ASSESSING AND PLANNING

Getting Started

Laura and Adam's story begins in 2003. They met while Laura was working a summer job at Gardens of Eagan, a 100-acre organic vegetable farm in Farmington, Minnesota, just south of the Minneapolis-St. Paul metropolitan area. She had recently finished college, and Adam was working toward a master's degree in industrial hygiene. Both were looking for something different than a career spent in a cubicle.

Although Laura and Adam did not set out to be farmers, their college degrees laid a good foundation for learning how to grow food and connect with people through Community Supported Agriculture (CSA). Laura has a bachelor's degree in anthropology, a holistic discipline that she thinks translates well to organic farming. Adam holds a bachelor's degree in biology with a minor in environmental studies.

Educator's Perspective: Resource Tip

Community Supported Agriculture

CSA is a model for agricultural production that has become more prominent in the U.S. since first introduced in the 1980s. The USDA[1] definition highlights the sharing of risks and benefits between consumers and producers. A summary of how CSAs work is available at Local Harvest. An ATTRA[2] publication provides more in-depth information on history, trends, research results, and examples.

[1]U.S. Department of Agriculture

[2]ATTRA, formerly known as the "Appropriate Technology Transfer for Rural Areas" project, is now the home of the National Sustainable Agriculture Information Service.

Hands-on Experience

Having caught the farming bug in the summer of '03, Adam and Laura set out to gain more hands-on experience. Much of their knowledge came from working at Gardens of Eagan over the next few years. They learned about all aspects of large-scale organic vegetable production, including soil health, fertility, pest management, and cover crops. They also saw all phases of production, from seeding to post-harvest handling. As Table 1 shows, they also worked at other types of farms in different locations in order to acquire a variety of skills and perspectives.

Figure 2: Adam and Laura took up Gardens of Eagan on the offer to rent land, where they are shown walking in August 2005.

Farmer's Perspective: Lessons Learned

If We Knew Then What We Know Now…

Adam and Laura place a high value on the training they received by working on a variety of farms. It allowed them to see different crops and scales of farming and to combine favorite practices into their own operation. If they could change one thing about the course of their farm career, however, it would be to spend even more time working on other farms before starting their own. Although they are glad they didn't pass up the opportunity to start farming on rented land (Figure 2), they feel 4-5 years of working on vegetable farms would have made their first seasons in business much easier.

Table 1. Summary of farming experience

Time Frame	Farm Name, Type, Size,[1] and Location	Position(s)	Skills
2003 (summer)	Gardens of Eagan Organic vegetables Large (100 acres)[2] Minnesota	Intern (Laura)	Greenhouse techniques, transplanting, cultivating, harvesting, and retail sales at roadside stand
2004 (winter)	Flying Disc Ranch Eco-dynamic fruit California	Laborer (Laura)	Managing citrus trees and date palms, retail sales at farmers market
2004-2006 (summers)	Gardens of Eagan Organic vegetables Large (100 acres)[2] Minnesota	Sales (Laura)	Retail sales at roadside stand
		Harvester (1 yr) + Equipment Operator (2 yrs) (Adam)	Machine repair, tractor tillage, mechanical cultivation, harvesting, fertilizing, and cover cropping
2004 (summer)	Riverbend Farm Organic vegetables Mid-sized (80 acres)[3] Minnesota	Harvester (Laura)	Growing specialty vegetable crops, marketing to restaurants and smaller wholesale accounts, cover cropping, beneficial insects, varietals, and managing a farm crew
2004 (summer)	Natural Harvest CSA[4] Organic vegetables Small (5 acres) Minnesota	Laborers (Laura and Adam)	Production, harvesting, packing, and management for a 140-member CSA
2005 (winter)	Fazenda Demetria Biodynamic vegetables Brazil	Garden Managers (Laura and Adam)	Managing biodynamic vegetable, herb, and flower gardens

[1]if available
[2]about 65 acres in production/cover crops
[3]about 40 acres in production/cover crops
[4]no longer in operation

Educator's Perspective: Resource Tip

Hands-on Learning

The Land Stewardship Project's Farm Beginnings is a farmer-led educational training and support program designed to help people who want to evaluate and plan their farm enterprise.[1]

The Beginning Farmers Web site from Michigan State University (MSU) provides a list of resources under Employment/Internships and Training Programs.[1]

MISA[2] maintains a list of internship opportunities with farms and related organizations in Minnesota and beyond.

ATTRA has a directory of on-the-job learning opportunities in sustainable and organic agriculture in the U.S. and Canada. Farmers and interns/apprentices can connect by searching for opportunities by state.

The MOSES[3] Farmer-to-Farmer Mentoring Program pairs experienced organic farmers with transitioning organic farmers to promote the successful adoption of organic methods through one-on-one interaction.

Some training programs are designed to serve as "incubator programs" and may be targeted to specific audiences. The Minnesota Food Association, for example, provides small learning plots through its Immigrant Agriculture Training Program at Wilder Forest.

