Greene County Agriculture Incubator Study

Donna Williams & Rick Zimmerman

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I. EXECUTIVE SUMMARY

The Greene County Industrial Development Agency ("IDA") has envisioned creating the Greene County Agriculture Incubator ("GCAI"). The IDA requested a Study (the "GCAI Study"), funded by a grant from the New York Office for Small Cities, to assess the need and scope for the GCAI, identify key considerations and create a model plan.

The study determined that farm sales are growing nationally, regionally and in Greene County. The 2007 Agriculture Census shows that the national average market value of agriculture product sold per farm was $134,807, a 43% increase from 2002. In the Greene County Regional Counties (define as Albany, Columbia, Delaware, Dutchess, Greene, Rensselear, Schoharie and Ulster Counties), total agriculture sales grew 33% from $257.7 million in 2002 to $342.8 million in 2007. At $16.4 million in 2007, Greene County had the smallest agriculture sales of the Regional Counties, which averaged $32.2 million. Greene County total sales grew 14% during the five-year period.

This growth has been driven in large part by the local food market and is expected to continue to grow. There are almost no statistics and research data to specifically quantify consumer and wholesale demand for local food. However, looking at the size and growth of the organic market helps to frame the significant demand side potential for local foods. U.S. sales of organic food and beverages grew from $1 billion in 1990 to an estimated $20 billion in 2007, and were projected to reach nearly $23 billion in 2008.

Farmers have been able to capitalize on the demand for local foods by using direct sales channels and have made a dramatic transition from selling to intermediaries to direct sales. The number of farmers markets in the New York State has grown from 235 in 2000 to 450 in 2010, nearly doubling. Community Supported Agriculture ("CSA") has also taken-off. Just Food, a NYC organization that creates CSAs, now has 100 organic CSAs serving about 22,000 members. This is up from 80 CSAs last year (a 25% increase).

According to the 2007 Agriculture Census, total direct sales for the Regional Counties were $16.8 million in 2007 versus $14.5 million in 2002, a 19% increase. Excluding Ulster County, which had a large fruit crop failure in 2002, direct sales grew 24% in 2007. Greene County direct sales more than tripled growing from $539,000 to $2 million. Greene County has the highest average direct sales per farm with $43,478 versus $21,862 for the Regional Counties and the highest average organic sales per farm at $44,273.

The wholesale local food market also shows great potential and appears to be underserved. According to a 2005 study for the New York State Department of Agriculture and Markets, there was significant unmet demand for locally grown farm products by foodservice, distributors and retailers. This study determined that the unmet wholesale demand for local product in NYC was $866 million in 2005. The author of the study now estimates that the wholesale market has grown to $4 billion.

Despite this impressive growth, the aging farmer base, need for infrastructure operations (processing and distribution) and access to affordable quality agriculture lands is limiting supply. The CGAI could serve an important role in addressing these issues.

There has been a substantial increase in small farm start-ups and programs. Furthermore, existing farmers will or have seen opportunities to branch out into new product and business models. There are numerous organizations in the region providing support for farmers. The missing link in the maze of programs, institutions, and organizations is a land-based incubator for farmers ready to start their businesses. Seven organizations targeting start-up farmers have recently been launched in the region and can serve as referral sources for GCAI applicant recruitment. Collectively these groups work with over 200 potential candidates each year.
Our proposed model for the GCAI is based on the IDA goals of promoting agriculture and land conservation, the Mabee property as a possible location, agriculture economic growth opportunities and existing land-based agriculture business incubators. The following lists the proposed goals for the GCAI:

1. To employ IDA acquired land in agricultural production and habitat preservation.
2. To increase the amount of existing farm lands employed in growing and profitable farming enterprises.
3. To attract the “best” start-up farming ventures to Greene County.
4. To support existing farmers by offering a platform for launching new farming ventures.
5. Increase the critical mass of agriculture-related products so as to offer opportunities for the agriculture industry overall.
6. To increase agriculture-related revenue, income and jobs.
7. Make Greene County a farming innovation and entrepreneur center.

The agriculture model assumes the GCAI will open with six farmers each operating a mixed farming operation defined as specialty vegetable production, berries, livestock and poultry. The GCAI should be open to a variety of production methods employed by the incubator farmers. Business plan training and development will be important.

Given the fact that the property for the GCAI has not been definitively selected, infrastructure recommendations are meant to serve as guidelines. The general assumptions for determining possible infrastructure needs are:

1. Permanent structures are supplied by GCAI.
2. Farmers will provide production-specific equipment that can be removed from the location.
3. Equipment or implements that are infrequently used by an individual farmer or require a substantial capital outlay ($10,000 +/-) are to be provided by the GCAI and shared by participating farmers.
4. There is a barn for equipment storage and processing needs and an on-site farm stand.
5. New equipment is purchased and infrastructure improvement work is contracted.

The total budget for infrastructure and equipment is $297,000. This number errs high and as a “budget” does not necessarily reflect actual costs. Major expenditures include: two tractors ($75,000), hay cutting and harvesting equipment ($49,000), various farming implements ($40,000), water and irrigation system ($34,500), livestock fencing and structure ($30,500) and barn improvements ($20,000).

Defining the GCAI program entails looking at a fee structure and farmer selection criteria. The basic plan is that the GCAI would charge farmers fees to cover about 85% of equipment, land and infrastructure costs and bill at market rates for utilities. Key criteria for farmer selection are farming experience, a solid business plan, intent to remain in Greene County and intent to employ innovative farming methods and pursue new growing markets.

The GCAI could play a substantial role in a larger regional agriculture scheme. Establishing the GCAI as a regional agribusiness center would entail expanding its goals and mission and drawing on the various grant programs. The facility and program would then be more reflective of the priorities of the large grant programs. It would also be much better positioned to take advantage of the local food market growth to grow the regional agriculture-based economy. This approach would require a long-term strategic plan incorporating staging of the various programs over time. As a Regional Agribusiness Center, the GCAI could:

- Serve as demonstration farm and farmer referral for private landowners.
- Act as a model and research center for agriculture and habitat integration.
- Act as an incubator for expansion of infrastructure and sales/distribution.
- Act as a center for agritourism and consumer education.
- Offer programs and services to support a sustainable community food system.
Due to the consolidation of American farming over the past several decades, agriculture infrastructure that supports small and mid-sized farms has dwindled. There are opportunities for new ventures to fill the infrastructure gap and capitalize on the growth in the local food market. These ventures could include sales and distribution operations, fruit and vegetable processing ventures, livestock processing and agriculture production services.

The GCAI could require roughly $474,000 to fund $297,000 infrastructure and equipment requirements and a $177,000 three-year operating cash reserve. Net annual cash needs are $59,000, which can be viewed as $50,000 for personnel and $9,000 for equipment and facility subsidy. These numbers are for illustration purposes only and could vary significantly depending on the site selection, production, and management approach. These numbers do not anticipate that the GCAI initiates any of the programs under the Regional Agribusiness Center model.

Right now a large number of grant opportunities exist for projects supporting agriculture and food system development. We have identified over 20 grants or organizations providing funds for agriculture development. One of the best opportunities may be an Economic Development Agency ("EDA") grant under its Comprehensive Economic Development Strategies ("CEDS") program. The EDA is looking for project like the GCAI and will provide significant funds for organizations/counties that have existing CEDS, as does Greene County.

Because of the potential for the GCAI to have a significant impact on Greene County region agriculture, the need for the programs and services proposed, the enthusiasm for the program from agriculture stakeholders and the level of federal and state focus on sustainable agriculture, we recommend the:

1. The IDA aggressively moves forward with the project as presented in the Greene County Agriculture Incubator Model section.
2. The IDA pursue Regional Agribusiness Center concept either in tandem with the GCAI project or in the context of a longer term strategic plan. Given the size of grants available and the regional orientation of the larger grant program a tandem approach may be warranted.
II. PURPOSE AND BACKGROUND

The Greene County Industrial Development Agency (“IDA”) has envisioned creating the Greene County Agriculture Incubator (“GCAI”). The IDA has requested a Study (the “GCAI Study”), funded by a New York Office for Small Cities grant, to assess the need and scope for the GCAI, identify key considerations and create a model plan.

The IDA’s development philosophy is to take a proactive role in supporting the development of agriculture in Greene County and to maintain a balance between conservation and agriculture. In 2004, the Greene Land Trust was established to preserve and protect significant natural and cultural resources in and around Greene County, New York. Currently the Green Land Trust has protected over 300 acres of fields, forests and riparian wetlands. Acreage is expected to continue to be added to the Green Land Trust, which in all likelihood will be land previously or currently used for farming. **A critical consideration for the IDA’s interest in exploring the feasibility of the GCAI is its overarching concern that designating land solely for habitat will reduce the already shrinking agriculture land base.**

A land-based Incubator located on Greene Land Trust holdings could be a means of keeping the land employed in agriculture, be a catalyst and model for integrating habitat management and agriculture and a driver for agriculture economic development.

The Green Land Trust has an option on the Mabee Farm in Coxsackie, NY and the adjacent Mabee Land as part of the Greene Land Trust program. Additional farm acreage may also become available. For purposes of developing a model program for the GCAI, this study uses the Mabee property as a theoretical location for the GCAI.

III. STUDY METHODOLOGY

The study relied heavily on the input and experience of local and regional agriculture experts and stakeholders with a direct or peripheral interest in the success of agriculture in the Hudson Valley region. In particular, the support of Mick Bessire from Cornell Cooperative Extension Agroforestry was invaluable. In addition, the study incorporates information from numerous research publications and other third-party published sources.

A. Site Visits and Meetings

Two meetings were held. The first was April 5th, 2010 and the second was May 25th, 2010. In addition, Donna Williams personally visited Erica Frenay, Cornell Beginning Farmer Program, Joanne Greene, Groundswell, Greg Mol, Farmers Ground Flour and attended Congressman Scott Murphy’s Buy Local Conference Friday April 30th, 2010. In addition, Mick Bessire and Donna Williams attend a consulting session at the Intervale Center on June 1, 2010.
### B. Individuals Interviewed and/or Attended Meetings

Fifty-one individuals were interviewed or participated in meetings about the project.

<table>
<thead>
<tr>
<th>Individual</th>
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<tr>
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<td>Born, Chuck</td>
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<td>Snyder, Joanne</td>
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<td>VanSchaack, Rene</td>
<td>Director Community and Environmental Programs, Greene County</td>
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<td>Vispo, Conrad</td>
<td>Farmscape Ecology Program</td>
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<td>Von Tscharnner Fleming, Severine</td>
<td>Lehigh County Farmland Preservation Program (The Seed Farm Incubator)</td>
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IV. GREENE COUNTY AGRICULTURE LAND

A. Land and Farms

The 2007 Agriculture Census data shows 44,328 acres of land in farms in Greene County; however about 25% of this land is woodland. In 2002, there were 57,898 acres in farms a reduction of 13,570 acres or 30%. The 2007 Agriculture Census shows that Greene County had 286 farms. In 2002, 342 farms were reported reflecting a 16% reduction from 2002 to 2007. Agriculture sales in Greene County increased from $14 million in 2002 to $16 million in 2007, a 14% increase. When compared to the number of farms in Albany, Columbia, Delaware, Dutchess, Greene, Rensselaer, Schoharie and Ulster, collectively referred to as the “Regional Counties”, Greene County has roughly half the amount of farms. This is due in large part to the fact that about 75% of its land is in forest. In 2007, there were 4,273 farms in the Regional Counties down 4% from 2002 when there were 4,439 farms. Greene County experienced the largest reduction in farms while Columbia County increased the number of farms by 11%. Total Agriculture sales for the Regional Counties grew from $257 million in 2002 to $343 million in 2007, a 33% increase.

B. Cost of Land

According to the a 2009 USDA Survey of Agriculture Land Rent, in Greene County the rent for un-irrigated land was $12/acre, which was the lowest in the state. (Note: this could be artificially low because of limited reporting; however, compared to other areas Greene County does have less high-quality agriculture lands). A 2008 Cornell Cooperative Extension survey of Greene County land rents cited a range of $15-$22 per acre for good pasture (with water and fence) and $25-$60 per acre for tillable cropland (based on soil fertility and demand). The cropland average for the state is roughly $40/acre.

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<td>Southeast (Other, Dutchess, Orange)</td>
<td>$80</td>
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<td>Cropland, Irrigated</td>
<td>Eastern (other)</td>
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<td>Cropland, Non-irrigated</td>
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<td>$12</td>
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<td>Cropland, Non-irrigated</td>
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<td>Cropland, Non-irrigated</td>
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<td>Pastureland</td>
<td>Southeast (Sullivan, Delaware, Columbia, Other)</td>
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<td>Pastureland</td>
<td>Eastern (Albany, Schoharie, Washington, Saratoga, Montgomery, Other)</td>
<td>$16</td>
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Despite close proximity to the New York City Metro area, the market value of land in the Greene County Regional Counties is considerable lower than land in the metro areas. The agriculture value of land in the Greene County Regional area ranges roughly from $1500/acre to $2,500/acre (Bessire 2010). This is somewhat lower than the market value data presented below. According to Jeff Perry from Farmlink, Western New York State, one of the most competitive areas for farmland prices are averages $3,000/acre for class 1 soils, and up to $5,000. These prices reflect an agricultural value rather than residential development or commercial development values pressure (Perry, 2010).

V. **DEMAND FOR LOCAL FOOD**

The local food market is a growing market and has potential to generate billions of dollars in revenue for the agriculture industry. Broadly defined the local food market is product that is grown by small to medium sized farms (generally with revenue under $250,000) and is sold to customers in a regional area. In large part due to its proximity to the New York City metro market, Greene County region agriculture industry is participating in this growing market and is well positioned to continue to show gains. The “Local Food Movement” is driving this growth.

A. **The Local Food Movement**

The Local Food Movement, a part of the broader sustainability movement, is a "collaborative effort to build more locally based, self-reliant food economies - one in which sustainable food production, processing, distribution, and consumption is integrated to enhance the economic, environmental and social health of a particular place" (Feenstra, 2002).

According to the Wallace Center, consumers are purchasing local foods because:
1) They believe it offers better nutrition and taste.
2) It allows for more civic engagement (going to a farmers market is more fun than the grocery store).
3) Buying local supports their local economy and sustainability.

Additional factors include concerns about food safety and security, popularity of the locavore movement (someone that eats food grown within a 100 +/- miles), distrust of large food manufacturers, belief that mass-produced food is poor quality, animal welfare concerns and others.


B. Demand-Side Trends

There are almost no statistics and research data to specifically quantify consumer and wholesale demand for local food, particularly with respect to specific product categories and geographic areas within the “local food” market. However, for the purposes to this study it is reasonable to generalize from market observation, anecdotal reports and the little data that does exist.

Studies indicate that “local” resonates with consumers even more than organic. (Broccolli 2010) “Local” is becoming the “new organic.” Looking at the size and growth of the organic market helps to frame the demand side potential for local foods. A 2007 study by the Organic Trade Association showed that U.S. sales of organic food and beverages grew from $1 billion in 1990 to an estimated $20 billion in 2007, and were projected to reach nearly $23 billion in 2008. Organic food sales were anticipated to increase an average of 18% each year from 2007 to 2010. In 2006, organic food and beverage sales represented 2.6% of total food sales and were expected to grow at a faster rate than conventional food (Organic Trade Association 2007).

The New York Metro region is a large and rapidly growing local food market. With respect to growth rates, a survey of farms from 33 counties surrounding the Metro New York region showed that the majority of these farms reported increases in their gross sales from 1999 to 2004 ranging from more than 50% (32% of the farms) and up to 50% (32% of the farms) (Karp Resources 2005). Furthermore, while a great deal of focus is on New York City, the lower Hudson/Westchester region also has great promise and appears to be underserved (Kimball 2010). Hudson Valley consumers spend more than the national average on food and are willing to pay more for food or are at least accustomed to higher food prices (Gottwals).

The growth in demand for local food applies to all product categories including vegetable crops, grass-fed livestock and grains (see Appendix B for a discussion of the market for local grain). The growing demand for fruit and vegetables crops can most clearly be seen in the growth of direct-to-consumer sales driven by farmers markets and Community Supported Agriculture (“CSA”). Grass-fed or certified all-natural beef, goats, lambs and certain types of pigs are all promising markets. There are distributors in New York City that are pro-actively looking for meat suppliers (Broccolli)1. Demand is large for pasture poultry as well as rabbits (von Tascharner Fleming, 2010).

**Farmers have been able to capitalize on this demand for local foods by using direct sales channels.**

1. Direct Sales

In the past decade, farmers have made a dramatic transition from selling to intermediaries (wholesalers, distributors, etc) to direct sales (direct-to-consumer or foodservice). A 2005 survey of farmers in the New York metro region found that nearly all of the farmers surveyed (92%) engaged in some retail selling over the past 12 months and for 71%, at least half of their sales came from retail direct marketing activities such as farm stands and farmers markets (Karp Resources, 2005). This is particularly true for small to medium-sized farmers.

The popularity of local foods has driven the growth in farmers markets and CSAs, which are currently the primary channel for consumers to purchase local foods from small to medium-sized farmers. Consensus is that the direct marketing model continues to work well for new farmers. According to Kate Grange, the new farmers coming out

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1 Appendix A shows the summary results for “Local Food and Local Taste: A Study of Supply and Demand”, which provides additional support for the Demand-side and Supply-side trends discussed.

