



# 2011 Regional Food System Assessment *for South Central New York*





## 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 evident in 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 *integrate* 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*

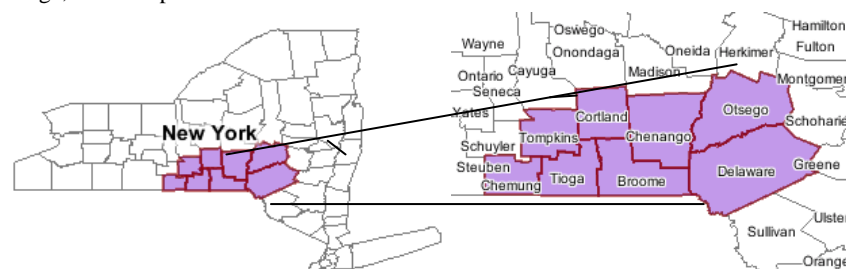
**Economic Vitality:** 5,328 farms, farming 502,916 acres generated \$370,571,000 in 2007, up 21% from 2002. However, less than half of farms reported net gains in farm income in 2007.

**Food Security:** Food banks distributed 1,873,327 lbs. of fresh produce to hunger relief agencies in 2010. Despite this, 1 in 8 residents are food-insecure, and only 63% of eligible individuals receive SNAP (food stamp) benefits.

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

**Healthy People:** 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. The percent of obese preschool children in every county is higher than the NYS goal of less than 11.6%

**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. FaHN is a coalition of organizations and individuals from many sectors of the food system who work together to create food-secure communities and improve the quality of life in the region. The group supports practices, projects, and policies leading to increased use of nutritious and locally produced foods. See [www.foodandhealthnetwork.org](http://www.foodandhealthnetwork.org). We serve the following eight counties, all of which are included in the assessment: Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Tioga, and Tompkins.





The FaHN **Food System Assessment** (FSA) is a priority in the group's 2011 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."<sup>1</sup> 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.

### Goals of the 2011 FaHN FSA

- Establish baseline regional food system information that can be easily replicated and measure progress over time.
- Provide a tool for 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.
- 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 <sup>2</sup>	Sq. miles	Pop. density: people/sq. mile, 2010 <sup>3</sup>	% of total pop. in poverty, 2009	% of children & youth < 18 yrs. in poverty, 2009 <sup>4</sup>	% of racial minority pop., 2010 <sup>5</sup>
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.

## Agricultural Overview and the Role of Dairy

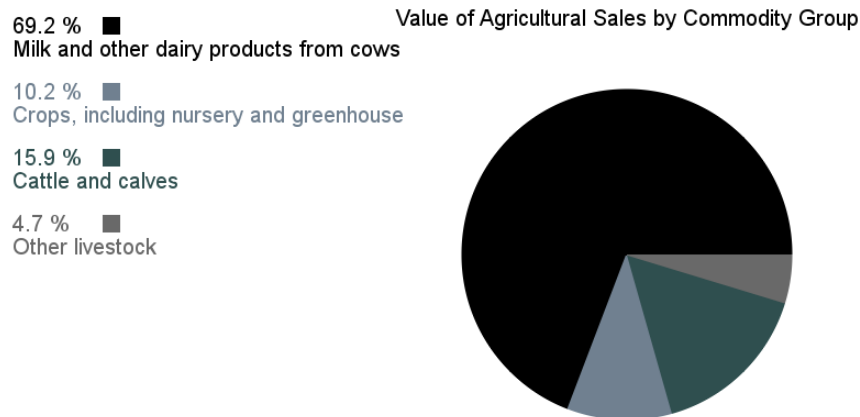
Agriculture is an essential part of South Central New York's economy. In 2007, 5,328 farms generated \$370,571,000 in sales.<sup>6</sup> Multiplier effects suggest that the economic impact of agriculture in our area is approximately two times greater than the value of these sales. Farming positively 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).<sup>7</sup> 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, 2007<sup>8</sup>: **\$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° and -20°F) with small portions in Zone 4 (average annual minimum temperature between -20° and -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.

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.<sup>9</sup>

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.

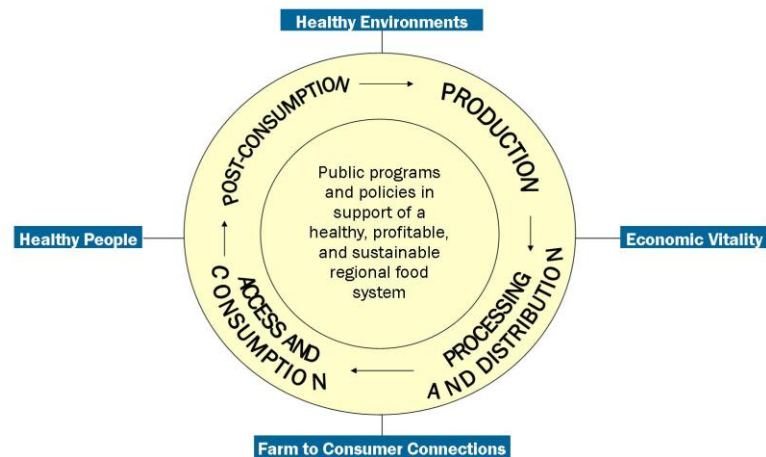
## Food System Assessment Overview

With several model assessments in mind, four broad vision statements were developed as a means for organizing the indicators in this FSA:<sup>10</sup>

- **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.



Ithaca Farmers' Market



## 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. 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 Task Force is grateful for their insights. The whole FaHN also offered substantive input and was responsible for reviewing the final draft report recommended by the Task Force.