[1]The Farm Beginnings courses led by LSP are offered in the Upper Midwest. Links to Farm Beginnings programs in other regions are on the MSU Beginning Farmers Training Programs page.

[2]Minnesota Institute for Sustainable Agriculture

[3]Midwest Organic and Sustainable Education Service

Setting Up Shop

In 2005, Gardens of Eagan owners Martin and Atina Diffley offered to rent the fledgling farmers two acres of land (Figure 3). Adam and Laura went into business as Loon Organics. The rented land, combined with an opportunity to borrow equipment from their mentors and to continue working part-time for the Diffleys, provided several advantages. It was a low-risk financial situation, allowing them to make mistakes, get feedback from established farmers, earn off-farm income, and find out if full-time farming was a good choice for them. Laura described their mentorship in the first of a series of articles about their first season, now archived at the New Farm Web site.

Figure 3: Adam and Laura standing in front of the green beans on their rented land during their first year in business, August 2005.

Gardens of Eagan and Loon Organics maintained a written agreement each year. It outlined rental fees for greenhouses, equipment, and farmland. It also included expectations that the Diffleys had for Laura and Adam, such as achieving and maintaining organic certification, carrying liability insurance, and keeping weeds under control. Rent was $200 per acre for the certified organic acreage. Gardens of Eagan charged less than the going rate for organic farmland rental because Laura and Adam were beginners with low capital access.

Educator's Perspective: Resource Tip

Leases and Contracts

Whether it's an opportunity to rent land or the need to understand rules and regulations, farmers often find themselves in need of legal documents or services.

Free rental agreement lease forms are available from Iowa State University.

The Farmers' Legal Action Group is a nonprofit law center dedicated to providing legal services to family farmers and their rural communities in order to help keep family farmers on the land.

Educator's Perspective: Resource Tip

Organic Certification

For Laura and Adam, growing vegetables organically was a commitment from the outset, as indicated by the name of their new enterprise (Figure 4). While farmers can use organic growing methods without getting certified, certification was an important part of the agreement between Loon Organics and its mentor farm, Gardens of Eagan. The following resources provide good baseline information on organic certification:

What is Organic Farming?

Minnesota Guide to Organic Certification

Organic Certification of Vegetable Operations

MOSES Organic Certification Guidebook[1]

Minnesota Department of Agriculture Organic Division

University of Minnesota Southwest Research and Outreach Center

eXtension

ATTRA Organic Farming

[1]MOSES also has a Farmer Transition hotline at 1-888-551-GROW (4769) for questions about soil building, weed and pest control, livestock, and certification paperwork.

Adam and Laura initially focused on wholesale markets but quickly transitioned to a predominantly direct-marketing strategy, as described in a New Farm article written by Laura at the end of their first season. Their decision to emphasize CSA and other direct sales is explained further under Marketing Models. An important part of the mentoring relationship with the Diffleys was the purchase of certain crops from Gardens of Eagan so that Adam and Laura could offer customers a more complete CSA box each week. The purchase of product for re-sale is described further under Finances.

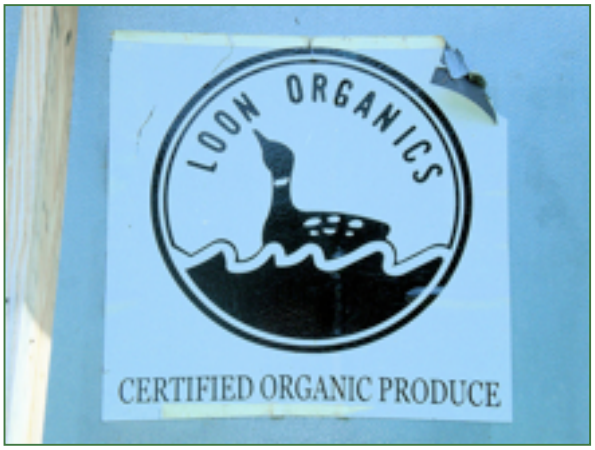


Figure 4: Adam and Laura agreed to achieve organic certification as part of their agreement with Gardens of Eagan.

Land Acquisition

Laura and Adam started looking for their own land soon after they established Loon Organics. Their search was to take until 2008, when they found a 40-acre certified organic CSA farm for sale outside of Hutchinson, Minnesota, 70 miles west of Minneapolis-St. Paul. Although they had initially focused on southeastern Minnesota, they found themselves squeezed between development pressure by the Twin Cities to the north and Rochester to the south.

Educator's Perspective: Resource Tip

Finding Land

Some organizations have clearinghouses or "matchmaking" programs designed to help aspiring farmers locate suitable land.

MOSES: Land Link-Up

Center for Rural Affairs: Land Link

Land Stewardship Project: Seeking Farmers-Seeking Land Clearinghouse

Iowa State University Extension Beginning Farmer Center: Farm On Program

Programs in other states or regions may be found through the National Farm Transition Network.