2 Meat Innovations distributor looking for grass fed (meatinnovations@aol.com Even Wexler 718-764-5658) Dave Mosner at Hunts Point (Broccolli). Flying Pigs is looking for someone to raise pigs for them.
of the New Farmer Development Program have success with a diverse direct marketing model in which farmers sell to CSAs, farmers markets, and direct to restaurants.

a) **Farmers Markets**

According to the New York State Farmers Direct Marketing Association the number of farmers markets in the New York has grown from 235 in 2000 to 450 in 2010, nearly doubling. Looking at the New York City market, the number of NYC Greenmarket Farmers Markets (located in Manhattan, Brooklyn, the Bronx, Queens or Staten Island) has nearly doubled in eight years from 28 locations in 2002 to 50 in 2010. The Greenmarket is a part of GrowNYC, a nonprofit, which has several environment and agriculture-based programs in New York City. The Greenmarket runs the largest and most successful open-air farmers market in the country. Currently there are over 200 farmers and fisherman participating in the Greenmarket. Greenmarket revenue has increased from approximately $1.5 million in 2003 to $2.8 million in 2008, an 87 % increase. The majority of this growth occurred between 2006 and 2008. Greenmarket charges farmers 1-5% of their profits to rent stalls; assuming a 2.5% average, this implies that in 2008 the 190 Greenmarket farmers earned in excess of $100 million in revenue at the markets or approximately $500,000/year on average (Grow NYC).

b) **Community Supported Agriculture (“CSAs”)**

A CSA consists of a group of individuals that each purchase a “share” of the product (typically vegetables) produced by a local/regional farmer. Shares generally cost $400-$600. When a consumer purchases a share he typically receives a bag or box of produce each week for a 26-week period during the summer and fall (most run June to October). He picks up his bag at the farmers location or at a designated drop spot. The most critical component of the CSA model is that consumers purchase their shares in the winter so as to provide capital for the farmer to produce product during the season. In this way the consumers shares the risk of a bad season and the rewards of a good season.

Just Food is a non-profit NYC organization that helps create and manage CSAs. They manage 100 organic CSAs in the five boroughs. This is up from 80 CSAs last year (a 25% increase). Just Food currently has a hold on new CSAs in the city as they do not have the capacity to handle anymore. They feel very strongly that Westchester and other suburban metro NYC areas are ripe for significant growth. Last year, Just Food, had 29 vegetables farmers serving the 80 CSA, which average around 225 members. Using $475/share this represents an $8.5 million market served by Just Food and an average of $295,000 in revenue per farm. According to Just Food, the greatest need in the NYC Metro CSA market is winter shares (season extenders), which can be address by hoop houses and winter storage. Processed food -- canned, pickled, sauces, salsas, etc - are not important (Griffith, 2010). At Intervale, most of the farmers have waiting list for their CSAs and their feeling is that the market is not close to being tapped.

**Examples of CSAs serving the New York Market**

- **Stoneledge Farm, South Cairo, NY**-- 100 acre certified organic farm of which 50 acres are cropland. They serve 17 CSA locations through out eastern New York, New York City and western Connecticut and support over 1,200 CSA shares. We estimate this farm is generating approximately $594,000 in annual sales or $11,880/acre.

- **Roxbury Farm, Kinderhook, NY** -- 225-acre organic farm growing vegetables, herbs and grass-fed animals for 1,000 CSA members in Columbia County, the Capital Region, Westchester County and Manhattan. Sales are estimated at about $520,000.

- **Golden Earth Worm, Long Island** -- 80-acre organic farm growing fruit and vegetables serving 1,500 CSA members. Sales estimated at about $825,000 or $10,312/acre.
2. **Wholesale**

The wholesale market, which is defined as buyers such as restaurants, caterers, food retailers, produce distributors and florists, shows significant growth potential and is clearly underserved. According to a 2005 study by Market Ventures, Inc. entitled “A Study on Development of New York City Wholesale Farmer’s Market” on behalf of the New York State Department of Agriculture and Markets, there was significant unmet demand for locally grown farm products by food service, distributors and retailers. (This study is the only one that has been to done to attempt to quantify the wholesale demand for local foods.) This study determined that in 2005 the unmet wholesale demand for local product in New York City was $866 million. In 2005 this represented about 3% of the total food market in the NYC metro region. The author of the study now estimates that the wholesale market has grown to $4 billion (Karp Resources, 2005).

Specifically, the study showed that the demand among New York City food retailers, restaurants and produce distributors for locally grown produce was $649 million; for local meat and poultry $48 million; for local eggs and dairy $44 million. The demand for local plants and flowers from florists and other horticultural buyers was $126 million.

The study asked farmers to estimate the annual gross sales they would expect if they sold through a wholesale market in New York City. The average for all of those surveyed was $79,000. The city’s size, its proximity to farming areas and the swelling demand for fresh foods provide a tremendous opportunity for farmers and food producers from New York and adjacent states to expand their marketing to the city’s wholesale buyers if it can be done cost-effectively (Karp Resources, 2005).

There is increasing demand for local products in grocery retailers. For example, the Catskill, NY Walmart store manager stated that he had been trying to source local product for two years but has been unsuccessful. He was unsure as to the reason, but Walmart like other large retailers, requires suppliers to meet certain criteria including product liability insurance. In general, the paperwork and process requirements of larger retailers can be daunting and time-consuming for small business.

C. **Supply-Side Trends**

1. **National**

According to the 2007 Census of Agriculture, the number of farms in the United States has grown four percent, the average market value of product sold per farm has grown and the operators of those farms have become more diverse in the past five years. Nearly 300,000 new farms have begun operation since the last census in 2002. Compared to all farms nationwide, these new farms tend to have more diversified production, fewer acres, lower sales and younger operators who also work off-farm. U.S. farm operators have become more demographically diverse. Census results show that the majority of U.S. farms are smaller operations. More than 36 percent are classified as residential/lifestyle farms that have sales of less than $250,000 and operators with a primary occupation other than farming. Another 21 percent are retirement farms, which have sales of less than $250,000 and operators who reported they are retired. In 2007, the average market value of product sold per farm was $134,807, a 43% increase from 2002. By comparison, in 2002 the average market value of product sold per farm was $94,245, a 3% increase from 1997.

The number of farms between 1 and 179 acres increased 8% between 2002 and 2007; the number of farms between 180 and 999 acres declined 6%; and the number of farms 1000 acres or more remained flat. One possible explanation for the increase in smaller farms and the stagnation of mid-sized farms is that smaller farms have been able to use direct sales channels to sell all or most of their product. In order to move to the next level farmers would need to enter wholesale markets for which, on regional levels, there is limited processing.
operations (washing, grading, freezing packing fruit and vegetables, slaughter and mills) and wholesale
distribution. Furthermore, selling into retail operations such as grocery stores or distributors that serve them
requires food safety and tracking systems and processing and packaging consistency that farmers find challenging.

2. **Regional**

Using the 2007 Census of Agriculture as well as interviews with various agriculture experts in the region, current
agriculture production trends in Greene County and select counties in the region were analyzed. The focus for the
analysis was to identify facts and trends in small to medium farm agriculture production (loosely defined as
agriculture production not associate with large commercial farming ventures). The overriding conclusion is that
agriculture from small and medium farms is experiencing a growth trend both in Greene County and the Regional
Counties and New York State overall.

a) **Sales increased for all Regional Counties**

Total sales for the Regional Counties were $342.8 million in 2007 versus $257.7 million in 2002, a 33% increase. Note: Ulster County saw a
dramatic increase in 2007 this was due to the fact that 40% of the fruit crop failed in 2002. Growth
excluding Ulster County was 24% (Fargione, 2010). At $16.4 million Greene County had the
smallest agriculture sales of the Regional Counties, which averaged $32.2 million. Greene County sales grew 14% during the five-year period.

```
<table>
<thead>
<tr>
<th>County</th>
<th>Total Sales 2007</th>
<th>Total Sales 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>$70,000,000</td>
<td>$50,000,000</td>
</tr>
<tr>
<td>Columbia</td>
<td>$65,000,000</td>
<td>$45,000,000</td>
</tr>
<tr>
<td>Delaware</td>
<td>$50,000,000</td>
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</tr>
<tr>
<td>Dutchess</td>
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<td>$25,000,000</td>
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<tr>
<td>Greene</td>
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<tr>
<td>Rensselaer</td>
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</tr>
<tr>
<td>Schenectady</td>
<td>$25,000,000</td>
<td>$15,000,000</td>
</tr>
<tr>
<td>Ulster</td>
<td>$20,000,000</td>
<td>$15,000,000</td>
</tr>
</tbody>
</table>
```

b) **Direct Sales increased for all Regional Counties except Ulster**

Total direct sales for the Regional Counties were $16.8 million in 2007 versus $14.5 million in 2002, a 19% increase. Again we see that the 2002 fruit crop failure is
skewing the data as Ulster County showed a significant decrease in direct sales. This, in all likelihood, reflects a relative increase in the wholesale prices as a result of the shortage (Fargione, 2010). Direct sales growth in 2007 excluding Ulster was a 47%. Greene County direct sales more than tripped growing from $539,000 to $2 million. This is due in large part to the
growth in land holdings and marketing efforts of four larger producers (Bessire, 2010). Greene County has the highest average direct sales per farm with $43,478 versus $21,862 for the Regional Counties.
3. **Organic**

2007 was the first year the Census reported Organic Sales. For the Regional Counties this totaled $3.8 million in 2007 or about 1% of Total Sales. Greene County had eleven farms earning $.5 million in organic sales averaging $44,273/farm, which was the highest average Organic Sales per farm in the region.

![Ave. Organic Sales/Farm](chart.png)

D. **Factors Limiting Supply**

Despite this impressive growth there are three critical factors limiting supply:

1. There was a general consensus among individuals interviewed that most older farmers are not interested in tackling new products, processes and markets. In 2007, the average age of Greene County farmers was 57.8 years. (USDA). In addition a study done by Karp Resources showed that there is a statistically significant correlation between years in farming and interest in a NYC wholesale farmers’ market. Those with fewer years in farming showed more interest than the more tenured farmers (Karp Resources 2005).

2. Due to the consolidation of American farming over the past several decades, agriculture infrastructure that supports small and mid-sized farms has dwindled. This is particularly true in the eastern part of New York State (Schaeffer, 2010). There is need for processing operations (washing, grading, freezing and packing fruit and vegetables, slaughter and mills) and wholesale distribution serving local farm products.

3. Limited access to affordable quality agriculture land as farmlands are lost to development. The number of farms in Greene County declined by 16% from 2002 to 2007.

VI. **“AGRICULTURE INCUBATOR” MODELS**

Broadly agriculture incubators are organizations that offer some combination of farming education, hands-on training and low-cost land and infrastructure to help farmers launch new agricultural business. Their goal is to support and growth the agricultural base in their region. They address four core barriers to starting a successful farm business.

1) Lack of knowledge
2) Lack of experience
3) Lack of equipment due to lack of capital
4) Lack of land due to lack of capital and availability

Agriculture Incubators fall into three categories to address these needs.

1) Educational (farming and business) Incubators
2) Land-based Farmer Training Incubators
3) Land-based Agriculture Business Incubators
A. **Educational Incubators**  

*Incubators with an educational focus that address lack of knowledge both in farm methods and business skills.*

These incubators primarily provide educational support and business consulting

**Examples**
- Hawthorne Valley Farm Beginnings Program (started 2009)
- The Farm School
- Ottawa County Michigan Agriculture Incubator
- Central New York Agriculture Incubator (in development)

See Appendix F for detailed descriptions.

B. **Land-based Farmer Training Incubators**  

*Incubators with a physical location that address lack of knowledge and lack of experience.*

These incubators serve as “Experiential Farming Schools” providing education and hands-on training for beginning farmers with demonstration farms. Unlike, the Land-based Agriculture Business Incubators, their mandates are not to specifically help start new farm businesses, but rather to train individuals for farming.

**Examples**
- Stone Barns Center for Food and Agriculture
- Sullivan County, NY Demonstration Farm (in development)

See Appendix G for detailed descriptions.

C. **Land-based Agriculture Business Incubators**  

*Incubators with a physical location and shared infrastructure that address lack of experience, land and equipment needs for new farming enterprises.*

In addition to providing land and infrastructure, these incubators may provide farming internships, farm skill training, and agricultural business development. The most important distinction between these types of incubators is that one of their primary goals is to help start new farming businesses.

**Examples**
- Agriculture and Land Based Training Association “ALBA” (Salinas, CA started 1972)
- Farm Catskill - Growing New Farmer Incubator (Delaware County, NY started 2010)
- FarmStart: The New Farms Incubator Program (Ontario, Canada. Recently started)
- Intervale Center (Burlington, VT started 1988)
- Meridale Farm Center (Delaware County, NY proposed)
- Minnesota Project Urban Farm Incubator (in development)
- Raft Swamp Farms (Hoke County, NC)
- Southern Maine Incubator (not launched)
- The Seed Farm (started 2010)

See Appendix H for detailed descriptions.
VII. DEMAND FOR INCUBATORS

There has been a substantial increase in small farm start-ups and programs and organizations have sprouted up to serve them. For example, the Cornell NY Beginning Farmer Project was launched in 2006 in response to increasing interest in farm start-up. Furthermore, with the growth in the local food market and its emphasis on a diversified crop model, existing farmers will or have seen opportunities to branch out into new product and business models. For example, a local crop farmer that would like to pursue livestock could run his business out of the Incubator. There are numerous organizations providing information, educational, networking, grants and technical support for farmers in the region. The missing link in the maze of programs, institutions, and organizations supporting the small farming and local food movement in the region is a land-based incubator for farmers ready to start their businesses (Green 2010). Appendix C provides a list of 24 organizations serving regional farmers and provides additional detail for the organizations listed below. While there is demand for incubator opportunities, there is also competition for the best new farmers. Competition comes from wealthy landowners who lease land to these farmers. Access to production and processing equipment offered by the GCAI would be a substantial advantage (Fleming, 2010).

A. Organizations Supporting New Farmers

There are seven organizations or programs that have recently been launched in the region targeted towards start-up farmers. These operations can serve as referral sources for GCAI recruitment. Collectively these groups work with over 200 potential candidates each year.

- **NY Beginning Farmer Project** aims to enhance the likelihood of success of new agricultural enterprises by making the best resources and training available to new and diversifying farmers. A team of Cornell Cooperative Extension Educators in partnership with the Cornell Small Farms Program leads the NY Beginning Farmer Project.
- **Hawthorne Valley Farm Beginning Program** is a training and education program and is expected to have 15-20 participants in its first year (For more information see Appendix D).
- **Hudson Valley Collaborative Regional Alliance for Farmer Training** is a cooperative effort of local farms to enhance educational opportunities for 30-40 farm apprentices per year.
- **Greenhorns’** mission is to "recruit, promote and support" the growing tribe of new agrarians. It has several hundred members nationwide and estimates that they could refer 20 candidates each year to the GCAI.
- **Beginning Women Farmers Program** is training 270 farmers in the northeast and was launched in 2010. (See Appendix E for more information)
- **Catskill Farmlink** (in development) is a project of the NY Watershed Agriculture Council to meet the need to connect farmers with landowners.
- **Greenmarket New Farmer Development Program** identifies, educates and supports immigrants with agricultural experience by helping them become local farmers and establish small farms in the region. The NFDP was created in 2000 as a partnership between Greenmarket and Cornell Cooperative Extension's NYC Program. The project is based in New York City and supports new farmers within the city, New York's Hudson Valley and Catskill Regions, New Jersey and northeastern Pennsylvania. More than 150 immigrants have graduated from the NFDP’s comprehensive agriculture training course. Twenty-two individuals and families have started their own farming businesses with the support of NFDP of which six have their own land, five have long-term leases (3+ years) and the rest have short term leases. According to Kate Granger, NFDP Program Director, graduates from these programs are experienced farmers and are ready to start new business; their largest hurdle is finding access to land. The program does not
provide any start-up funding to farmers, as it is important that they are able to run their own businesses. However, once they graduate from the training course and have a lease in place, they are eligible to apply for a microcredit loan from the project. (First-year farmers are limited to loans of $3,000. There is no loan limit for more experienced farmers, but few loans exceed $5,000.)

In addition, NYFarmlink has close to 100 listing for individuals hoping to buy or work into a farm. The overall trend shows more land seekers than land sellers. This trend is expected to continue. Seekers are a mix of interested and experienced folks “with a group of dreamers that have no idea of what they are getting themselves into” (Perry, 2010).

It would be an understatement to say that the people we have spoken to at these organizations are enthusiastic.

I. Rachel Schneider, the Director of Hawthorne Valley Farm Beginnings, is extremely supportive of the GCAI. The possibility of an alliance between programs could be an elegant opportunity to raise the profile and quality of both the GCAI and Rachel’s program. New farmers would enter her program with the understanding that those with business plans that show solid promise for success would be considered for the GCAI.

II. The Beginning Women Farmer Program is of particular note, as one of the program aims is to improve land health and water quality on participating farms by specifically focusing on whole farm planning and biological monitoring and record keeping. This could integrate very well with habitat integration needs. Furthermore, the program has a $650,000 grant from the USDA with 270 woman farmers slated to take its 3-year program. In 2010, farms were selected to participate in a biological monitoring protocol that will track changes in soil, forage produced and biodiversity to document how improved management practices (learned in the whole farm planning workshops) impact land health and productivity. Rachel Schneider will be a trainer in this program. The GCAI could potentially participate directly in this program.

III. Severine von Tscharner Fleming, the director of the Greenhorns, has access to a large regional and national network of new farmers that are looking for land. Severine estimates that if the GCAI were to open today, approximately 20 farmers would apply for positions. These individuals would have 2-3 years of internship experience and be folks in their late 20s or second-career people.

IV. One idea proposed at the May 25th meeting was that farmers currently operating farm business could launch new businesses at the GCAI. Another suggestion was that an incubator could provide a fantastic opportunity to help local Greene County young people or second, third, etc generation farmers pursue agricultural businesses. The Greenville High School Future Farmers of America program is quite active.

### B. Existing Incubator Experience

The demand for incubators can be seen in the experience of two of land-based incubator referenced in Land-based Agriculture Business Incubators section of the report. These are the Intervale Center in Burlington Vermont, which is one of the oldest Incubators in the country, and The Seed Farm located in Pennsylvania’s Lehigh Valley, which was opened for applications in 2009. (Detailed information on both these organizations can be found in Appendix H.) Both these organizations have success in attracting candidates and have found the greatest interest from individuals 20 to 30 years old and who have some farming experience.