## Indicators

Food system stakeholders identified key indicators that best supported the visions of healthy environments, economic vitality, farm to consumer connections, and healthy people. To the extent possible the indicators meet the following criteria:

- Reliable and credible source of data, with data regularly collected to determine trends
- Data publically 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 appropriately measure that which is reflective of a strong regional 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 the collection of data *at the source*, then made publically available and easily accessible, will improve the ability of varied entities throughout the state to conduct food system assessments with limited resources.

## 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 in conjunction with 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 become our ideal definition of a regional food system.

The intent is for future FaHN food system assessments to build on this product and particularly address indicators that identify specific needed interventions: These “on the ground” interventions help measure progress over time better than broad, framing indicators. It is important to review this FSA with all of these considerations. The most enlightening insights will surely come with an awareness of the many nuances that exist in food systems and this FSA.

## Issues Affecting Healthy Environments

### *Hydraulic Fracturing*

Planned natural gas extraction in the Marcellus Shale, which includes the FaHN region, 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, as described in our Healthy Environments policy indicator, will ensure the protection of our regional foodshed.

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 eventually 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.

### *Importance of Grass-Fed Beef and Dairy Operation*

As previously noted, 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 forage crops and pasture (rather than with grain-based feed) is the method best-suited to our land for converting local plant energy into local food for consumption. 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 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.<sup>11</sup> 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.

## Issues Affecting Economic Vitality and Farm to Consumer Connections

The national trend of farm consolidation and corporatization has endangered small- and mid-scale 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.
- **Mid-scale producers:** The ideal role of mid-scale farms is to produce at a scale profitable for the farm and affordable for consumers, 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 grow availability of local food in the channels through which most food is purchased.
- **Value-added producers:** Value-added production provides innovative ways of increasing profitability and increasing availability of local produce year-round.
- **Regional hubs:** These sites of aggregation pave the way for efficient distribution of food from local producers through regional market channels.

## Issues Affecting Healthy People

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 2009, 12.9 percent of individuals in our region were food-insecure, with similarly high rates of obesity and diabetes between 2006 and 2009. 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. Increasing the accessibility of grocery stores through the number of stores and innovative transportation initiatives, increasing the availability of produce (especially local) through hunger relief agencies, and increasing subsidized direct sale initiatives through farmers' markets and CSAs all serve as meaningful interventions for this problematic paradox.

## KEY INDICATORS AND MEASURES AT A GLANCE: PROMISING TRENDS, CHALLENGES AND OPPORTUNITIES

Overarching indicator: Increase in local, county, state, and federal public programs and policies in support of a healthy, profitable, and sustainable regional food system					
	Production	Processing and Distribution	Access and Consumption	Waste Management	All Sectors of the Food System
<b>Healthy Environments</b>	<p><b>Promising trend: Sustainable nutrient management practices are improving</b>, as indicated by nitrogen and phosphorus balances of inputs and outputs on farms.</p> <p><b>Positive indicator:</b> 50.1% of livestock farms reported practicing rotational or management-intensive grazing in 2007.</p> <p><b>Challenge:</b> Only 23.4% of farms reported using <b>conservation methods</b> in 2007.</p>	To be addressed in future Food System Assessments.	<p><b>Positive indicator:</b> 201 farms with 24,315 organic acres in the region generated \$10.3 million in sales of certified organic products in 2007.</p>	<p><b>Opportunity:</b> Need for more institutions and homes to practice <b>composting</b>. Cayuga Compost and Tompkins County Master Compost program are examples of programs that work.</p>	<p><b>Opportunity:</b> State and municipal laws and regulations need to be in place and enforced to <b>protect farmland, crops, livestock, and water quality from the adverse effects of hydro-fracking for natural gas</b>.</p>
<b>Economic Vitality</b>	<p><b>Challenge: Reverse the trend toward fallow land</b> in the region: Acres in cropland decreased by 5.1% from 2002 to 2007.</p> <p><b>Challenge: Young farmers needed.</b> The average age of farmers is increasing and was an average of 57.1 years in 2007.</p> <p><b>Challenge:</b> More women and minority principal farm operators needed.</p>	<p><b>Challenge:</b> Need for increased capacity of: <b>slaughterhouses</b> within 100 miles of farms, <b>processors</b> and <b>distributors</b> of local foods, and <b>regional distribution hubs</b> for win-win strategic partnerships with farms.</p>	<p><b>Challenge: Need for growth of mid-sized farms:</b> 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.</p> <p><b>Challenge:</b> Increase the percentage of all farms reporting <b>net gains in farm income</b> from the average of 41% in 2007.</p>		<p><b>Challenge:</b> <b>Increase earnings</b> for agricultural employees and food service employees at least equal to the average for all employees in the county.</p>
<b>Farm to Consumer Connections</b>	<p><b>Opportunity:</b> Build on increasing public interest to <b>create and expand the availability of community gardens and urban farms as well as restore urban farms and community gardens lost to Hurricane Irene and Tropical Storm Lee</b>.</p>	<p><b>Opportunity:</b> Build on increasing public interest in the local foods movement to promote home canning and freezing of locally grown food.</p>	<p><b>Promising trends:</b> 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. In 2010, there were 26 CSAs in the region.</p> <p><b>Challenge: Increase access to local foods by residents of all income levels:</b> (1) All 36 farmers' markets participating in EBT up from 50% in 2010, with increases in EBT sales up from \$21,741 in 2010.</p>		<p><b>Opportunity:</b> Children's health can benefit from increased public <b>support of school districts' wellness policies and efforts to provide children and youth with nutrient-rich food choices</b>.</p>
<b>Healthy People</b>	<p><b>Promising Trend:</b> The New York Center for Agriculture and Health, affiliated with the Bassett Healthcare Network, is working to improve farmworker health and safety by preventing and treating occupational injury and illness.</p>	<p><b>Opportunity:</b> In 2010, 3,052 lbs. of <b>donated venison</b> was processed by approved processors for food banks. Hunter awareness of this program could increase availability of this nutritious meat to reduce hunger.</p>	<p><b>Challenge: Reduce hunger:</b> 13,010 people in the region do not have enough nutritionally adequate food to sustain them. Outreach is needed to increase the percent of eligible residents receiving SNAP (food stamp) benefits. Also need to increase amount of produce and venison that food banks distribute.</p> <p><b>Challenge: Improve health through consumption of more nutritious food:</b> Need to reduce adult age-adjusted diabetes rates, reduce obesity rates for all ages, and increase the percentage of residents eating 5+ fruits and vegetables daily.</p>		



