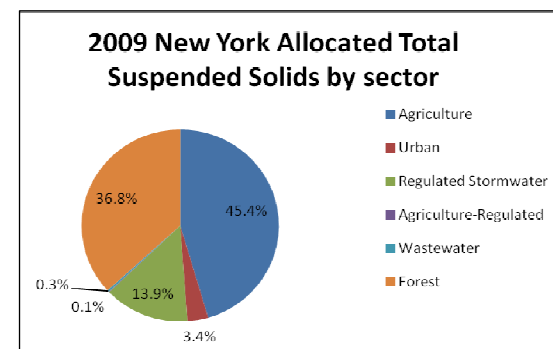
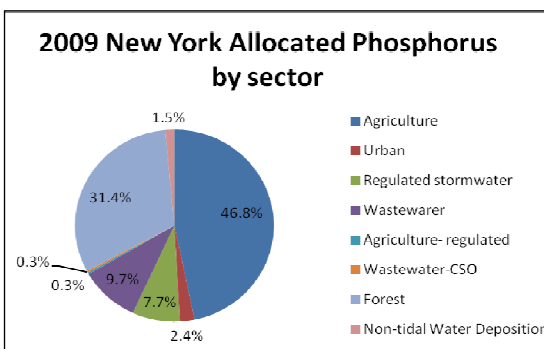
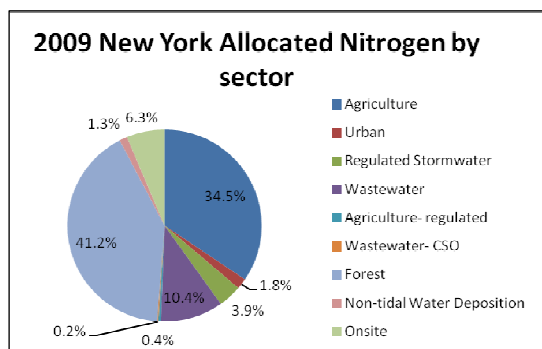
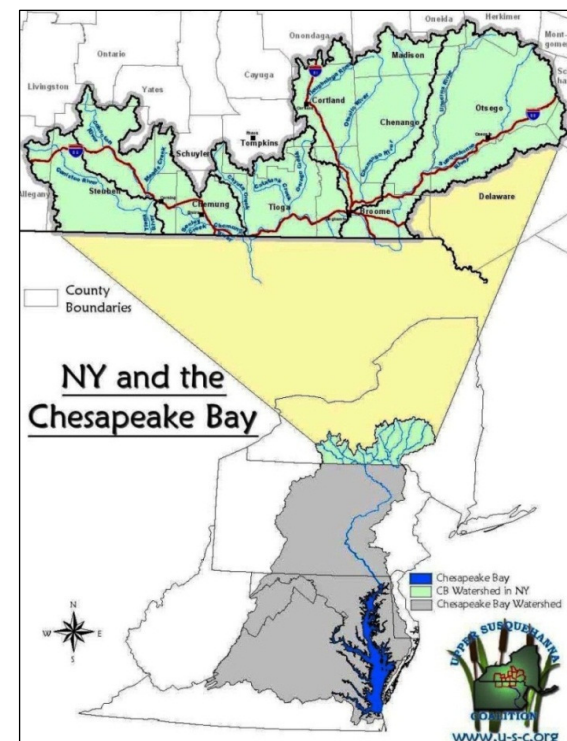
Total Maximum Daily Load (TMDL) defines the capacity of a waterbody to absorb a pollutant and still meet water quality standards. The US Environmental Protection Agency (EPA) established the Chesapeake Bay TMDL, a comprehensive plan with rigorous measures to restore the clean water in the Chesapeake Bay and the region's streams, creeks, and rivers. The water restoration strategy identifies the necessary pollution reductions of nitrogen, phosphorus, and sediment across Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia and sets the pollution limits necessary to meet water quality standards in the Bay. The TMDL is designed to ensure that all pollution control measures are in place by 2025 and at least 60 percent of all actions completed by 2017. Specific regulatory and voluntary initiatives are planned out by state, federal, local, and non-governmental organizations.

Why is agriculture important? Agriculture covers 23 percent of the land area in the Chesapeake Bay Watershed and is one of the primary land uses in the region. In the state of New York, agriculture is one of the largest sources of nitrogen, phosphorus, and sediment pollution to the Bay and so might hold the largest potential in reducing pollution.

Chesapeake Bay Watershed across New York:¹⁶ Nineteen New York State counties are in this watershed, including all of FaHN's eight counties. The Soil and Water Conservation Districts in these counties have a successful, long-standing collaboration for watershed-wide conservation via the Upper Susquehanna Coalition (USC). The USC reports progress in

agricultural conservation for the New York portion of the Watershed.

The charts below show the modeled contributions of nitrogen, sediment, and phosphorus within the New York region of the Chesapeake Bay Watershed. For example, the Chesapeake Bay model estimates that agriculture contributes 34.5 percent of the nitrogen pollution, 45.4 percent of the suspended solids pollution, and 46.8 percent of the phosphorus pollution. Forests represent a significant portion of the load—with 41.2 percent of nitrogen, 36.8 percent of suspended solids, and 31.4 percent of phosphorus pollution—because they cover nearly 70 percent of the land area. The wastewater load is measured from everyday “dry weather” discharges of treated effluent from wastewater treatment plants. The wastewater CSO (combined sewer overflow) is the load from storm drain discharges and wastewater treatment plants when storm sewer flows exceed treatment plants' capacities.



HEALTHY ENVIRONMENTS through agricultural stewardship

In 2008, New York State developed a two-year milestone plan for tracking and reducing the nitrogen, phosphorus, and sediment contributions to the Chesapeake Bay. The two-year milestones provide short-term objectives that assess progress on restoration goals. The table below shows that New York has achieved over 90 percent of the target levels for improvement in six of the thirteen measures for agricultural environmental management to protect the Chesapeake Bay Watershed. There was exceptional progress with animal waste management, wetland restoration, cover crop planting, and grass buffers. Expansion of other practices such as forest buffers, pasture grazing best management practices, and conservation tillage, however, fell short of the 2009-2011 commitment. New York State will continue to submit and work toward two-year milestone plans for the Chesapeake Bay TMDL.

NY: 2009-2011 Milestones to Reduce Nitrogen & Phosphorus. Assessment June 2012 ¹⁷



Notable Program

Agricultural Environmental Management: AEM is an umbrella program in New York State, providing coordination among local, state, and federal partners; technical assistance; a continuous improvement process for agricultural conservation; technical tools; cost-share funding; training; and planner certification <http://www.nys-soilandwater.org/aem>

Soil and Water Conservation Districts, such as those in the **Upper Susquehanna Coalition**, and their local partners have a long track record of helping farmers make practical, cost-effective decisions that protect natural resources for their families, communities, and future generations.

Agriculture	2009-2011 Commitment	Achievement (7/1/08- 6/30/11)	% Achieved (7/1/08- 6/30/11)
Animal Waste Management Systems, including barnyard runoff controls (animal units)	43,500	138,750	319%
Conservation Tillage, All Types (acres)	3,000	-6,277	-209%
Cover Crop Planting, All Types (acres)	1,000	1,597	160%
Forest Buffers (acres)	2,051	698	34%
Grass Buffers (acres)	3,549	7,409	209%
Horse Pasture Management (acres)	300	77	26%
Land Retirement (acres)	2,000	1,098	55%
Nutrient Management (acres)	38,000	34,518	91%
Pasture Grazing Best Management Practices, stream protection w/ fencing (feet)	608,000	81,951	13%
Pasture Grazing Best Management Practices, rotational grazing (acres)	18,700	8,365	45%
Precision Feeding (animal units)	7,600	1,217	16%
Tree Planting (acres)	200	195	97%
Wetland Restoration, ag and other land (acres)	450	1,185	263%
Urban/Suburban			
Erosion & Sediment Control (acres)	150	2,911	1,940%
Wastewater			
Wastewater Nitrogen (pounds reduced)	348,200	274,208	79%
Wastewater Phosphorus (pounds reduced)	36,414	24,428	67%



Example of a Strip Cropping System

HEALTHY ENVIRONMENTS with composting

VISION 2

Food waste is minimized and diverted from the waste stream through production of compost, which is then returned to the soil.

INDICATORS

2.1 Institutions, schools, and other institutions and households minimize food waste and engage in composting and composting education.

How is composting part of our food system? Increasing participation by consumers, institutions, and businesses in composting food waste limits the amount of usable organic material in landfills. This is important to preserve valuable (and decreasingly available) landfill space. When diverted from landfills to composting, this organic waste is recycled into a usable product for food producers to build soil fertility and health. Healthier soil equals healthier food.

Measure: Amount of food waste diverted from the waste stream to compost facilities.

Findings: Cayuga Compost and Delaware County's Solid Waste Facility are the 2 centralized composting facilities in our region with data on the amount of food composted.

Cayuga Compost: In 2010, 3,424 tons of organic food waste composted, resulting in approximately 3,000 cubic yards of finished product, 2010. In 2011, 1,927 tons of food and farm waste composted, resulting in approximately 4,000 yards of finished product.¹⁸

Delaware County Solid Waste Management Center and Compost Facility: In 2010, Of the 27,000 tons of garbage processed through the digester, 65% was turned into compost. In 2011, of the 22,199 tons of garbage processed through the digester, 13.5% represented food waste, for an estimated 2,997 tons diverted. Approximately 28,786 tons of total material waste, with a 65% conversion rate, resulted in an estimated 18,711 total tons of organics diverted.¹⁹

In addition, many institutions compost their food waste (often through other facilities or farms): Cayuga Medical Center and Lourdes Hospital; Elmira Correction Facility, Binghamton University, Cornell University, Ithaca College, and SUNY Cortland. The



Field of Dreams Farm picks up and composts food waste from Spencer Van Etten School District.²⁰

Institution Highlight: The partnership between **Lourdes Hospital** and Natural by Nature composting facility in Warren Center, PA is a notable illustration of the South Central NY food system extending beyond county lines. Through this partnership, Lourdes Hospital has diverted 45,000 pounds of organic material from a landfill to compost.

Notable Practices and Programs

Cayuga Compost: This local business successfully provides compost services for local institutions, including restaurants and schools, and local events. Close collaboration with the Tompkins County Division of Solid Waste contributes to successful collection of food scraps and the sale of resulting compost to local businesses and residents. A drop-off option is in the works for local residents who wish to compost food scraps. Industrial capacity enables Cayuga Compost to compost meat, dairy, compostable plastics, and other materials that will not decompose in home composting systems.



Compost education and outreach provided by *Master Composters of Tompkins County* also plays a role in the successful rate of home composting and institutional and event composting through Cayuga Compost. <http://www.cayugacompost.com>

Composting Classes: Five of the eight county offices of Cornell Cooperative Extension offer composting classes: Broome, Chenango, Otsego, Tioga and Cortland.

HEALTHY ENVIRONMENTS through sound public policies

VISION 3

Local, county, state, and federal policies and funding support a healthy environment.

Hydraulic fracturing in New York State is one of the most important policy issues facing New York State residents, especially residents in the Marcellus Shale, which includes the FaHN region. Planned natural gas extraction in the Marcellus Shale, using the controversial method of hydraulic fracturing (also known as hydro-fracking or fracking) poses serious implications for agriculture and our regional food system. Only rigorous regulation and enforcement will ensure the protection of our regional foodshed. See map and <http://www.fracktracker.org/fracktracker-maps/ny-moratoria/> for updated information on moratoria and movements to prohibit hydro-fracking in the Marcellus Shale region.

The concerns voiced by people who informed this FSA vary. Numerous potential environmental hazards may render agricultural land unsuitable for production—especially organic production—and taint our regional food supply: polluted water and soil contamination; bioaccumulation of radioactivity, heavy metals, and toxic chemicals; soil erosion and compaction from machinery; and decreasing crop yields from ground level ozone emissions. Fragmentation of farmland from the construction of pads and access roads may decrease the profitability and sustainability of farms and shrink the infrastructure that supports them. Also a significant concern, especially with a nationwide shortage of farmers, is the possibility of farmers discontinuing farming because of money earned from leases. Efforts to strengthen our regional food system may be hindered by potential negative perceptions of consumers about food produced in a region with hydro-fracking.

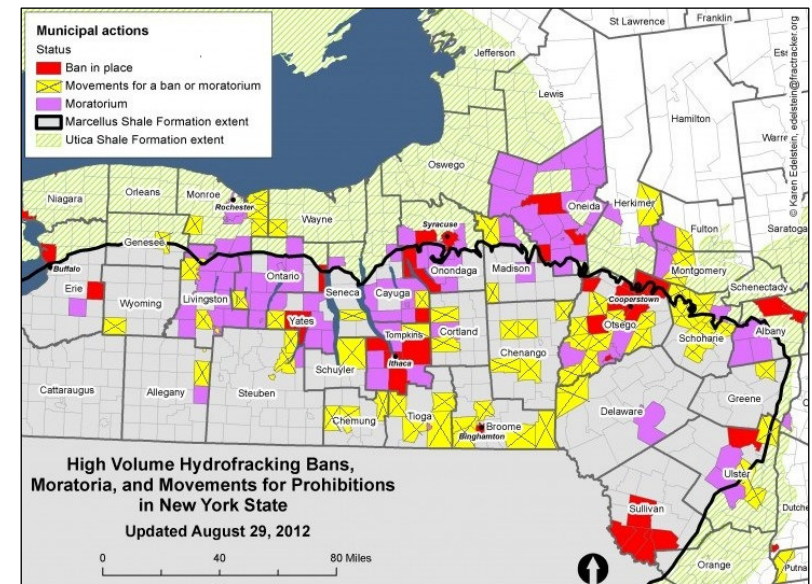
There is also concern that the potential bounty of natural gas from hydraulic fracturing may deter a clean energy future and that a sustained gas glut may undermine new investments in clean energy sources such as wind and solar and keep us dependent on fossil fuels for decades.²¹

Before moving forward, policy makers and their constituents need more science-driven and peer-reviewed studies on the potential health, economic, environmental, and social impacts on communities.

Measure: State and municipal regulations in place and enforced, as a means to protect farmland, crops, livestock, and water quality from the adverse effects of hydraulic fracturing for natural gas.

Findings: The New York State Department of Environmental Conservation's revised and expanded regulations are anticipated shortly, after four years of study and public comment. As noted in a New York Times editorial, "The rules must require that wells be properly encased and drilled deep enough to prevent drilling fluids and methane gas from contaminating water supplies. They must provide for the safe disposal of the millions of gallons of chemical-laced wastewaters discharged by every well, and prevent leaks of air pollutants, including methane, a potent greenhouse gas. Mr. Cuomo must also beef up a state regulatory apparatus that is now severely understaffed. The challenge in New York is the same as it is elsewhere: harvesting a considerable natural resource without putting public health or the environment at risk. An exemplary regulatory program could be a model for the rest of the country."²²

In June, the New York Times reported on a plan that New York State would initially restrict hydraulic fracturing to economically depressed counties along the Pennsylvania boarder—primarily Broome, Chemung, Chenango, Steuben, and Tioga Counties—and only if local communities agreed to the drilling. As a consequence, there is increased pressure for municipalities to either allow or prevent hydraulic fracturing.