In its first year, The Seed Farm had 14 people apply to its incubator program of which 6 were accepted. Applicants varied from high school seniors to middle aged people. Most of the applicants were young adults (20s and 30s) with diverse backgrounds. Many of the applicants had some farming experience (i.e. they had interned or worked on a farm or had gardening experience, etc.), and a couple of the applicants had small farm businesses. Most of the applicants had full or part time jobs unrelated to farming. All the applicants were from the Southeast Pennsylvania area (Lehigh County or counties adjacent to Lehigh). Three of the six apprentices selected were residents of Lehigh Valley.
A typical Intervale candidate would be a University of Vermont graduates, with a degree in something other than agriculture, in late their 20s or early 30s and have never owned a farm. Intervale does not actively solicit candidates. Most applicants arrive through word of mouth and several have moved to Burlington to be in the Intervale program. Once there they do not leave as they have built a local market. They often receive 30 or more inquires each year with ten seriously considering applying. Applicants work with Intervale staff to prepare business plan proposal for their application. By the approval stage, there are usually only two to three applicants remaining.

**VIII. **GREENE COUNTY AGRICULTURE INCUBATOR MODEL

The IDA’s development philosophy is to take a proactive role in supporting the development of agriculture in Greene County and to maintain a balance between conservation and agriculture. A critical consideration for the IDA’s interest in exploring the feasibility of the GCAI is its overarching concern that designating land solely for habitat will reduce the already shrinking agriculture land base. A land-based Incubator located on Greene Land Trust holdings could be a means of keeping the land employed in agriculture, be a catalyst and model for integrating habitat management and agriculture and a driver for agriculture economic development. The Green Land Trust has an option on the Mabee Farm in Coxsackie, NY and the adjacent Mabee Land as part of the Greene Land Trust program. Additional farm acreage may also become available.

For purposes of developing a model program for the GCAI, this study uses the Mabee property as a theoretical location for the GCAI, incorporates the integration of habitat and agriculture, and incorporates agricultural economic growth as key priority.

**A. Mabee Farm Background**

As part of its land conservation program, The Green Land Trust has secured an option to purchase approximately 175 acres of land located in Coxsackie, NY, the property known as the Mabel Farm and Mabee Land. The land is adjacent to 100 acres currently owned by the Greene Land Trust. For purposes of this study, this land base is being used as a theoretical site for the GCAI since it is a potential site and is representative of other Greene County lands. However, there is additional farm acreage that may also become available and could be better suited for the GCAI.

The following presents some general information about the property. The land would have or does have habitat conservation restrictions that need to be addressed. The Land Use numbers are estimates of usage that could serve both agriculture and habitat and are presented for modeling purposes only.

<table>
<thead>
<tr>
<th>125-Acre Mabee Farm</th>
<th>100 Acre Greene Land Trust land</th>
<th>50-Acre Mabee Land</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Use</strong></td>
<td><strong>Land Use</strong></td>
<td><strong>Land Use</strong></td>
</tr>
<tr>
<td>o 50% Late Cut Hay (63 acres)</td>
<td>o No Crops</td>
<td>o Less restrictive</td>
</tr>
<tr>
<td>o 25% Grazing (31 acres)</td>
<td>o Grazing</td>
<td>o Grazing</td>
</tr>
<tr>
<td>o 25% crops (31 acres)</td>
<td>Adjacent to Coxsackie Creek; could support well</td>
<td>No well, but property could support</td>
</tr>
<tr>
<td><strong>Shared Well</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Soil quality: 10-15% is &lt; Class 2 &amp; 3</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B. Proposed Mission and Goals

The GCAI mission is to support the growth of new farming businesses in Greene County by offering access to land and infrastructure and business support to farm entrepreneurs. The following lists the goals for the GCAI:

1. To employ IDA acquired land in agricultural production in a manner consistent with habitat preservation.
2. To increase the amount of existing farm lands employed in growing and profitable farming enterprises.
3. To attract the “best” start-up farming ventures to Greene County.
4. To support existing farmers by offering a platform for launching new farming ventures.
5. Increase the critical mass of agriculture-related products so as to offer opportunities for the agriculture industry overall.
6. To increase agriculture-related revenue, income and jobs.
7. Make Greene County an farming innovation and entrepreneur center (agriculture equivalent of “Tech Valley”)

The GCAI can accomplish these goals by:

1. Developing a model for agriculture and habitat integration to secure lands from the Greene Land Trust for creation of the GCAI and for long-term leasing to farmers.
2. Creating the GCAI infrastructure and programs to support farming entrepreneurs to capitalize on local and sustainable food market.
3. Selecting farmers with the intent to employ innovative farming practices and to pursue new growing markets.
4. Educating farmers in business planning.

Finally, there are ample opportunities and arguments for broadening this mission and goals. This is discussed in the GCAI as Regional Agribusiness Center section.

C. Agriculture Model

The agriculture model assumes the GCAI will open with six farmers each operating a mixed farming operation defined as specialty vegetable production, berries, livestock and poultry. The operation will provide the equipment infrastructure typically used on a 5-acre farm. This mixed farming model will allow for the greatest flexibility in building the infrastructure to meet the broad local food market as well as mirror the land and farm characteristics of Greene County, which are small-to-medium sized operations and lands appropriate for livestock.

We have assumed the GCAI will support 70 head of cattle, using a traditional Prescribed Grazing Management (“PGM”). Based on GCAI land base, which has a high proportion of lower quality soils currently employed in haying, targeting livestock farmers would be an important part of the program. Crop processing infrastructure assumes vegetables and berries will be prepared for sale into farmers markets, CSAs, and direct to foodservice which require basic washing, sorting and packing.

Based on the Mabee farm characteristics, we have assumed the following:

<table>
<thead>
<tr>
<th>275-acre location</th>
<th>Farm production</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 35 acres designated as cropland for fruit and vegetables</td>
<td>• Up to 6-5 acres mixed vegetable crops</td>
</tr>
<tr>
<td>• 140 acres livestock fallow</td>
<td>• 1 acre small fruit</td>
</tr>
<tr>
<td>• 100 acres fallow/habitat /late cut hay for bedding</td>
<td>• 70 head of beef and/or goats/sheep/hogs</td>
</tr>
<tr>
<td></td>
<td>• Grass-fed/range chickens integrated into livestock grazing</td>
</tr>
</tbody>
</table>

1. Production Methods

The GCAI should be open to a variety of production methods employed by the incubator farmers. However, ecological agriculture practices would in
all likelihood be the driving model as they are advocated by several beginning farmer-training programs and are sensitive to habitat. Additionally, the habitat needs of specific target bird species should be factored into the location and amount of habitat land as well as the agriculture practices. Ecological agriculture practices are a holistic approach to agriculture encompassing the biological, social, animal and human aspects of the farm enterprise. Ecological farming is contrasted with traditional commercial agriculture, which relies on off-farm inputs such as fertilizers, feeds and pesticides. Management techniques include cover crops, green manures, composting, mulching, crop rotation, no till cropping and the use of animal waste to maintain fertility (Ecological Agriculture). Ecological farming generally involves a diversity of crops, animals and methods. Diversification prevents pest build-up and provides insurance against crop failure (Hendrickson, 2005). The program and infrastructure offered by the GCAI would be well suited for this model as learning to grow many different crops is challenging and growers with a wide array of crops often cannot justify specialized equipment purchases. (Hendrickson, 2005)

With respect to livestock, in order to produce quality grass-fed beef, Prescribed Grazing Management methods and other resource-efficient grazing practices are essential. One approach, as proposed by Mick Bessire (Greene County CCE Agroforestry), would be to use the total 140 acres for the grazing animals, but in late May or early June take hay off 70 acres, leaving wide margins around the fields for the hawks/songbirds. After 3 grazing rotations, the land cut for hay would be entered into a grand rotation for the remainder of the year. Mick believes (subject to additional validation from hawk experts) that nesting birds all across the spectrum would be attracted to and thrive in the extra-wide margins left around the proposed grazing, haying, and croplands (Bessire, 2010). Another alternative would be to devote 70 acres just for grazing and the other 70 acres for haying throughout the season. The choice of livestock production management employed by the farmers will impact the final decision. Furthermore, pasture management for high quality forage is also required. Grasses with a 30-50% component of legume should be considered. Alfalfa should not be overlooked if the soil and climate are suitable. If management, soil, or climate capacity is not available to support pasture requirements, production costs are likely to increase significantly (Zimmerman, 2010).

Given that the Northeast climate prohibits pasturing cattle throughout the year, hay production is a requirement. CGAI farmers have essentially three alternatives: hay can be grown and cut by the Incubator farmers, cut by custom harvesters or farmers can purchase hay. This rotational grazing/hay harvesting system provides for minimized hay harvests at maximized hay quality, but requires incubator farmers to cut and harvest their own hay. Therefore we recommend that GCAI provide the hay cutting and harvesting equipment for the incubator farmers.

Within this over-arching model, farmers could choose to use organic methods (although the land would need be prepared for organic certification, a 3 year process) or conventional methods. One example of a farming method that could be employed is Holistic Management. This is a land-based strategic planning methodology designed to improve the health and profitability of land with an emphasis on models that manage livestock to enhance the health of the land and wildlife. See Appendix J for more information.

2. **Infrastructure**

Given the fact that the property for the GCAI has not been definitively selected, recommendations are meant to serve as guidelines. Furthermore, input from the farmers selected to participate in the GCAI will be critical. For example, installation of a fruit/berry orchard would only be appropriate if a farmer was interested in producing these products.

General assumptions for determining possible infrastructure needs are:

1. Agriculture model and land characteristics outlined in the Agriculture Model section.
2. Permanent structures are supplied by GCAI.
3. Farmers will provide production-specific equipment that can be removed from the location (although the GCAI could consider providing low interest loans).
4. Equipment or implements that are infrequently used by an individual farmer or require a substantial capital outlay ($10,000 +/-) are to be provided by the GCAI.
5. There is a barn for equipment storage and processing needs.
6. There is an on-site farm stand.
7. Dollar amounts are “budgeted” numbers and do not necessarily reflect actual costs, since at this point there are too many variables to obtain costs quotes. (Budget numbers err high.)
8. New (not used) equipment is purchased.
9. Infrastructure improvement work is contracted and not done in-house or by the farmers.

Infrastructure and equipment requirements are divided into three categories: production, post-harvest handling and farm stand. The total budget is $297,000.

### a) Production

<table>
<thead>
<tr>
<th>Infrastructure and Equipment</th>
<th>Comment</th>
<th>Year 1 Budget</th>
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<tbody>
<tr>
<td><strong>Fencing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock Fencing</td>
<td>Perimeter fencing installed around entire livestock-designated area. Farmers could supply their own portable fencing for paddocks. This would require approximately 7,000 linear feet at $2-$3 per linear foot, or $14,000 to $21,000. Additional costs will be incurred if goats are raised. (Bessire, 2010)</td>
<td>$17,500</td>
</tr>
<tr>
<td>Deer Fencing</td>
<td>This can vary considerably based on severity of deer problem in location. More important for fruit than vegetables. Materials for deer fencing for 10 acres (approximately 2,620 linear feet) would costs $4-6 per foot for a total range of $10,650 to $15,840. In addition, maintenance costs can be quite expensive. (Bessire, 2010) A decision on need to install deer fencing could happen after GCAI Farmers have had a season on the farm. Furthermore, deer fencing can be removed so it could be purchased and owned by individual farmers.</td>
<td></td>
</tr>
<tr>
<td><strong>Water and Irrigation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well (or alternative system of ponds and cisterns), Pump and Pump-house</td>
<td>Will need to include a metering system in order to track individual farmer usage.</td>
<td>$20,000</td>
</tr>
<tr>
<td>Water System (70 Acres grazing)</td>
<td>Assume low maintenance natural feed systems. Budget represents costs for excavation, fencing and black poly tubing on top of the ground. Depending upon the layout of the fences and paddock, the costs would run $4000 - $5000. Will need to address frost prevention.</td>
<td>$4,500</td>
</tr>
<tr>
<td>Irrigation main lines and headers</td>
<td>Farmer provides irrigation lines to main lines. Need and type of irrigation is debatable and will require farmer input. (Note Intervalle irrigation system is valued at $70,000 for 120 acres (includes main pump and pump-house).</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>Buildings/Structures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barn to house feed, equipment, cooler(s) and processing station includes electricity, plumbing and</td>
<td>General improvements to the Mabee barn (30 acres of vegetables would require about 2,500 square feet of space for washing, packing and coolers) (Hendrickson, 2005). Will also need a separate shop area.</td>
<td>$20,000</td>
</tr>
<tr>
<td>Structures for livestock</td>
<td>Run-in shed(s) for the livestock would be provided ($3000). In addition, there should be livestock handling/working corrals, pens and equipment included. This can be expensive, but for $10,000 or less, good quality handling equipment like: weaning/feeding pens, chutes and alleyways for sorting, doctoring and working animals, squeeze, palpation, loading chutes could/should be incorporated. (Bessire, 2010)</td>
<td>$13,000</td>
</tr>
<tr>
<td>Farm Tractors and Vehicles</td>
<td>1 - 35 hp Tractor with loader 4-wheel drive 1-80 hp Tractor with bucket</td>
<td>May need 3 tractors.</td>
</tr>
<tr>
<td>Greenhouse plastic covered w/benches and heater</td>
<td>Farmer demand for the number of greenhouses will need to be evaluated. An average 5-acre farm would use a 1,500 square foot greenhouse. (Hendrickson, 2005)</td>
<td>$7,000</td>
</tr>
<tr>
<td>Hay Cutting and Harvesting</td>
<td>Haybine (disc-type, pull behind) Baler (large round) Tedder</td>
<td></td>
</tr>
<tr>
<td>Composting area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>Wiring and installation to mainline greenhouse, buildings, and water pump</td>
<td>Will depend upon site.</td>
</tr>
<tr>
<td>Plants</td>
<td>Berry Seedlings</td>
<td>If need is determined by farmer(s), then purchased by GCAI and “rented” by the farmer. Will need 3 years before maturity.</td>
</tr>
<tr>
<td>Implements</td>
<td>3pt rotary mower 3pt tiller 3pt digger (field cultivator) 3pt chisel plow 3pt tool bar and clamps 3pt sprayer 6 ft grain drill Manure spreader 4 x 6 trailer Disc Harrow Vegetable Transplanter Lely spring tine cultivator Bedding (mulch) chopper</td>
<td>Will vary depending on needs of farmers. (Assumed all new implements.)</td>
</tr>
<tr>
<td>Ancillary work required to</td>
<td>Could get creative by clearing land with cattle or other livestock.</td>
<td></td>
</tr>
</tbody>
</table>

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3 Polyface Farms use 10 ft. X 12 ft. X 2 ft. high floorless, portable field shelters housing about 75 birds each to grow 8-week meat birds. (n.d.). Retrieved from Polyface Farms: www.polyfacefarms.com
prepare site: Tree removal, bushwhacking, roads, mowing, etc.

| TOTAL BUDGET | $272,500 |

b) Post-Harvest Handling

Post-harvest handling, which includes cooling, washing, grading (if necessary) and packing, was repeatedly cited as critical to the long-term quality of the product. Cooling is particularly important as the sooner produce is cooled, the better its chance for a long storage and shelf life. For example, some products with high respiration rates (asparagus, broccoli, peas) can deteriorate as much in one hour at 78 degrees as in one week at 34 degrees.

<table>
<thead>
<tr>
<th>Infrastructure and Equipment</th>
<th>Comment</th>
<th>Year 1 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-cooling and cooler</td>
<td>Assumed 1 cooler; however, cooling systems will need to be designed to meet needs of particular produce. Multiple coolers could be used to accommodate different holding temperatures. An alternative would be to use a CoolBot, which would be much less expensive as long as space was available in barn. (The CoolBot turns a highly insulated room with a window air conditioning unit into a walk-in cooler.)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Washing Line and Sorting Tables</td>
<td>(Hendrickson, 2005)</td>
<td>$3,000</td>
</tr>
<tr>
<td>Barrel Washer</td>
<td>(Hendrickson, 2005)</td>
<td>$1,500</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$14,500</td>
</tr>
</tbody>
</table>

c) Farm Stand

A farm stand is particularly important as it will train farmers in direct marketing but also increase community awareness of project and could encourage agritourism to the site.

<table>
<thead>
<tr>
<th>Infrastructure and Equipment</th>
<th>Comment</th>
<th>Year 1 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Stand/Store (400 sq ft)</td>
<td>Simple open sided structure includes cash register system, shelves, displays, etc.</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

D. Education

As a result of the local food movement, farming business models are changing. They are moving away from commodity-based business models, and moving into models where profit can be realized by effective niche product development, marketing, branding and customer relationship development. With new farming entrants, there is an opportunity to change the mindset from a production focus to a customer focus. Business plan training and development that includes the following would be important to capitalize on this trend:

- Market Size Evaluation
- Competitive Assessment
- Distribution alternatives and costs
Regional organizations that offer business planning services includes New York Farmlink, Hawthorne Valley Farm and Hudson Valley Agribusiness Development Corporation (“HVADC”), as well as economic development agencies which provide microenterprise consulting services, such as the Columbia Hudson Partnership. New York Farmlink, based in Ithaca, NY, was recently awarded a 2-year grant to provide business-consulting services. They could send consultants to Greene County for business planning classes, or provide consulting services and business plan review directly for individual farmers (Perry, 2010). Intervale offers its Success on Farms program, which provides business-planning services throughout the state of Vermont. They bring in outside experts to provide programming, which is funded by the Vermont Housing Board. Intervale requires a business plan as part of its application process.

E. Program Design

1. Fee Structure

Since there are a number of unknown parameters, the program design of the GCAI is best approached conceptually. The basic plan is that the GCAI would charge farmers fees to cover about 85% of equipment, land and infrastructure costs, and bill at market rates for utilities.

1) Land is leased at market rates plus cost to cover fencing, roads and site maintenance.
2) Land lease and administration fees cover administration costs, including legal, accounting and insurance.
3) Equipment rental fees are set to cover maintenance costs and replacement reserve.
4) Facility rental fees are set to cover maintenance costs and, in the case of coolers or other similar semi-permanent facilities, a replacement reserve.
5) Water Fees are set to cover facility maintenance costs, including irrigation mainlines. Fee would be based on usage.
6) Sewer and waste disposal fees are set to cover most costs incurred.
7) Electricity fees, if possible, are based on usage; if not, they are prorated based on acreage.
8) Program outreach expenses could be covered by a percentage earned by the GCAI on farm stand income.