## HEALTHY ENVIRONMENTS

Vision	Indicator	Measure
<p>Farmers steward the land and other natural resources in a way that maintains agricultural productivity, biodiversity, and environmental quality.</p>  <p>Grazing dairy cows photographed by the New York Grazing Lands Conservation Initiative coordinator, Karen Hoffman</p>	<p>Farmers are adopting sustainable practices in all aspects of production.</p>	<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 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> <p><u>Future measures when resources and data are available:</u></p> <p>Increase in number and percent of acres of land that certified organic farmers set aside for native pollination: Collect data with possible use of a return postcard at a NOFA conference.</p> <p>Decrease in plastic waste on farms. Increase in number of counties completing Agricultural Environmental Management (AEM) report cards. Counties in the Chesapeake Bay Watershed meet Environmental Protection Agency's biennial targets for water quality. Targets for Total Maximum Daily Load (TMDL) for the Susquehanna River are met.</p>
	<p>Farmers are adopting agricultural practices <i>consistent with</i> the soils, topography, geography, and climate of the region.</p>	<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>
<p>Food waste is minimized and diverted from the waste stream through the production of compost, which is then returned to the soil.</p>	<p>Institutions, schools, other facilities with food services, and households minimize food waste and engage in composting and compost education.</p>	<p>Increase in pounds of food waste diverted from the waste stream to compost facilities.</p> <p><u>Future measure when resources and data are available:</u></p> <p>Increase in number of collaborative composting programs. Increase in number and percent of households that compost food waste. Increase in municipal policies for composting at the home and institutional level.</p>
<p>Local, county, state, and federal policies and funding support this vision for a healthy environment.</p>		<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>



## MEASURES FOR HEALTHY ENVIRONMENTS

Measure and desired direction of change	↑ # and % of acres used for certified organic production, 2007 <sup>12</sup>		↑ Sales of organic products from local producers <sup>13</sup>	↑ # and % of farms using conservation methods, 2007 <sup>14</sup>		↑ # and % of livestock farms practicing rotational or management-intensive grazing, 2007 <sup>15</sup>		↑ # and % of cropland acres used for pasture or grazing <sup>16</sup>		↑ # and % of farms generating energy or electricity on the farm, 2007 <sup>17</sup>		Nutrient inputs and outputs approach a balanced 0.0 lbs./acre <sup>18</sup>			
												Nitrogen lbs./acre		Phosphorous lbs./acre	
County	#	%	2007	#	%	#	%	#	%	#	%	2002	2007	2002	2007
Broome	928	2.1%	\$322,000	104	17.9%	141	65%	2,891	6.6%	8	1.4%	26.8	7.0	4.1	-1.4
Chemung	N/A	N/A	N/A	84	22.5%	88	62%	3,616	11.0%	5	1.3%	33.0	11.5	2.7	-1.2
Chenango	3,680	4.2%	\$967,000	220	24.2%	201	44%	7,507	8.7%	8	0.9%	56.5	33.7	4.7	0.5
Cortland	3,860	6.3%	\$1,584,000	139	23.7%	135	51%	4,319	7.0%	13	2.2%	67.3	45.7	9.0	1.2
Delaware	4,061	5.9%	\$101,000	208	27.8%	219	50%	7,475	10.8%	6	0.8%	50.1	35.8	6.9	6.5
Otsego	3,385	3.8%	\$1,002,000	172	17.6%	185	42%	7,890	9.0%	5	0.5%	70.6	36.0	6.3	1.1
Tioga	2,586	4.8%	\$1,098,000	129	22.8%	131	46%	4,693	8.7%	8	1.4%	33.9	45.5	4.1	1.7
Tompkins	5,815	8.6%	\$5,263,000	188	32.0%	132	62%	3,974	5.9%	13	2.2%	46.8	22.7	4.1	0.04
Region	24,315	4.8%	\$10,337,000	1,244	23.4%	1,232	50.1%	43,365	8.6%	66	1.2%	N/A	N/A	N/A	N/A

Amount of food waste diverted from the waste stream to compost facilities		Notable Interventions	
Facility	Amount diverted from waste stream	<p><b>Grazing Lands Conservation Initiative (GLCI):</b> 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 chapter of GLCI carries out this mission for our region. <a href="http://www.glci.org/index.html#">http://www.glci.org/index.html#</a></p> <p><b>Cayuga Compost:</b> 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 for local residents wishing to compost food scraps is in the works. 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. <a href="http://www.cayugacompost.com">http://www.cayugacompost.com</a></p>	
Cayuga Compost	3,424 tons of organic food waste composted, resulting in approximately 3,000 cubic yards of finished product, 2010 <sup>19</sup>		
Delaware County Solid Waste Management Center & Compost Facility	Of the 27,000 tons of garbage processed through the digester, 65% was turned into compost, 2010 <sup>20</sup>		
Notable Intervention			
<p><b>The Conservation Effects Assessment Project (CEAP)</b> is a national effort by the Natural Resource Conservation Service division of the USDA to evaluate the effects of conservation practices on croplands, grazing lands, wetlands, and wildlife. <b>The CEAP-Cropland Assessment on the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay region</b>, finds that the adoption of conservation practices on cultivated cropland has reduced edge of field sediment loss by 55%, losses of nitrogen with surface runoff by 42%, losses of subsurface nitrogen flows by 31%, and losses of phosphorous by 41% in the Chesapeake Bay region.</p> <p><a href="http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1042078.pdf">http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1042078.pdf</a></p>			