The above map indicates municipalities that have adopted moratoria, bans, or have organized movements in place to prevent fracking as of late July, 2012.²³

In July 2012, the Town of German in Chenango County asked the state to require companies to use **food grade fluids** in hydraulic fracturing, since the latest draft of the Supplemental Generic Environmental Impact Statement required only non-toxic fracturing formulas. The German Town Board is requesting an exemption to protect their groundwater.

Measure: Number and percent of acres in Agricultural Districts that have been (or have not been) leased to natural gas companies.

Findings: Agricultural Districts are the cornerstone of farmland protection in NYS and help to help keep farmland in agricultural production. Of the 1,006,170 acres in Agricultural Districts in the 7 FaHN counties for which data are available, land owners of 256,042 acres or **25% of acreage in Agricultural Districts have signed leases with gas companies.**²⁴ These findings raise questions about the possible impact of hydraulic fracturing on future agricultural production. Note that data for Chenango County was not readily available at the publication of this report.

ECONOMIC VITALITY Overview of Visions and Related Indicators and Measures

<i>VISION</i>	<i>INDICATORS</i>	<i>MEASURES</i>
VISION 4 Viable farms and their lands are preserved. Farms make profits for themselves, the community, and the economy. People who want to farm have access to farmland.	4.1 Farmland is kept in production. 4.2 Farms regularly make a return on investments and are able to further invest in their businesses.	Increase in number and percent of acres of total cropland on farms. Increase in number and percent of farm operators reporting net gains in farm income.
VISION 5 Mid-scale farms and the cottage and artisanal food economy thrive.	5.1 “Ag of the Middle” is sustained: Mid-scale farms remain in production and are viable. 5.2 Farmers benefit from research and product development and have the skills to run successful, innovative businesses.	Increase in number and percent of mid-sized farms (annual gross sales between \$100,000 and \$500,000). Increase in the market value of agriculture products sold by mid-sized farms. Increase in the percentage of farm operators reporting high speed internet access.
VISION 6 Farms reflect the diversity of the culture in which they exist. Viable family farms continue from generation to generation, farming is considered a respectable career, and young people are inspired to become farmers. Farmers are supported by a robust labor force and service-based infrastructure.	6.1 Minorities have an equal opportunity to serve as the principal operators of farms. 6.2 Younger farmers are operating farms on a fulltime basis. 6.3 There is an adequate supply of trained and experienced agricultural labor.	Increase in number and percent of minority and women principal farm operators. Decrease in average age of farmers. Increase in the number of participants in beginning farmer training programs.
VISION 7 Value chains thrive within the local/regional food system: Farmers, processors, distributors, and hubs enjoy cooperative rather than competitive relationships, fostering win-win strategic partnerships for the long-term benefit of all. Farmers, processors, distributors, and hubs are maximizing their assets, have adequate capital and skilled labor, and are working at capacity in a manner that supports agriculture’s triple bottom line of economic, community, and environmental vitality.	7.1 Agriculture-related support and technical assistance businesses and organizations are thriving and accessible to farms. 7.2 Farmers have access to slaughterhouses; fruit, vegetable, and meat processing; and centrally located food hubs. 7.3 Food hubs create opportunities for producers, processors, distributors, wholesalers, and retailers. 7.4 Value-added production is accessible to and utilized by local producers.	Increase in number of USDA conventional and certified organic slaughterhouses within approximately 100 miles of most conventional and certified organic farms in the region. Examples of development and use of commercial kitchen enterprises, instant quick freeze facilities, and cold chain processing and distribution that serve local producers. Examples of regional food hubs that are new or expanding.
VISION 8 Local, county, state, and federal policies support this vision for economic vitality.		Examples of effective new policies and funding that preserve farms and farmland; support ethnic, gender, and age diversity on farms; and foster a vibrant regional food economy.

ECONOMIC VITALITY

Agricultural Overview and the Role of Dairy

Agriculture is an essential part of South Central New York's economy. In 2007, 5,328 farms generated \$370,571,000 in sales.²⁵ Multiplier effects suggest that the economic impact of agriculture in our area is approximately two times greater than the value of these sales. Farming positively impacts our regional economy in two ways:

First, through the upstream effects of the jobs and revenue resulting from goods and services that farmers purchase within the community to produce their products: Farmers rely on local businesses such as feed and seed dealers, fuel companies, machine repair shops, veterinarians, and more.

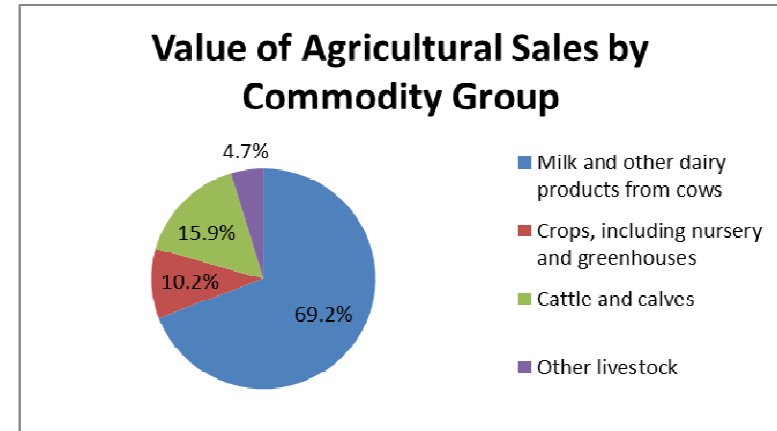
Second, through the downstream effects of the jobs and revenue resulting from the processing, transporting, marketing, wholesaling, retailing, and food services necessary to bring products to consumers.

Livestock operations, dairy in particular, are prominent in our agricultural landscape because of the hilly topography, slope, soil depths, and dominant soil types; more land in our region is better suited for the production of perennial forage crops (pasture, dry hay, haylage, and greenchop) rather than the production of annual crops (corn, soy, wheat, and vegetables).²⁶



According to the 2007 US Census of Agriculture, **69 percent of all gross agricultural sales are from sales of milk and other dairy products from cows.** The top crop item for every FaHN county was forage crops. However, vegetables, orchard fruit, wine grapes, and maple syrup are also defining pieces of our agricultural economy, especially in the context of small- and mid-scale operations.

The following graph depicts averages for the eight FaHN counties:



Total Market Value of Ag Products Sold, 2007²⁷: \$370,571,000

Our temperate climate provides us with abundant rainfall and a sufficient growing season. The average annual rainfall amount for our region is approximately 39 inches, and most of our region falls into USDA Hardiness Zone 5 (average annual minimum temperature of -10° to -20°F) with small portions in Zone 4 (average annual minimum temperature between -20° to -25°F).

Many opportunities exist for season extension, and the drive for locally produced food throughout the year is growing. Ensuring the success of livestock operations also helps ensure a vibrant regional food system year-round.

Given agriculture's essential role, our region's economy would greatly benefit from initiatives to tap the unrealized potential of agriculture-based economic development. More jobs can be created and more products proudly made and sold in South Central New York. This potential could be realized with initiatives such as development of value-added products, processing facilities, and development or expansion of regional food hubs which facilitate aggregation, storage, processing, distribution, and marketing of regionally produced food products.

Statewide, New York's farming industry accounted for \$4.7 billion worth of products sold in 2010. New York State ranked first in the country in cottage cheese and sour cream production in 2010; second in wine, apple, maple syrup, and cabbage production; and fourth in milk, tart cherries, and pear production. Other significant New York State products include yogurt, cheese, pumpkins, snap peas, corn, and onions.²⁸

ECONOMIC VITALITY with productive farmland and profitable farms

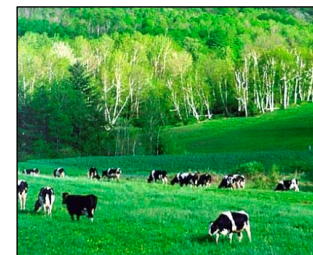
VISION 4


Viable farms and their lands are preserved. Farms make profits for themselves, the community, and the economy. People who want to farm have access to farmland.

INDICATORS

4.1 Farmland is kept in production.

4.2 Farms regularly make a return on investments and are able to further invest in their businesses.



	Measure: ↑ # of acres cropland.²⁹ Findings: From 2002-07, farms in the region decreased cropland acres by 17%, from 608,254 to 502,916.		Measure: ↑ cropland as % of total acres on farms. Findings: From 2002-07, every county experienced a decrease in the % of acres of cropland on farms. In 2007, Tompkins County's farms had the highest % of acres devoted to cropland.		Measure: ↑ total # of farms. Findings: Contrary to desired change, a reported 199 farms were lost between 2002 and 2007.		Measure: ↑ # of total farms reporting net gains in farm income.³⁰ Findings: 4 counties had increases in the # of farms with net gains from 2002-07.		Measure: ↑ % of total farms reporting net gains in farm income. Findings: Regionwide, in 2007 only 2 out of every 5 farms reported net gains in farm income.		<p>Notable Program</p> <p>Catskills FarmLink launched in October of 2011 in response to increasing inquiries related to land access in the Catskills region. The website is designed to promote the Catskills as a great place to operate a small, diversified farm and seeks to maintain the region's working landscape by connecting farmers with underutilized agricultural land.</p> <p>Catskills FarmLink compiles user-submitted properties and offers a range of resources related to land access. Site users submit listings on the website at no charge. Catskills FarmLink is a collaborative effort including: Catskill Mountainkeeper; Cornell Cooperative Extension of Delaware, Schoharie and Sullivan Counties; Delaware Highlands Conservancy; Farm Catskills; Farmhearts; NYC Department of Environmental Protection; and the Watershed Agricultural Council.</p> <p>Within the first eight months of operating, two successful links have been made.</p> <p>http://www.catskillsfarmlink.org</p>
	County	2002	2007	2002	2007	2002	2007	2002	2007	2002	2007
	Broome	54,413	43,575	55.3%	50.3%	588	580	157	211	27%	36%
	Chemung	37,283	32,923	53.9%	50.1%	427	373	117	140	27%	38%
	Chenango	100,601	86,719	53.0%	48.9%	960	908	484	411	50%	45%
	Cortland	70,226	61,458	55.3%	49.2%	569	587	214	218	38%	37%
	Delaware	92,038	68,959	48.1%	41.7%	788	747	398	319	51%	43%
	Otsego	112,145	88,174	54.4%	50.0%	1,028	980	412	410	40%	42%
	Tioga	74,588	53,816	58.2%	50.1%	604	565	258	213	43%	38%
	Tompkins	66,960	67,292	66.4%	61.9%	563	588	228	243	40%	41%
	Region	608,254	502,916	54.8%	49.7%	5,527	5,328	2,268	2,165	41%	41%

ECONOMIC VITALITY due to profitable mid-scale farms and their sales to institutions

VISION 5

Mid-scale farms and the cottage and artisanal food economy thrive.

INDICATORS


5.1 “Ag of the Middle” is sustained: Mid-sized farms remain in production and are viable.

5.2 Farmers benefit from research and product development and have the skills to run successful, innovative businesses.



The ideal role of **mid-sized farms** is to produce at a scale profitable for the farm and affordable for buyers, without severely damaging the environment or compromising the health of employees and livestock. This depends on many factors, including the type of production and the number of acres available for production. Defined in this report as farms with gross annual sales between \$100,000 and \$500,000, these farms play a critical role in supplying institutions like schools, health care facilities, senior centers, large retail stores, and restaurants. From 2002 to 2007, the region lost 94 mid-sized farms. This presents a

challenge in sustaining *farms that can increase availability of local products in the channels through which most food is purchased*. The number of mid-sized farms alone does not fully indicate their success as economic drivers and keystone facets of thriving value chains and healthy regional food systems. Other important factors for mid-sized farm success include value chain infrastructure (processing and distribution) as well as the number and variety of markets *accessible to* mid-scale farms. Pages 19-21, 27-28, and 35 provide insights on other factors influencing mid-sized farm success.

“Ag of the Middle” farms as economic drivers: Mid-sized farms: \$100,000-\$500,000 in gross annual sales ³¹										High-Speed Internet Access					
	Measure: ↑ # of mid-sized farms.			Measure: ↑ % of mid-sized farms.			Measure: ↑ market value of agricultural products sold in \$1,000’s.			Measure: ↑ % of total market value of agricultural products sold.			Measure: ↑ % of farm operators reporting high speed internet access, 2007.³²		
	Findings: Regionwide, there were 94 fewer farms in 2007 than in 2002.			Findings: The percentage of mid-sized farms is not increasing and represented less than 14% of all farms in 2007. More current data will be available with the 2012 US Census of Agriculture.			Findings: Regionwide, from 2002 to 2007, there was a 1% increase in the value of products sold from 2002 to 2007.			Findings: Mid-sized farms are losing market share, as the % of products sold dropped from 52.8 to 44.2% between 2002 and 2007.			Finding: Farm access to high speed internet access is limited in the region and impedes access to innovation.		
	County		2002	2007	2002		2007	2002		2007	2002		2007	County	2007
	Broome		50	34	8.5%		5.9%	\$10,326		\$8,836	35.9%		29.6%	Broome	40%
	Chemung		27	27	6.3%		7.2%	\$5,845		\$7,029	48.4%		42.3%	Chemung	30%
	Chenango		175	151	18.2%		16.6%	\$35,022		\$35,405	67.0%		53.8%	Chenango	44%
	Cortland		95	82	16.7%		14.0%	\$17,999		\$18,983	45.3%		34.6%	Cortland	35%
	Delaware		144	123	18.3%		16.5%	\$31,702		\$28,739	62.8%		52.1%	Delaware	36%
	Otsego		169	139	16.4%		14.2%	\$33,021		\$28,905	65.1%		56.2%	Otsego	31%
	Tioga		81	73	13.4%		12.9%	\$15,241		\$18,296	50.9%		49.9%	Tioga	38%
	Tompkins		56	74	9.9%		12.6%	\$12,347		\$17,500	41.2%		47.7%	Tompkins	47%
	Region		797	703	14.4%		13.2%	\$161,503		\$163,693	52.8%		44.2%	Region	N/A

ECONOMIC VITALITY with an adequate supply of experienced and diverse farm operators and workers

VISION 6

Farms reflect the diversity of the culture in which they exist.

Viable family farms continue from generation to generation, farming is considered a respectable career, and young people are inspired to become farmers.

Farmers are supported by a robust labor force and service-based infrastructure.