The equipment and facility rental fee structure has the GCAI paying the implied financing costs, while receiving fees that cover maintenance and a replacement reserve. This forces the farmer to operate closer to a “real world” situation.

2. Farmer Criteria and Program Terms

Careful selection of the incubator farmers is critical considerations. The selection of the farmers should be consistent with the overall goals of the incubator and clearly understood and agreed upon by the selection committee. The programs terms such as length of lease and amount of land should be, within boundaries, farmer specific.

a) Selection Criteria

- Evidence of practical farming experience, such as farm employment, sharecropping, internships or current or prior farm ownership or leasing.
- Presentation of a solid business plan and, ideally, completion of a farm business-planning course such as offered at Hawthorne Valley. In addition, financial resources will be reviewed.
- Intent to remain in Greene County region.
- Capacity to take risk and cover living expenses.
- Demonstrate knowledge of ecological agriculture practices.
- Intent to employ innovative farming practices and pursue new growing markets. (Intervale now looks for applicants that have identified a niche market with unmet needs.)
- Shows a capacity to work collectively, be a team player and is a cultural fit.
- Acreage, infrastructure and equipment needs that can be met by incubator.

b) Application Process

Examples of application requirements and process are detailed in Appendix K.

c) Length of Program

There are a variety of opinions on this, from a minimum of 1-2 years for vegetables farmers and 2-3 for livestock, to a four-year program. Kate Grange from the NYC Greenmarket New Farmer Development Programs has observed that their farmers generally experience a loss the first year, breakeven the second year, profitability the third year and use the fourth year to save profits for moving to a permanent location (Grange, 2010). Intervale targets three years at the center, and structures one year renewable leases; but they do recommend that some farms become permanent. The Seed Farm also has a three year target; however, the Seed Farm has a challenging mandate to transition 21,000 acres of land to agriculture. Furthermore, livestock farmers may need more time on the incubator to build their business. In general, the best format appears to be a one-year lease, renewable by either party and a four-year maximum term, except in the case of farmers identified as permanent.

d) Farmer Transition

There was some concern about the challenges of getting farmers to move out of the Incubator. This seems to more of an issue of finding affordable and suitable new locations, and not the practical issue of moving a farming operation to a new location. According to Rachel Schneider from Hawthorne Valley Farm, there are ample examples of farmers in her programs that have successfully moved to new locations. These include the Chubby Bunny Farm, Little Seed, Monks Hood Nursery and Jean-Paul Courtens of Roxbury Farm.

The GCAI should actively monitor and support farmer progress on transition to permanent locations. Working with organizations that are tackling this issue will be important. For example,
- Greenhorns is organizing workshops to address land issues for new farmers.
- NYFarmlink provides farm listings of farm owners who want to transfer farms and seekers who want to work into farm ownership.
- The Watershed Agriculture Council is developing Catskill Farmlink.

Finally, farmers could stay on incubator farms or transition to Greene Land Trust property. One goal for the IDA could be to dedicate land for agriculture use by providing long-term leases to farmers.

F. Management and Governance

Given the complexity of the GCAI, a new non-profit entity would be created for the GCAI. This could fall under the auspices of the IDA’s Greene Environmental Group, LLC. Oversight for the GCAI would occur through a Board of Directors, but the day-to-day operations would be the responsibility of staff. Management and governance responsibilities fall into four categories:

1) Farm Management
2) Farmer Mentoring
A detailed list of management responsibilities is presented in Appendix L. It is important to note that not all responsibilities need to be performed by a single individual, although one individual (the “manager”) should be responsible for oversight and reporting to the Board of Directors. This could be a part-time position. To reduce cash outlays, the farmers or county personnel could perform some of these responsibilities. With respect to business planning services, the GCAI could partner with organizations that have received grants to provide these services, subsidize the cost of using consultants or have farmers pay for these services. Furthermore, local farmer(s) could be hired to act as mentors. The Board of Directors primary responsibilities would include oversight, strategic planning, funding, reviewing applicant selection and monitoring financial and operating performance.

G. **Benefits To Incubator Farmers**

While most of the discussion around land-based incubators centers on providing low cost land, land rental costs are a relatively small as a percentage of total farm expense. The most compelling benefits the GCAI could provide are:

- To provide immediate availability of land and infrastructure.
- To eliminate short-term need for capital outlay for certain pieces of equipment (i.e. tractors). Since crop diversification requires a larger variety of equipment than monoculture, shared equipment is particularly beneficial.
- To eliminate short-term need for capital outlay for land improvements (i.e. fencing, water).
- To build solid business prior to purchasing land/long-term commitment, enhancing site selection and investment decisions.
- To provide volume purchasing opportunities.
- To provide networking and support systems.

H. **Potential Challenges for GCAI**

The following is a short list of potential challenges for the GCAI:

- Adequate funding, and finding the appropriate level of support for new farming enterprises.
- Coordination and cooperation between farmers.
- Finding talented personnel to manage the program and the farm.
- Farmer transition.
- Affordable housing for farmers.
- Off-season employment.
- Community buy-in could be an issue, if the location has not been actively farmed in recent years and is near residential areas, which may have issue with farming operations’ smell and noise.
- Availability of adequate water.

IX. **GCAI AS REGIONAL AGRIBUSINESS CENTER**

The GCAI could play a pivotal and substantial role in a larger regional agriculture scheme. In interviews with stakeholders, there was support for a regional GCAI concept. Andy Turner, Executive Director of the Cornell Cooperative Extension of Greene County, believes that positioning the GCAI as a Regional Center would be a “ground-breaking” initiative, have “wide-ranging” implications and provide an opportunity to “bust through some paradigms.” The GCAI, in all likelihood, would have a regional impact. Other organizations are now approaching agriculture on a regional basis. For example, Cornell Cooperative Extension is reorganizing around regional teams.
that offer subject matter expertise rather than county-by-county support. The Hudson Valley Agribusiness Center offers another example.

Establishing the GCAI as a regional agribusiness center would entail expanding its goals and mission to include those listed below, and drawing on the various grant programs listed in the GCAI Funding Section. The facility and program would then be more reflective of the priorities of the large grant programs; it would also be much better positioned to take advantage of local food market growth to grow the regional agriculture-based economy, which includes infrastructure and distribution enterprise. This approach would require a long-term strategic plan incorporating staging of the various programs over time.

Serve as demonstration farm and farmer referral for private landowners. We have heard anecdotally that private landowners are increasingly looking to have their land actively farmed and entering long-term lease contracts (Perry, 2010). There is an issue, however, of “quality control.” Very new or amateur farmers find themselves in over their heads, leaving landowners with a failed farming venture (Green 2010), and landowners who do not understand the practical implications of having a working farm on their property challenge farmers (Kasinki, 2010) (Bahrel, 2010).

The incubator would be a resource for landowners to find prospective farmer tenants and an important link in matching farmers with land. The GCAI could work to generate awareness about farm benefits to landowners, including agriculture land classification for real estate taxes, lease income, land maintenance, habitat improvements and land trust options.

Act as a model and research center for agriculture and habitat integration. The GCAI could offer a model for private landowners who own large tracts of land that are not actively farmed and want to maintain open space and habitat (Turner, 2010). For example, the California-based ALBA Incubator has become a training center for soil conservation, water quality improvement, habitat enhancement and innovative farming practices. Conservation projects include: native plant hedgerows to provide habitat for beneficial insects, vegetated swales for erosion control and better water infiltration, and a native grass trial to determine the best varieties for local agricultural conditions.

Act as an incubator for expansion of infrastructure and sales/distribution. As will be discussed in depth in the Agriculture Infrastructure and Distribution section, there is a need for infrastructure to grow the agriculture base in the Greene County region. This is a national issue. Due to the consolidation of American farming over the past several decades, agricultural infrastructure that supports small and particularly mid-sized farms has dwindled, especially with respect to serving the wholesale market. Mid-sized family farms with between $100,000 and $250,000 in gross annual sales are too small, lack resources, and/or do not want to expand to compete effectively in industrial agriculture, yet they are too big to market all farm products directly to consumers (Hoshide, 2007).

Act as a center for agritourism and consumer education. Agritourism is growing in popularity. Intervale reports that they receive a large number of visitors each year. The Stone Barns Center for Food and Agriculture, a nonprofit, member-driven collaboration, could be a model to consider. The Center has a farm, kitchen, classroom, laboratory, and a campus. Their mission is to teach and advance community-based food production. Greene County’s proximity to metro New York City and major highways as well as existing tourism industry are assets.

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As of May 2010, the NY Farmlink database showed 36 farms for sale, 21 with land to rent, 46 interested in partnership opportunities (folks not ready to sell the farm but want to find a younger generation that is interested in working into the business) and 97 seekers (folks looking to buy land or find an opportunity) (Perry, 2010). This database is small in comparison to the overall market. The total number of farms in New York State in 2007 was 36,352.
Offer programs and services to support a sustainable community food system. This model integrates production, processing, distribution and consumption in ways that enhance the environmental, economic, social and nutritional health of the region. For example, Healthy City is a program of the Intervale Center, which ran from 2002-2009. It was designed in response to the community’s need for job- and life-skills training for at-risk youths; the need for better education about food in local schools; and the needs of low-income families for fresh produce. Healthy City met these needs during its seven years with the Intervale Center by creating a community of teens and adults dedicated to growing healthy food for themselves, their families and their community. This would also include Farm to School, Food Safety, and Food Deserts (areas underserved by food retailers) programs.

Enhance links between organizations. The incubator could create formal links between the various organizations serving farms such as Hawthorne Valley, Glynwood and Cornell Cooperative Extension. As a land-based organization serving a number of farmers, the GCAI could facilitate coordination among the numerous organizations. Appendix C lists over 24 such organizations.

X. AGRICULTURE INFRASTRUCTURE AND DISTRIBUTION

Due to the consolidation of American farming over the past several decades, agriculture infrastructure that supports small and mid-sized farms has dwindled. This is particularly true in the eastern part of New York State (Schaeffer, 2010). As the market grows, producers that can efficiently reach consumers through a broad number of channels with high quality, consistency and innovation will prosper. There are opportunities for new ventures to fill the infrastructure gap and capitalize on the growth in the local food market. These ventures could include sales and distribution operations (multi-farmer CSAs, brokerage services, coordinated distribution and production and cooperative wholesale sales), fruit and vegetable processing ventures (sorting, grading, packing, aggregating, freezing), livestock processing (slaughter, butchering, packing) and agriculture production services (contract harvesting). In addition, agriculture industry support services, such as agriculture equipment sales and service, agriculture supplies, veterinary services and so on, would be demanded.

Since all indications point in the direction of continued growth in the local food market, farms serving this market will grow to meet this demand (or the number of small farms in a region will increase). Farmers are currently using direct sales tactics to service the market demand. This will eventually change, as more farmers enter these markets and growth in demand flattens. As they grow, mid-size farms maybe too big to direct-market all farm products to consumers, but unable to enter wholesale markets because of lack of support infrastructure (Hoshide, 2007). This could similarly hinder small farms seeing opportunities to aggregate product. In addition, smaller farmers are grappling with issues of what do to with seconds and over production (Gottwals). Farmers and regional agriculture systems would be well-served to prepare for this eventuality today, and capitalize on new business opportunities.

There is momentum in the industry to support the re-establishment of agriculture infrastructure, and there are new sources of funds to support such development. State and Federal programs like New York State’s Upstate Agriculture Economic Development Fund and USDA’s Value-Added Producer Grants could potentially support an investment in processing equipment. Tax benefits for job creation and new production facilities are available through the NYS investment tax credit and industrial real property exemption (Karp, 2010).

A. Sales and Distribution

There are opportunities to enhance the efficiency of sales and distribution in the local food market, which is currently highly fragmented. Various marketing coordination schemes could be incubated in the GCAI, making the overall region more competitive:
- **Multi-farmer CSA:** In its third year, the Intervale Center multi-farm CSA, which includes Intervale farms and others, delivers to offices in Burlington, and is targeting upscale corporate market consumers that value convenience. The CSA sold $105,000 of product to 120 customers in 2008. For Greene County region, farmers’ opportunities to service the Metro NY area may be significant.

- **Brokerage/sales service:** In discussions with Greene County farmers, this was identified as a needed service. Selling into food service, retail and wholesale markets requires dedicated sales and customer service expertise. The Food Hub at Intervale has begun to perform these services for Intervale and other local farmers. The Upstate Growers and Packers organization was created to provide these services for a group of central and western New York Farmers. The Northeast Livestock Processing organization was created to provide a clearinghouse and sales function for local livestock producers. As discussed in the Fruit and Vegetable Processing section, the next logical step would be to incubate a fruit and vegetable processing company that would purchase, process and sell product from regional farmers for distribution into markets that require critical mass and consistency.

- **Coordinated distribution and production:** Tuscarora Organic Growers (“TOG”) in Pennsylvania is a farming cooperative that coordinates crop production and acts as a distributor. TOG has over 28 member producers and 17 non-member producers that bring about 100,000 cases of produce into the metro DC market 12 months of the year. Growers follow guidelines for harvesting, grading, packing, storage and food safety.

- **Farmer to farmer market sharing:** Cooperative efforts between farmers, in which, for example, a poultry farmer would sell product to a vegetable farmer’s CSA members. This is essentially done at the Menands market, but need for this could be further explored.

- **Branding for wholesale/retail markets:** “Farmers believed that branding was important, and planned to use either New York State’s “Pride of New York” food and agricultural product branding program, or a combination of this with their own or a collective brand to establish the identity and credibility of local products. The concept of branding was echoed in responses through the interviews with representatives of agricultural cooperatives around the state” (Karp Resources, 2005). Pure Catskills is a buy local branding campaign sponsored by the Watershed Agricultural Council, to mobilize community support for fresh food products grown, raised and manufactured in the Catskill region.

- **Direct to consumer delivery and ordering:** Central New York Bounty is an example of the growth in direct marketing models. Started in 2007 with a variety of development grants, CNY Bounty delivers local food product to consumers’ homes or to drop stops. Whether the venture is a viable model is yet to be determined; however, its creation does speak to the fact that creative solutions are needed to address the challenges of distribution for small and mid-scale agricultural producers.

- **Cooperative Selling at NYC Wholesale Greenmarket:** Cooperatives are allowed at the NYC Wholesale Greenmarket. A venture that would aggregate, process and pack for wholesale distribution could prove highly successful (Cohen, 2010).

- **Market Intelligence:** Information sharing, and funding for consumer demand research, would be very valuable to farmers for both pricing, production volume and product development decisions.

**B. Fruit and Vegetable Processing**

The model assumes basic post-harvest handling requirements for direct sales (farmers markets, CSAs, direct to restaurants). In order to reach wholesale volumes, small-scale producers will need to aggregate their product, which poses challenges for product quality, consistency and traceability. The GCAI would be well positioned to facilitate the development of a processing venture.
The importance of providing a quality product cannot be understated, as it is the most concrete way to differentiate product and garner higher prices. The 2005 Karp Resource study asked wholesale buyers to rate their recent experiences buying locally grown foods for a number of quality factors, including (1) consistency of size and appearance (2) freshness or condition (3) taste and texture (4) price (5) packaging and handling, and (6) shelf life or durability. Locally grown products ranked well for all of these factors. Generally, the highest scores were received for “freshness and condition” and “taste and texture,” with the lowest scores for “packaging and handling.” Overwhelmingly, all of the buying groups stated that quality was the number one factor, followed closely by price. For restaurants and retailers, the availability of delivery was a distant third. For distributors and florists, the facility’s location was third (Karp Resources, 2005).

To sell into the wholesale, retail and larger foodservice markets, farmers will have to conform to Good Agriculture Practices (“GAP”), which ensures food safety and traceability of product. With the increasing focus on GAP, third party audits are being utilized by the retail and food service industry to verify that their suppliers are in conformance to specific agricultural best practices.

A post-harvesting facility would typically include a designated building for washing, grading, sorting, bagging and cooling produce. Multiple walk-in coolers are often used to accommodate different optimal holding temperatures (Hendrickson, 2005). A typical facility could include:

- Multiple temperature-controlled coolers
- Freezer
- Centralized grading and packing
- Standardized packaging
- Food safety plans and product traceability mechanisms
- Refrigerated vehicles

Perhaps the most critical aspect of this scheme is that there be a sales and marketing function. While theoretically, farmers could treat the facility as a co-packer and sell and distribute processed product to their own customers, this is not an efficient model. A farmer-supported processing facility venture in the southeastern US went bankrupt in three months, as they had no customers for the product: they had failed to anticipate the long sales lead time required to sell into retail and foodservice (Gottwals). The recently formed Northeast Livestock Processing Company, which will either buy product from farmers for resale or broker product to its foodservice customers, is one example of a product sales company. Examples of processing facilities in the region:

- Winter Sun Farms frozen food co-packer located in New Paltz, NY and Asheville, NC was a project supported by the Hudson Valley Agriculture Development Corporation. The primary goal of Winter Sun Farms is to work with small local farms to distribute food through winter CSA programs.
- In summer 2009, the Western Massachusetts Food Processing Center (Greenfield, MA) initiated a pilot project to test the viability of freezing food in its shared commercial kitchen as a way to extend the market for area growers. More than 50 tons of vegetables were frozen for distribution through Hartford-based FreshPoint Connecticut (Davis, 2010).
- In 2010, the Community Involved in Sustaining Agriculture organization (South Deerfield, MA) began a roughly $37,000 federally funded study of mobile quick-freeze equipment. They are applying for a U.S. Department of Agriculture Rural Business Enterprise Grant, or a newly introduced Value Added Producer Grant, to help buy some of the estimated $50,000 in needed equipment (Davis, 2010).