## ECONOMIC VITALITY

Vision	Indicator	Measure
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.	<p>Farmland is kept in production.</p> <p>Farms regularly make a return on investments and are able to further invest in their businesses.</p>	<p>Increase in number and percent of acres of total cropland on farms. <i>(If data on number of active and inactive farm acres were accessible instead of total cropland acres, this would be used)</i></p> <p>Increase in number and percent of farm operators reporting net gains in farm income.</p> <p><u>Future measure when resources are available to collect data:</u></p> <p>Increase in number of acres offered through programs that link farmers with owners of fallow land.</p> <p>Increase in number and percent of farmers earning a livable wage, defined as income appropriate for the local cost of living.</p>
Mid-scale farms and the cottage and artisanal food economy thrive.	<p>“Ag of the Middle” is sustained: Mid-scale farms remain in production and are viable.</p> <p>Farmers benefit from research and product development and have the skills to run successful, innovative businesses.</p>	<p>Increase in number and percent of mid-sized farms (annual gross sales between \$100,000 and \$500,000).</p> <p>Increase in the market value of agriculture products sold by mid-sized farms.</p> <p><u>Future measures when resources and data are available:</u></p> <p>Increase in number and percent of farms using techniques, such as hoop houses, to extend the growing season.</p>
Farms reflect the diversity of the culture in which they exist.	Minorities have an equal opportunity to serve as the principal operators of farms.	Increase in number and percent of minority and women principal farm operators.
Viable family farms continue from generation to generation, farming is considered a respectable career, and young people are inspired to become farmers.	Younger farmers are operating farms on a fulltime basis.	Decrease in average age of farmers. <i>(If data on % of young farmers were available instead of average age, this would be used)</i>
<p>Farmers are supported by a robust labor force and service-based infrastructure.</p> <p>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.</p> <p>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.</p>	<p>Agriculture-related support and technical assistance businesses and organizations are thriving and accessible to farms.</p> <p>There is an adequate supply of trained and experienced agricultural labor.</p> <p>Farmers have access to slaughterhouses; fruit, vegetable and meat processing; and centrally located food hubs.</p> <p><b>Food hubs</b>—which facilitate the aggregation, storage, processing, distribution, and/or marketing of regionally produced food products—create opportunities for producers, processors, distributors, wholesalers, and retailers.</p> <p>Value-added production is accessible to and utilized by local producers.</p>	<p>Increase in number of USDA conventional and certified organic slaughterhouses within approximately 100 miles of most conventional and certified organic farms in the region.</p> <p>Increase in the percentage of farm operators reporting high speed internet access.</p> <p>Examples of development and use of commercial kitchen enterprises, instant quick freeze facilities, and cold chain processing and distribution that serve local producers.</p> <p>Examples of regional food hubs that are new or expanding.</p> <p><u>Future measures when resources and data are available:</u></p> <p>Increase in number of agriculture support businesses and organizations, such as equipment, feed, seed, and veterinary assistance. Increased public dollars for agriculture training. Expansion or addition of training programs for processing at Community Colleges and BOCES. Increase in number of beginning producers utilizing farm and food incubators. Slaughterhouses reach carrying capacity through growth of infrastructure, with consideration of height. Increase in slaughterhouses and processors that are cash-positive and have adequate business to operate year-round. Increase in small- and mid-scale ventures producing value-added products. Increase in sales of value-added products. Increase in jobs through value-added product processing. Increase in on-farm creameries. Increase in availability and use of economic development dollars for processing, distribution, and hubs. Decrease in food miles.</p>
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.


## MEASURES FOR ECONOMIC VITALITY

Measure and desired direction of change	↑ # of acres cropland <sup>21</sup>		↑ Cropland as % of total acres on farms		↑ # of total number of farms		↑ # of total farms reporting net gains in farm income <sup>22</sup>		↑ % of total farms reporting net gains in farm income		<i>“Ag of the Middle” farms as economic drivers</i> Mid-sized farms: \$100,000-\$500,000 in gross annual sales <sup>23</sup>							
											↑ # of mid-sized farms		↑ % of mid-sized farms		↑ Market value of agricultural products sold in \$000's		↑ % of total market value of agricultural products sold	
County	2002	2007	2002	2007	2002	2007	2002	2007	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%	50	34	8.5%	5.9%	\$10,326	\$8,836	35.9%	29.6%
Chemung	37,283	32,923	53.9%	50.1%	427	373	117	140	27%	38%	27	27	6.3%	7.2%	\$5,845	\$7,029	48.4%	42.3%
Chenango	100,601	86,719	53.0%	48.9%	960	908	484	411	50%	45%	175	151	18.2%	16.6%	\$35,022	\$35,405	67.0%	53.8%
Cortland	70,226	61,458	55.3%	49.2%	569	587	214	218	37%	36%	95	82	16.7%	14.0%	\$17,999	\$18,983	45.3%	34.6%
Delaware	92,038	68,959	48.1%	41.7%	788	747	398	319	51%	43%	144	123	18.3%	16.5%	\$31,702	\$28,739	62.8%	52.1%
Otsego	112,145	88,174	54.4%	50.0%	1,028	980	412	410	40%	42%	169	139	16.4%	14.2%	\$33,021	\$28,905	65.1%	56.2%
Tioga	74,588	53,816	58.2%	50.1%	604	565	258	213	43%	38%	81	73	13.4%	12.9%	\$15,241	\$18,296	50.9%	49.9%
Tompkins	66,960	67,292	66.4%	61.9%	563	588	228	243	40%	41%	56	74	9.9%	12.6%	\$12,347	\$17,500	41.2%	47.7%
Region	608,254	502,916	54.8%	49.7%	5,527	5,328	2,268	2,165	41%	41%	797	703	14.4%	13.2%	\$161,503	\$163,693	52.8%	44.2%