Adam and Laura looked at approximately ten farms before finding the one they purchased, and they drove by many more. They found that "drive-bys" were efficient because it was often quickly apparent that the farm layout and the amount of tillable land made a farm not worth pursuing. They used Multiple Listing Service (MLS) listings, called local realtors, and made inquiries through organic farmer networks. Although they expected to find a farm through word of mouth, they saw their farm listed on MLS.

Laura and Adam considered anything from 10 to 80 acres. Their preferred size was 40 acres, but they found it a difficult parcel size to find in their price range. Besides the obvious need to find a farm that fit their budget, they wanted to avoid parcels with dilapidated structures that would divert their cash flow from the farming operation. Laura and Adam sought the advice of veteran organic farmers, who emphasized paying attention to soils, drainage, the degree of protection from neighboring conventional farms, and protection from flooding. Their top priority was finding good soil for growing vegetables, and they hoped to find land that hadn't been sprayed.

They couldn't quite believe their luck at finding an existing organic CSA vegetable operation (Figure 5). As discussed further under Finances, a USDA Farm Service Agency (FSA) loan helped to make their dream of owning land a reality.

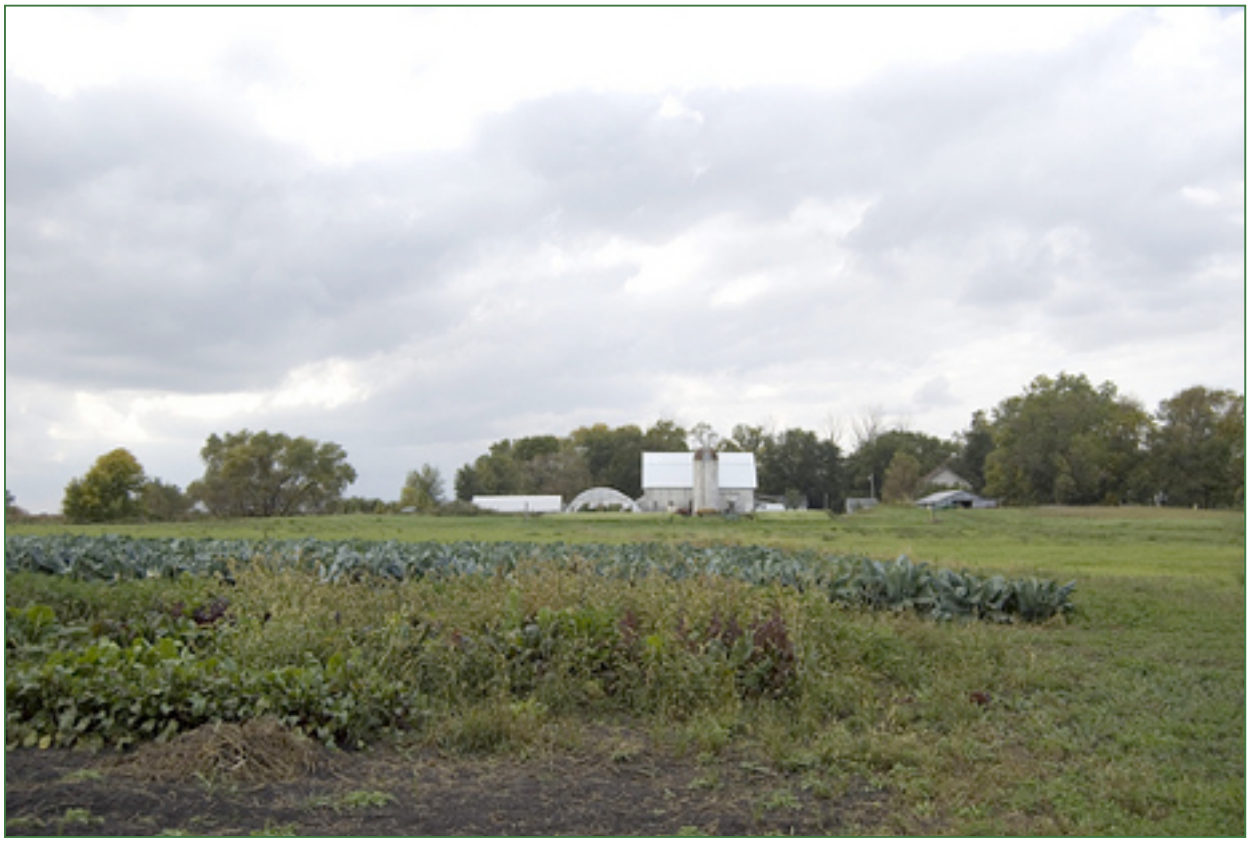


Figure 5: The farmstead on Laura and Adam's farm in Hutchinson, as seen from the fields on the east side of the property.

Farm Description

After closing on their new farm in the fall of 2008, plans and preparations for the next season began in earnest. Laura and Adam nearly tripled the amount of land they farmed, from just over two acres on the rented land to six acres on the new farm.