INDICATORS


6.1 Minorities have an equal opportunity to serve as the principal operators of farms.

6.2 Younger farmers are operating farms on a fulltime basis.³³

6.3 There is an adequate supply of trained and experienced agricultural labor.



Beginning Farmer Training at Groundswell Center in Tompkins County

	Measure: ↑ # of farms with a minority principal operator, including women, 2007.³⁴ Finding: Otsego County has the most women principal farm operators.		Measure: ↑ % of farms with a minority principal operator, including women, 2007.³⁵ Finding: Regionwide, women are the principal operators on nearly 1 in 4 farms. Racial minorities represent less than 3% of all principal farm operators.		Measure: ↓ average age of principal operator.³⁶ Finding: More young farmers are needed. The average age of farmers is increasing in every county.	
	County	Women	Racial Minorities	Women	Racial Minorities	2002
Broome	100	12	20.8%	2.1%	56.9	56.8
Chemung	75	8	25.2%	2.2%	54.3	56.7
Chenango	168	13	22.7%	1.5%	54.2	58.0
Cortland	90	9	18.1%	1.6%	53.4	56.4
Delaware	142	3	23.5%	0.4%	55.0	56.7
Otsego	192	24	24.4%	2.5%	54.9	58.3
Tioga	113	9	25.0%	1.6%	54.6	58.5
Tompkins	175	9	42.4%	1.6%	53.9	55.4
Region	1,055	87	24.7%	1.7%	54.7	57.1



"Holistic Management for beginning women farmers taught me how to think about the big picture dynamics of the system I am managing. In addition to the rich curriculum, the relationships that developed between all the talented and driven women were valuable educational experiences."

Lauren Tonti, participant, CNY RC&D's Beginning Women Farmers program



ECONOMIC VITALITY with an adequate supply of experienced and diverse farm operators and workers

VISION 6

Farms reflect the diversity of the culture in which they exist.
Viable family farms continue from generation to generation, farming is considered a respectable career, and young people are inspired to become farmers.
Farmers are supported by a robust labor force and service-based infrastructure.

INDICATORS

- 6.2 Younger farmers are operating farms on a fulltime basis.³⁷
6.3 There is an adequate supply of trained and experienced agricultural labor.

Notable Program

The recently launched **NOFA-NY Beginning Farmer, Mentorship, and Apprenticeship program** connects beginning or transitioning-to-organic farmers with experienced farmers, creating a long-term mentorship that supports the development of new farming careers, focused particularly on organic and sustainable practices. NOFA-NY supplements the mentor-mentee relationships by providing logistical support and information on best practices for functioning and fulfilling relationships and by offering access to other Beginning Farmer Program resources, networks, and activities. The program is also tied to the NOFA-NY and Stone Barns Center for Food and Agriculture **Technical Consultancy Program**. <http://www.nofany.org/mentorship>

Measure: ↑ # of participants in beginning farmer training programs.³⁸

Findings: In 2011, 191 individuals participated in beginning farmer trainings in 1 of the region's 4 programs.

Program	2011 Participants
Catskills CRAFT Program	47 members
Central NY Resource Conservation and Development Beginning Women Farmer Training	Spring: 14 students Fall: 20 students
Cornell Small Farms Beginning Farmer Online Courses	11 students
Groundswell Center for Local Food and Farming	Sustainable Certificate Program: 24 trainees Finger Lakes CRAFT Program: 46 trainees Summer Practicum: 12 students Farm Business Planning: 17 trainees
Regional total	191 participants

The average age of farmers in our region is 57.

To ensure an able and diverse new generation of regional producers, accessible beginning farmer training programs are crucial.

Though many degree programs in agriculture already exist, the expense and time commitment are too costly for some. The beginning farmer training programs listed here focus on practical, hands-on experience, often with a focus on small-scale, diversified production, learning from (thus, cultivating relationships for continued learning with) those who are already in the field.

At one year or less in length, these programs are often spacious enough for participants to work while participating. In many cases, minority applicants are strongly encouraged to apply and the programs are made accessible to low-income applicants.

"Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds." Thomas Jefferson

Classroom at Groundswell



ECONOMIC VITALITY

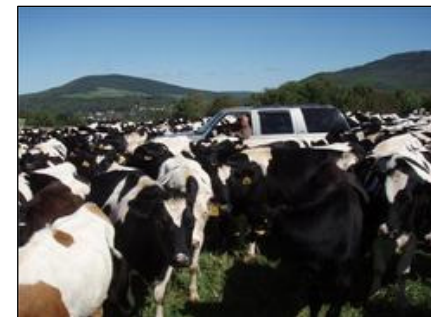
with thriving value chains connecting farms, processors, distributors, and hubs with buyers

VISION 7

Value chains thrive within the local/regional food system: Farmers, processors, distributors, and hubs enjoy cooperative rather than competitive relationships, fostering win-win strategic partnerships for the long-term benefit of all. Farmers, processors, distributors, and hubs are maximizing their assets, have adequate capital and skilled labor, and are working at capacity in a manner that supports agriculture's triple bottom line of economic, community, and environmental vitality.

INDICATORS

- 7.1 Agriculture-related support and technical assistance businesses and organizations are thriving and accessible to farms.**
- 7.2 Farmers have access to slaughterhouses; fruit, vegetable, and meat processing; and centrally located food hubs.**
- 7.3 Food hubs create opportunities for producers, processors, distributors, wholesalers, and retailers.**
- 7.4 Value-added production is accessible to and utilized by local producers.**



Bill Eklund and cows on his farm

South Central New York's food system has untapped potential for increased economic development through growth of value chains. Value-added production provides innovative ways of increasing profitability and increasing availability of local produce year-round. There are opportunities for expanded/efficient meat, poultry, dairy, and grain processing, as well as aggregation and distribution of locally grown products. This page and the next feature notable interventions and unmet needs.

Slaughterhouses: Notable Interventions and Unmet Needs

As the Wallace Center project "*Charting Growth: Sustainable Food Indicators*" reports, the concentration of the meat industry (in the United States) is staggering (e.g. in 2007 the four top beef packers controlled over 80 percent of the market). Those looking to build a sustainable regional food system must understand the tremendous economic forces that lead to this situation to succeed in their goal.³⁹

CADE, the Center for Agricultural Development and Entrepreneurship in Otsego County, was featured in a Wallace Center webinar that identifies the strategic barriers to Northeast regional meat production and their programs, systems, and ideas on how to alleviate these barriers. Issues addressed include: infrastructure (slaughterhouses), HACCP requirements,⁴⁰ educational resources for producers, seasonality of beef production, and the required skill sets for sustainable processing. See the webinar at <http://ngfn.org/resources/ngfn-cluster-calls/the-economics-of-regional-meat>.

New York Custom Processing received a grant in 2011 to purchase equipment for a new USDA slaughterhouse in the Town of Bridgewater, Oneida County, and expects to hire 14 new employees.

Eklund Farm in Stamford, Delaware County has opened its facility for both organic and traditional meats. In addition to providing general processing work for local meat producers, they are also developing an organic ground beef market using culled organic dairy cows. Prior to opening of Eklund's facility, the closest certified organic slaughterhouse and meat processing facility was in Troy, Pennsylvania.

Larry's Custom Meats, in Hartwick, Otsego County, opened a new USDA certified slaughterhouse in 2011.

Opportunities for developing slaughterhouses are improving: USDA's Rural Development is offering loans and grants to small packing houses and processors to expand, upgrade, or update facilities. There is greater cooperation between the USDA's Food Safety and Inspection Service and facilities. USDA's Rural Business Enterprise Grants (RBEG) for slaughterhouses and feasibility studies has improved.

USDA is inspecting custom slaughterhouses that are USDA exempt on a yearly basis. Several are considering becoming USDA certified. Prior to this, custom slaughterhouses exempt from USDA certification were inspected less often by New York State.

ECONOMIC VITALITY

with thriving value chains connecting farms, processors, distributors, and hubs with buyers

Processors and Distributors: Notable Interventions and Unmet Needs

Meat and Poultry Processing

LCM and Purdy & Sons' Foods, Inc., a USDA processor in Chenango County, will soon be certified organic. Several poultry processors, which are USDA exempt plants that process less than 20,000 head of poultry per year, are located in the region and include: Eklund Farm in Delaware County, K&K in Otsego County, and Norwich Meadows in Chenango County.

Dairy Processing and Value-Added Products



Chobani's plant in Chenango County is the largest yogurt maker in the United States and continues to expand to keep up with demand. Chobani started in 2005 with five employees and currently employs over 1,200 people. Chobani uses three million pounds of milk each day to make yogurt.

Artisanal cheeses made at farmstead creameries and often sold at farmers' markets also make contributions to the agricultural economy. Kortright Creek Creamery in Delaware County received an RBEG award to purchase creamery equipment and is raising funds to build the building. When complete, the facility is expected to be available to local farmers to process their products.



Fingerlakes Farmstead Cheese Bronson Hill Creamery

Fruit, Vegetable and Grain Processing

Lucky Dog Farm, in the Town of Hamden, Delaware County, is developing a commercial kitchen. Commercial kitchens outside of the region, such as Farm to Table, in Kingston NY, is also used by farms in the region, as is Nelson Farms in Madison County. Cayuga Pure Organics in Tompkins County produces sustainably grown organic beans, grains, and flours for wholesale and retail in addition to producing organic feed for livestock.

Needed enterprises include commercial kitchens, Individual Quick Freeze facilities, and cold chain processing and distribution serving local producers. Funding opportunities for processing projects are available, particularly for job creation. These include county IDA's, Regional Economic Development Agencies, and USDA Rural Business Enterprise Development grants.

Food Hubs

The USDA and Wallace Center's 2012 report defines a regional food hub as a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand.⁴¹ There are various types of food hubs in the region, all benefitting local producers. They include Evans Creamery/Sunrise Family Farms and Purdy & Sons' Foods, Inc. in Chenango County as well as Regional Access in Trumansburg. For example, Purdy & Sons' Foods, Inc. provides warehousing and distribution services for small to mid-sized farms, in addition to food inspection, food processing, and customer cut and packaging of meats. Their foods are distributed to colleges/universities, institutions, government agencies, and restaurants in upstate New York.

Notable Partnership

The community-oriented and grassroots company **Regional Access** is the leading purveyor in New York State of specialty and natural foods, offering a catalog of more than 3,400 products and distributing to every corner of the state. It is notable for its commitment to sourcing locally produced and ecologically responsible products. Regional Access also partners with **Wholeshare**, a new consumer buying club focused on making local and organic food more accessible. When enough Wholeshare clubs are established in a specific area, regional farmers are recruited so that they can adhere to their wholesale business practices while selling directly to local consumers. <http://www.wholeshare.com/start/nys>

"Wholeshare is able to provide communities with unbeatable prices for local foods without cutting into the viability of the farmers and processors, and the vibrancy of our regional food system. All of this is achieved through our website's ability to replace physical infrastructure with the social networks that exist in communities across the state."

Dan Livingston, Wholeshare Representative and City of Binghamton resident

As of September 2012 there were eight Wholeshare groups operating within the FaHN region in South Central New York. With over 350 total members between them, these groups represent over \$50,000 in annual sales for Regional Access and over a dozen small and mid-sized regional farmers and food producers.

ECONOMIC VITALITY through sound public policies

VISION 8

Local, county, state, and federal policies and funding support economic vitality of the regional food system.

*Food system development
is economic development*

New York State Policies: In 2007, the New York State Governor's Office issued an Executive Order establishing the **New York State Council on Food Policy**. The council was created with the recognition that agriculture is a critically important industry to New York State, that hunger is a serious problem facing many families; that access to affordable, fresh, and nutritious food is a serious problem; and that there are significant environmental, health, and economic benefits from expanding agriculture production, including locally grown and organically grown food. The Council continues to meet and explore opportunities for achieving its mission and has untapped potential for policy advocacy in the future.

As of mid-2012, the Council was moving ahead with nutritional integrity standards for state institutions and geographical preference guidelines for purchasing local products.

In 2010, then Governor Elect Andrew Cuomo released his agricultural policy platform ***Farm NY: Growth Through Innovation***. Citing New York's \$4.4 billion agricultural industry as a connector of multiple important and interrelated priorities, including the economy, the environment, and public health, Mr. Cuomo's agricultural platform *Farm NY* notes, "Land is the lifeblood of the agricultural industry, and the protection of New York State's long term food supply, the environment, and the health of the public are directly related to the preservation of this land."⁴² The policy paper detailed innovative ways to access capital for agriculture; noted the value of food processing expansion and selling locally grown food locally; and

identified opportunities to capitalize on emerging technology, as well as strategies for keeping New York agriculture competitive nationally and globally.

Governor Elect Cuomo's environmental platform ***A Cleaner Greener NY*** also identifies the protection of farms as a crucial step toward a healthy economy and environment and long-term food security.

Also in 2010, State Comptroller Thomas DiNapoli released a report on the importance of farmland protection entitled ***Bet the Farm: Farmland Protection as a Strategy for Economic Growth***.

These three major policy documents made a strong case for the need to invest in protecting New York's farms and farmland.⁴³

In 2011, Governor Cuomo created ten **Regional Economic Development Councils** to develop strategic plans for economic growth in each region. As part of the process, \$785 million became available for job creation and community development. As part of the **Southern Tier Regional Economic Development Council**, which services six of FaHN's eight counties, Broome County received funding for a permanent farmers' market structure. Statewide, a second round of funding has \$220 million available.

In August 2012, the Southern Tier Regional Council announced awards from its **Rural Initiative Fund** to expand two hubs in Chenango County: As a result, Purdy & Sons' Foods, Inc. expects to create 15 new jobs and expand the number of farmers served and its distribution service area. Sunrise Family Farms expects to create 14 jobs, increase dairy processing capacity by 250 percent, and further support the growth of dairy farms.⁴⁴

In August, 2012, at the state's first **Yogurt Summit**, Governor Cuomo announced state plans to allow farmers to increase the number of cows on farms from 200 to 300 without needing a Concentrated Animal Feeding Operations (CAFO) permit.

The change is expected to result in more upstate milk available to help keep up with the growth of upstate's yogurt industry. Major yogurt producers such as Fage and Chobani have rapidly increased production in rural counties. Governor Cuomo said that "this is one of the best private sector market opportunities upstate New York has had in 30, 40 years.... I don't know when we get another one. I really, really don't. And that entrepreneurial spirit is when you see an opportunity, grab it and make it happen."

This important opportunity to promote economic growth can hopefully be achieved without compromising water quality. Residents have raised concerns about long term consequences if manure from the increased number of cows allowed without a CAFO permit increases nitrogen levels of streams and rivers. Proper farm management of waste from cows is an important consideration in this region, since the eight FaHN counties are part of the Chesapeake Bay Watershed. Please refer to the discussion of TMDL in the Healthy Environments section of this report.

Future Regional Food System Assessments will offer updates to New York State policies and highlight county and national policies.