	↑ % of farm operators reporting high speed internet access, 2007 <sup>24</sup>		
Broome	40%	<b>Slaughterhouses: Notable Interventions and Unmet Needs</b> <ul style="list-style-type: none"> <li><b>Larry's Custom Meats</b>, in Hartwick, Otsego County, opened a new US Department of Agriculture (USDA) certified slaughterhouse in 2011.</li> <li><b>NY Custom Processing</b> 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.</li> <li>Currently, the closest certified organic slaughterhouse and meat processing facility is in Troy, Pennsylvania. There are no certified organic slaughterhouses in the region. <b>Eklund Farm</b> in the Town of Harpersfield, Delaware County, is in the process of developing a facility for both organic and traditional meats capable of processing 5,000 head.</li> <li><b>Opportunities for developing slaughterhouses are improving:</b> 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 have improved.</li> <li>USDA is currently 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.</li> </ul>	<b>Processors: Notable Interventions and Unmet Needs</b> <ul style="list-style-type: none"> <li><b>Meat and Poultry Processing: LCM and Purdy &amp; Sons' Foods, Inc.,</b> 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&amp;K in Otsego County, and Norwich Meadows in Chenango County.</li> <li><b>Dairy Processing and Value-Added Products:</b> Agro Farma's plant in Chenango County is the largest yogurt maker in the US and continues to expand to keep up with demand for <b>Chobani Yogurt</b>. <b>Kortright Creek Creamery</b> in Delaware County received an RBEG award to purchase creamery equipment and is currently raising funds to build the building. When complete, the facility is expected to be available to local farmers to process their products. Several farms in the region have also developed on-farm creameries.</li> <li><b>Fruit, Vegetable and Grain Processing: Lucky Dog Farm</b>, in the Town of Hamden, Delaware County, is developing a commercial kitchen. Commercial kitchens outside of the region: Farm to Table, in Kingston NY, is also used by farms in the region, as is Nelson Farms in Madison County. <b>Cayuga Pure Organics</b> in Tompkins County produces sustainably produced organic beans, grains, and flours for wholesale and retail in addition to producing organic feed for livestock.</li> <li><b>Needed enterprises</b> include commercial kitchens, Individual Quick Freeze facilities, and cold chain processing and distribution that serve 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.</li> </ul>
Chemung	30%		
Chenango	44%		
Cortland	35%		
Delaware	36%		
Otsego	31%		
Tioga	38%		
Tompkins	47%		
<b>Distributors of Locally Grown Food</b> in the Region include CNY Bounty, Joe Angello, Regional Access, and Red Jacket. CADE's HUFED Feasibility Study may also result in a new local food distribution system. <b>Expansion of regional food hubs for storage and distribution</b> , such as Evan's Creamery in Chenango County, would be an asset to farmers and spur economic growth. The Wallace Center is a resource for hub development.			<b>Job Training: Notable Interventions and Unmet Needs</b> <ul style="list-style-type: none"> <li><b>Farm Incubator Program: Groundswell Center for Food and Farming</b> is launching the first farm incubator program for beginning farmers in the region.</li> <li><b>Needed:</b> Viable apprenticeships and internships with farms and, particularly, processors.</li> </ul>



## ***FARM TO CONSUMER CONNECTIONS***


Vision	Indicators	Measures
<p>Local food citizens of all income levels are connected to local agriculture and consume more locally produced, fresh, safe, and healthful food.</p> <p>Consumers recognize and support the economic and cultural value of small farms and cottage, artisanal food enterprises in the region.</p>  <p>Isaac and four chickens in his Tompkins County backyard</p>	Residents support local producers through direct sale purchasing.	<p>Increase in direct farm sales and percent of total farm sales.</p> <p>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.</p> <p>Increase in number of farmers' markets, number of times per week farmers' markets are held, and number of winter farmers' markets.</p> <p>Increase in number of CSAs (Community Supported Agriculture programs) and buying clubs/cooperatives selling to residents in the region.</p> <p><u>Future measures when resources and data are available:</u> Increase in agricultural tourism, outreach, and education. Increase in number of mobile units selling direct farm-to-consumer. Increase in number of established, well-organized, volunteer "Crop Mob" programs similar to that in Tompkins County, to increase consumer-to-farmer connections and provide help to farmers when needed.</p>
	Low-income residents have improved access to and ability to afford local food through market channels that include emergency food providers.	<p>Increase in number and percent of farmers' markets using Electronic Benefits Transfer (EBT) for customers to purchase local foods with SNAP and other benefits.</p> <p>Increase in the value of sales from EBT at farmers' markets.</p> <p><u>Future measures when resources and data are available:</u> Increase in number and percent of CSA programs that accept EBT. Increase in number and percent of NYS-grown food purchased by Emergency Food Providers.</p>
	Local food citizens of all income levels grow more of their own food.	<p>Increase in number of community gardens and urban farms.</p> <p><u>Future measures when resources and data are available:</u> Increase in number of home gardens. Increase in availability of open space suitable for urban agriculture. Increase in number of brownfield acres reclaimed for urban agriculture.</p>
	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.	<p><u>Future measures when resources and data are available:</u> Increase in wholesale activity: Local food purchased by school districts, colleges and universities, health care facilities, prisons, senior centers, and other institutions; large retail stores, such as Price Chopper, Weis, and Wegmans; and restaurants. An ideal measure might be the percent of the total food dollar that institutions spend on local foods.</p>
	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.	<p><u>Future measures when resources and data are available:</u> Increase in number of schools with educational gardens: This will be added to FaHN's annual Regional Community Garden survey. Increase in number of Farm to School programs (use of this measure is pending a standard definition of a Farm to School program).</p>
Local, county, state, and federal policies support this vision for farm to consumer connections.	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.