There is momentum in the industry to support the re-establishment of agriculture infrastructure. See the GCAI Funding section for additional information about grants.
C. **Livestock Processing**

We have heard repeatedly that there is a significant shortage of slaughter capacity in New York State. However, recently a number of initiatives have begun to make headway. The Glynwood Center, though the Local Infrastructure for Local Agriculture non-profit organization, has opened a Mobile Slaughterhouse, which is intended to travel to docking stations in the region. The first of five proposed regional docking stations opened in Stamford, NY in April 2010. (Appendix M provides a description and costs for a docking station.) The cost for a docking station is $35,000; including land and infrastructure, the total cost is approximately $50,000. The plan is to use these sites as processing nodes and local distribution points that could include vegetable processing, a butcher site and value-added commercial kitchen (LaBelle, 2010). According to Kathleen Harris, there is a shortage of affordable slaughter services and now many farmers are beginning to set up their own hanging and cutting rooms. These do not require USDA certification and can be licensed through New York State. SUNY Cobleskill is offering butchering training. In addition, there is a shortage of poultry and rabbit slaughter facility. The cost for mobile poultry slaughter equipment is $30,000. (von Tascharner Fleming, 2010).

The USDA announced on May 20, 2010 that it wants to increase the availability of slaughterhouses to serve small livestock and poultry producers. Matthew Michael of the Food Safety and Inspection Service said in a press briefing that maps developed by the agency show that high densities of small cattle, pork and chicken producers across the United States lack access to federally and state-inspected slaughterhouses.

D. **Value-Added Processing**

The term “value-added” processing can be applied to the type of processing discussed earlier, or more narrowly defined to include products included as ingredients in finished products, such as salsas and sausages. Here we use the latter definition. Breaking things down further, value-added processing can fall into two categories: Commercial Kitchens and Co-packing.

Commercial kitchens are facilities that provide shared facilities in which small-scale food-processing companies produce product. In addition to equipment and licensing, they may provide nutritional analysis and recipe development services. Commercial kitchens are best suited for small producers, as the capital required to bring a product to the retail/foodservice market is substantial. Area commercial kitchens include:

- Hudson Valley Foodworks was a commercial kitchen located in Kingston, NY. The facility is in the process of closing down, and is essentially being replaced by Farm to Table Co-packers.
- Nelson Farms (located in Cazenovia, NY, in partnership with Morrisville College) provides entrepreneurial agri-business opportunities for specialty food processors, farmers, growers and producers. Opportunities include: processing/co-packing, product development, dairy incubator, distribution and sales and marketing.

Co-packing facilities provide contract-manufacturing services. Generally, producers have an established product and market before using co-packers, as minimum orders can be large. Area co-packers include:

- Affiliated with Winter Sun Farms, Farm to Table Co-packers is a full service contract packaging facility that produces everything from frozen vegetables, pies and soups to jarred pickles and sauces. They also offer an incubator kitchen, where new products can be tested and small batch runs can be made. This operation was started with the support of the Hudson Valley Agribusiness Development Corporation.
The Western Mass Food Processing Center’s mission is to promote economic development through entrepreneurship, provide opportunities for sustaining local agriculture and promote best practices for food producers. They work with producers to develop commercial production quantities of product, offer complete technical assistance, business planning, product development, distribution resources and manufacturing space for specialty and organic food producers. The facility supports bottled and shelf-stable prepared foods, acidified foods, fresh-pack or frozen, dry mix and bakery operations. The processing center has been used by 130 businesses, primarily to create cooking and baking products made from mostly local ingredients.

**E. Haying: An Example**

Since we anticipate that the GCAI will contain livestock farmers, hay sourcing and/or production will be needed. Haying poses unique challenges and opportunities because of the substantial equipment cost and a reported shortage of customer harvesters in the area. The opportunity here might be for the GCAI to incubate a custom harvesting business by both guaranteeing business and helping to fund the equipment purchase. This business would serve the incubator farmers, as well as other farmers in the region.

**XI. GRANTS AND PROGRAMS**

Right now, a large number of grant opportunities exist for projects supporting agriculture and food system development. According to Phil Gottwals, one of the best opportunities may be an Economic Development Agency (“EDA”) grant under its Comprehensive Economic Development Strategies (“CEDS”) program. The EDA is looking for projects like the GCAI, and will provide significant funds for organizations/counties that have existing CEDS, as does Greene County, or can be included under the CEDS of other organizations such as the Hudson Valley Regional CEDS. In addition, local agriculture development, as well as small business development, has political support, particularly from United States Senator Kirsten Gillibrand, United States Senator Charles Schumer, United States Congressman Scott Murphy, State Senator James Seward and Assembly Member Peter Lopez.

<table>
<thead>
<tr>
<th>Grants That Could Fund GCAI or Incubator Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic Development Agency</strong> - Comprehensive Development Strategies Grants</td>
</tr>
<tr>
<td><strong>New York State Farm Viability Institute</strong></td>
</tr>
<tr>
<td><strong>New York State Agriculture and Markets: County Agriculture and Farmland Protection Planning Grant</strong></td>
</tr>
<tr>
<td><strong>New York State Agriculture and Markets: Municipal Agriculture and Farmland Protection Planning Grant</strong></td>
</tr>
<tr>
<td>USDA Farm and Foreign Agriculture Service: Risk Management Agency (&quot;RMA&quot;)</td>
</tr>
<tr>
<td>---</td>
</tr>
</tbody>
</table>
| USDA Marketing and Regulatory Programs: Agriculture Marketing Service | - **New York State Agriculture & Markets: Specialty Crop Block Grant Program** - purpose is to enhance the competitiveness of New York specialty crops by creating partnerships, fostering innovation, increasing efficiencies and reducing costs, promoting and developing new-existing markets, reaching consumers in rural, suburban and urban communities and enhancing the long term viability of New York’s specialty crop agricultural businesses and food systems. (Deadline June 4, 2010.) Allocations to states are based on the value of specialty crops in the state, relative to the value of specialty crops nationally, with a guaranteed minimum award to states of $100,000.  
- **Farmers’ Market Promotion Program (FMPP) grants** - designed to increase marketing opportunities for farmers to sell directly to consumers through farmers’ markets, community supported agriculture (CSA) farms, farm and roadside stands, agritourism activities and other direct marketing initiatives. FMPP grants can go to farmer networks, coops and associations, nonprofits, agricultural cooperatives or producer associations, local governments, economic development corporations, regional farmers’ market authorities, public benefit corporations and Tribal Governments. The minimum award per grant is $2,500 and the maximum is $100,000. |
| USDA Natural Resources Conservation Services (NRCS) - Easement Programs | NRCS’s programs reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat and reduce damages caused by floods and other natural disasters. Public benefits include enhanced natural resources that help sustain agricultural productivity and environmental quality, while supporting continued economic development, recreation and scenic beauty.  
- **The Grassland Reserve Program (GRP)** is a voluntary conservation program that emphasizes support for working grazing operations, enhancement of plant and animal biodiversity and protection of grassland under threat of conversion to other uses. Participants voluntarily limit future development and cropping uses of the land, while retaining the right to conduct common grazing practices and operations related to the production of forage and seeding, subject to certain restrictions during nesting seasons of bird species that are in significant decline or are protected under Federal or State law. A grazing management plan is required for participants. Easement payments are made in an amount not to exceed the fair-market value of the land, less the grazing value of the land encumbered by the easement, as determined by an appraisal.  
- **The Farm and Ranch Land Protection Program (FRPP)** provides matching funds to help purchase development rights to keep productive farm and ranchland in agricultural uses. Working through existing programs, USDA partners with State, tribal or local governments and non-governmental organizations to acquire conservation easements or other interests in land from landowners. USDA provides up to 50 percent of the fair market easement value of the conservation easement. |
| USDA Research, Education and Economics: National Institute of Food and Agriculture (“NIFA”) | NIFA's unique mission is to advance knowledge for agriculture, the environment, human health and well being, and communities by supporting research, education, and extension programs in the Land-Grant University System and other partner organizations. NIFA doesn't perform actual research, education, and extension but rather helps fund it at the state and local level and provides program leadership in these areas.  
- **USDA Beginning Farmer and Rancher Development Program (BFRDP)** grants are awarded to local, state and regionally based networks and partnerships to support financial and entrepreneurial training, mentoring and apprenticeships for beginning farmers and ranchers, as well as land link programs that connect retiring farmers with new farmers and innovative farm transfer and transition practices. **BFRDP grants have a term of 3 years, and cannot exceed $250,000 a year.**  
- **Community Food Projects Competitive Grant Program (CFP)** funds non-profit organizations for projects to meet the food needs of low-income people by increasing their communities' capacity to provide enough food for its residents. CFP also funds projects that promote comprehensive responses to local food, farm and nutrition issues, meet specific state, local, or neighborhood food and agriculture needs for infrastructure improvement and development, or create marketing activities that benefit both agricultural producers and low-income consumers. **Projects can be funded from one to three years, in amounts from $10,000 to $300,000.**  
- **NIFA’s Sustainable Agricultural Research and Education (SARE) Program** funds projects and conducts outreach through competitive grants. SARE projects are designed to improve agricultural systems from farm to consumer. Its findings may apply directly to farms, ranches and rural communities across the nation. Grants that could be used for the GCAI or its farmers are Farmer Grants (max $15,000), Partnership Grants (max $15,000), Research & Education Grants ($30,000 - $150,000) and Sustainable Community Grants (max $15,000). |
| USDA Rural Cooperative Development Grant Program (“RCD”) | RCD grants are made to improve the economic condition of rural areas through the development of new cooperatives and improved operations of existing cooperatives. The USDA desires to encourage and stimulate the development of effective cooperative organizations in rural America, as a part of its total package of rural development efforts.  
- **The Rural Business Enterprise Grant program** provides grants for rural projects that help fund business incubators for small and emerging rural businesses, and help fund employment-related adult education programs. To assist with business development, RBEGs may fund a broad array of activities. **No set max or min but smaller grants given priority.**  
- **Value-Added Producer Grants** may be used for planning activities and for working capital, for marketing value-added agricultural products and for farm-based renewable energy. Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups and majority-controlled producer-based business ventures. **Planning grants up to $100,000, and operating grants up to $300,000.**  
- **Rural Business Opportunity Grants** promote sustainable economic development in rural communities, focusing on communities that experience trauma due to natural disasters, fundamental structural change and persistently poor, long-term population decline or job deterioration. **Maximum of $250,000 per grant.**  
- **Rural Cooperative Development Grant Program’s purpose is to establish and operate centers for rural cooperative development, with the primary purpose of improving the economic condition of rural areas by promoting the development or improvement of cooperative organizations. No single award can exceed $200,000.**  
- **Rural Microentrepreneur Assistance Program** (announced June 3, 2010) includes loans and grants to rural microenterprises and microentrepreneurs, and business-based training and technical assistance grants to rural microborrowers and potential microborrowers. It also may include other activities to ensure the |
The minimum loan amount an MDO may borrow under this program is $50,000. The maximum loan any MDO may borrow in any given year is $500,000. The maximum amount of a technical assistance-only grant under this program will not exceed an estimated $130,000.

- Business and Industry Guaranteed Loan Program’s purpose is to improve, develop or finance business, industry and employment, and improve the economic and environmental climate in rural communities. Guaranteed loans up to $10,000, with some special exceptions for loans up to $25 million.
- Community Facilities Grant Programs are designed to develop essential community facilities for public use in rural areas.
- Small Socially-Disadvantaged Product Grants provide technical assistance to small, socially disadvantaged agricultural producers through eligible cooperatives and associations for cooperatives. Maximum award per grant in $200,000.

USDA: Office of Advocacy and Outreach
The Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers Competitive Grants Program (OASDFR) is designed to enhance the coordination of outreach, technical assistance and education efforts authorized under USDA programs through eligible entities, and to reach socially disadvantaged farmers and ranchers in a linguistically appropriate manner, to improve their participation in the full range of USDA programs. Up to $400,000 per year, for up to 3 years.

Watershed Agriculture Council (“WAC”) Farm Beautification Grants
WAC has administered funding from the O’Connor Foundation in Delaware County to over 20 farm operations in the region for beautification of their farmsteads. (Depends on location of farm.)

Wallace Center
The Wallace Center supports entrepreneurs and communities as they build a new, 21st century food system that is healthier for people, the environment and the economy. They bring financial resources and other capacity-building support to good-food innovators.

Whole Foods Local Producer Loan Program
Provides up to $10 million in low-interest loans to independent local farmers and food artisans.

XII. FINANCIAL ANALYSIS

The financial analysis is based on the Proposed Greene County Agriculture Model. The financial analysis provides an order of magnitude assessment of:
1) Potential revenue generated by GCAI farms over three years
2) Potential revenue impact for Greene County
3) 3-year cash operating requirements for the GCAI

A. GCAI Farms Three-year Revenue

As shown in Exhibit 1, the forecasted total revenue generated over a three-year period by the farmers on the GCAI is $1.2 million. There are three key assumptions:
- We forecasted full-production revenue levels as shown in Exhibit 2.
- We assumed it would take farmers three years to reach full production. Year 1 revenue was estimated at approximately 50% of Year 3 and Year 2 was estimated at approximately 80% of Year 3.
- Each farmer has exactly the same farming operation (this is not expected to happen, but any other assumption would be equally theoretical).
1. **Exhibit 1: Revenue Forecast from GCAI Farmers, Years 1-3**

<table>
<thead>
<tr>
<th>Percent of full production</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>50%</td>
<td>80%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>50%</td>
<td>75%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>50%</td>
<td>80%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>50%</td>
<td>80%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>$180,000</td>
<td>$288,000</td>
<td>$360,000</td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>$66,987</td>
<td>$100,480</td>
<td>$133,974</td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>$11,340</td>
<td>$18,144</td>
<td>$22,680</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>$3,938</td>
<td>$6,300</td>
<td>$7,875</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL** $262,264 $412,924 $524,529 $1,199,717

Note: We have assumed that the farmers use cattle stockers in Year 1.

2. **Exhibit 2: Annual Combined GCAI Farmer Revenue Forecast at Full Production Capacity**

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Cattle</th>
<th>Poultry</th>
<th>Eggs</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pounds/acre</td>
<td>10,000</td>
<td>Head Slaughtered 70</td>
<td>Birds Slaughtered 1,350</td>
<td>Birds Laying 150</td>
</tr>
<tr>
<td>Acres employed</td>
<td>30</td>
<td>Hanging Weight 600</td>
<td>Carcass Weight 4</td>
<td>Eggs/Bird 250</td>
</tr>
<tr>
<td>Pounds Produce</td>
<td>300,000</td>
<td>Retail Weight 390</td>
<td>Total Pounds 5,400</td>
<td>Total Eggs 37,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Price/Pound</th>
<th>Price/Pound</th>
<th>Price/Pound</th>
<th>Price/Egg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA $1.00</td>
<td>CSA/Farmers Market $7.5</td>
<td>CSA $4</td>
<td>CSA $0.20</td>
</tr>
<tr>
<td>Farmers Markets $2.00</td>
<td>Direct Foodservice $3.0</td>
<td>Farmers Markets $5</td>
<td>Farmers Markets $0.25</td>
</tr>
<tr>
<td>Direct Foodservice $1.00</td>
<td>Wholesale $2.3</td>
<td>Direct Foodservice $2</td>
<td>Direct Foodservice $0.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pounds Sold</th>
<th>CSA-500 members 210,000</th>
<th>CSA/Farmers Market 10,920</th>
<th>CSA 2,700</th>
<th>CSA 18,750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers Markets</td>
<td>60,000</td>
<td>Direct Foodservice 8,190</td>
<td>Farmers Markets 2,160</td>
<td>Farmers Markets 15,000</td>
</tr>
<tr>
<td>Direct Foodservice</td>
<td>30,000</td>
<td>Wholesale 12,600</td>
<td>Direct Foodservice 540</td>
<td>Direct Foodservice 3,750</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Revenue</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA $210,000</td>
<td>CSA/Farmers Market $81,463</td>
<td>CSA $10,800</td>
</tr>
<tr>
<td>Farmers Markets</td>
<td>$120,000</td>
<td>Direct Foodservice $24,161</td>
</tr>
<tr>
<td>Direct Wholesale</td>
<td>$30,000</td>
<td>Wholesale $28,350</td>
</tr>
<tr>
<td>Total Vegetables</td>
<td>$360,000</td>
<td>Total Cattle $133,974</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenue/acre</th>
<th>Revenue per Head</th>
<th>Revenue/Bird</th>
<th>Revenue/Bird</th>
</tr>
</thead>
<tbody>
<tr>
<td>$12,000</td>
<td>$1,914</td>
<td>$16.80</td>
<td>$52.50</td>
</tr>
<tr>
<td>$60,000</td>
<td>$22,329</td>
<td>$3,780</td>
<td>$1,313</td>
</tr>
</tbody>
</table>

The model shows that each farmer would make approximately $87,000 in revenue after 3 years, with $12,000/acre earned from vegetables and $1,900 per head for cattle.

- The most significant assumption is that the GCAI would individually or collectively be able to set-up a 500 member CSA. We assumed each CSA member would receive 420 pounds of produce per season. This is based on Roxbury Farm’s information. They report that their shares provide 10-17 lbs of freshly harvested produce each week, or 400-450 lbs of produce every season (Roxbury Farm, 2010).
- Beef CSA/Farmers Market price/pound is net of processing cost of $1.79/lbs and assumes $8/lbs for stew/ground round (75%) and steaks $13/lbs (25%) for an average price per/pound of $7.5. Direct to Foodservice /pound assumes sides are sold. All pricing from NELP (Harris, 2010).

The following provides various references supporting the reasonableness of these assumptions:

- In 2008, Intervale’s 12 farming operations on 104 acres had total gross sales of over $1 million, averaging $83,000/farm and $9,600/acre.
There are numerous examples of 8 to 12-acre vegetable farms successfully supporting 300 members CSA, with sales in the $150,000 range (Schneider, 2010).

A six-acre CSA farm could supply 150-200 member households, and have gross sales of $80,000 and net cash income of $40,000 (Hendrickson, 2005).