FARM TO CONSUMER CONNECTIONS Overview of Visions and Related Indicators and Measures

<i>VISION</i>	<i>INDICATORS</i>	<i>MEASURES</i>
<i>VISION 9</i> Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food. Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.	9.1 Residents support local producers through direct sale purchasing.	Increase in direct farm sales and percent of total farm sales. Increase in value of direct farm sales per population in each county, suggesting an increase in the amount of the food dollar that is spent by residents on local food. Increase in number of CSAs (Community Supported Agriculture programs) and buying clubs/cooperatives selling to residents in the region. Increase in number of farmers' markets, number of times per week farmers' markets are held, and number of winter farmers' markets.
	9.2 Low-income residents have improved access to and ability to afford local food through market channels that include emergency food providers.	Increase in the percent of NYS grown food purchased by emergency food providers in the region. Increase in number and percent of farmers' markets using Electronic Benefits Transfer (EBT) for customers to purchase local foods with SNAP and other benefits. Increase in the value of sales from EBT at farmers' markets.
	9.3 Local food citizens of all income levels grow more of their own food.	Increase in number of community gardens and urban farms.
	9.4 School-aged children understand and value the local food system and have opportunities to grow and consume local food as part of a comprehensive education program.	Increase in the number of schools with educational gardens.
	9.5 Schools, universities, restaurants, other institutions with food services, grocery stores, and restaurants in the area buy more local food products from farms, processors, and distributors of local foods.	Example of restaurants, public schools, and other institutions that regularly serve locally grown food.
<i>VISION 10</i> Local, county, state, and federal policies support this vision for farm to consumer connections.	10.1 Local, county, state, and federal policies support increased consumption of locally produced, processed, and distributed food.	Examples of newly adopted policies, such as zoning changes or geographic preference guidelines.

FARM TO CONSUMER CONNECTIONS *through direct sales*

VISION 9

Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food.

Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.

INDICATOR

9.1 Residents support local producers through direct sale purchasing.



Data for the measures about direct consumer purchase of farm products are from the US Census of Agriculture. Updated information will be added after data from the 2012 US Census of Agriculture is available.



Measure: ↑ value of agricultural products sold directly to individuals.⁴⁵

Findings: In 2007, individuals bought over \$7.3 million in agricultural products directly from farms. This is an increase of 59% from 2002

Measure: ↑ % of total farm sales that are direct farm to consumer sales.

Findings: Direct to consumer farm sales as a % of total farm sales increased from 1.5 to 2% between 2002 and 2007.

Measure: ↑ # of farms selling directly to individuals.

Findings: From 2002-07, the number of farms selling directly to individuals increased in 6 out of 8 counties.

Measure: ↑ value of direct farm sales per population in each county, suggesting an increase in the amount of the food dollar that is spent by residents on local food.

Findings: On average, each person spent an estimated \$11.29 in 2007 on food purchased directly from farms.⁴⁶

County	2002	2007	2002	2007	2002	2007	2007
Broome	\$553,000	\$676,000	1.9%	2.3%	63	93	\$3.46
Chemung	\$408,000	\$916,000	3.4%	5.5%	54	50	\$10.42
Chenango	\$383,000	\$1,032,000	0.7%	1.6%	98	136	\$20.20
Cortland	\$538,000	\$714,000	1.4%	1.3%	58	59	\$14.75
Delaware	\$986,000	\$1,155,000	2.0%	2.1%	120	134	\$24.93
Otsego	\$538,000	\$1,172,000	1.1%	2.3%	98	144	\$18.83
Tioga	\$623,000	\$767,000	2.1%	2.1%	84	80	\$15.23
Tompkins	\$598,000	\$933,000	2.0%	1.6%	81	84	\$9.29
Region	\$4,627,000	\$7,365,000	1.5%	2.0%	656	780	\$11.29

The national trend of farm consolidation and corporatization has endangered small- and mid-sized farms, which play critical roles in strengthening regional food systems.

Small producers who connect directly with consumers: Even though these farms account for only two percent of total farm sales and may increase up to ten percent at most, they foster thriving local food communities through farmers' markets and community supported agriculture (CSA) programs. They also serve as agricultural innovators, sparking new farming and business practices.



FARM TO CONSUMER CONNECTIONS with increased use of CSAs and farmers' markets

VISION 9

Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food.

Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.

INDICATOR


9.1 Residents support local producers through direct sale purchasing.



Ithaca Farmers' Market



VINES in Binghamton

	↑ # of CSAs (Community Supported Agriculture programs) and buying clubs/cooperatives selling to residents in the region. ⁴⁷		Increased farm to consumer connections through farmers' markets ⁴⁸				CSA (community supported agriculture) programs create direct relationships between producers and consumers that allow consumers to act as shareholders of farm and food businesses, thus sharing with the owner the risks and benefits of the business. In exchange for payment, producers provide members with regular shares of product throughout the season (as determined by owners). A key benefit of CSA programs is the up-front capital it provides for farmers to invest in their operations, regardless of the outcome of the season.
	Findings: CSAs have soared, with a 54% increase from 2010 to 2012, due to CSA growth in Chenango and Tompkins Counties.		↑ # of farmers' markets. Findings: The number of farmers' markets in the region increased by 11, with growth in 5 counties.		↑ # of times farmers' markets held per week. Findings: In all 8 counties, residents have increased opportunities to access farmers' markets.		
County	2010	2012	2010	2011	2010	2011	<p>CSAs are diverse. They may provide one or more of: vegetables, fruit, meat, cheese, grain, bread, mushrooms, and even granola. Methods of payment include paying ahead in-full, pay-as-you-go, pay plans, subscriptions, and credit systems. Some are pre-packaged boxes of products, others provide members with free choice. Some deliver, some have pick-up locations. A CSA program may even require a hands-on commitment of labor from its members.</p> <p>The measure we include here simply indicates the location of CSA program production sites; we listed only CSA programs based in the region <i>selling to residents in the region</i> (others may exist that sell <i>only</i> to residents outside the FaHN counties). In reality, a CSA program located in one county may provide opportunities for farm to consumer connections in other counties by providing off-site pick-up locations.</p> <p>Winter Farmers' Markets: Though the growing season has ended, consumers in South Central NY can still find local products during winter: root crops that can be stored such as potatoes, rutabagas, beets, and carrots; meat, dairy, and eggs; and even some greens! For the 2011 FSA, the methodology used to collect the number of winters farmers' markets by county yielded inaccurate results. This year, as confirmed by the Farmers Market Federation of NY and county Cornell Cooperative Extension offices, the only winter markets in the region are the Ithaca Farmers' Market in Tompkins County and the Downtown Binghamton Metro Center Market in Broome County. Expanding winter farmers' markets in all counties is an opportunity for increased farm to consumer connections year-round.</p>
Broome	3	2	5	6	5	9	
Chemung	1	1	5	7	5	7	
Chenango	3	6	3	5	3	6	
Cortland	1	2	4	4	4	5	
Delaware	3	3	6	10	6	10	
Otsego	1	1	3	5	3	8	
Tioga	2	2	2	2	2	4	
Tompkins	12	23	8	8	8	10	
Region	26	40	36	47	N/A	N/A	

CSA (community supported agriculture) programs create direct relationships between producers and consumers that allow consumers to act as shareholders of farm and food businesses, thus sharing with the owner the risks and benefits of the business. In exchange for payment, producers provide members with regular shares of product throughout the season (as determined by owners). A key benefit of CSA programs is the up-front capital it provides for farmers to invest in their operations, regardless of the outcome of the season.

CSAs are diverse. They may provide one or more of: vegetables, fruit, meat, cheese, grain, bread, mushrooms, and even granola. Methods of payment include paying ahead in-full, pay-as-you-go, pay plans, subscriptions, and credit systems. Some are pre-packaged boxes of products, others provide members with free choice. Some deliver, some have pick-up locations. A CSA program may even require a hands-on commitment of labor from its members.

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Winter Farmers' Markets: Though the growing season has ended, consumers in South Central NY can still find local products during winter: root crops that can be stored such as potatoes, rutabagas, beets, and carrots; meat, dairy, and eggs; and even some greens! For the 2011 FSA, the methodology used to collect the number of winters farmers' markets by county yielded inaccurate results. This year, as confirmed by the Farmers Market Federation of NY and county Cornell Cooperative Extension offices, the only winter markets in the region are the Ithaca Farmers' Market in Tompkins County and the Downtown Binghamton Metro Center Market in Broome County. Expanding winter farmers' markets in all counties is an opportunity for increased farm to consumer connections year-round.

FARM TO CONSUMER CONNECTIONS benefitting low-income residents

VISION 9

Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food. Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.

INDICATOR

9.2 Low-income residents have improved access to and ability to afford local food through market channels that include emergency food providers.

Measure: ↑ % of NYS grown food purchased by emergency food providers in the region.

Findings:⁵¹

In FY10-11, HPNAP (Hunger Prevention and Nutrition Assistance Program) contractors reported NYS locally grown purchases of approximately **\$1 million**.

In FY11-12, HPNAP contractors reported NYS locally grown purchases of approximately **\$1.2 million**.

This represents the food banks throughout the state plus other contractors that serve the hungry in NYS.

More information on food security and the role of food banks in our regional food system is found in the Healthy People section on pgs. 32-34.



Notable Tompkins County CSA Program for Residents with Limited Incomes

Healthy Food for All: A partnership between the **Tompkins County CSA coalition** and the **Tompkins County Cornell Cooperative Extension**, this program makes available subsidized CSA shares to people with limited income in the Ithaca area. The program also offers free nutritional cooking classes to teach preparation of local, seasonal products as well as biweekly workshops on composting, home preservation, and u-picking. This program is supported by benefit harvest dinners throughout the growing season at local farms, with local chefs and wineries making use of seasonal ingredients for the meal.

<http://www.freewebs.com/fullplatefarms/healthyfoodforall.htm>

Measures:

- ↑ # and % of farmers' markets using Electronic Benefits Transfer (EBT) for customers to purchase local foods with SNAP (Food Stamp) and other benefits.⁴⁹
- ↑ value of sales from EBT at farmers' markets.⁵⁰

Findings: Though the number of farmers' markets grew from 2010 to 2011, the percentage of markets with EBT decreased slightly. 100% of farmers' markets in Tioga and Tompkins Counties offered EBT in 2011. The region did, however, experience a positive jump in sales from EBT at farmers' markets totaling more than \$15,000, with higher sales in all but 1 county. Tompkins County accounted for much of the increase, with almost \$10,000 more in sales from 2010 to 2011.

County	↑ # of farmers' markets with EBT		↑ % of farmers markets with EBT		↑ sales from EBT at farmers' markets	
	2010	2011	2010	2011	2010	2011
Broome	5	4	100%	66%	\$4,468	\$6,837
Chemung	1	1	20%	14%	\$2,207	\$2,110
Chenango	0	1	0%	17%	N/A	\$0
Cortland	2	2	50%	50%	\$1,877	\$4,572
Delaware	0	0	0%	0%	N/A	N/A
Otsego	1	3	60%	50%	\$106	\$977
Tioga	1	2	50%	100%	\$364	\$2,256
Tompkins	8	8	100%	100%	\$12,719	\$22,671
Region	18	21	50%	45%	\$21,741	\$39,423

FARM TO CONSUMER CONNECTIONS *promoting community*

VISION 9

Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food.

Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.

INDICATORS

9.3 Local food citizens of all income levels grow more of their own food.

9.4 School-aged children understand and value the local food system and have opportunities to grow and consume local food as part of a comprehensive education program.

Notable Chenango County CSA Program for residents with limited incomes

Making CSA programs accessible to those using Food Stamps can be a challenge because of payment limitations with EBT. Thanks to the Farmers' Market Promotion Project, the **Chenango County Cornell Cooperative Extension** received grant funding from the USDA until the end of 2013 to develop a CSA program that addresses this challenge. The program is facilitated in the CCE-Chenango office and is one of the first CSA programs to allow Food Stamp payments, working to make fresh, local food available to everyone in the county.
<http://chenangofarmfresh.com>



↑ # of community gardens and urban farms.⁵²

Findings:
The number of community gardens in the region increased by 54% from 35 in 2010 to 54 in 2011.

↑ # of schools with educational gardens.⁵³

Findings:
Of the 27 schools with educational gardens in the region, 18 were in Tompkins County.

County	2010	2011	2011
Broome	10	10	7
Chemung	2	4	0
Chenango	1	2	1
Cortland	2	5	0
Delaware	1	4	1
Otsego	1	1	0
Tioga	1	1	0
Tompkins	17	27	18
Region	35	54	27



VINES Urban Farm

"Working at the Urban Farm for the third year has made me think about where my food comes from and I actually watch what I put in my body now. As a crew leader I have learned responsibility and how to work as a team." *DeShawn Bostick, VINES youth Crew Leader*

In Ithaca, **Gardens 4 Humanity** operates similarly and provides a biannual garden-based teaching training program for community members interested in becoming community garden site coordinators/volunteers and/or garden educators. <http://cctompkins.org/garden/community-school-gardens>

In Lansing, **Gardens of Grace** was a 2011 Sustainable Tompkins award winner. Started in 2011 by two organic farming families who are members of the East Shore Christian Fellowship Church, this organic garden offers both individual plots and a community section, which is cared for by church members. Free fresh vegetables from the community section are harvested by area residents...from young families to elders. Whatever isn't harvested by Sunday is available for anyone to pick up at the church's **Gardens of Grace** table.

The **Catskill Edible Garden** project of Catskill Mountainkeeper helps schools in the region to create and maintain gardens, provides students with a learning experience about local food systems, and encourages youth to develop an understanding of agriculture's importance to the region. <http://www.catskillmountainkeeper.org>

Community Gardens and Urban Farms

In Binghamton, **Volunteers Improving Neighborhood Environments (VINES)** supports the added development and continued sustainability of the city's community gardens, including its urban farm, by coordinating leadership, fundraising, and education. <http://vinescommunitygardens.org/>

VINES Urban Farm



FARM TO CONSUMER CONNECTIONS through institutional purchasing

VISION 9

Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food.

Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.

INDICATOR

9.5 Schools, universities, restaurants, other institutions with food services, grocery stores, and restaurants in the area buy more local food products from farms, processors, and distributors of local foods.

Congratulations to the restaurants and institutions that proudly and regularly serve locally grown food!

Thank you to all who contributed to the list. Kindly note that this list⁵⁴ is from a variety of sources in response to the FaHN request. Apologies to any restaurants that were inadvertently left out. Please let us know and we will add you in the future.

Broome

Apple Dumpling Café, Down to Earth Whole Foods Deli, Lost Dog Café, Moxie Wood Fire Grill, Remlik's, Water Street Brewing Company

Chemung

Charlie's Café, Classic Café, Hilltop Inn, Starlight Room

Chenango

Amazing Grains, Bob's B-Que, The Bohemian Moon, Dan's BBQ, La Maison Blanche Bakery Café, School House Kitchen, Whispering Pines Bakery & Crafts, Yaleville Inn

Cortland

Pita Gourmet, Brix, Hairy Tony's

Delaware

The Beehive, Crescent Wrench Café, Fable at Stone and Thistle Farm, Good Cheap Food, Lucky Dog Store and Café, Masonville General Store, Midtown Grill Restaurant & Bar, Quarter Moon Café, SUNY Delhi Signature Restaurant, Stony Creek Farm Pizzeria, The Andes Hotel, Vineyard Wine Bar

Otsego

Alex & Ika Restaurant, Autumn Café, Green Earth Health Food Market, Origins Café, Savor New York

Tioga

Calaboose Grille, Las Chicas Taqueria, River Rose Café, The Cellar Restaurant

Tompkins

Agava, Bandwagon Brewery, Brookton's Market, Café Dewitt, Carriage House Café, Cayuga Lake Cruises, Chipotle, College Town Bagels/Ithaca Bakery, Cornell University, Corks and More, Dorothy's Music Room, Elizabeth Restaurant, Farm and Fork/Serendipity Catering, Felicia's Atomic Lounge, Fine Line Bistro, Finger Lakes Wine Center, Good to Go!, Harvest Dinners at local farms to benefit Healthy Food for All, Greenstar Deli, Hazelnut Kitchen, Just a Taste Wine & Tapas Bar, Loaves and Fishes, Macro Mamas, Mexeo, Mia, Manndible Café, Mate Factor, Mercato Bar & Kitchen, Moosewood, Northstar Pub, Rogue's Harbor Inn, Serendipity Catering, Simply Red Bistro, Southside Community Center and Greater Ithaca Activities Center, Stella's, Stone Soup Supper Club, Tamarind, Taste of Thai Express, The Boatyard Grill, The Good Truck, The Piggery, Water Wheel Café

Other notable mentions: Summerhouse Grill in Montrose, PA

Notable Institution

Wegmans isn't the only retail supermarket in the region carrying local produce. But it is the only retailer with its own organic farm. The four-acre farm is based outside of the FaHN region in Canandaigua, NY (Ontario County), but it supplies area Wegmans stores, including some in this region, with organic produce ten months of the year. Wegmans is also committed to education for both the public and its employees through tours of the farm and vegetable showcases in stores that highlight the benefits of fresh, organic produce and offer recipes. The farm is also notable for its use of season extension techniques, including hoop houses and succession planting, and for its partnerships with area seed producers and farmers.