## MEASURES FOR FARM TO CONSUMER CONNECTIONS

Measure; And direction of desired change	↑ Value of agricultural products sold directly to individuals <sup>25</sup>		↑ % of total farm sales that are direct farm to consumer sales		↑ # of farms selling directly to individuals		↑ Direct farm sales/ capita <sup>26</sup>	↑ # of farmers' markets <sup>27</sup>	↑ # of times farmers' markets held per week	↑# of winter farmers' markets	↑ # of farmers' markets with EBT 2010		↑ Sales from EBT at farmers' markets	↑ # of community gardens and urban farms <sup>28</sup>
County	2002	2007	2002	2007	2002	2007	2010	2010	2010	2010	#	%	2010	2010
Broome	\$553,000	\$676,000	1.9%	2.3%	63	93	\$3.46	5	6	4	5	100.0%	\$4,468	10
Chemung	\$408,000	\$916,000	3.4%	5.5%	54	50	\$10.42	5	4	5	1	20.0%	\$2,207	2
Chenango	\$383,000	\$1,032,000	0.7%	1.6%	98	136	\$20.20	3	5	3	0	0.0%	N/A	1
Cortland	\$538,000	\$714,000	1.4%	1.3%	58	59	\$14.75	4	6	3	2	50.0%	\$1,877	2
Delaware	\$986,000	\$1,155,000	2.0%	2.1%	120	134	\$24.93	6	6	5	0	0.0%	N/A	1
Otsego	\$538,000	\$1,172,000	1.1%	2.3%	98	144	\$18.83	3	8	3	1	60.0%	\$106	1
Tioga	\$623,000	\$767,000	2.1%	2.1%	84	80	\$15.23	2	2	3	1	50.0%	\$364	1
Tompkins	\$598,000	\$933,000	2.0%	1.6%	81	84	\$9.29	8	10	6	8	100.0%	\$12,719	17
Region	\$4,627,000	\$7,365,000	1.5%	2.0%	656	780	\$11.29	36	N/A	32	18	50.0%	\$21,741	33

	↑ # of CSAs serving local residents	↑ # of farms with a minority principal operator, including women, 2007 <sup>29</sup>		↑ % of farms with a minority principal operator, including women, 2007 <sup>30</sup>		↓ Average age of farmers		<p><b>Notable Interventions:</b></p> <p><b>Binghamton Urban Agriculture Zoning:</b> 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.</p> <p><b>Healthy Food for All:</b> 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. <a href="http://www.freewebs.com/fullplatefarms/healthyfoodforall.htm">http://www.freewebs.com/fullplatefarms/healthyfoodforall.htm</a>.</p> <p><b>Community garden initiatives:</b> In Binghamton, <b>Volunteers Improving Neighborhood Environments (VINES)</b> supports the added development and continued sustainability of the city's community gardens, including its urban farm by coordinating leadership, fundraising, and education: <a href="http://vinescommunitygardens.org/">http://vinescommunitygardens.org/</a>. In Ithaca, <b>Gardens 4 Humanity</b> 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: <a href="http://ccetompkins.org/garden/community-school-gardens">http://ccetompkins.org/garden/community-school-gardens</a>.</p>
	2010	Women	Racial Minorities	Women	Racial Minorities	2002	2007	
Broome	3	100	12	20.8%	2.1%	56.9	56.8	
Chemung	1	75	8	25.2%	2.2%	54.3	56.7	
Chenango	3	168	13	22.7%	1.5%	54.2	58.0	
Cortland	1	90	9	18.1%	1.6%	53.4	56.4	
Delaware	3	142	3	23.5%	0.4%	55.0	56.7	
Otsego	1	192	24	24.4%	2.5%	54.9	58.3	
Tioga	2	113	9	25.0%	1.6%	54.6	58.5	
Tompkins	12	175	9	42.4%	1.6%	53.9	55.4	
Region	26	1,055	87	24.7%	1.7%	54.7	57.1	