Three-year average annual gross sales for 3 to 12-acre mixed vegetable farms ranged between $6,267/acre and $15,276/acre, and averaged $11,121 per acre. The farms under six acres had a significantly higher per acre average—$12,658—than those farming more than six acres—$9,701. Only one farm that mainly sold wholesale earned less than $8,000 in gross sales per acre (Hendrickson, 2005).

Half-Pint Farm (Intervale) - 1 ¼ acre farm selling micro greens and baby vegetables, with annual sales of $130,000+/-. (Frenay, 2010).

Stoneledge Farm - a 100-acre certified organic farm in South Cairo, NY of which 50 acres are cropland. They have a 1,700-member CSA. We estimate annual sales at $841,500 or $16,830/acre, assuming 1,700 shares at $495/share.

Roxbury Farm - 225-acre organic farm in Kinderhook, with a 1,000-member CSA serving Columbia County, the Capital Region, Westchester County and Manhattan. We estimate annual sales at $520,000 based on 1,000 shares at $520/share.

Golden Earth Worm - an 80-acre organic farm on the east end of Long Island. Serves 1,500 CSA members both fruit and vegetables. We estimate annual sales of $825,000 or $10,312/acre assuming 1,500 shares at $550/share.

We estimate that NYC Greenmarket farmers average $500,000 in annual sales from the Greenmarket.

We estimate that Just Food CSA farmers average $295,000 in annual sales from Just Food CSAs.

3. **Profitability**

Profitability was not forecast, as the number of variables is too wide-ranging. However, a 2005 study done by John Hendrickson with the University of Wisconsin-Madison College of Agriculture and Life Sciences shows evidence that farms of similar size and operations can be profitable ventures.

*The farmers participating in this case study were able to earn livelihoods growing and marketing fresh vegetables at a variety of farm scales. Most growers with fewer than three acres in production realized a part-time income, often supplemented by another job or enterprise. On 3 to 12 acre farms, there were instances where farmers or farm couples earned net cash income between $35,000 and $55,000 from their farms. On other farms at this scale, a spouse worked off farm. On the largest vegetable farms, some households were able to achieve a total farm net cash income over $100,000.*

*The farms in this project achieved impressive gross sales, with the highest gross sales per acre observed at the smallest scales. Over the three years of this project, the farms under three acres earned average gross sales of $15,623 per acre. The 3 to 12 acre market gardens averaged $11,121 per acre, and vegetable farms over 12 acres averaged $10,810 per acre. Although this study was not designed to produce statistically significant quantitative data, average values instead of ranges are reviewed in most of this summary as a means to simplify the discussion* (Hendrickson, 2005).

Anecdotal evidence indicates that farmers pursuing direct sales methods are profitable (Schneider, 2010). The Urban Farm Incubator in Minnesota was created in part because “the demand for organic, locally-grown produce is far greater than supply. Strong evidence demonstrates that intensive, small-scale urban agriculture can help to fill this gap. Examples in other cities have shown that even on very small parcels of land, urban agricultural operations growing salad greens, sprouts, and other vegetables can turn a significant profit” (Urban Farm Incubator: Minnesota Project).
With respect to livestock operations, the 2010 Durham Agriculture and Forestry Opportunities Report by Rick Zimmerman determined that livestock operations offered opportunity to Greene County farmers and could be profitably sustained (Zimmerman, 2010).

Profitability is an important consideration as it will determine the success of the CGAI farmers and in turn the GCAI. Intervale provides some insight, although their data is thin. They have had 43 businesses start since 1990, of which four are current incubator farms, eight enterprise farms, 13 have left and are operating, four are known failures, three possible sales and 11 of unknown status. If the failures, sales and unknown status businesses are all assumed to have closed, then over a 10-year period, 54% of the businesses are still in operation.

### B. GCAI Cash Requirements

The GCAI could require roughly $410,000 to fund infrastructure and equipment requirements, and a three-year operating cash reserve:

- $297,000 infrastructure and equipment costs (detail is provided in the Agriculture Model: Infrastructure section)
  - Livestock-related costs approximately $112,000.
  - Crop-related costs approximately $95,000.
  - Non-allocated costs approximately $90,000.
- $177,000 three-year annual operating cash reserve.

*It should be emphasized that these numbers are for illustration purposes only, and that they could vary significantly depending on the site selection, production, and management approach. They also assume all new equipment is purchased.*

#### 1. Annual Operating Cash Requirements

Again, because of the number of variables involved, determining the operating cash requirements of the GCAI is best approached conceptually. These requirements do not assume that the GCAI takes a lead role as a regional agribusiness center, which would require additional staff. As a note, the equipment rental function could be spun-off as a separate business, in which the GCAI has an ownership position.

**CASH INFLOW**

<table>
<thead>
<tr>
<th></th>
<th>$500/farmer</th>
<th>$3,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Fees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Rental Fees</td>
<td>$100/acre for cropland and $50/acre pastureland. (See Appendix N)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Farm Stand Income</td>
<td>10% of Revenue</td>
<td>$1,000</td>
</tr>
<tr>
<td>Equipment Rental, Facility Rental, Utility Usage*</td>
<td>Average annual fees from each farmer should approximate $8,500 per year, which is approximately 85% of expenses for land, equipment and utilities on a comparable farm. Total annual fees for all farmers are estimated at $51,000, of which $10,000 is for land and $41,000 for equipment and facility rental. Intervale and FarmStart aim for setting fees at 20% below the market rate. Intervale fees for two greenhouses, four tractors and various implements are approximately $30,000 annually. (See Appendix G for Intervale charges.)</td>
<td>$41,000</td>
</tr>
</tbody>
</table>

**TOTAL** | $55,000 |

**CASH OUTFLOW**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate Taxes</td>
<td>Based on a $1000/acre assessed value for 30 acres cropland ($30,000) and $500/acre assessed value for pasture land ($70,000), times 3% tax rate.</td>
</tr>
<tr>
<td>Road Maintenance</td>
<td>Will vary, depending on layout of farm parcels.</td>
</tr>
</tbody>
</table>
Management Personnel and/or Consulting | Management responsibilities presented in Appendix J. To reduce cash outlays, the farmers or county personnel could perform some of these responsibilities. | $50,000
---|---|---
Equipment, Infrastructure, Facility Maintenance, Reserve and Utilities | See above | $50,000
Farm Stand | Assumes managed by farmer | $1,000
Legal, Marketing, Consulting and Other | Note: This would be most heavily weighted in the first year, as it is critical that all contractual aspects of the GCAI be vetted. Includes land use and environmental restriction, standard farmer land lease contract, equipment rental contracts, permits, etc. | $6,000
**TOTAL** |  | **$114,000**

### NET ANNUAL CASH

$(59,000)$

Net annual cash needs are $59,000, which can be viewed as $50,000 for personnel and $9,000 for equipment and facility subsidy. Fees and revenue cover all other expenses.

*Using a University of Wisconsin-Madison study, we estimated similar expense at a comparable farm running at approximately 10% of revenue, or $10,000 (Hendrickson, 2005)). The 2007 census showed that Greene County farms average 19% of revenue for utilities, supplies, repairs, maintenance, rent and lease for machinery, rent for land, building and grazing fees. We are not able to break out supplies, which in the case of the GCAI would be covered by the farmer, and could be a significant portion of the 19% in expenses.*

### C. Impact of Incubator on Greene County Economy

#### 1. Employment and Revenue

Each of the six farms could employ two farmhands, or 12 people in total employed. GCAI farm payroll should run at approximately 16% of gross revenue, or approximately $80,000 per year (Hendrickson, 2005).

The financial model shows that six GCAI farmers could generate **$524,000 per year** in annual production, when running at full production capacity, or approximately $87,000/farm. Applying a 1.8 agriculture economic multiplier results in approximately **$1 million** of incremental annual benefit to Greene County (Bessire, 2010). This assumes that these farmers remain on relatively small plots of land and do not move on to larger operations (a scenario that is inherently conservative). By way of comparison, the 2007 Agriculture Census showed that 23% of Greene County farms had average sales of $160,000, and 61% of Greene County farms had average sales greater than $100,000.

Taking a longer term and less conservative view, if the GCAI graduated six farmers every four years, in 10 years there could be 12 new farms. Assuming average sales of $160,000/farm, this would result in annual incremental agriculture sales in Greene County of **$1.9 million**. Applying a 1.8 agriculture economic multiplier results in **$3.5 million** of incremental annual benefit to Greene County.

Going one step farther, if 50% of the farmers were able to achieve the success of Stoneledge Farm, Roxbury Farm and Greenmarket farms, and achieved sales in the $500,000 range, and the remaining farmers achieved sales of $160,000, annual incremental agriculture sales could be in the range of **$4 million**. This would represent a 25% increase over 2007 Greene County agriculture sales (USDA), which is reasonably attainable, given the growth and size of the local food market. To illustrate, the 2007 Agriculture Census showed that national agriculture sales
increased 43% from 2002 to 2007, and Greene County Regional Counties’ revenue increased 33%. Applying a 1.8 agriculture economic multiplier results in $7.2 million of incremental annual benefit to Greene County.

2. **New Businesses**

This potential growth coupled with the current lack of infrastructure leads to processing, distribution and other businesses opportunities. Intervale farmers have started a farmer owned restaurant, and one business started a small farm on a few acres just to produce garlic and basil for their pesto product.

3. **Social**

Finally, there are quality of life benefits that could result from the GCAI. Burlington, VT was named one of the 10 best cities to live in by Kiplingers, in large part due to the impact Intervale has had on the community.

“In fact, the local-food movement spreads throughout the city. Many shops and restaurants along Burlington’s Church Street Marketplace, the famous pedestrian mall, serve up local goodies. A couple blocks over, the City Market/Onion River Co-Op, a community-owned grocery store, offers more than 1,000 Vermont products. (And atop the supermarket, generating 3% of the Co-Op’s energy needs -- enough electricity to power six Burlington homes -- are 136 solar panels from groSolar, another Vermont-based company.) And the crown jewel for locavores: The Intervale Center is a nonprofit organization that has managed 350 acres of family-owned farmland in Burlington since 1988 and provides 10% of the town’s food” (Rapacon, 2010).
XIII. **RECOMMENDATIONS**

Due to the potential for the GCAI to have a significant impact on Greene County region agriculture, the need for the programs and services proposed, the enthusiasm for the program from agriculture stakeholders and the level of federal and state focus on sustainable agriculture, we recommend:

1. **The IDA aggressively move forward with the project as presented in the Greene County Agriculture Incubator Model section, taking the following next steps:**
   a. Identify the GCAI location and develop a plan for acquisition or long-term lease.
   b. Develop an agriculture and habitat integration plan for Green Land Trust properties that incorporates grass-fed livestock production, and consider partnering with organizations such as CCE, Farmscape or HMI to develop a plan.
   c. Formalize partnerships with organizations, to provide:
      i. Incubator candidate referral (such as Hawthorne Valley, Greenhorns, New York Beginning Farmer Project, C.R.A.F.T, Greenmarket New Farmer Development Project)
      ii. Agriculture production and infrastructure expertise (such as CCE and Hawthorne Valley)
      iii. Business planning expertise (such as New York Farmlink, Hawthorne Valley, HVADC, CADE, New York State Farm Viability Institute)
      iv. Agricultural land brokering (such as Cornell Small Farms, Farmlink, Watershed Agriculture Council)
   d. Develop a funding strategy, incorporating IDA resources and various grant options listed in the CGAI Funding section.
   e.  

2. **Pursue Regional Agribusiness Center concept, either in tandem with the GCAI project or in the context of a longer-term strategic plan.** Given the size of grants available, and the regional orientation of the larger grant program, a tandem approach may be warranted.

**Topics for further study:**
- Survey and interview potential candidates to determine level of experience, interest and type of agriculture venture they plan to undertake, as well as other factors that would inform program design and infrastructure investment.
- Inventory potential farmland in Greene County for incubator farmers. This would include identifying retiring farmers, agriculture lands owned by non-farming landowners and lands that could be reclaimed for farming (these properties may not prove to be worth the reclamation costs; however, livestock farming may work.)
- Consider positioning GCAI as a location for woman and minority farmers, given the public resources available for these groups, specifically the Beginning Women Farmers Program (Appendix E), NYC Greenmarket New Farmer Development Project and the USDA Socially Disadvantaged Farmers and Ranchers Competitive Grants Program.
- Explore the opportunity for developing local grain production and processing (see Appendix B).
- Continue analysis of the potential size and profit potential for various infrastructure ventures, specifically livestock processing and vegetable processing.
XIV. APPENDICES

A. Appendix A: Summary Results for “Local Food and Local Taste”

The following is a summary of a September 2009 study on local food for the Lehigh Valley Buy Fresh Buy Local Chapter.

Annual production based on gross income was quite variable among the farmers interviewed, ranging from $4,000 to $400,000 per year. The majority of farmers’ produce was sold locally, ranging from 50%-100% of total production, both on a mass and dollar basis. The majority of local sales are being made at farmers markets (up to 90% for some farmers). Remaining local sales are made to restaurants, on-site stands or stores, and to supermarkets and buyers in decreasing order. All but one of these farmers sells 100% or nearly 100% of their food locally. The farmer that sells less locally may sell more to restaurants, but our findings are not conclusive. Answers to open-ended questions indicate that CSAs (Community Supported Agriculture groups) are important to some, but not uniformly important to this sample of farmers. Consumers’ perceptions of CSAs may be important determinants of farmers’ decisions to adopt them.

Retail grocery stores that have more control (rather than receiving food from the distribution center) buy 10-15% of their food locally during the peak (summer) season. All of the groceries we talked to seek to advertise the “local” food that they sell, and use its availability, where possible, as a differentiating factor to provide higher-quality produce to the consumer. Some even have “meet the grower” events a few times a year, to generate goodwill with both farmers and consumers; these are sometimes difficult to organize around farmers’ schedules. All of the groceries have seen a rise in consumer interest for locally grown foods, with one representative mentioning specifically that some consumers desire to help the local economy.

All of these restaurants indicated that they are concerned about strengthening the local Lehigh Valley economy and the future of family-owned farms in the Lehigh Valley area. Most agreed (or agreed strongly), but some were neutral, on statements that local farmers provide safer products, a variety of foods and that buying locally-grown foods is easy.
B. Appendix B: Grains

The production and marketing of locally grown, food-grade, heritage grains has received increasing attention in the last few years, in large part due to the demand for including local grains in bread, pastries and beer. From a production perspective, small grain production has potential in Greene County.

Anecdotal evidence supporting the interest in local grains:

- Greenmarket is leading a movement to bring local grains into their markets and the New York City foodservice markets. They are working to identify grain growers, millers and distributors, in order to determine what sort of expectations could be had for the use of local grains at their markets. They are also working to educate bakers and consumers on where to source and how to use fresh regional grains. On January 11, 2010, Greenmarket and NOFA-NY’s Organic Wheat Project organized a Local Grain Discussion and Tasting at the French Culinary Institute.
- The Northeast Organic Wheat consortium of organic farmers and artisanal bakers in the Northeast is working to research and advocate for the establishment of rare heritage wheat. They have a SARE grant.
- Champaign Valley Milling stated that they could purchase 1,000 acres of local grain to meet their New York City customer demand (Kemnah, 2010).
- FarmLink’s Jeff Perry reports that heritage wheat varieties are the rage with his Organic folks, and he has a bakery he works with in Orange County now sourcing organic flour from upstate. Recently, a group of grain farmers with 500 acres in production started the Farmers Ground Flour mill in Ithaca to mill their product, which is sold into the NYC Greenmarket.
- Karen Karp of Karp Resources reported that she works for a number of commercial bakeries looking for local grains. The lack of local mills is a production bottleneck, as the demand level for the product is insufficient to meet the minimums from the large commercial mills in western NY.
- Don Lewis in Millerton, NY started a local grain milling operation in 2008.
- The local need for grains and actual demand is growing, which should elevate prices to make them once again profitable to rise. Most of the small grains are in the $3-4 per bushel range at commodity prices. These prices could be doubled or possibly tripled for the new, local marketing. At 30-50 bushels per acre, grosses could be up to $600 per acre or more. Prices for grains could increase significantly higher than even the triple-commodity levels, very soon, and will depend on the type of marketing or value adding being done (Bessire, 2010).

However, the heritage grains market is still not proven.

- A March 2010 article by The Atlantic titled “The Breadbasket of America: New England?” noted that the movement is relatively new, and despite organizing efforts, it is still largely fragmented. Lack of infrastructure—mills and processing facilities—is another limiting factor (Koening 2010).
- Local grain does not have the uniform consistency of mass-produced flour, and will require educating customers about its attributes. Bakers in particular will need to learn to adapt recipes to the varying qualities of flour (Koening, 2010). (Irregularity could be due in part to the type of milling equipment used.)
- Local milling and processing infrastructure is lacking.
- Farmers Ground Flour is running far below capacity because of pricing and sales challenges. Their products are priced significantly higher than competitive products. Farmers are finding delivering small quantities time-consuming. The mill only uses about ¼ of the acreage of product available to it (Mol, 2010).
- Small grain production has great potential in Greene County, but early spring wet weather and subsequent disease issues, coupled with historic low "commodity," prices have caused them to fall out of favor with farmers (Bessire, 2010).
The climate can be too moist for grains to mature without getting rust, smut, fusarium, wilt and a host of other diseases. Quality of output may be an issue. The other element that drives costs is that a combine is a huge investment, not to mention the mill and grain storage (Perry, 2010).
### C. Appendix C: Organizations and Programs Supporting Agriculture in the Greene County Region

<table>
<thead>
<tr>
<th>Organization/Program</th>
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<tbody>
<tr>
<td>Buy Pure Catskills part of the Watershed Agriculture Council (“WAG”)</td>
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<td>Catskill Farmlink (In development at WAG)</td>
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<tr>
<td>Center for Agriculture Development and Entrepreneurship (CADE)</td>
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<tr>
<td>Cornell Cooperative Extension Agroforestry</td>
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<tr>
<td>Cornell Cooperative Extension NY Beginning Farmer Project</td>
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<td>Cornell Small Farms Program</td>
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<td>Farm Catskill</td>
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<td>Farm Service Agency</td>
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<td>Farmscape Ecology Program</td>
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<td>Glynwood</td>
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<td>Greenhorns</td>
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<td>Groundswell</td>
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<td>Hudson Valley Agribusiness Development Corporation (HVADC)</td>
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<td>Hudson Valley Collaborative Regional Alliance for Farmer Training</td>
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<td>Just Food</td>
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<td><strong>Local Infrastructure for Local Agriculture, Inc. (LILA)</strong></td>
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<td><strong>New York Farm Bureau</strong></td>
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<td><strong>New York State Agriculture &amp; Markets</strong></td>
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<td><strong>Northeast Organic Farming Association (NOFA)</strong></td>
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<td><strong>NY FarmLink</strong></td>
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<td><strong>NYC Greenmarket New Farmer Development (“NFDP”)</strong></td>
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<tr>
<td><strong>The Hawthorne Valley Farm Beginnings Program</strong></td>
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<tr>
<td><strong>The Northeast Livestock Processing Service Company (NELPSC)</strong></td>
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<tr>
<td><strong>Upstate Growers &amp; Packers</strong></td>
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<td><strong>Watershed Agricultural Council (“WAG”)</strong></td>
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D. **Appendix D: Farm Beginnings**

Farm Beginnings is a Land Stewardship Project located in Minneapolis, MN. The organization was founded in 1982. Farm Beginning has developed a training program that can be used by other organizations. Hawthorne Valley is running a Farm Beginnings program. The Farm Beginnings program provides 36 hours of training and hands-on learning opportunities in the form of classroom sessions, farm tours and mentorships. It is a yearlong training and support effort. Farmers and other agricultural professionals are the primary presenters, mentors and steering committee members.