Healthy, Local Food on School Menus!

Broome and Tioga Counties

Rock on Café: This program of Broome-Tioga BOCES food service, with 15 participating school districts, seeks to provide nutritious, affordable school meals. The Rock on Café is a strong advocate for Farm to School and is working hard to reform geographic preference guidelines to better enable them to purchase food for the cafeteria from local growers within New York State or within 100 miles. <http://rockoncafe.com/>



Rock on Café's Rex and Roxy

Tompkins County

The Ithaca City School District features a Cool School Food program; the salad bar at Lehman Alternative School; as well as a daily fresh fruit and vegetable snack program serving mostly local and organic produce at the Beverly J. Martin Elementary School and Cayuga Heights Elementary School. In an effort to promote both farm to school connections and a healthier environment, all leftovers plus trays and silverware in Ithaca City School District schools are composted.

FARM TO CONSUMER CONNECTIONS through sound public policies

VISION 10

Local, county, state, and federal policies support farm to consumer connections.

Local Policies

Binghamton Urban Agriculture Zoning: Pending approval from the City Council, amendments to the city's zoning ordinance would increase the number and types of animals allowed for keeping in the city and more adequately define community gardens, urban farms, and beekeeping and related permissible activities. Proposed amendments were developed through a collaborative effort between the City of Binghamton Department of Planning and Development, the Broome County Health Department, the Food and Health Network, and the Binghamton Regional Sustainability Coalition.

State and Federal Policies: *Geographic Preference*

For Schools: The 2008 Farm Bill amended the National School Lunch Act to encourage institutions operating Child Nutrition Programs to purchase fresher, unprocessed, local/regional food. Instituting geographic preference has been critical for farm to school progress. Prior to the amendment, local/regional producers had difficulty forging contracts with schools since entities accepting federal Child Nutrition Program funds for school meals are obligated to contract for products through a bidding process; through this process, schools must solicit multiple food contractors for any given product and choose the contractor with the cheapest offer. Typically, local/regional products are more expensive and so usually were out-bid. With geographic preference, locally/regionally produced and raised products may now receive "points" that effectively award these products with a lower price in the bidding process. The local/regional product still may not win in the bidding process, but it has a better chance. If a local/regional producer does win the bid for a contract, he/she is still paid the full price for the product, even though it was "deducted" in the bidding process.

The amendment does not prescribe the geographic area to be considered local, leaving this to individual institutions. Broome-Tioga BOCES Food Service, home of the Rock on Café, awards geographic preference to products from within a 100-mile radius or within New York State. Bridge the GAP, mentioned in the Healthy People vision, is another important piece of the farm to school equation.

For State Institutions: The New York State Council on Food Policy has been working hard to promote the use of nutritious, local food in state-funded institutions. Recommendations have been passed on to the Governor's office regarding nutrition preferences and the promotion of local products.

Notable Practices and Programs

Cornell University's Commitment to Local Foods

In a July, 2012 letter to the Food and Health Network Facilitation Team, Cornell University's President David J. Skorton noted, "Cornell Dining has been actively engaged since 2007 in sourcing local and regional foods for its 33 locations on campus. About 24% of our fresh produce is sourced locally or within New York State. Additionally, we were the first university dining service in the country to purchase locally raised whole beef steer and use all of its cuts and ground beef in our operations. For two and a half years we have had a remarkable "local beef" program in six retail operations, serving ground beef in burgers and other products like burritos. Cornell Dining also has partnerships with local/regional coffee companies and small producers like Ithaca Soy and Emmy's Sweets." *Bravo, Cornell!*

Promoting Farm to School Connections

Several School districts have started **Farm to School programs featuring the 4 C's:** Classroom, Cafeteria, Culinary and Community. Though every farm to school program has its own flavor, the 4 Cs are guiding principles to creating a rich, long-lasting, and influential farm to school program.

Classroom: Providing standards-based farm, food, and nutrition curriculum and professional development for teachers.

Cafeteria: Instituting procurement practices and building relationships between cafeteria staff and local food producers. In addition, school gardens are taking root and supplying cafeterias.

Culinary: Bridging the gap for students between typical foods and those that are more healthful and more abundantly grown in our region through food education and sampling. Providing students with food preparation and cooking skills.

Community: Developing community forums and collaborative partnerships between families, businesses, government, and non-profits that contribute to program sustainability.



Cornell University's Farm to School Research and Extension Program offers schools significant support to increase the availability and purchase of fresh, minimally processed foods. Through outreach, education, and research, Cornell's Farm-to-School program helps bring healthier foods into schools, and raises awareness about the need to eat healthy and support local farmers. A downloadable toolkit can help schools get started.

<http://farmtoschool.cce.cornell.edu/toolkits.html>

HEALTHY PEOPLE Overview of Visions and Related Indicators and Measures

VISION	INDICATOR	MEASURE
VISION 11 Residents of all income levels have access to a nutritious diet of affordable, fresh, healthful, minimally processed, culturally appropriate food. Everyone has the skills and knowledge essential for the production, preparation, and enjoyment of nutritious food.	11.1 Healthy outcomes: There is a low prevalence of diet-related health conditions and chronic diseases.	Decrease in percent of adults with physician-diagnosed diabetes. Age-adjusted rate Decrease in number and percent of obese adults, (BMI>30). Age-adjusted rate Decrease in percent of children, ages 2-4, participating WIC, who are obese, (>=95 th Pctl). Decrease in the percent of elementary, middle and high school students who are overweight or obese.
	11.2 Healthy choices: Residents consume recommended amounts of fruits and vegetables.	Increase in percent of adults eating five or more servings of fruit and vegetables daily. Age-adjusted rate
VISION 12 Fewer individuals are experiencing food insecurity.	12.1 More residents are food secure.	Increase in number and percent of food secure individuals.
	12.2 No residents live in a food desert: They have access to a grocery store where they can purchase affordable, high-quality, culturally appropriate, and nutritious food. 12.3 Residents who need food from food banks and food pantries have increased availability of fresh produce and local healthy meats, such as venison. 12.4 Individuals eligible for SNAP (formerly Food Stamp) benefits are enrolled in the program.	Increase in number of pounds of fresh produce distributed by food banks to hunger-relief agencies. Increase in number of pounds of donated venison processed by approved processors for food banks. Increase in number and percent of eligible individuals receiving SNAP benefits.
VISION 13 Residents are protected from food contamination and other hazards, such as genetically modified organism (GMO) products.	13.1 Farmers selling to institutions, such as schools, have documented certification that they follow safe handling procedures for fruits and vegetables.	Pilot program on Bridge the Gap developed, yielding an increase in number of farmers with training and certification that are selling to schools. ⁵⁵
VISION 14 Empowered workers in all sectors of the food system are paid livable wages and have safe working conditions.	14.1 Food system jobs are plentiful and earnings for a food system employee are at least equal to the average for all employees in the county.	Increase in number of people working in the food system. Increase in average annual earnings for food system employees.
VISION 15 Local, school district, county, state, and federal policies and funding incentives promote consumption of healthful food and this vision for healthy people.	15.1 Public policies, funding, and marketing promote purchase and consumption of nutrient-rich foods and discourage purchase and consumption of sugared soft drinks and other high-calorie/nutrient-poor choices.	Public support of school districts' wellness policies and efforts to provide children and youth with nutrient-rich food choices.

HEALTHY PEOPLE with a nutritious diet


VISION 11

Residents of all income levels have access to a nutritious diet of affordable, fresh, healthful, minimally processed, culturally appropriate food. Everyone has the skills and knowledge essential for the production, preparation, and enjoyment of nutritious food.

INDICATOR

11.1 Healthy Outcomes: Low prevalence of diet-related health conditions such as obesity and diabetes.



	Measure: ↓ % of children ages 2-4 participating in WIC who are obese (>95 th Pctl.). ⁵⁶ Findings: FaHN counties have higher percentages of obese preschoolers than the NYS goal of 11.6%. 11.7% of Cortland preschoolers are obese, the lowest of the 8 counties.	
County	Est. % of obese preschool children	
	2006 - 08	2007-09
Broome	14.7%	14.3%
Chemung	13.2%	13.8%
Chenango	13.6%	14.2%
Cortland	11.7%	11.7%
Delaware	17.0%	16.4%
Otsego	15.6%	15.4%
Tioga	14.9%	14.5%
Tompkins	12.8%	13.2%
Comparison	NYS Goal: 11.6%	

Measure: ↓ % of elementary school children overweight or obese (in 85 th + Pctl.) 2008-10. ⁵⁷ Findings: The estimated % of overweight or obese elementary school children ranges from a low of 17.2% in Otsego to 33.7% in Chenango County.	
Est. % overweight or obese elementary school students	
2008-10	
29.6%	
32.3%	
33.7%	
30.1%	
32.6%	
17.2%	
25.6%	
22.8%	

Measure: ↓ % of middle and high school students overweight or obese (in 85 th + Pctl.) 2008-10. ⁵⁸ Findings: Childhood obesity is increasing with age. The estimated % of overweight or obese middle school and high school students is higher than the % of elementary school children in every county.	
Est. % overweight or obese high school and middle school students	
2008-10	
36.6%	
37.7%	
36.3%	
34.6%	
32.2%	
33.8%	
40.8%	
34.1%	

Measure: ↓ % and # of obese adults (BMI>30), age-adjusted, 2008-09. ⁵⁹ Findings: Over 127,000 adults in the region are obese. The percentage of obese adults ranges from a low of 20% in Tompkins to 34.9% in Chenango.	
Est. # of obese adults	% of obese adults
2008-09	
37,500	24.9%
19,900	30.0%
13,300	34.9%
11,100	29.7%
9,800	27.5%
11,600	23.1%
9,400	24.1%
14,600	20.0%
Region 127,200	Upstate NY: 24.61%

Childhood and adult obesity is a health and economic crisis. Over one in three middle school and high school students in the region are either overweight or obese. The proportion of overweight children has tripled since 1980.

At 68.6 percent, six Southern Tier counties—Broome, Chemung, Chenango, Schuyler, Steuben, and Tioga in Excellus’ Southern Tier Region—had the highest rate of overweight and obese adults in upstate New York in 2007.

On average, obese individuals die up to ten years sooner, mostly because of their increased likelihood of developing chronic conditions such as type 2 diabetes, hypertension, heart disease, stroke, and arthritis.⁶⁰ These diseases harm quality of life and contribute to rising costs of medical care.

Causes of obesity are complex and include genetic, biological, behavioral, and cultural factors. Obesity is affected by individual choices; poor eating habits, overeating, or bingeing; lack of exercise; and junk food marketing influences. Complex root causes require multi-faceted initiatives involving public health, primary care, families, schools, businesses, faith-based organizations, non-profits, and government.

A weight loss of only ten to twenty pounds through good nutrition and exercise can result in significant health improvements.

HEALTHY PEOPLE with healthy lifestyle choices and positive health outcomes

VISION 11

Residents of all income levels have access to a nutritious diet of affordable, fresh, healthful, minimally processed, culturally appropriate food. Everyone has the skills and knowledge essential for the production, preparation, and enjoyment of nutritious food.

INDICATORS

11.1 Healthy Outcomes: Low prevalence of diet-related health conditions such as diabetes and obesity.

11.2 Healthy Choices: Residents consume recommended amounts of fruits and vegetables.

Diets rich in fruits and vegetables are associated with multiple health benefits, including decreased risk for some types of cancer, cardiovascular disease, diabetes, and obesity. Nationwide, in 2007, only 9.5 percent of adolescents in grades 9-12 consumed at least two servings of fruit and three servings of vegetables per day.⁶¹

Diabetes is serious and kills more US residents each year than AIDS and breast cancer combined. The prevalence of diabetes continues to rise, fueled by an aging population and increasing obesity rates. In Excellus' six Southern Tier Counties, the prevalence of diabetes increased from 9.8 percent in 2003 to 11.3 percent in 2008 and resulted in over \$297 million in annual treatment costs.⁶²



Blueberry Picking at Gary's Berries

Healthy Choices leading to Healthy Outcomes

Measure: ↑ % of adults eating 5 or more servings of fruit and vegetables daily, age-adjusted.⁶³

Findings: As of 2008-09 Tompkins was the only county meeting the US objective of eating 5 or more servings of fruit and vegetables daily. More current data is pending.

Measure: ↓ % of adults with physician-diagnosed diabetes, age-adjusted.⁶⁴

Findings: As of 2008-09, the percentage of adults with physician-diagnosed diabetes in all counties was higher than the US objective of 5.7%.

	2008-09	2008-09
Broome	27.4%	8.6%
Chemung	28.0%	11.3%
Chenango	24.4%	12.1%
Cortland	29.3%	10.5%
Delaware	24.2%	8.7%
Otsego	28.1%	6.6%
Tioga	22.5%	10.7%
Tompkins	33.1%	7.4%
Comparison	Upstate NY: 27.7% US Objective: 33%	Upstate NY: ⁶⁵ 9.0% US Objective: 5.7%

Notable Program to Reduce Childhood Obesity

The UHS Stay Healthy Kids Club is a free twelve-week intervention program for children between the ages of 8-13 and in the 85th percent BMI, referred to the club by their UHS provider. After an initial "interview" process, participants in the club meet (parents are involved separately) for healthy eating and physical fitness lessons and activities. The We Can and CATCH programs focus on three main principals: 1. Better nutrition through decreasing fats and sugars and increasing fruits and veggies, 2. Increasing activity, and 3. Decreasing screen time. Regular communication between families and health professionals takes place regularly throughout the program and after for one year.

UHS is also empowering its pediatricians and primary care physicians as agents of change in the obesity epidemic. Through a New York State Department of Health grant, **UHS Stay Healthy** is working with providers in five counties (Broome, Chenango, Cortland, Tioga, and Tompkins) for the assessment, prevention, and treatment of childhood and adolescent overweight and obesity. This grant assists providers with the Expert Committee Recommendations that the grant is based on to affect change in key behaviors.