## ***HEALTHY PEOPLE***

Vision	Indicator	Measure
<p>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.</p>  <p>Fewer individuals are experiencing food insecurity.</p>	<p>There is a low prevalence of diet-related health conditions and chronic diseases.</p>	<p>Decrease in percent of adults ever having been told by a doctor that had diabetes. Age-adjusted rate.</p> <p>Decrease in number and percent of obese adults, (BMI&gt;30). Age-adjusted rate.</p> <p>Decrease in percent of children, ages 2-4, participating WIC, who are obese, (&gt;=95<sup>th</sup> Pctl).</p> <p><u>Future measures when resources and data are available:</u> Decrease in rate of obesity and diabetes for all ages.</p>
	<p>Residents consume recommended amounts of fruits and vegetables.</p>	<p>Increase in percent of adults eating 5 or more servings of fruit and vegetables daily. Age-adjusted rate.</p>
	<p>More residents are food-secure.</p> <p>Residents who need food from food banks and food pantries have increased availability of fresh produce and local healthy meats, such as venison.</p> <p>Individuals eligible for SNAP (formerly Food Stamp) benefits are enrolled in the program.</p> <p>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.</p>	<p>Decrease in number and percent of food-insecure individuals.</p> <p>Increase in number of pounds of fresh produce distributed by food banks to hunger-relief agencies.</p> <p>Increase in number of pounds of donated venison processed by approved processors for food banks.</p> <p>Increase in number and percent of eligible individuals receiving SNAP benefits.</p> <p><u>Future measures when resources and data are available:</u></p> <p>Increase in amount of healthful, local food obtained through gleaning programs. Decrease in food deserts: 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, building on the work of Mari Gallagher.</p>
<p>Residents are protected from food contamination and other hazards, such as genetically modified organism (GMO) products.</p>	<p>Farmers selling to institutions, such as schools, have documented certification that they follow safe handling procedures for fruits and vegetables.</p>	<p>Pilot program on Bridge the Gap developed, yielding an increase in number of farmers with training and certification that are selling to schools.<sup>31</sup></p>
<p>Empowered workers in all sectors of the food system are paid livable wages and have safe working conditions.</p>	<p>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</p>	<p>Increase in number of people working in the food system.</p> <p>Increase in average annual earnings for food system employees.</p>
<p>Local, school district, county, state, and federal policies and funding incentives promote consumption of healthful food and this vision for healthy people.</p>	<p>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.</p>	<p>Public support of school districts' wellness policies and efforts to provide children and youth with nutrient-rich food choices.</p>



## MEASURES FOR HEALTHY PEOPLE

Measure and desired direction of change	↓ % of adults with physician-diagnosed diabetes, age-adjusted <sup>32</sup>	↓ % and # of obese adults (BMI>30), age-adjusted, 2008-09 <sup>33</sup>		↓ % of obese children in WIC, 2-4 years <sup>34</sup>	↑ % of adults eating 5 or more servings of fruit and vegetables daily, age-adjusted	↑ Pounds of donated venison processed by approved processors for food banks <sup>35</sup>	↑ Pounds of fresh produce distributed by food banks to hunger-relief agencies <sup>36</sup>	↓ # and % of food-insecure individuals, 2009 <sup>37</sup>		# of SNAP recipients <sup>38</sup>	Pop. < 125% Federal Poverty Level	↑ % of pop. < 125% FPL receiving SNAP benefits
County	2008-09	#	%	2006-08	2008-09	4/10-3/11	2010	#	%	June, 2009	2006-08	June, 2009
Broome	8.6%	37,500	24.9%	14.7%	27.4%	427	211,318	26,540	13.6%	24,449	33,256	74%
Chemung	11.3%	19,900	30.0%	13.2%	28.0%	956	279,261	12,780	14.5%	12,293	17,006	72%
Chenango	12.1%	13,300	34.9%	13.6%	24.4%	0	34,848	6,770	13.3%	6,947	9,071	77%
Cortland	10.5%	11,100	29.7%	11.7%	29.3%	1,078	48,031	6,740	14.0%	5,790	7,918	73%
Delaware	8.7%	9,800	27.5%	17.0%	24.2%	0	313,050	6,340	13.7%	4,501	8,659	52%
Otsego	6.6%	11,600	23.1%	15.6%	28.1%	0	718,646	8,040	12.9%	4,842	11,526	42%
Tioga	10.7%	9,400	24.1%	14.9%	22.5%	1,669	127,443	5,930	11.8%	5,325	6,369	84%
Tompkins	7.4%	14,600	20.0%	12.8%	33.1%	0	140,730	13,010	12.9%	7,150	18,931	38%
Comparison	Upstate NY <sup>39</sup> : 9.0%	Region 127,200	Upstate NY: 24.61%	NYS Goal: 11.6%	Upstate NY: 27.7% US Goal: 33%	Region 4,130	Region 1,873,327	NYS 2,616,780	NYS 13.5%	Region 71,297	Region 112,736	Region 63%

	# of people and average annual earnings for food system employees, 2009 <sup>40</sup>									<div>Notable Interventions</div> <div>Food Bank of the Southern Tier's Backpack program: This 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 school breaks. <a href="http://www.foodbankst.org/index.asp?pageId=154">http://www.foodbankst.org/index.asp?pageId=154</a></div> <div>Rock on Café: This service 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. <a href="http://rockoncafe.com/">http://rockoncafe.com/</a></div>		
	Working in Agriculture				Working in Food Services				Working in Food Manufacturing			
	Annual average # of people	Average earnings	% of average earnings by county		Annual average # of people	Average earnings	% of average earnings by county		Annual average # of people		Average earnings	% of average earnings by county
Broome	155	\$24,013	65.3%	6,619	\$12,919	35.1%	908	\$41,662	113.2%			
Chemung	40	\$15,017	40.6%	2,665	\$13,272	35.9%	N/A	N/A	N/A			
Chenango	86	\$21,752	61.5%	740	\$11,374	32.2%	199	\$33,214	93.9%			
Cortland	156	\$26,198	77.8%	1,533	\$11,623	34.5%	29	\$28,738	85.3%			
Delaware	124	\$26,384	76.1%	808	\$11,367	32.8%	N/A	N/A	N/A			
Otsego	63	\$22,839	64.7%	1,803	\$13,321	37.7%	177	\$42,546	120.5%			
Tioga	54	\$22,988	48.6%	640	\$10,594	22.4%	171	\$44,850	94.9%			
Tompkins	490	\$35,233	82.3%	3,025	\$15,098	35.3%	169	\$19,592	45.7%			
Region	Total: 1,168	\$24,303	64.2%	Total: 17,833	\$12,446	32.9%	N/A	N/A	N/A			