Farm Beginnings graduates come from a variety of backgrounds and are engaged in a broad spectrum of farming enterprises: beef, dairy, hogs, meat and dairy goats, sheep, poultry, wholesale vegetables, Community Supported Agriculture, organic grains and specialty products such as cut-flowers, hazelnuts and cheese.

Farm Beginnings also has a Livestock Loan Program, which is a zero-interest revolving livestock loan available for qualified Farm Beginnings graduates. It helps farmers build equity, while supporting them with a continuing education component that connects them with an adviser. Individuals are able to apply for dairy heifers, beef heifers, hogs, goats, sheep and chickens.
E. Appendix E: Beginning Women Farmers Program

The Beginning Women Farmers Program is run by Holistic Management International, an Albuquerque, NM based company. The program has been funded by a $650,000 USDA Grant and is a three-year training program for beginning women farmers in six Northeastern states. In collaboration with existing women’s agricultural programs, academic institutions and Holistic Management certified educators, the program will train between 180 – 270 beginning women farmers in sustainable land management practices, financial planning and business management practices so that the participants can create environmentally sustainable and financially viable farming operations.

Project Goals
The program teaches an intentional, whole farm-planning framework, which helps farm families integrate the dynamic relationships of economic, social and ecological factors into their management decisions. Infused in this program are sessions to help farmers learn and implement sustainable cropping and livestock production skills, in addition to whole farm planning and entrepreneurial focus.

Specifically, the program aims to achieve the following:
1) Expand the knowledge of whole farm planning among beginning women farmers in six Northeastern states.
2) Improve land health and water quality on participating farms, by implementing a beginning farmer program in WAgN (Women in Agriculture Networks) that specifically focuses on whole farm planning, and biological monitoring and record keeping.
3) Strengthen healthy, safe and local food production by training beginning women farmers in all aspects of farm management, including production, business planning and marketing.

Key elements of the strategy/tactics are to:
1) Offer local instruction and mentorship in whole farm planning and sustainable farming practices to beginning women farmers.
2) Work with already established women’s networks and other NGOs (WAgN, NRCS, RC & D, Small Farm Programs, etc.) for outreach, participant recruitment and coordination of trainings.
3) Provide whole farm training to ninety women farmers each year – fifteen from each of the Northeastern states of Maine, Vermont, Connecticut, Massachusetts, New Hampshire and New York. Trainees will have the option to continue the training throughout the three-year project period.
4) Have nine of the whole farm trainers complete a two-year intensive training program to provide continued support in each of the six participating states, to ensure continued technical support to graduates of the training and other interested farmers in the region.
5) Monitor training sessions to provide important insights into the relevance of the training content.
6) Have two participating farmers from each state agree to implement a biological monitoring program that will show changes in the quality of their land and soil over the three year period, after applying improved management techniques.

Project Update
Most of the participating states have completed the first six courses, which took place in the classroom. The remaining four courses will be on-farm visits, and include grazing, planning and biological monitoring. In each of the six states, two farms were selected to participate in a biological monitoring protocol that will track changes in soil, forage produced and biodiversity, to document how improved management practices (learned in the whole farm planning workshops) impact land health and productivity. The interest in this program has been high, and many applicants have applied for the 2011 workshops.
F.  **Appendix F: Educational Incubators**

1.  **Hawthorne Valley Farm Beginnings Program, Ghent, NY**

   The Hawthorne Valley Farm Beginnings Program will offer a structured business-planning course, Field Days on successful sustainable farms and individually tailored mentoring sessions for both new and existing farmers. The program will adapt materials developed and successfully implemented by the Land Stewardship Project and Angelic Organics Learning Center in Minnesota, Illinois and Wisconsin to address the unique needs of Northeast farmers. Over 500 farmers have graduated from these mid-west Farm Beginnings® programs. Hawthorne Valley Farm Beginnings will become a member of this national network of farmer training programs and resource centers.

2.  **The Farm School, Althol, MA**

   In contrast to informal apprenticeships on individual farms, The Farm School offers a curriculum-based agricultural education program that has been established for the specific benefit of the participants. Funding for the program is provided by tuition, which is kept relatively low with the addition of equal parts from fund-raising and the sale of farm products grown by the students and staff. Student Farmer Tuition for one year is $12,000, includes full instructional program, off-farm workshops and seminars and some conference fees, as well as full room and board.

3.  **Business Consulting Incubators**

   a)  **Ottawa County, Michigan Agriculture Incubator, Ottawa County, Michigan**

   This program would help those who are trying to start an agriculture-related company, but lack the business expertise, space or other skills needed to make their idea a going concern. The incubator would encourage any type of business related to agriculture that would bring jobs to the area. That could mean companies that produce software related to agriculture, or businesses that produce added value to current agricultural businesses or products. The incubator would have a board of directors, executive council, expert resource council and other resources that will be able to help new businesses. It would also have an association with Grand Valley State University and the Michigan State University Extension program. (Intent for program announced November 2009)

   b)  **Central New York Agriculture Incubator**

   Chris Harmon, Executive Director for CADE, is working on developing an agriculture business incubator. This program will work with food entrepreneurs on all facets of starting new businesses, from business planning, to technical support, to funding strategies.
G. Appendix G: Land-based Farmer Training Incubators

1. **Sullivan County Demonstration Farm**

Sullivan County is working to create a demonstration farm on foreclosed land owned by the county. The property has 80 acres, a house and 2 barns. The demonstration farm is intended to be a resource for farmers and a source of education about farming for young people. It is also meant to attract visitors to the county with an ecotourism component.

2. **Stone Barns Center for Food and Agriculture, Pocantico Hills, NY**

Stone Barns Center for Food and Agriculture is a farm, a kitchen, a classroom, an exhibit, a laboratory and a campus. The mission of this unique, nonprofit, member-driven collaboration is to celebrate, teach and advance community-based food production and enjoyment, from farm to classroom to table. The *four-season* and *pastured livestock farm* grows crop varieties best suited for our locality, and raises the types of animals Westchester pastures can support. All farm products are raised for food. The farmers continually explore the most appropriate breeds, seeds and ecological dynamics for creating a diverse, resilient and reliable food system. The farm is the Center's core educational resource. The *education center's* rich mix of programs and activities provides an intriguing path for people to participate and learn. For adults, offerings include cooking classes, tastings, how-to workshops and lectures, in-depth book discussions with noted authors and more. For kids, there are school programs, farmer-in-training after-school activities and a summer day camp. In addition, there are numerous family activities and volunteer opportunities.
H. Appendix H: Land-Based Agriculture Business Incubators

1. Agriculture and Land Based Training Association ("ALBA"), Salinas, CA

a) Mission and Goals

ALBA provides educational and business opportunities for farm workers and aspiring farmers, with a focus on the demonstration of farming and conservation working in harmony. ALBA’s Triple M Ranch has become a training center for soil conservation, water quality improvement, habitat enhancement and innovative farming practices. Conservation projects include: native plant hedgerows providing habitat for beneficial insects, vegetated swales for erosion control and better water infiltration, and a native grass trial to determine the best varieties for local agricultural conditions. The farm hosts many workshops and field days every year. Local Latino farmers lease land here in order to learn new strategies that can be adapted elsewhere, sometimes on leased land that they manage elsewhere. By creating more diverse market options, ALBA is opening new opportunities for farmers in northern Monterey County, where more than half speak Spanish as their first language.

b) The Site and Program

ALBA owns and operates two training and education farms in rural Monterey County. The Rural Development Center (RDC) is located on a 110-acre organic farm between Salinas and Chualar, and serves as ALBA headquarters, with recent additions including a resource center and classroom, maintenance workshop, and produce cooler and distribution facility. The Salinas farm is home to the Small Farm Education Program, where beginning farmers learn about organic farming, business planning and marketing. Typically, more than 16 farmers cultivate more than 50 different crops at the RDC. During their tenure here, ALBA helps the farmers establish and transition their small farm businesses to other locations.

The Farm Training and Research Center, also known as the Triple M Ranch, is located in northern Monterey County. This 195-acre farm (60 acres of which can not be cultivated due to a natural lands easement) demonstrates soil, water and habitat conservation in the environmentally sensitive Elkhorn Slough watershed. Limited-resource farmers are able to lease land at the Triple M, in order to explore organic production and participate in conservation-intensive crop production. The farm hosts numerous annual field days, and organizes tours for hundreds of farmers and others each year.

In 2008, ALBA used a $98,000 Rural Business Enterprise Grant (RBEG) to provide business training and support to farmers, farm workers and entrepreneurs in developing value-added food enterprises to increase wealth in Santa Cruz and Monterey Counties.

In 2002, ALBA established ALBA Organics, as a licensed produce distributor to support the sales and sales training needs of ALBA farmers. The on-farm coolers, warehouse and delivery infrastructure at the ALBA farm near Salinas are major assets for both the farmers and the organization. ALBA Organics connects its customers with the highest-quality product available in season, and offers the opportunity to support small-scale, limited-resource and beginning farmers.
2. **Farm Catskills - Growing New Farmer Incubator, Delaware County, NY**

   a) **Mission and Goals**

   The Farm Catskills “Growing New Farmers” programs are designed to help new or aspiring farmers get the training they need to go out on their own and to get started farming.

   b) **The Site and Infrastructure**

   Offering land rental and shared equipment.

   c) **The Program**

   In 2010, they intend to start two programs to help new farmers:

   - The Growing New Farmers training program provides paid on-farm internships (up to 6 months) and individualized learning plans for eligible applicants who demonstrate a commitment to agriculture and a need to further develop their own farming skills and knowledge. This is a program for people who are working towards a career or business in farming.
   - The New Farmer Incubator will provide affordable land and shared equipment in a supportive community to new farmers.

   In order to participate, farmers must:
   * Have at least 1-year, preferably more, farming experience.
   * Have a solid business plan.
   * Have the resources to afford the rent of land and equipment.
   * Be committed to organic farming practices.
   * Demonstrate a willingness to communicate and give and take feedback.

   Farm Catskills will review all applications and work with each applicant in determining readiness to start a farm venture. Applicants who are not yet prepared will be offered access to the training and resources they need to start their farm venture in a future year.

3. **FarmStart Incubators, Guelph, Ontario, Canada**

   a) **Mission**

   FarmStart operates two separate incubator locations under its New Farms Incubator Program. The program supports new farm enterprises by offering access to land, equipment and infrastructure at reasonable rates, along with business planning support, technical training, mentorship and experience with ecological and emerging farming methods. The goal of the New Farms Incubator Program is to foster the development of fully independent and sustainable agricultural enterprises that supply local markets.

   The New Farms Incubator Program is aimed at anyone who is ready to start a viable, locally oriented, ecological farm or farm-related enterprise. This could include: those from non-farm backgrounds who have developed
relevant knowledge and practical agriculture experience; those from conventional farms who wish to farm ecologically and do not have access to land and/or capital; new to Canada immigrants with agricultural experience; and those with innovative and ecological farm related-enterprise ideas (i.e. relating to farm inputs and/or processing, etc.).

The New Farms Incubator Program Facility will eventually host a mix of Start-Up Farms, Enterprise Farms and Mentor Farms. FarmStart will work toward creating a cooperative farm environment that encourages both shared knowledge and resources. By fostering a diversity of farmers, with collaborative approaches to business, the goal is to create a growing number of interdependent and mutually beneficial viable enterprises.

b) The Ignatius Site and Infrastructure

Ignatius Farm is on land owned by the Ignatius Jesuit Centre of Guelph. The facility provides leased land, infrastructure and equipment, including greenhouse space, irrigation and storage at a rate discounted to 20% below market value. The Ignatius Farm cropland is certified organic.

Land: FarmStart participants rent from a fraction of one acre to over a hundred acres, depending on the requirements of their specific crop or livestock enterprises. There is a total of 200 rentable acres. Participants are required to maintain ecological farming methods.

The Program Equipment: Tractors and tillage equipment is available on either a custom work or rental basis. Tillage equipment includes ploughs, discs, cultivators, harrows and roto-tillers. Custom combining services are available on site at standard rates, and two seed cleaners are available.

Infrastructure: Greenhouse facilities are available for farmers interested in season extension. Limited irrigation water is available to the greenhouse and to small outdoor garden plots; future plans include harvesting rainwater from barn and shed roofs and expanding other water resources as required. Water conservation measures such as mulching and drip irrigation systems are strongly recommended.

Horticultural inputs: High quality compost is available for purchase by participants, and organic seed for a variety of cover crops is usually available. Assistance is provided for sourcing some seeds and other planting materials.

Barns and storage: Barn space is available for livestock operations, and some shed space is available for storage of equipment and crops. Participants are directed to organically certified abattoir facilities and to some certified food processing facilities. At present, cold storage facilities are not available, but these can be arranged, if required.

Cooperative Marketing: Ignatius supports cooperative marketing efforts by participants and strives to avoid competition among farm operations at Ignatius, including their 130-member CSA program. Assistance is available in conducting or accessing market research for specific crops and livestock. Participants are also encouraged to consider value-measures to enhance income from their crops.

c) The McVean Site and Infrastructure

Land: This fifty-acre facility is owned by the Toronto and Region Conservation, and leased to FarmStart on a long-term lease. Now in its second year of production, the facility accommodates several farm enterprises. Parcels from a fraction of an acre to ten acres are available at the McVean Incubator Farm. Participants have access to tilled land, ready for planting. Soil tests have been conducted and organic amendments are applied as needed to ensure soil fertility. The certification process has been started. Full organic certification should be in place for the 2010 season. Land is also available to community groups in Brampton that may wish to establish community garden programs. Research and education plots are available to demonstrate water conservation techniques and the growing of non-traditional crops.

Facilities and Equipment: Roto-tillers and hand tools are available to participants, as are storage facilities. Specialized tools for individual operations can be sourced, but their purchase will be the responsibility of individual farmers. A tractor and a walk-behind tractor (BSC), as well as irrigation systems, are available.

Cooperative Marketing: A farm market building will be constructed when required by participant farmers, to allow for direct sales of crops to the public.
**Horticultural Inputs:** FarmStart assists participants in sourcing planting materials and custom work, as required by individual farm operations.

**d) The Program**

Participants accepted into the program are involved in a tiered system of support that begins with Start-Up Farms, followed by Enterprise Farms and Mentor Farms. The program features greater support to enterprises during the early stage of development, and phased out support as the enterprise matures. This graduated approach is designed to encourage new, alternative and innovative business ideas that include a primary consideration for overall and long-term sustainability. The New Farms Incubator Program will eventually host a mix of New Farms, Enterprise Farms and Mentor Farms.

1. **Phase 1: Start-Up Farm**
   Start Up Farms will be ‘incubated’ for a period of 3 years, during which time they will receive reduced rates on land, equipment, greenhouse space, irrigation and storage. The program will encourage informal mentorships, cooperation with other on-site farms and local farmers, and will help link new farms with various relevant support programs and resources (i.e. education courses and mentorship opportunities offered by the Ecological Farmers Association of Ontario (EFAO)). FarmStart will also facilitate access to training and advice necessary for farms to develop their business plans, accounting systems, marketing and distribution strategies, and food and safety procedures.

2. **Phase 2: Enterprise Farms**
   After three years, Start-Up Farms will have the option to continue farming on-site for 2 more years as Enterprise Farms. During this period, they will pay the full costs for their operation (i.e. for land, infrastructure, equipment, etc.), as a means to refine their business plan to reflect real market operating conditions. All other support, such as business planning and production assistance, will continue to be available.

3. **Phase 3: Mentor Farms**
   After five years at the New Farms Incubator Program Facility, most Enterprise Farms will be expected to graduate to their own farms. There will be, however, the possibility, depending on the enterprise and available land, for some graduated farms to become Mentor Farms. They will be allowed to continue farming on-site, while also mentoring Start-Up Farms and taking on a larger role in assisting to facilitate a cooperative farm structure.

4. **Intervale Center, Burlington, VT**

   **a) Mission and Goals**

   Mission is to develop farm- and land-based enterprises that generate economic and social opportunity while protecting natural resources. Through the Center’s 20 years of operation, almost 350 acres of formerly abandoned, historically significant agricultural land has been reclaimed and put into productive agricultural, recreational and conservation use. The various enterprises in the Intervale support approximately 100 full-time jobs, and part-time and seasonal jobs in agriculture.

   The Farms Program removes start-up barriers that typically challenge new farmers: access to training, land, capital and markets; farm experience; equipment operation and maintenance; and isolation. One of the great assets of the program is the cooperative spirit of the farmers themselves, the informal mentoring and support they provide to each other.