HEALTHY PEOPLE through increased food security

VISION 12

Fewer individuals are experiencing food insecurity.

INDICATORS

12.1 More residents are food secure.

12.2 No residents live in a food desert:

They have access to a grocery store where they can purchase affordable, high-quality, culturally appropriate, and nutritious food.

The direct relationship between increasing rates of food insecurity and increasing rates of diet-related health problems like obesity and diabetes is visible across the country. In 2010, nearly one in five children and one in eight total residents in the region were food insecure. At the same time, the obesity epidemic is growing.

Access to healthy foods can be a challenge: Residents on a tight budget may find it difficult to afford nutritious fresh fruits and vegetables or sources of protein, especially with increasing expenses for other necessities of life. This can leave some households little choice but to choose unhealthy options.

Food deserts exacerbate this problem as the lack of grocery stores in some urban and rural areas makes it even more difficult for some consumers to not only access food but also choose healthy options. Meaningful interventions for this problematic paradox include *increasing* the following: the accessibility of grocery stores through the number of stores and innovative transportation initiatives; the availability of produce (especially local) through hunger relief agencies; and subsidized direct sale initiatives through farmers' markets and CSAs.

Measure: ↑ # and % of food secure individuals.

Findings: Feeding America's *Map the Gap* project estimates that in 2010, nearly 1 in 5 children and 1 in 8 residents in the region were food insecure.⁶⁶ From 2009 to 2010, the estimated % of food insecure children and total residents decreased slightly in every county.

1 in 5 children are hungry	FOOD INSECURE CHILDREN				ALL RESIDENTS, FOOD INSECURE			
	2009 estimates		2010 estimates		2009 estimates		2010 estimates	
	#	%	#	%	#	%	#	%
Broome	9,920	24.3%	8,810	21.6%	26,540	13.6%	26,550	13.2%
Chemung	5,290	26.7%	4,420	22.5%	12,780	14.5%	11,680	13.2%
Chenango	2,870	24.1%	2,540	21.5%	6,770	13.3%	6,430	12.6%
Cortland	2,510	24.5%	2,110	20.3%	6,740	14.0%	6,310	12.8%
Delaware	2,360	25.5%	1,970	21.0%	6,340	13.7%	5,930	12.3%
Otsego	2,780	22.9%	2,330	19.7%	8,040	12.9%	7,540	12.0%
Tioga	2,690	22.3%	2,260	18.8%	5,930	11.8%	5,570	10.8%
Tompkins	3,270	19.5%	2,540	16.3%	13,010	12.9%	12,110	12.0%
Regional Total	31,690		26,980		85,610		82,120	
New York State		22.4%		21.3%		13.5%		14.2%
United States		23.2%		21.6%		16.6%		16.1%

What is food insecurity and what does it look like?



Feeding America undertook the *Map the Gap* project to learn more about the face of hunger at the community level. Feeding America's mission is to feed America's hungry through a nationwide network of member food banks and engage the county in the fight to end hunger.

Food insecurity refers to the USDA's measure of: Lack of access, at times, to enough food for an active healthy life for all household members and limited or uncertain availability of nutritionally adequate foods.

As noted in *Map the Gap*, food insecure households are not necessarily food insecure all of the time. Food insecurity may reflect a household's need to make tradeoffs between important basic needs, such as housing and medical bills and purchasing nutritionally adequate foods.

HEALTHY PEOPLE through increased food security

VISION 12

Fewer individuals are experiencing food insecurity.

INDICATORS

12.3 Residents who need food from food banks and food pantries have increased availability of fresh produce and local healthy meats, such as venison.

12.4 Individuals eligible for SNAP (formerly Food Stamp) benefits are enrolled in the program.

The Federally administered Supplemental Nutrition Assistance Program (SNAP), formerly known as **Food Stamps**, helped over 87,000 low-income residents put healthy food on their tables this year. SNAP is this country's first line of defense against hunger and primarily benefits households with children, seniors, and disabled family members. The economic downturn has kept unemployment and under-employment relatively high and has deepened hunger. Fortunately, SNAP has responded to help meet this need. Nearly one out of seven residents in the region rely on SNAP to help put food on the table. Increases in the SNAP participation rates may be in part due to a streamlined application process, increased outreach and increased use of Electronic Benefits Transfer (EBT) cards.

About 80 percent of funding from the Federal Farm Bill is allocated to SNAP. SNAP is at the heart of the Farm Bill debate, with perspectives centering on cost savings by reducing SNAP benefits versus ensuring adequate food for hungry residents. As of August, 2012, Congress had not yet made a final decision on the Farm Bill, which was due to expire at the end of September.



Frozen Venison
for food banks

Measure: ↑ lbs. of donated venison processed by approved processors for food banks.

Promising Trends: The region's deer population is increasing and venison is a nutritious source of protein. 38% more pounds of venison was donated this year compared to last year. *Calling all hunters:* Continued growth of the venison donation program helps reduce hunger in your community.

Measure: ↑ lbs. of fresh produce distributed by food banks to hunger-relief agencies.

Findings: Each year, nearly 1 million lbs. of fresh produce are distributed by our region's food banks to hunger relief agencies.

Measure: ↑ # and % of eligible individuals receiving Supplemental Nutrition Assistance Program (SNAP) benefits.

Promising Trends: From 2007 to 2012, there was a 62% increase in the number of *eligible* residents in the region receiving SNAP benefits, suggesting an improvement in the program's accessibility. All counties increased their SNAP access/participation rates. Chenango had the highest participation rate in 2012, followed by Chemung County. In only 1 month in 2012, this federal **Food Stamp program provided \$11,573,471 in federal dollars that were spent at local grocers and farmers' markets in the region.**

County	4/2010-3/2011 ⁷⁰		4/2011-3/2012 ⁷¹		2010 ⁷²		2011 ⁷³		April 2007		April 2012		2005-07		2008-10		April 2007		April 2012	
Broome	427		641		211,318		161,161		18,796		29,423		36,687		39,791		51%		74%	
Chemung	956		933		279,261		217,480		10,005		15,137		17,343		16,860		58%		90%	
Chenango	0		1,111		34,848		43,559		5,046		8,245		8,655		9,102		58%		91%	
Cortland	1,078		1,709		48,031		65,133		4,344		7,187		8,305		9,515		52%		76%	
Delaware	0		0		37,135		93,902		2,838		5,895		7,899		8,834		36%		67%	
Otsego	0		0		104,068		139,141		3,392		6,295		10,612		12,957		32%		49%	
Tioga	1,669		1,304		127,443		117,660		3,906		6,230		7,403		7,087		53%		88%	
Tompkins	0		0		140,730		121,020		5,625		9,126		20,091		19,642		28%		46%	
Region	4,130		5,698		982,834		959,056		53,952		87,538		116,995		123,788		46%		71%	

HEALTHY PEOPLE through increased food security

Notable Practices and Programs

Reducing Food Waste, Reducing Hunger through Gleaning

Waste not, want not: Gleaning helps prevent food waste by encouraging farmers to donate surplus produce or unmarketable fruits and vegetables to food banks, pantries, soup kitchens, and nutrition programs. Gleaning programs often use volunteers to harvest the produce.

In 2012, **Glean NY**, a new gleaning program, began as a collaboration among the state's farmers, the Food Bank Association of New York State, the New York Farm Bureau and Cornell University's College of Agriculture and Life Sciences. As of July 2012, twelve Ithaca area farms have signed on. "Partnerships with New York farmers have enabled the food banks to feed millions of people in need," said John Evers, Executive Director of the Food Bank Association of New York State. "Our latest partnership in the area of gleaning would benefit both farmers and the hungry. By working with farmers to harvest crops that otherwise will not be picked, farmers and food banks will be able to tap into a new source of fresh produce for the hungry."⁷⁴



In Tioga County, ACT Meal (Allied Christians of Tioga) provides weekly free meals on a rotating basis throughout the county. They are starting to participate in a farmers' market program to (1) use excess food not sold and either incorporate the food into weekly meals or give it away to people in need, and (2) offer nutrition education in collaboration with Tioga County Cornell Cooperative Extension.

In Tompkins County, the **Friendship Donations Network** has worked with farmers since 1988 to "rescue" produce that would otherwise go to waste and distributes it to low-wage workers, the elderly, and the young. Donated gleaned produce serves 24 programs that feed more than 2,000 people a week. <http://www.friendshipdonations.org>

Growing Food for Donation

The following programs and projects are all successful models of increasing the availability of locally grown, nutritious food for food insecure residents and building community at the same time!

The Food Bank of the Southern Tier's **Plant a Row for the Hungry** program encourages local home gardeners and farmers to plant excess crops for donation to the food bank throughout the season. In 2010, nearly 20,000 pounds of produce was distributed to hungry residents across the Southern Tier through this program.

Farm Catskills **Harvest Days** program utilizes produce from the Delaware Opportunities organic garden (managed by an AmeriCorps member), the Delaware Academy school garden at Smith Pond Park, and local farmers to provide a *preserved* harvest for continued use in programs serving school children and food insecure members of our community. Partners include Delaware Opportunities Community Food Bank Network, Delaware Academy Food Service and Walton First United Methodist Church (WFUMC) Community Soup Suppers.

Tompkins Community Action (TC Action) empowers its consumers to grow their own through its annual **Victory Garden** project. With donations from the Cornell University Horticulture Department, thousands of complimentary vegetable and herb seedlings are distributed to food insecure families. Additionally, the TC Action food pantry regularly distributes nutritious food grown in its on-site garden, which is also used to educate staff on home gardening and seed saving.

Backpack Program for Children



The **Food Bank of the Southern Tier's Backpack Program**: provides children in the free and reduced lunch program with nutritious, kid-friendly food every Friday during the school year to ensure food security over the weekend and during school breaks throughout the school year. <http://www.foodbankst.org/index.asp?pageId=154>

HEALTHY PEOPLE

VISION 13

Residents are protected from food contamination and other hazards, such as genetically modified organism (GMO) products.

INDICATOR

13.1 Farmers selling to institutions, such as schools, have documented certification that they follow safe handling procedures for fruits and vegetables.

Measure:

Pilot program on Bridge the Gap developed, yielding an increase in number of farmers with training and certification that are selling to schools.⁷⁵

Finding a workable food safety protocol is critical for the success of farms selling to institutions. Currently, a farm may grow seven different products, and under the current food safety requirements of **GAP (Good Agricultural Practices)**, that farm would need individual plans for each product.



To address this challenge, a submission has been made to the USDA for a pilot project in FaHN counties to develop a training program in coordination with New York State Department of Agriculture and Markets; the program would be provided at little or no cost to interested farmers, as well as foodservice staff for proper handling of fresh products. The project would also include culinary training in product preservation as a means of expanding the availability of seasonal products.

Frank Wiles and Ray Denniston discuss the pilot GAP Project

VISION 14

Empowered workers in all sectors of the food system are paid livable wages and have safe working conditions.

INDICATOR

14.1 Food system jobs are plentiful and earnings for a food system employee are at least equal to the average for all employees in the county.

Measures:

Increase in number of people working in the food system
Increase in average annual earnings for food system employees

Findings: In 2010, **21,473 people were employed throughout the region and had earnings of over \$351,191,813.** This NYS Dept. of Labor data is from employers covered under the NYS Unemployment Insurance Law and does not include the additional farmers and other entrepreneurs who work in the food system and do not have employees.⁷⁶

Employees working in agriculture: Regionwide, no significant change: 1,168 in 2009 vs. 1,164 in 2010. The 1,164 employees earned an average of \$29,048 in 2010. Tompkins County had the greatest number of employees working in agriculture (469) and the highest average earnings per employee (\$35,960). In all counties the average earnings of employees working in agriculture were lower than the average earnings for all employees in the county.

Employees working in food services represented the highest number of employees in the food sector. Regionwide, 18,304 people worked in the food services sector in 2010, up from 17,833 in 2009. Their regional average earnings were only \$13,257 in 2010. This represents about a third of the average earnings for employees in all sectors in each county. Due to the sheer number of food service employees, their earnings totaled \$242,663,289 in 2010.

Employees working in food manufacturing totaled 2,005 in 2010 in the region, with average annual earnings of \$37,265. Broome had the greatest number of employees (892) and the highest average earnings per employee (\$44,883), followed by Chenango County with 286 employees in 2010 and \$41,210 in average earnings. Overall, employees in food manufacturing had total earnings of \$74,716,478 in 2010.

The New York Center for Agricultural Medicine & Health (NYCAMH) provides agricultural safety and health training for farm workers in New York. NYCAMH estimates that there are around 100,000 agricultural workers in the state. "Every year, NYCAMH is able to provide agricultural safety training to approximately 4,500 members of the New York farm community. We definitely feel that there is a gap in occupational safety training for the New York agricultural community. Also, with the current state of the economy at this time, this gap in training is likely to increase as our funding sources for NYCAMH are under the very real threat of budget cuts both at the state and national level. It is important to note that agriculture is currently ranked as the most hazardous industry in the United States...."

James Carrabba, NYCAMH Agricultural Safety Specialist, Education Coordinator

HEALTHY PEOPLE through sound public policies

VISION 15:

Local, school district, county, state, and federal policies and funding incentives promote consumption of healthful food and this vision for healthy people.

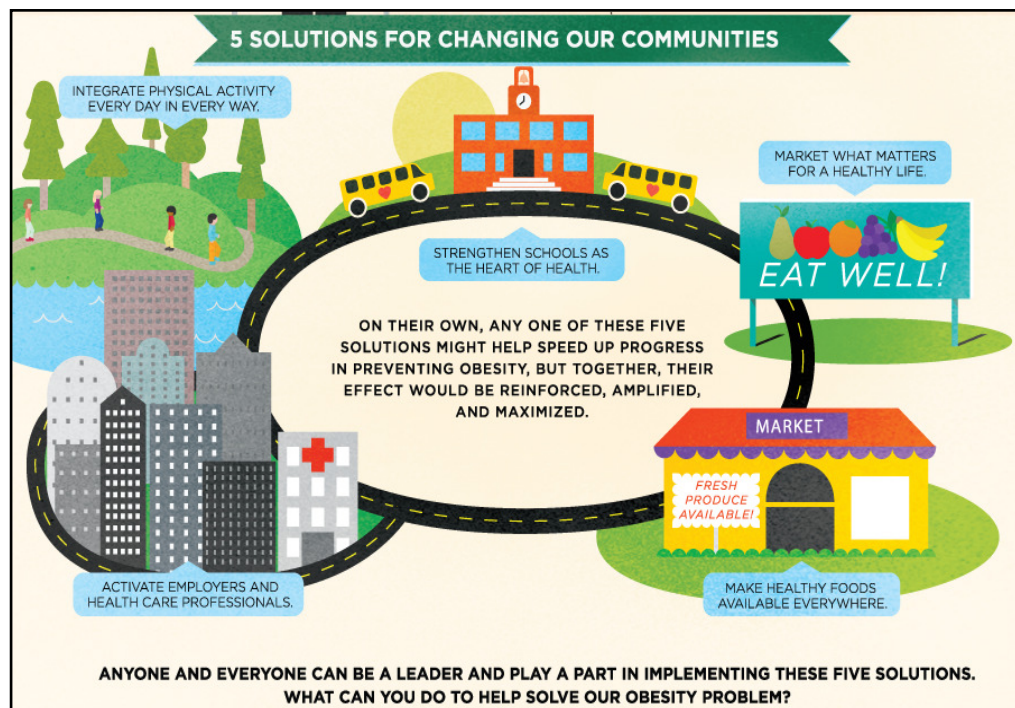
INDICATOR

15.1 Public policies, funding, and marketing promote purchase and consumption of nutrient-rich foods and discourage purchase and consumption of sugared soft drinks and other high-calorie/nutrient-poor choices.