The current fields occupy a relatively small proportion of this gently rolling 40-acre farm. Adam and Laura estimate that their maximum tillable area is 15 acres of clay loam, and they don't anticipate putting more than 10 acres into vegetables. The remaining tillable area is earmarked for eventual perennials and fruit crops. The rest of the farm contains mixed grasses, woodland, and wetland. The wetland complex presumably prevented this particular section corner from being easily integrated into the adjacent fields of conventional row crops (Figure 6).

Educator's Perspective: Resource Tip

Soils

Farmers seeking land need to know what kind of soil they'll be dealing with. To get a map of soil types for a specific property, contact the local Soil and Water Conservation District or USDA Natural Resources Conservation Service. Click here for an office locator. Soil data are also available through the Web Soil Survey.

Once farming is underway, SARE"s[1] Building Soil for Better Crops is an essential reference. This one-of-a-kind, practical guide to ecological soil management was updated in 2010.

[1]Sustainable Agriculture Research and Education, a program of the USDA

Figure 6: The general layout of Laura and Adam's farm overlaid onto a 2007 aerial photograph from McLeod County GIS.

Although Laura and Adam's new farm had been operating as a CSA under the previous owners, the CSA was smaller and some of the farm's infrastructure needed updating to accommodate Loon Organics. Laura and Adam added a lean-to onto the north side of the existing barn to serve as a packing area (Figure 7). They also made other improvements to the barn, including addition of an 8' x 12' cooler, a concrete floor, shelves, and an electrical system upgrade (Figure 8). The irrigation system and irrigation pond did not require any improvements, but they did purchase a pump from the previous owners.

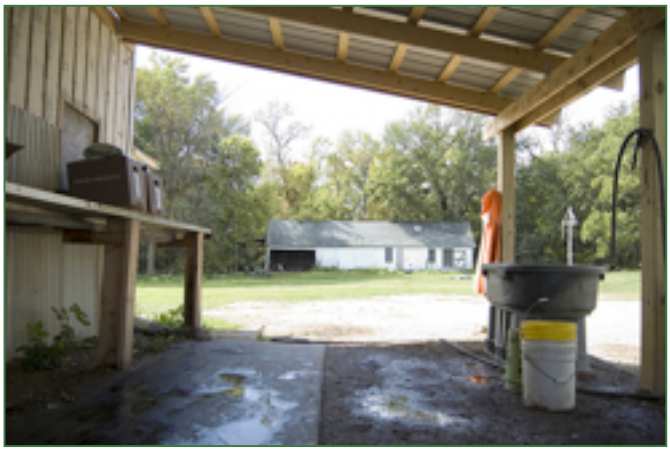


Figure 7: The new lean-to provides Adam and Laura with an area for post-harvest handling and packing.

The house on Adam and Laura's new farm was relatively small and built in the early 1900s. It had been partially remodeled and was in relatively good condition (Figure 9). Although it needs work, Adam and Laura found it provided them the necessary balance between functional living space and the overall affordability of the farm. If the home had been larger or newer, or if it had needed major improvements, it could have been a deal breaker for them.

Adam and Laura quickly started becoming a part of the surrounding community. In 2009 they had 55 local CSA members, many of whom were subscribers of the previous owners. Most of the local CSA members came to the farm every week to pick up their share of produce. Laura and Adam also hosted a few gatherings during the season (Figure 10). (Note that in 2009 they had an additional 70 CSA members, some of whom picked up their weekly boxes at the farmers market in Minneapolis [see Marketing Models] and others at a drop-off site in Chanhassen, a suburb southwest of the Twin Cities.)

Figure 8: Adam and Laura also added shelves and other improvements to the barn to enhance post-harvest handling and packing.

Other nearby farmers have pastured livestock and use organic farming methods, so Laura and Adam automatically had some peers in the neighborhood. They have found that even among their conventionally farming neighbors, to whom their crops may seem a little eccentric, respect is given to anyone who works hard.