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- 1 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: 2010 Census Redistricting Data (Public Law (P.L.) 94-171) Summary File—Broome County/prepared by the U.S. Census Bureau, 2011.
- 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](http://quickfacts.census.gov/qfd/maps/new_york_map.html). Population density is also from this source.
- 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](http://www.nyskwic.org/get_data/county_report.cfm).
- 5 Includes: American Indian and Alaska Native, Black or African American, Asian, Native Hawaiian and other Pacific Islander, and persons of Hispanic or Latino origin. Source: US Census Bureau. State and County Quick Facts. Retrieved July 28, 2011 from [http://quickfacts.census.gov/qfd/maps/new\\_york\\_map.html](http://quickfacts.census.gov/qfd/maps/new_york_map.html).
- 6 Source: US Census of Agriculture, Table 2.
- 7 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).
- 8 Source: US Census of Agriculture, County Profiles.
- 9 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.
- 10 Values modeled after the “Whole Measures for Community Food Systems” Fields and Practices and the “Charting Growth to Good Food” Values and Definitions.
- 11 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).
- 12 Source: US Census of Agriculture, Table 43. 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. Please note that certified organic farming is a very good but imperfect indicator of a healthy environment: Certified organic farms may not always use all available and applicable environmental management practices. Conversely, some farms in the region use organic methods of production but are not certified organic. Similar to other categories, readers should consider all of the indicators as a group that may collectively improve our understanding of the status of the regional food system.
- 13 Source: US Census of Agriculture, Table 44.
- 14 Source: US Census of Agriculture, Table 44.
- 15 Source: US Census of Agriculture, Table 44. 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.
- 16 Source: US Census of Agriculture, Table 8. 2002 data is not used since it is not comparable with 2007 data, due to changes in definitions.
- 17 Source: US Census of Agriculture, Table 44.
- 18 Data is rounded to the nearest 10th. 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.
- 19 Source: Cayuga compost
- 20 Source: Delaware County Solid Waste Management Center and Compost Facility
- 21 Source: US Census of Agriculture, Table 8; also source for “Cropland as % of total acres on farms”
- 22 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
- 23 As defined by the FaHN Task Force
- 24 Source: Atlas of Rural and Small Town America, [www.ers.usda.gov/data/ruralatlas/download.htm](http://www.ers.usda.gov/data/ruralatlas/download.htm)
- 25 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.
- 26 Source: USDA Food Environment Atlas

27 Source: Farmers' Market Federation of New York; also source for "Farmers markets with EBT machines," and "Sales from EBT at farmers' markets"

28 Source: Food and Health Network Regional Community Garden Survey

29 Source: US Census of Agriculture, Tables 48, 50, 51, 52, 53, 54. Minority categories include: American Indian or Alaska Native; Asian; Black or African American; and Spanish, Latino, or Hispanic Origin

30 Source: US Census of Agriculture, Tables 48, 50, 51, 52, 53, 54. Minority categories include: American Indian or Alaska Native; Asian; Black or African American; and Spanish, Latino, or Hispanic Origin

31 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

32 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. Source: Expanded Behavioral Risk Factor Surveillance System (BRFSS), July 2008 – June 2009 data. NYS Department of Health. Same source used for fruit and vegetable consumption.

<http://www.health.ny.gov/statistics/brfss/expanded/2009/county> Note: comparable data for earlier years not available. CDC data for counties is available for earlier years but has limitations.

33 Source: Expanded Behavioral Risk Factor Surveillance System (BRFSS) [www.health.ny.gov/statistics/prevention/obesity/about.htm](http://www.health.ny.gov/statistics/prevention/obesity/about.htm). Estimated # of obese adults rounded to the nearest hundred.

34 Source: Expanded Behavioral Risk Factor Surveillance System (BRFSS), NYS Department of Health Based on % obese children in WIC ( $\geq 95$ th Pctl), 2-4 years, Low SES.

<http://www.health.state.ny.us/statistics/prevention/obesity/>

35 Source: Correspondence, July 21, 2011: Matthew Griffin, Director of Agency Services and Programs, Food Bank of the Southern Tier; 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.

36 Source: Correspondence, July 21, 2011: Matthew Griffin, Director of Agency Services and Programs, Food Bank of the Southern Tier.

37 <http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap.aspx>. 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. Map the Meal Gap 2010.

38 County-by-County Review of SNAP/Food Stamp Participation, January 5, 2010. Food Research and Action Center, [www.frac.org](http://www.frac.org) SNAP recipients are for June 2009. The population under 125% of Federal Poverty Level is 2006-2008.

39 Upstate NY means exclusive of New York City

40 Source: New York State Department of Labor, Quarterly Census of Employment and Wages. Data for number of employees and wages collected quarterly, yielding an annual average. Number of people working in agriculture includes the New York State Department of Labor sector Agriculture, Fishing, and Forestry. Data for each sector in each county not always available.



## 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.

## ACKNOWLEDGMENTS

The Food and Health Network's 2011 Regional Food System Assessment is dedicated to the 5,328 farms in our region and the businesses that process and distribute locally grown food. We also recognize and express sorrow for the tragic loss of farms, crops, livestock, farm infrastructure, and fertile topsoil during Hurricane Irene and Tropical Storm Lee in 2011, as well as the many Food and Health Network's members and partners affected by these natural disasters. We celebrate the strength and resilience of our local farms and communities as they work together to recover from these disasters.

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**The Food & Health Network is a coalition of stakeholders that works to create food-secure communities and improve the quality of life in South Central New York by supporting practices, policies, and programs leading to increased use of locally produced foods.  
We serve Broome, Chemung, Chenango, Cortland, Delaware, Otsego, Tioga, and Tompkins Counties.**