Measure:

Public support of school districts' wellness policies and efforts to provide children and youth with nutrient rich foods.

Findings: At the national level, the well-respected Institute of Medicine of the National Academies released the 2012 Consensus Report on *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation*. This policy report recognizes that challenges are complex and cannot be solved effectively by only one sector in isolation. Rather, solutions require the collaborative action of many sectors in each community. Public support of school district policies and needed resources is essential for improving the health of our area's children, as depicted in the Institute of Medicine's graph below.⁷⁷



Notable Programs, Studies, and Policies

Transparent, Comprehensive, Relevant, and Robust Information for Creating Effective Public Policies

In 2011, under Governor Cuomo's leadership, the New York State Department of Health launched a new website to make critical health status and health services data more accessible to the public. It is called the **METRIX** project (Maximizing Essential Tools for Research Innovation and eXcellence). <http://www.health.ny.gov.metrix>

The intent is to improve stakeholder access to key data such as student overweight and obesity rates used in this assessment, and other information such as from the Behavioral Risk Factor Surveillance System and the Healthy Neighborhoods Program.

By strategically using data and engaging academic researchers, county health departments, health care providers, community-based organizations, and consumers, the New York State Department of Health will be able to develop targeted policies and projects that improve the health and quality of life of residents. For example, researchers interested in studying obesity prevention in adults might use the Behavioral Risk Factor Surveillance System to explore the relationships between risk factors such as poor mental health, inadequate sleep, diet, and other modifiable risk factors for chronic disease. The results could result in more effective policies and programs for preventing obesity in each county.

Toolkits for Schools

The Robert Wood Johnson Foundation's Center to Prevent Childhood Obesity offers toolkits to help schools reverse the trends in childhood obesity. <http://www.rwjf.org/childhoodobesity/product.jsp?id=74285>

Impact of State Laws

State policies can have a positive effect on childhood obesity: In 2012, the journal *Pediatrics* published a study of 6,300 5th and 8th grade students in 40 states. The study concluded that laws regulating school nutrition content may reduce adolescent BMI if they are comprehensive, contain strong language, and are enacted across grade levels.⁷⁸

THE NEXT STEPS

This 2012 Regional Food System Assessment is designed for interdisciplinary learning, program development, and evaluation for individuals and organizations from many sectors and perspectives. The Food and Health Network of South Central New York plans to continue updating the Regional Food System Assessment in future years and hopes to expand the work to include development of a food system plan—a blueprint for the future. Over time, the assessment’s indicators and their related measures will likely be refined and become more adaptable to measure actual “on the ground” changes. Discussions at Food and Health Network meetings and conferences have led to suggestions for use of more refined and additional measures to add to future assessments when resources and data are available. *Critical to this pursuit is a unified effort among stakeholders across the region and state for primary data collection and regular tracking of credible, accurate, publically available data for the most meaningful measures possible.* Regional and local food networks, coalitions, and policy councils across New York all have a role to play in working toward a common set of data for regional and statewide collection and sharing insights on emerging trends, issues, and even definitions. This presents a meaningful opportunity to cultivate a collective voice across the state in support of healthy local and regional food systems.

Potential future measures include the following:

Healthy Environments

Increase in number and percent of acres of land that certified organic farmers set aside for native pollination.

Decrease in amount of plastic waste on farms.

Increase in number of collaborative composting programs.

Increase in number and percent of households that compost waste.

Increase in municipal policies for composting at the home and institutional level.

Increase in number of counties completing Agricultural Environmental Management (AEM) report cards.

Decrease in food miles.

Economic Vitality

Increase in number of agriculture supported businesses and organizations, such as equipment, feed, seed, and veterinary assistance.

Increase in availability and use of public dollars for agriculture training.

Increase in percent of young farmers; decrease in average age of farmers.

Increase in number of jobs through value-added product processing.

Beginning farmer training programs: Average age of participant. Increase in number and percent of training program graduates who are currently farming.

Increase in number of new or expansion of existing training programs at community colleges and BOCES for food processing.

Increase in number of jobs through value-added product processing and agritourism.

Increase in number of beginning producers utilizing farm and food incubators.

Increase in number of slaughterhouses and processors that are cash-positive and have adequate business to operate year-round. Slaughterhouses reach carrying capacity through growth of infrastructure. Increase in number of USDA conventional and certified organic slaughterhouses within approximately 100 miles of most conventional and certified organic farms in the region.

Increase in number of small- and mid-sized ventures producing value-added products. Increase in sales of value-added products including cheese, wine, and beer. Increase in amount of fluid milk production devoted to value-added production. Increase in number of on-farm creameries.

Increase in availability and use of economic development dollars for processing, distribution, and hubs.

Increase in percent of active farm acres; decrease in percent of inactive acres on farms.

Farm to Consumer Connections

Increase in number of home gardens.

Increase in availability of open space suitable for urban agriculture.

Increase in wholesale activity: Local food purchased by school districts, colleges and universities, health care facilities, senior centers, restaurants, and other institutions as well as larger retail stores, such as Price Chopper, Weis, and Wegmans.

Increase in percent of food purchased by consumers that is local, by income level.

Increase in number of municipalities, universities, other institutions, and restaurants with policies that support increased purchase of healthy, local foods.

Healthy People

Increase in amount of healthful food obtained through gleaning programs.

Decrease in number of food deserts: Note that USDA’s Economic Research Service’s definition of a food desert appears inadequate for the region. A more nuanced definition of a food desert is needed, perhaps building on the work of Mari Gallagher.

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- 1 **Source:** Ellsworth, S. & Feenstra, G. (2010). Assessing the San Diego County Food System: Indicators for a More Secure Future. Retrieved February 19, 2011, from <http://sandiegofoodsystem.com>.
- 2 **Source:** US Census Bureau. State and County Quick Facts. Retrieved July 28, 2011, from http://quickfacts.census.gov/qfd/maps/new_york_map.html.
- 3 **Source:** US Census Bureau. State and County Quick Facts. Retrieved July 28, 2011, from http://quickfacts.census.gov/qfd/maps/new_york_map.html.
- 4 **Source:** Kids Well-Being Indicators Clearinghouse, NYS Council on Children and Families. Retrieved July 28, 2011, from http://www.nyskwic.org/get_data/county_report.cfm.
- 5 **Source:** US Census Bureau. State and County Quick Facts. Retrieved July 28, 2011, from http://quickfacts.census.gov/qfd/maps/new_york_map.html. **Note:** Includes: American Indian and Alaska Native, Black or African American, Asian, Native Hawaiian and other Pacific Islander, and persons of Hispanic or Latino origin.
- 6 **Source:** Bills, N. L., Fick, G.W., Lembo, A. J., Peters, C. J., & Wilkins, J. L. (2011). Mapping potential foodsheds in New York State by food group: An approach for prioritizing which foods to grow locally. Cambridge University Press.
- 7 **Note:** Values modeled after the “Whole Measures for Community Food Systems” Fields and Practices, prepared by the Community Food Security Coalition, retrieved February 12, 2011, from <http://foodsecurity.org/pub/WholeMeasuresCFS-web.pdf>, and the “Charting Growth to Good Food” Values and Definitions, prepared by the Wallace Center, retrieved February 12, 2011, from <http://www.wallacecenter.org/our-work/past-initiatives/sustainable-food-indicators/sustainable-indicators-report/CHARTING%20GROWTH%20BOOK%20final%20with%20charts.pdf>.
- 8 **Source:** US Census of Agriculture, Table 8. **Note:** 2002 data is not used since it is not comparable with 2007 data, due to changes in definitions.
- 9 **Source:** US Census of Agriculture, Table 44. **Note:** The total number of livestock farms from Table 1 of the US Census of Agriculture includes the number of farms reporting beef cows, milk cows, sheep and lambs inventory.
- 10 **Source:** Fick, G.W., Peters, C.J., & Wilkins, J. L. (2008). Land and Diet: What’s the most land efficient diet for New York State? Rural New York Minute. (19). Cornell University Community & Rural Development Institute (CaRDI).
- 11 **Source:** 2007 Nitrogen Balance: Chase, L.E. , Czymmek, K.J, Ketterings, Q.M., Swink, S.N., & van Amburgh, M. E. (2011). Nitrogen balances for New York State: Implications for manure and fertilizer management. Journal of Soil and Water Conservation 66(1): 1-17. **Source:** 2002 N balance and 2007 P balance: Correspondence with Quirine Ketterings and Sheryl Swink, Nutrient Management SPEAR Program, Cornell University. **Source:** 2002 Phosphorus balance: Journal Article: Chase, L.E., Czymmek,K.J., Ketterings, Q. M., Mekken, J.C. * & Swink*, S.N. (2009). Past and future phosphorus balances for agricultural cropland in New York State. Journal of Soil and Water Conservation 64(2):120-133. **Note:** Data is rounded to the nearest 10th.
- 12 **Source:** US Census of Agriculture, Table 44.
- 13 **Source:** US Census of Agriculture, Table 43. **Note:** Certified organic information was not collected in the 2002 Census. N/A for Chemung County means that the data are suppressed to avoid risk of disclosing an individual respondent’s data. This might occur if a farm was large enough to dominate the cell total.
- 14 **Note:** Background information on the environmental value of organic farming from the National Resources Defense Council, retrieved July 31, 2012, from <http://www.nrdc.org/health/farming/forg101.asp>, and the Food and Agriculture Organization of the United Nations retrieved July 31, 2012, from <http://www.fao.org/organicag/oa-faq/oa-faq6/en/>.
- 15 **Source:** US Census of Agriculture, Table 44.
- 16 **Source:** ChesapeakeStat, retrieved July 10, 2012, from http://stat.chesapeakebay.net/?q=node/130&quicktabs_10=1.
- 17 **Source:** ChesapeakeState, retrieved July 10, 2012 from <http://stat.chesapeakebay.net/sites/all/cstat/milestones/factsheets2011/NY.pdf>.
- 18 **Source:** Mark Wittig (Manager, Cayuga Compost), email to author, June 26, 2012.
- 19 **Source:** Susan McIntyre (Solid Waste Director, Delaware County Solid Waste Management Center and Compost Facility), email to author, June 25, 2012.
- 20 **Source:** NYS Compost Facilities Map, prepared by Cornell Waste Management Institute, retrieved June 26, 2012, from <http://compost.css.cornell.edu/maps.html>. **Source:** Phone calls to universities, hospitals, and county Cornell Cooperative Extension offices for the 8 FaHN Counties.
- 21 **Source:** Friedman, Thomas. Get it Right on Gas. The New York Times, August 5, 2012.
- 22 **Source:** Editorial. Drilling in New York. The New York Times, June 13, 2012. Retrieved July 20, 2012, from <http://www.nytimes.com/2012/06/14/opinion/drilling-in-new-york.html>.

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- 23 **Source:** FracTracker, retrieved July 20, 2012, from <http://www.fractracker.org/fractracker-maps/ny-moratoria>. Map prepared by Karen Edelstein.
- 24 **Source:** Karen Edelstein, emails to author, June 2012. Data sources include Broome County GIS, Citizen's Campaign for the Environment, Otsego County Conservation Association, Tioga County GIS Division, www.Tcgasmap.org, and Cornell University's Geospatial Information Repository. **Note:** The lease data were compiled in 2010 and do not reflect leases that have been released, terminated, expired, or newly created since that time.
- 25 **Source:** US Census of Agriculture, Table 2.
- 26 **Source:** Fick, G.W., Peters, C.J., & Wilkins, J. L. (2008). Land and Diet: What's the most land efficient diet for New York State? Rural New York Minute. (19). Cornell University Community & Rural Development Institute (CaRDI).
- 27 **Source:** US Census of Agriculture, County Profiles.
- 28 **Source:** DiNapoli, Thomas P. "Agriculture by the Numbers: New York Farming is Big Business," Report 7-2013, Office of the State Comptroller, August 2012. Retrieved August 29, 2012, from <http://www.osc.state.ny.us/osdc/rpt7-2013.pdf>.
- 29 **Source:** US Census of Agriculture, Table 8; also source for "Cropland as % of total acres on farms."
- 30 **Source:** US Census of Agriculture. Table 4. **Note:** Farms with total production expenses equal to total market value of agricultural products sold, government payments, and farm-related income are included in farms with net gains.
- 31 **Source:** US Census of Agriculture, Table 2: Value of Agricultural Products Sold including Direct Sales, 2007 and 2002. **Note:** As defined by the FaHN Task Force, after extensive discussion.
- 32 **Source:** Atlas of Rural and Small Town America, retrieved July 15, 2011, from <http://www.ers.usda.gov/data/ruralatlas/download.htm>.
- 33 **Note:** The percentage of young farmers is considered a better measure than the average age of farmers, but as of 2012, data were not available.
- 34 **Source:** US Census of Agriculture, Tables 48, 50, 51, 52, 53, 54. **Note:** Minority categories include: American Indian or Alaska Native; Asian; Black or African American; and Spanish, Latino, or Hispanic Origin.
- 35 **Source:** US Census of Agriculture, Tables 48, 50, 51, 52, 53, 54. **Note:** Minority categories include: American Indian or Alaska Native; Asian; Black or African American; and Spanish, Latino, or Hispanic Origin
- 36 **Source:** US Census of Agriculture, 2007, County Profiles.
- 37 **Note:** The percentage of young farmers is considered a better measure than the average age of farmers, but as of 2012, data were not available.
- 38 **Source:** Lauren Lines (Executive Director, Central New York Resource Conservation & Development), email to author, June 28, 2012. **Source:** Rachel Whiteheart (Intern, Cornell Small Farms), email to author, July 17, 2012. **Source:** Joanna Green (Director, Groundswell Center for Local Food & Farming), email to author, July 19, 2012. **Note:** Data for Cornell Small Farms classes is inaccurately low, as noted in email from Rachel Whiteheart, due to incomplete records for classes.
- 39 **Source:** Charting Growth: Sustainable Food Indicators. Final Project Report April 2009. Wallace Center Winrock International. Retrieved February 12, 2011, from <http://www.wallacecenter.org/our-work/past-initiatives/sustainable-food-indicators/sustainable-indicators-report/CHARTING%20GROWTH%20BOOK%20final%20with%20charts.pdf>.
- 40 **Note:** HACCP stands for Hazard Analysis and Critical Control Points, which define the requirements for effective control of food safety. These requirements are the basis for HACCP certification.
- 41 **Source:** Barham, J., Tropp, D., Enterline, K., Farbman, J., Fisk, J., & Stacia Kiraly. Regional Food Hub Resource Guide. US Department of Agriculture, Agricultural Marketing Service. Washington, DC. April 2012.
- 42 **Source:** Cuomo, Andrew. Farm NY: Growth Through Innovation. The New NY Agenda, 2010. Retrieved August 10, 2012, from http://www.andrewcuomo.com/system/storage/6/9c/f/1232/andrew_cuomo_farm_ny_agenda.pdf.
- 43 **Source:** DiNapoli, Thomas P. Bet on the Farm: Farmland Protection as a Strategy for Economic Growth and Renewal. Office of the State Comptroller, October 2010. Retrieved August 10, 2012, from http://www.osc.state.ny.us/press/releases/oct10/bet_the_farm_report1010.pdf.