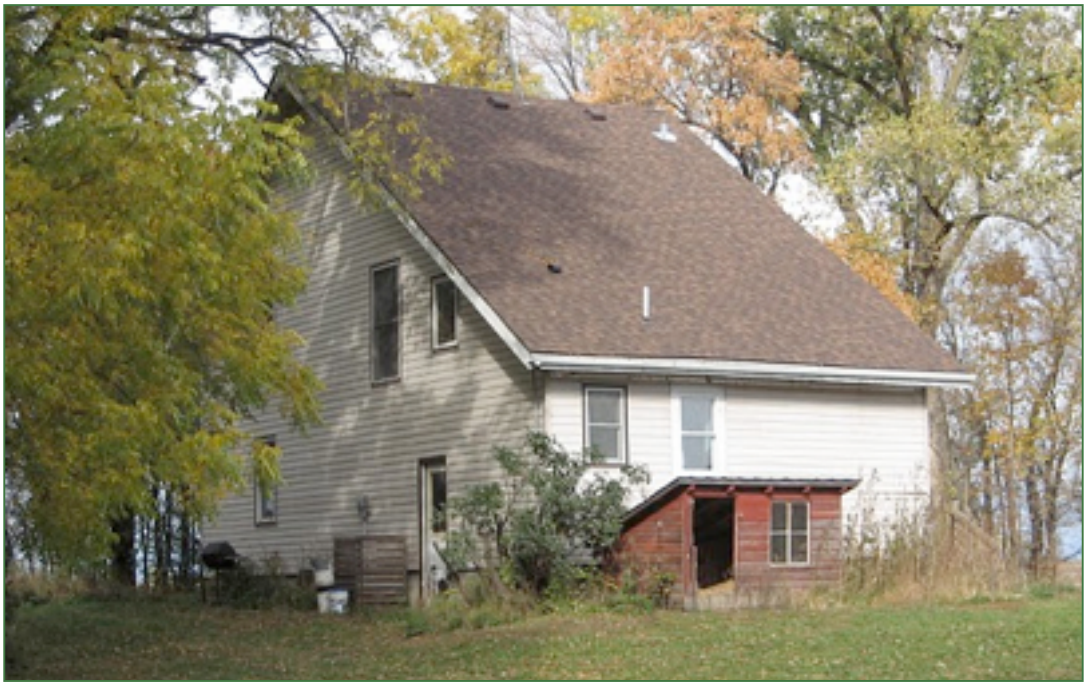


Figure 9: The farmhouse meets Adam and Laura's needs and helped to make the farm affordable to them.

Figure 10: Adam and Laura help put the "community" in "CSA" by hosting on-farm gatherings.

Business Plan/Whole Farm Planning

Adam and Laura grow up to 250 varieties of 40-50 different crops, including vegetables, herbs, flowers, and some fruits. They chose to emphasize annual vegetables as their main product for a couple of different reasons. When they started out they were vegetarians, so for dietary reasons livestock farming was not a compelling choice. They were, and continue to be, interested in fruit trees and other perennials, but they wanted an enterprise that simplified start-up. As outlined in one of their articles at New Farm, the appeal of producing food for others and having a consistent product throughout the growing season, plus having access to the knowledge and resources of Gardens of Eagan, made vegetables the logical focus for them (Figure 11).

Laura and Adam put together a business plan in 2005 before they started farming on their own. It evolved into their initial production plan, with lists of selected crops and the associated details needed for each one (e.g., seeding vs. transplanting, fertilizing, harvesting/handling, equipment). With time, the business plan became more focused on overarching issues, such as goals and mission, and on finances. The production planning became linked to their organic certification process.

Figure 11: Laura and Adam wanted to focus on high-yielding annuals, such as tomatoes, when they started out.

Adam and Laura review their business plan each winter, compiling and evaluating financial information from the previous season. The indicators they track most closely are finances and crop yields, though they also consider personal indicators, such as how stressful the season was. During the growing season, they have weekly meetings to review their financial picture. Growing plans and/or the farm budget sometimes need to be adapted as the season progresses depending on weather, pests, and diseases. In 2009, for example, a summer drought resulted in less product than anticipated for their farmers market sales. They increased fall production by planting more than they had originally planned and were able to make up what they had lost over the summer through fall sales.

Laura and Adam have not engaged in whole farm planning, but they feel it's their next step and may attend a course soon. At the beginning, whole farm planning felt too overwhelming. Now, with five years of experience and a farm to call their own, the issues to be addressed seem more manageable and pertinent.

Educator's Perspective: Resource Tip

Business Planning

A MISA publication called Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses assists with the creation of a holistic business plan rooted in personal, community, economic, and environmental values.

A free online course called Strategic Farm/Ranch Planning and Marketing, one of a series in SARE's National Continuing Education Program in Sustainable Agriculture, covers goal setting, developing business and marketing plans, managing risk, meeting with lenders and alternative financing, transferring farms, and understanding retirement options.

A free online business planning tool called AgPlan, from the Center for Farm Financial Management, offers tips and resources for writing a plan and provides an option for getting it reviewed.

The U.S. Small Business Administration has Small Business Development Centers throughout the country that offer free consultations for business planning. Click here for an office locator.