   In 2008 there were 12 farms on 104 cultivated acres, supporting 60 full- and part-time jobs. Farm sizes ranged from 1 to 50 acre, with an average size of 8.7 acres. Farms ranged from 1 to 15 years old. 10 of 12 farms participated in some CSA sales, 8 in 12 sell at farmers’ markets and 9 of the 12 sell wholesale. Sales ranged from less than $10k to over $250k. Total gross revenue for Intervale farmers was over $1 million. Farming ventures
The Chittenden Solid Waste District at the Intervale site now operates the facility.

waste each year to produce a wide range of compost-based agricultural and horticultural products. The Chittenden Solid Waste District at the Intervale site now operates the facility.

b) The Site

The Farms Program leases land, equipment, greenhouses, irrigation and storage facilities to small independent farms that agree to farm organically. Currently thirteen farms operate on 120 acres, with over 60 full time and seasonal workers. Several of the farms are recent start-ups in incubator status. Cropland parcels for farmer average 8.7 acres.

c) The Program

Farmers have access to a cafeteria of technical and mechanical support, as well as the benefit of marketing programs and business planning resources to help them establish themselves as profitable businesses.

Incubator farms (1-3 years) receive coaching in setting up a business plan, and the Intervale Center subsidizes costs of equipment, land and facilities (with a 20% cost share on Intervale fees). After three years as an incubator farmer, viable farms become enterprise farms. Enterprise farms (4-5 years) are entitled to extended leases, and their fees increase to cover full operating costs for Intervale services. Mentor Farms (6+ years) are mature farms, which have been operating in the Intervale for at least five years and take on the role of mentoring Incubator Farms. (Intervale is considering eliminating the Enterprise Farm stage.)

Half a dozen farmers have graduated from the Farms Program onto farms around Vermont. Others continue to farm in the Intervale, and may become Mentor Farms.

Success on Farms enrolled its 60th farm this year, and continues to be a successful and flexible business-planning program, supporting unique projects to increase profitability and quality of life for Vermont farm managers.

The Food Hub works to build a sustainable local food system, by connecting Vermont farmers with food marketing solutions. The Food Basket, a multi-farm Community Supported Agriculture program, delivers fresh, local food to employees at eight Burlington-area businesses. They also have storage solutions for Chittenden County farmers, and a local brokerage service that enables small wholesalers to access larger institutional markets.

The Intervale Food Enterprise Center (in development) is meant to provide an important link between farms—from the Intervale and northern Vermont—and consumers looking for nutritious locally grown food. This uniquely integrated food-processing facility will enable small food processors to employ season-extending processing techniques and develop new, value-added products. Already permitted and designed, the Intervale Food Enterprise Center will include a 20,000 square-foot LEED-certified modular food-processing facility and a 21,000 square-foot, year-round greenhouse. Shared branding, storage and shipping facilities will be available. A community kitchen will incubate new products to support participating local food processors. Both the food-processing facility and the greenhouse will be heated by waste heat from the neighboring City of Burlington’s wood-fired generating plant.

The City of Burlington and the Intervale Center have invested nearly $850,000 in pre-development costs. The total estimated budget for the Food Enterprise Center—including development, buildings and infrastructure and operations for the first year—is $5.5 million.

Intervale Compost Products, the Intervale's first venture, was created in 1987 to help restore the depleted lands of the Intervale. It has since grown to become Vermont's leading compost operation, recycling 30,000 tons of waste each year to produce a wide range of compost-based agricultural and horticultural products. The Chittenden Solid Waste District at the Intervale site now operates the facility.
The Intervale Conservation Nursery is a native tree and shrub nursery offering a local source of ecologically grown plants for conservation projects statewide. In addition, the Conservation Nursery acts as steward for the Intervale riparian forest, and provides educational workshops for the public.

### 2010 Rental Rates

<table>
<thead>
<tr>
<th></th>
<th>Incubator Farm</th>
<th>Enterprise/Mentor Farm</th>
</tr>
</thead>
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<tr>
<td>Land Rental</td>
<td>$135.45/acre</td>
<td>Depends on Lease</td>
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<tr>
<td>Farmer Barn</td>
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<td>$100</td>
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<tr>
<td>Water</td>
<td>$255 plus $.00393/gallon</td>
<td>$255 plus $.00393/gallon</td>
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<tr>
<td>Cooler</td>
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<tr>
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<td>Land Management</td>
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5. **Meridale Farm Incubator, Delaware County, NY**

Ken Jaffe of Delaware County, a beef farmer and CADE board member, is also trying to set up the Meridale Farm Incubator that would focus on grazing. The incubator would be placed on 200 acres.

6. **Minnesota Projects’ Urban Farm Incubator**

a) **Mission and Goals**

The Minnesota Project champions sustainable production and equitable distribution of energy and food in communities across Minnesota. Programs are focused on the development, conservation and efficient use of renewable energy; farm practice and policy that promote profitable farms that protect and replenish the environment; and the production and consumption of local, sustainably grown foods. The goal is to graduate six to eight women per year from the incubator who have the entrepreneurial and farming skills to succeed as small, urban agriculture business owners.

b) **The Site and Program**

This Women’s Urban Farm Incubator program will provide land and training to women, enabling them to become successful urban farmers. With the help of a planning grant from the Women’s Foundation of Minnesota, in 2010 they will:

* Secure multi-acre site on former industrial land
* Establish a planning committee including prospective participants
* Design a curriculum including both horticultural and small-business training
* Grow a green manure cover crop on the land to ensure soil quality

7. **Raft Swamp Farms, Hoke County, North Carolina**

Raft Swamp Farms is a 150-acre tract of land in the Antioch District of Hoke County, North Carolina, bordered on the west by Raft Swamp Creek. Formerly part of the D.H. Hodgin estate, the land consists of expansive woods and wetlands adjacent to the creek, and about 70 acres of rolling farmland. A 501(c)3 nonprofit organization, Raft Swamp Farms hosts an organic farm incubator program where individuals can learn the art and craft of sustainable organic farming.

Leases are available for small tracts of land. Incubator farmers receive hands-on training in organic methods and farm business management, have access to a community barn and shared farm equipment and market their produce to residents of Hoke and other nearby counties.
8. **Southern Maine Agriculture Incubator**

A feasibility study was completed in 2005; however, funding was not available, primarily because location was not eligible for Community Development Block Grants and USDA Rural Development Grants. In addition, the study was done in 2005, prior to the accelerated growth of the Local Food market. A site with a house and barn had been identified. The plan was that the Program Manager would live at the house. The intention was that the Cooperative Extension would provide training.

9. **The Seed Farm, Lehigh County, PA**

a) **Mission and Goals**

The mission of the Seed Farm is to start and grow new sustainable farms and farmers in the Lehigh Valley and to support the growth of the local food system. The Seed Farm was created in part to capitalize on the growth in the local food market and the need to put 20,000 acres of Farmland Preservation land into agricultural production.

**Goals:**

1. Provide land, training, infrastructure and other support for new farmers to start their own agricultural enterprises.
2. Help mentor new and existing area farmers, through a network of experienced Lehigh Valley farmers who have successfully adopted sustainable production and marketing systems.
3. Create a demonstration model of profitable and sustainable agricultural enterprises for new and existing farmers.
4. Be a focal point for building a strong local food system in the Lehigh Valley.
5. Provide educational opportunities for residents of Southeastern Pennsylvania to learn about the importance of local agriculture and local food production systems.
6. Help link new farmers to existing preserved farmland in the Lehigh Valley, for lease and purchase opportunities.

b) **The Site**

An initial 25-acre project site has been selected from a Lehigh County-owned, 451-acre agricultural property located in Upper and Lower Milford Townships. A Beginning Farmer Grant, issued through Penn State Cooperative Extension and the Lehigh Valley County, funded the program. Funding includes Farm Manager salary for 3 years.

The site contains 10 acres of prime tillable farmland soils, and two large ponds that are available for irrigation and livestock watering. The site is currently being transitioned from conventional to organic farm operations. In 2010, the farm will be equipped to provide land, deer fencing and irrigation main lines, including pump and headers. Plans for infrastructure in 2011 (pending funding) will include greenhouses, a pole barn, walk in cooler, tractor (with various implements), walk behind tiller and washing facilities. Participants will be required to supply their own small tools, seed, compost, mulch and irrigation lines from the main headlines.

c) **The Program**

The Seed Farm Incubator is a three-year program beginning with a one-year apprenticeship, followed by two-year beginning farm stewardship, producing products on incubator land.

**Seed Farm Apprentice - Year 1**

Participants are expected to participate in all parts of the apprenticeship, including the introductory class, 20 hours per week of collaborative work in the Seed Farm market garden, as well as participate in the organic vegetable production course. Participants interested in applying for years two and three to become Seed Farm
Stewards will participate in a five-week follow up farm planning course (Exploring the Small Farm Dream), to help develop farm and marketing plans for years 2 and 3.

(2) **Year 2: Farm Stewards**

“Beginning Farm Stewards” will develop their own businesses at the Seed Farm in years two and three of the program. The Seed Farm will provide land, infrastructure and equipment at reduced rates, as well as mentorship to help participants successfully start their new farm businesses. Farm stewards have a two-year limit to their status as new farms and are not guaranteed land at the Seed Farm beyond this period.
I. Appendix J: Holistic Management International

HMI is an Albuquerque-based, international nonprofit organization that provides training, courses and consulting services to stewards of large landscapes, including ranchers, farmers, pastoral communities, government agencies, NGOs, environmental advocacy groups and other non-profits. HMI’s holistic practices yield sustainable economic, environmental and social benefits by:

- Improving soil health and biodiversity of rangelands and pastures.
- Increasing grazing and wildlife capacity.
- Increasing annual profits and enhancing livelihoods.
- Optimally using rainfall and conserving water.
- Growing healthier crops and achieving higher yields.
- Reversing desertification in brittle environments.
- Breaking the cycle of food and water insecurity.
- Enhancing family relationships.
- Resisting and positively affecting global climate change.

HMI also trains Certified Educators to educate others about Holistic Management. They have received grants from USAID and the USDA; as well as significant grants from the Kellogg Foundation, the William and Flora Hewlett Foundation, the Ford Foundation, and the Rocky Mountain Institute.

HMI Clients and Projects:

- HMI currently has a major contract with Horizon Organic Dairies, the nation's largest producer of organic milk.
- They are in the final stages of signing a pilot project with the United States Army Corps of Engineers to improve land health and performance on the first of 21 sites in Texas, with a potential national rollout.
- They are engaged in a Holistic Site Management Land restoration project involving private ranchers, the BLM (Bureau of Land Management) and Conoco Phillips.
- They recently organized, hosted, and moderated the Grassland Carbon Working Group - under the auspices of the FAO/United Nations.
- They have had projects with the Navajo tribe and with the Acoma Pueblo (New Mexico Indian tribe).
- They have academic ties to Colorado College where they recently introduced our "Gen Next" college program, with plans to take it national.
- Their "Kids on the Land" program in Texas will go into California, New Mexico, Colorado over the next 24 months. This K - 6 grade school program has had 2,000 Texas school children participate in the last 4 years under the auspices of the Texas Dept of Education.
- They have courses accredited and offered for credit at Colorado’s Adams State College and in Australia through their TAFE program.
- They have academic colleagues, studies being done and supporters at Idaho State College, Texas A&M, California Polytechnic State University, University of New Hampshire, Montana State University, University of Texas/Austin and have partnered with Tufts University on a project in Africa.
J. Appendix K: Examples of Application Processes and Requirements

1. **Seed Farm Application Process and Requirements for Farm Stewards.**

The application process is expected to last three months from the application date to the final decision, and consist of the following steps:

(1) Creation of a farm plan: Apprentices planning to continue in year 2 will work with the Penn State Educator and the executive director to develop a business plan for their new farm enterprise during the farm-planning course. The Penn State Educator and the Executive Director will review preliminary farm plans and make suggestions.
(2) Applicants will submit applications and proposed business plans in electronic format, either by email or CD by the dates listed above.
(3) The Executive Director will screen applications for completeness and basic ability to comply with contract and the following criteria and make recommendations to the selection committee.

- Sound Business Plan that demonstrates good market opportunity
- Minimal one to three years farm experience and have never owned a farm
- Personal capacity to take risk: resources to cover living expense
- Strong awareness of organic production criteria

(4) The advisory committee composed of area farmers and the selection committee will review applications and business plans. The Executive Director will provide committee members with electronic versions of the applications and business plans at least 10 workdays prior to the review meeting. Applicants will make a presentation at the review meeting that includes their business plan and supporting materials, such as charts, list of markets, etc. Committee members will assess the soundness of the application and make additional recommendations.
(5) The Executive Director will submit final recommendations for approval to the board.
(6) If an application is approved, land will be assigned and the Executive Director will prepare a contract and lease. Typical lease terms will run from March to March.

2. **The FarmStart Application Process and Applicant Eligibility**

Applicants to the New Farms Incubator Program are asked to submit a proposal that describes their enterprise and preparedness to start their farm. They will be evaluated and accepted based on their proposed product and business idea as well as their background, experience and goals. The FarmStart Land Committee has identified a series of key objectives, targets, and limitations that will direct the selection process.

1) FarmStart will endeavor to maximize the overall number of participant farms
2) FarmStart will select participants who show promise to contribute positively to the future of farming and help foster a strong new generation of farmers.
3) FarmStart will strategically target the following individuals:

- New farmers, with acquired knowledge and experience, proposing to start a new agricultural enterprise
- Transitional farmers proposing to start a new type of agricultural enterprise
- New to Canada farmers proposing to start a new agricultural enterprise in Canada

FarmStart will evaluate Start-Up Farm applications based on standards that reflect the organization’s mandate, goals, and resource limitations. FarmStart will strategically target individuals and enterprises which:

- Show the greatest potential for maintaining long-term operations
- Show the greatest potential for economic viability
- Aim to conduct innovative operations
- Show greatest potential for positive community impact
- Show greatest potential for ecological sustainability
- Aim to serve local markets and contribute to local food sovereignty
- Show the least potential for negative impacts on existing local agricultural producers
- Are receptive to operating in a cooperative structure

Considerations and Limitations: FarmStart must operate within certain resource limits. Participant selections will be influenced by stated applicant resource needs. It is advised that applicants make their respective resource needs and respective solutions clear so that FarmStart can properly assess how many and what types of participants can be supported. The following needs/requirements, featured in respective applications, will be considered in relation to available FarmStart resources:

- Land area requirements
- Infrastructure requirements
- Equipment requirements
- Water needs
- Electricity needs
- Input needs

The application process is carried out in three steps:

- Submission of a pre-proposal.
- Fine tuning of the proposal and business plan.
- A final draft proposal and approval by the Land Committee and FarmStart Board of Directors.
K. Appendix L: Possible Responsibilities of Incubator Management

1. Incubator Management
   - Farm Management
     - Facilitate “farm update” meetings as a critical component in building an effective learning community.
     - Facilitate conflict resolution and communication between farmers.
     - Assign land and prepare contract and lease
     - Manage equipment rental and facility usage
     - Manage equipment and facility maintenance
     - Manage water use and quality
     - Manage farm stand operations
     - Coordinate volume discount purchasing (i.e. seed, fertilizer, etc)
     - Monitor farm production practices to meet habitat requirements
     - Manage equipment operator and safety training
     - Assistance in sourcing horticulture inputs and custom work contractors
     - Direct land management including mowing, plowing, road maintenance
   - Farmer Mentoring and Education Program (some of these functions could be provided by outside organizations)
     - Provide production mentoring
     - Assist new farmers in developing effective production and marketing techniques
     - Problem solve farm production challenges
     - Provide business consulting
     - Provide permanent location transition support
     - Business plan training and development
     - Work with farmers to prepare semi-annual progress reports
     - Coordinate programs provided by outside organizations
   - Administration
     - Manage farmer recruitment
     - Provide human resource advice and services
     - Manage accounts receivables and payables
     - Work with accountants on financial reports and tax filings
     - Prepare GCAI progress reports
     - Identify and recommend possible funding sources for new ventures (for example, Farm Beginnings offers a Livestock Loan Program)
     - Strategic planning
     - Regulatory compliance

2. Board Responsibilities (or committees/consultants)
   - Review applications, which include farm business plans
   - Screen applicants
   - Select applicants
   - Monitor financial and operating performance of GCAI
   - Review and comment on annual business plans updates
   - Review Semi-annual farmer progress and financial reports
   - Fund-raising
L. Appendix M: Requirements for Modular Harvest System

The Modular Harvest System ("MHS") can be leased to any community that provides an adequate docking site. One is now at a beta site in Stamford, Delaware County, New York. The fact that the MHS is impermanent in any given location allows many different farming communities to benefit from its availability. Cost is approximately $35,000 plus one acre of land zoned for light industrial.

Docking sites should include the following attributes:

- Animal Welfare Approved overnight housing for at least 20 cows or cow equivalents
- Appropriate passageway between the livestock housing and the slaughter trailer
- A one-acre paved or blacktopped level surface in an area zoned for agricultural or light industrial use. Ideally with exterior fencing and locked gates
- Exterior lighting of the trailer area
- A plan for accommodating three separate waste streams; offal, wash water and manure
- Electrical connectivity (220 V) and a potable water supply of at least 20 gallons per minute
- Connection to a local sewage plant, or alternatively, in ground tanks for storage pending transport to approved waste treatment facilities
- On site or nearby composting opportunity
- Availability of a front loader or fork lift
- A built structure, insulated and heated, for storage of materials and possibly for mechanical connections
- Additional locked storage for holding of hides and/or rendering products
M. **Appendix N: Land Lease Charges**

- Estimated at roughly $100/acre for crop land
- Estimated at roughly $50/acre for pastureland
- Charges also cover land maintenance costs.
  - Data Points
    - Intervale Charges: $135/acre for Incubator Farm
    - Average crop land rental in region is $73 (USDA)
    - Average pasture land rental in region is $15 (USDA)
    - Cornell Cooperative Extension data: $20-$60/acre based on soils for cropland and $15-$25/acre for pastureland. (Bessire, 2010)
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