44 **Source:** Southern Tier Regional Economic Development Council Announces Funding for Community Revitalization & Job-Creating Projects. The New NY Works for the Southern Tier press release, August 16, 2012. Retrieved August 29, 2012, from <http://regionalcouncils.ny.gov/generic/08162012Southern-Tier-press-release>.

45 **Source:** US Census of Agriculture, Table 2; also the source for % of sales that are direct farm to consumer sales and # of farms with direct farm sales.

46 **Source:** USDA Food Environment Atlas

47 **Source:** 2012 Guide to Foods Produced in the Finger Lakes & Southern Tier. Cornell Cooperative Extension South Central NY Agriculture Program. Retrieved July 17, 2012 from <http://ccetompkins.org/agriculture/buy-local/guide-local-foods>.

48 **Source:** Diane Eggert (Farmers' Market Federation of New York), email to author, August 31, 2012. **Source:** Phone calls to county Cornell Cooperative Extension offices for the 8 FaHN Counties.

49 **Source:** Diane Eggert (Farmers' Market Federation of New York), email to author, August 31, 2012. **Source:** Phone calls to county Cornell Cooperative Extension offices for the 8 FaHN Counties.

50 **Source:** Diane Eggert (Farmers' Market Federation of New York), email to author, August 31, 2012.

51 **Source:** Matthew Griffin (Director of Agency Services & Programs, Food Bank of the Southern Tier), email to author, August 23, 2012. Origination of data is the NYS Department of Health.

52 **Source:** Food and Health Network Regional Community Garden Survey.

53 **Source:** Food and Health Network Regional Community Garden Survey.

54 **Source** for restaurant listings: Members of the Food and Health Network of SCNY, organizations, and individuals, emails to author, August 2012, in response to a FaHN request for the names of restaurants and other institutions that regularly serve local foods on their menu.

55 **Note:** The importance of food safety cannot be overstated: It is crucial to maintaining a healthy population, supporting the institutional purchasing of locally produced food, and cultivating a sense of trust in our food system. Promoting responsible and ethical production practices is a notable contributor to food safety as are food safety policy measures. Equally important is the importance of food safety policies that take into account the differences between small and large food production and manufacturing operations

56 **Source:** Expanded Risk Factor Surveillance System (BRFSS), New York State Department of Health. Retrieved August 12, 2012, from <http://www.health.ny.gov/statistics/chac/general/overwt.htm>. **Note:** Based on percent of obese children in WIC (≥ 95 th Pctl.) 2-4 years, Low SES.

57 **Source:** 2008-2010 Student Weight Status Category Reporting System (SWSCR), New York State Department of Health, METRIX, Center for Community Health. Note: The SWSCR County Data set for school years 2008-10 is made available through METRIX and includes data from the first two years of mandatory reporting. The SWSCR Overview notes that the county-level estimates represent the percentage of students reported within a weight status category reported to the SWSCR system during the 2008-09 and 2009-10 school years. These data should not be considered to represent all school aged children attending school in that county because of: restrictions in reporting due to the Family Educational Rights and Privacy Act, parents/guardians ability to request that their child's weight status data be excluded from reporting and other sources of missing data. The New York State Department of Health makes no representation, warranty or guarantee relating to the data or analyses derived from these data.

58 **Source:** 2008-2010 Student Weight Status Category Reporting System (SWSCR), New York State Department of Health, METRIX, Center for Community Health. Note: The SWSCR County Data set for school years 2008-10 is made available through METRIX and includes data from the first two years of mandatory reporting. The SWSCR Overview notes that the county-level estimates represent the percentage of students reported within a weight status category reported to the SWSCR system during the 2008-09 and 2009-10 school years. These data should not be considered to represent all school aged children attending school in that county because of: restrictions in reporting due to the Family Educational Rights and Privacy Act, parents/guardians ability to request that their child's weight status data be excluded from reporting and other sources of missing data. The New York State Department of Health makes no representation, warranty or guarantee relating to the data or analyses derived from these data

59 **Source:** Expanded Behavioral Risk Factor Surveillance System (BRFSS), New York State Department of Health. Retrieved August 12, 2012, from www.health.ny.gov/statistics/prevention/obesity/about.htm. **Note:** Estimated # of obese adults rounded to the nearest hundred.

60 **Source:** The Facts about Overweight and Obesity Rates Among Upstate New York Adults. Excellus, Fall 2009. **Note:** The prevalence data is from BRFSS, 2007. This data is used because of the useful comparison among other upstate New York regions. The Southern Tier Counties in this report are Broome, Chenango, Chemung, Schuyler, Steuben and Tioga.

61 **Source:** State Indicator Report on Fruits and Vegetables. Centers for Disease Control and Prevention, DHHS, 2009. Data is from the 2007 Youth Risk Behavior Surveillance System.

62 **Source:** The Facts about Upstate New York Adults Diagnosed with Type 1 and Type 2 Diabetes and Estimated Treatment Costs. Excellus, Winter 2010. **Note:** the prevalence data is based on NYSDOH 2008 BRFSS data. This data is used because of the useful comparison among other upstate New York regions. The Southern Tier Counties in this report are Broome, Chenango, Chemung, Schuyler, Steuben and Tioga.

63 **Source:** Expanded Behavioral Risk Factor Surveillance System (BRFSS) July 2008 -June 2009 data. New York State Department of Health, December 2009. Retrieved August 12, 2012, from www.health.ny.gov/statistics/prevention/obesity/about.htm.

64 **Source:** Expanded Behavioral Risk Factor Surveillance System (BRFSS), July 2008-June 2009 data. New York State Department of Health, December 2009. Retrieved August 12, 2012, from www.health.ny.gov/statistics/prevention/obesity/about.htm.

65 **Note:** Upstate NY means exclusive of New York City. Diabetes rates are based on a random sample of residents in each County and defined as ever having been told by a doctor that respondent had diabetes, excluding pre-diabetes and women with diabetes only when pregnant.

66 **Source:** Map the Meal Gap. Feeding America, 2010 and 2011. Retrieved July 19, 2011 and July 17, 2012, from <http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap.aspx>. **Note:** Food Security is defined as the USDA's measure of lack of access at times to enough food for an active, healthy lives for all household members; limited or uncertain availability of nutritionally adequate foods.

67 **Source:** Temporary and Disability Assistance Statistics, Table 16. April 2012 and April 2007. New York State Office of Temporary and Disability Assistance. Retrieved July 18, 2012, from www.otda.ny.gov/resources/caseload/2012/2012-04-stats.pdf and www.otda.ny.gov/resources/caseload/2007/2007-04-stats.pdf.

68 **Source:** Poverty Status in the Past 12 Months, 2005-07 and 2008-10. American Community Survey 3-Year Estimates. American Fact Finder, U.S. Census Bureau.

69 **Note:** This percentage is the number of individuals who benefitted from SNAP in the given month divided by the estimated number of individuals living below 125% of the Federal Poverty Level. 3-year average estimated number of people below 125% of poverty is used for the county level estimates and is the best available estimate for the number of people eligible for SNAP benefits.

70 **Source:** Matthew Griffin (Director of Agency Services & Programs, Food Bank of the Southern Tier), email to author, July 21, 2011. **Note:** Food Bank of the Southern Tier includes Broome, Chemung, Tioga, and Tompkins Counties; Central New York Food Bank includes Chenango and Cortland Counties; Regional Food Bank of Northeastern New York includes Delaware and Otsego Counties.

71 **Source:** Matthew Griffin (Director of Agency Services & Programs, Food Bank of the Southern Tier), email to author, August 1, 2012. **Note:** Origination of data is the Venison Donation Coalition.

72 **Source:** Matthew Griffin (Director of Agency Services & Programs, Food Bank of the Southern Tier), email to author, July 21, 2011. Email to author from same July 27, 2012 corrected the 2010 pounds of produce for Delaware and Otsego Counties; this correction is reflected in the table.

73 **Source:** Matthew Griffin (Director of Agency Services & Programs, Food Bank of the Southern Tier), email to author, July 27, 2012.

74 **Source:** "Glean NY" partnership rallying growers to help those in need." Cornell University press release, July 12, 2012. Retrieved August 2, 2012, from <http://www.pressoffice.cornell.edu/releases/release.cfm?r=67562&y=2012&m=7>.

75 **Note:** The importance of food safety cannot be overstated: It is crucial to maintaining a healthy population, supporting the institutional purchasing of locally produced food, and cultivating a sense of trust in our food system. Promoting responsible and ethical production practices is a notable contributor to food safety as are food safety policy measures. Equally important is the importance of food safety policies that take into account the differences between small and large food production and manufacturing operations.

76 **Source:** Quarterly Census of Employment and Wages, prepared through a cooperative program between the NYS Department of Labor and the US Census of Labor Statistics. Retrieved August 8, 2012, from <http://www.labor.ny.gov/stats/lscqew.shtm>. **Note:** Food Manufacturing data for Chemung and Delaware Counties is for 2006, the most recent available data; all other data is for 2009 and 2010. 2011 data was not used since it is provisional and subject to change. Individuals interested in the county specific data should contact the Rural Health Network for a detailed table.

77 **Source:** "Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation." Consensus Report of the Food and Nutrition Board, Institute of Medicine, National Academy of Sciences, May 8, 2012.

78 **Source:** Chaloupka, F.J., Chiqui, J.F., Perna, F.M., Powell, L.M., & Taber, D.R. "Weight Status Among Adolescents in States That Govern Competitive Food Nutrition Content." Official Journal of the American Academy of Pediatrics, August 13, 2012. Retrieved August 20, 2012, from <http://pediatrics.aappublications.org/content/early/2012/08/08/peds.2011-3353.abstract>.

GLOSSARY

Community supported agriculture (CSA): CSA models vary, but in general community supported agriculture programs allow consumers to act as shareholders of farms, thus sharing the risks and benefits of the farm with the farm owner(s). In the traditional model, shareholders pay for their share in full at the beginning of the season and receive shares of the harvest throughout the growing season. Innovative models are finding ways to make CSAs affordable for consumers of all demographics throughout the year.

Food desert: Generally, food deserts serve as a label for areas in which consumers have difficulty accessing food retailers that offer nutritious, affordable food. Food deserts are difficult to precisely define because the ability of consumer to access affordable, nutritious foods depends on several factors, including (as noted by the USDA) the distance between food retailers and the consumer, the consumer's travel patterns, individual consumer characteristics (income level, access to a vehicle, disability status), and neighborhood characteristics (public transportation, sidewalk availability and crime patterns).

Food secure: The USDA specifies varying degrees of food security and food insecurity as defined by reported indications of changes in diet and food intake. Food insecurity is the USDA measure of lack of access, at times, to enough food for an active, healthy life for all household members, i.e., limited or uncertain availability of nutritionally adequate foods.

Hubs: The working definition from the Know Your Farmer, Know Your Food Regional Food Hub Subcommittee is a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products.

Nutrient-dense: Nutrient-dense foods have a high nutrient to calorie ratio, i.e. foods that are rich in nutrients relative to calorie content.

Mid-scale producers: The ideal role of mid-scale farms is to produce at a scale that is profitable for the farm and affordable for consumers, without severely damaging the environment or compromising the health of employees and livestock. Ultimately, this depends on many factors, including the type of production and the number of acres available for production. For the purposes of this report, mid-scale producers are defined as farms with gross annual sales of \$100,000-\$500,000.

Organic: As defined by the USDA, organic food has been produced through approved methods that integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used. Many farms practice organic agriculture but do not have the USDA certification, which requires annual inspection and fees.

Serving: Serving sizes as recommended by the USDA vary depending on the type of food and an individual's age and sex. For fruits, the recommended daily serving for individuals who exercise for 30 minutes or less per day is 1-2 cups (according to age and sex); for vegetables, the recommended daily serving is 1-3 cups (according to age and sex).

SNAP/EBT: The Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp Program, provides food and nutrition assistance for low-income individuals. Electronic Benefits Transaction is an electronic system that automates the delivery, redemption, and reconciliation of public benefits.

Value-added: In this report, value-added products refer to one of the following (adapted from the USDA definition): a) A change in the physical state or form of a product (e.g. cheese, yogurt, slaughtered livestock for sale as meat, preserves, flours); b) the production of a product in a manner that enhances its value, as demonstrated through a business plan (e.g. organic products).

Value chain: As defined by the National Good Food Network, a value chain is a supply chain that is designed to link supply with markets efficiently, but to do so while promoting the values of *equity and fair pay* for farmers, farm workers, food producers, and workers in the chain; *ecological sustainability* on the farm and in production practices; *community capacity* to better meet and to build a more self-reliant economy; and *health and food access for all*, especially those with limited means.

The Food & Health Network works to develop a thriving, healthy, and food secure regional food system.



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2012 Food & Health Network Members

Organizational Members:

- Binghamton Regional Sustainability Coalition
- Broome-Tioga BOCES Food Service
- Broome County Council of Churches
- Broome County Health Department
- Center for Agricultural Development & Entrepreneurship
- Chenango County Health Department
- Chenango Health Network
- Comell Cooperative Extension - Chenango
- Comell Cooperative Extension - Cortland
- Comell Cooperative Extension - Tioga
- Comell Cooperative Extension - Tompkins
- Engelbert Farms, LLC
- Food Bank of the Southern Tier
- Hatherleigh Foundation
- Lost Dog Cafe
- Morrison Healthcare Foodservices at Lourdes Hospital
- Northeast Organic Farming Association-New York
- NRCS/USDA & Grazing Lands Conservation Initiative
- Rural Health Network of South Central New York
- Seven Valleys Health Coalition
- Tioga County Health Department
- Tompkins Community Action

Individual Members:

- Susan Adair, Program Evaluation & Community Research
- Diane Albrecht, Community Volunteer
- Donna Bates, Office for Aging - Broome
- Susan Beaudoin, Community Volunteer
- Laura Biasillo, Comell Cooperative Extension - Broome
- Ray Denniston, Broome-Tioga BOCES Food Service
- Nancy Eckstrom, Community Volunteer
- Matt Griffin, Food Bank of the Southern Tier
- Sonia Janiszewski, Farm Catskills
- Amelia LoDolce, City of Binghamton & VINES
- Dan Maskin, Opportunities for Otsego
- Sue Paredes, United Health Services
- Jeff Piestrak, Albert R. Mann Library, Comell University
- Jack Salo, Rural Health Network