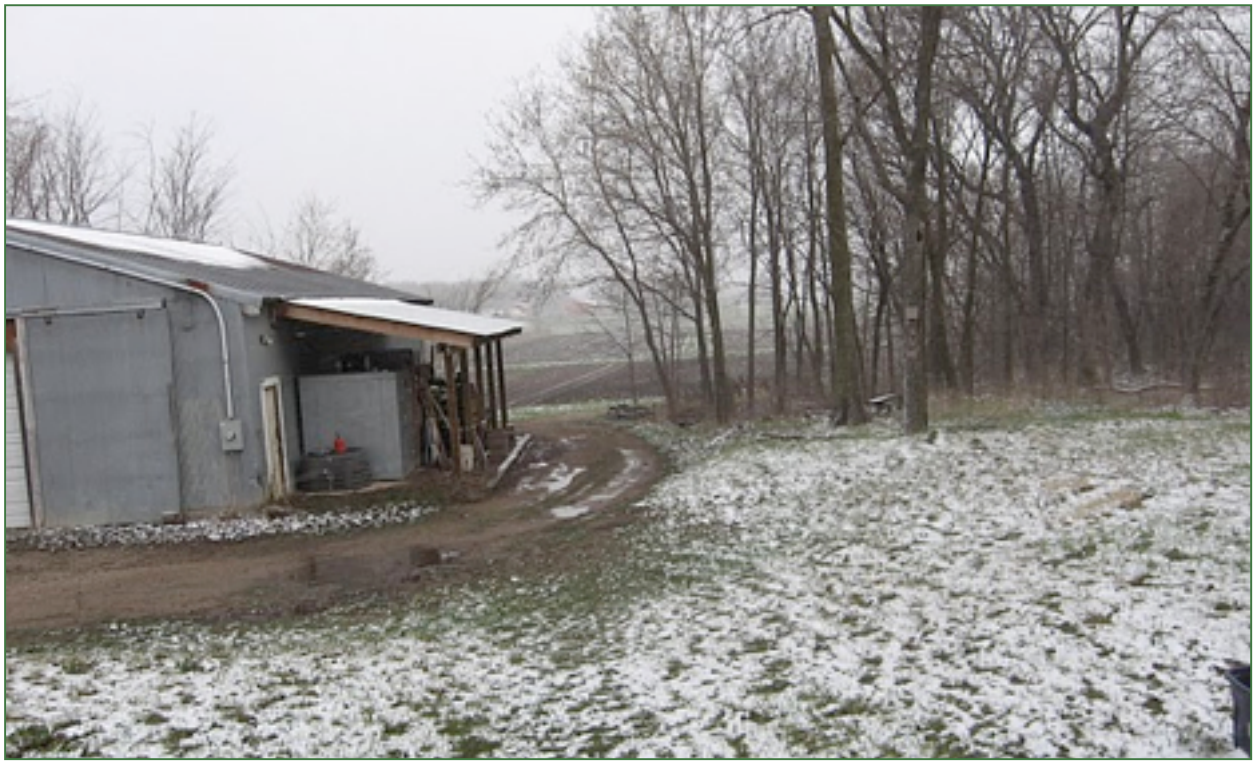


Figure 12: The cooler and lean-to used as a packing area on Laura and Adam's rented land. They did not use the pole barn to which the lean-to is attached. Their rented field is the land in front of the lean-to.

Infrastructure

When Adam and Laura rented land, most of their infrastructure was also rented from Gardens of Eagan. They rented space in the greenhouse each spring to raise seedlings and transplants. In 2005, they also rented cooler space and built a lean-to for use as their packing area. They bought their own small cooler in 2006, placing it underneath the lean-to as shown in Figure 12.

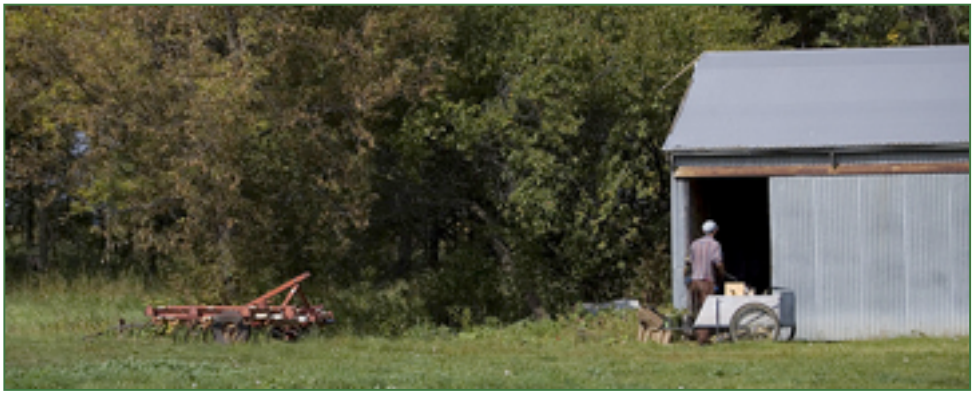


Figure 13: Adam enters the shed that they use to store and work on their collection of tractors.

Because Laura and Adam purchased an operating farm, much of the infrastructure they needed for Loon Organics was in place when they arrived in October 2008. Aside from the barn and irrigation system mentioned under Farm Description, their new farm already had a farmhouse, two greenhouses, and two sheds. One shed serves as Adam's machine workshop (Figure 13). The other shed is a refurbished granary; they use half for tractor storage, and the other half provides living quarters for one to two people (Figure 14).

Figure 14: The refurbished granary provides on-site living quarters for farm employees.

Farmer's Perspective: Lessons Learned

It's Always Something…

The need for infrastructure upgrades is often overlooked when budgeting for a farm purchase. A new septic system or well may be needed, for example. In Adam and Laura's case, the necessary electrical system upgrade cost $5,734.

The primary greenhouse on the new farm is a 30’ x 48’ Gothic-style greenhouse that is heated with propane (Figure 15). Because it has roll-up sides and raised beds on one side, it can also be used for season extension without a mechanical heat source (Figure 16). These same flexible walls make it inefficient to heat through winter nights, however. Adam and Laura are exploring options such as in-ground heating to make their greenhouse operation more economical.

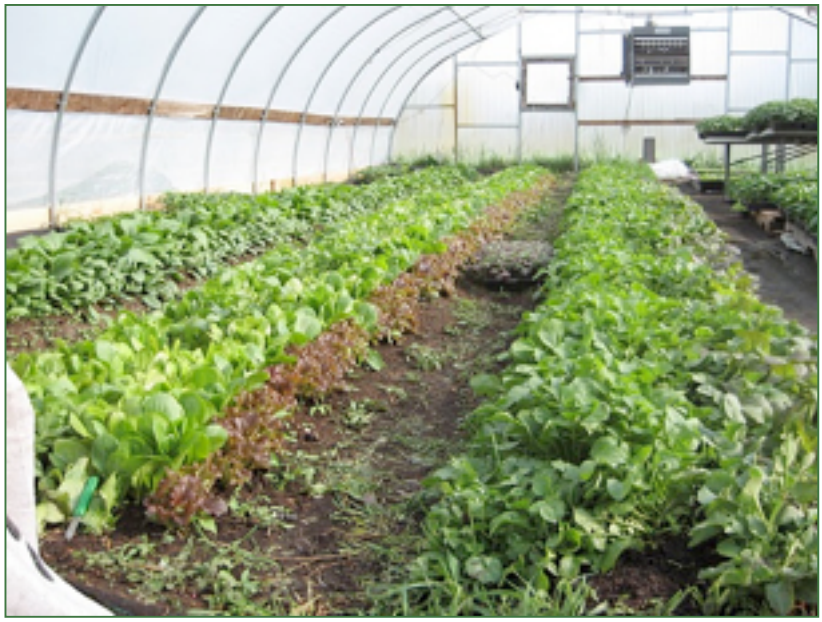


Figure 15: Radishes, salad mix, and turnips growing in raised beds in the primary greenhouse on May 5.

Figure 16: The primary greenhouse with its sides rolled up and newly sprouted seedlings in its raised beds on September 23.

The second greenhouse is a lean-to structure off the south side of the barn (Figure 17). They use it as an overflow greenhouse and for hardening off transplants. They are planning some structural and functional improvements so they can increase its use.

Figure 17: Laura and Adam's secondary greenhouse, attached to the barn.

Laura and Adam's major addition to farm infrastructure to date is a 30' x 96' Quonset-style (round roof) hoop house (Figure 18). They purchased a kit that included the plastic, hoops, and ground posts for $5,713 in 2008 (Figure 19). They spent approximately another $1,000 on end walls. In 2010, they plan to add better support beams for trellising crops at a cost of about $500. Their experience with this "pilot" hoop house is described further under Production Models and Methods.

Figure 18: Adam and Laura added what they hope is one of several hoop houses to their new farm for season extension.

Figure 19: Laura and Adam constructed the hoop house themselves (with lots of help) over a 2-3 week period.

Educator's Perspective: Resource Tip

Greenhouse vs. Hoop House

Hoop houses, or high tunnels, are unheated greenhouses used for extending the growing season.

ATTRA has a comprehensive resource list for greenhouses, including a section on hoop houses.

Hightunnels.org also has extensive hoop house resources as part of a USDA-sponsored project that is testing and promoting high tunnel systems in the Central Great Plains.

MISA and MOSES co-developed a season extension Web site that includes on-farm trials from the Midwest.

The University of Minnesota High Tunnel Production site is dedicated to furthering high tunnel research on fruit and vegetable crops in Minnesota.

A news release in late 2009 announced that the USDA Natural Resources Conservation Service would be funding hoop houses on farms in 38 states as part of a 3-year pilot study to increase availability of locally grown foods.

Equipment

Adam and Laura's strategy when they started out in 2005 was to use off-farm income to support themselves and to use their initial farming profits to acquire tractors, machinery, and other capital assets. Their goal was to buy as much equipment as possible while renting land, so that when they purchased a farm they could focus on the monthly mortgage payment.

Table 2 summarizes Laura and Adam's equipment purchases. They brought their 6' x 6' cooler with them to the new farm and placed it outside the barn next to the packing area (Figure 20). They keep it at 40˚F and use it for storing local CSA boxes. The new larger cooler that they added to the barn is kept between 35˚F and 45˚F and is used for storing Twin Cities CSA boxes and farmers market product.

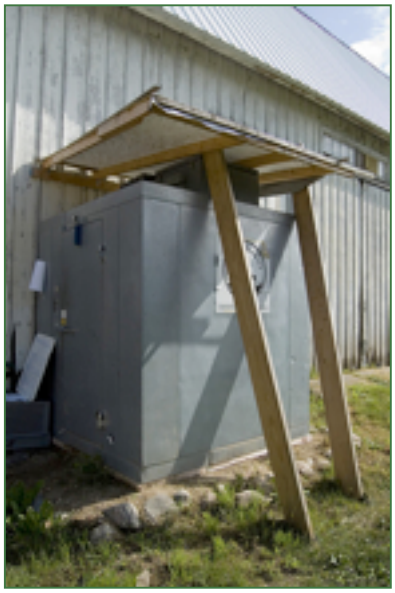


Figure 20: Adam and Laura's 6' x 6' cooler is in an accessible location, giving their CSA members flexibility with pick-up time.

The primary uses for each tractor are described in Figure 21. Adam and Laura prefer to purchase used tractors and implements when possible because they are more affordable and sometimes more widely available. Certain implements that are custom-made, such as the tine weeder and the basket weeder, were purchased new. Adam's mechanical abilities are important for maintaining the equipment and allowing them to rely primarily on used machinery.

Figure 22: Workers transplant seedlings while Adam drives the electric tractor.

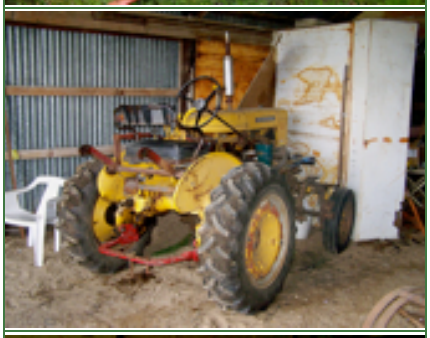
As an example of Adam's mechanical skills, he converted one of their gasoline tractors to an electric tractor using eight golf cart batteries. The primary motivation was a gas motor that was smelly and noisy, but a side benefit of the conversion is that they can attach two seats to the back for planting. Workers can sit with flats of seedlings between and in front of them for transplanting (Figure 22). With a gas motor, they would need a special (and expensive) gear to go slowly enough for this approach.

Table 2. Equipment purchases

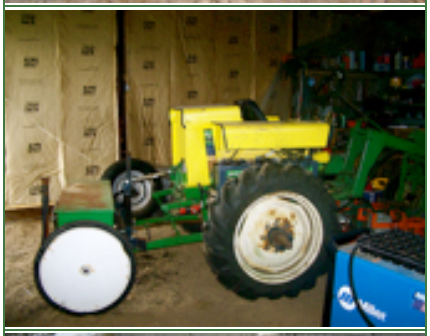
Category	Item	Price	Year
Tractors	JD 2640 Tractor	$9,500	2006
	IH 140 Tractor #1	$3,000	2006
	Hefty G Tractor	$1,750	2007
	Electric Tractor Components	$1,705	2008
	Allis Chalmers WD45 Tractor	$2,500	2008
	IH 140 Tractor #2	$2,500	2008
	JD Lawn Tractor	$1,000	2008
Implements	Fertilizer Sidedresser	$75	2006
	Rototiller	$1250	2006
	18" Disc (new)	$830	2007
	IH 140 Cultivating Parts	$839	2007, 2009
	Chisel Plow	$350	2007
	Spring Tine Weeder	$450	2007
	Planet Jr. Seeders	$1,639	2007
	Field Cultivator	$450	2008
	2 Field Discs	$885	2008
	Basket Weeder Cultivator	$2,809	2008
	Drag	$210	2008
	Cultivating Parts	$227	2008
	Various Tractor Implements	$500	2008
	Bed Lifter	$300	2008
	Plow	$560	2008
	Potato Digger	$400	2008
	Tiger Flail Mower	$2,500	2008
	Gandy Fertilizer Spreader	$300	2009
Small Machinery	Garden Tiller	$666	2005
	Chainsaw	$210	2009
Other	Small Cooler (6' x 6')	$1,800	2006
	Large Cooler Compressor[1]	$500	2007
	Irrigation Pump	$800	2008
	250-gallon Water Tank	$100	2009
	Water Pump	$71	2009
	Welding Equipment	$1,234	2009
	Hydraulic Hay Wagon	$175	2009
	Total Spent	**$666**	**2005**
[1]purchased in advance of large cooler because of good price		**$15,625**	**2006**
[2]not including hoop house ($5,713)		**$5,719**	**2007**
[3]not including lean-to construction (including large (8' x 12') cooler) ($1,116), electrical upgrade ($5,734), or break room appliances/office equipment ($920)		**$17,346**	**2008[2]**
		$2,729	**2009[3]**

Figure 21: Adam and Laura's fleet of tractors.

(a) This John Deere 2640 is used for primary tillage and soil preparation, including field digging, chisel plowing, discing, rototilling (sparingly!), and plowing. It is also used for mowing.



(b) Adam and Laura's first International Harvester 140 is used for cultivating 1- or 2-row vegetable crops and for sidedressing. It is also used with the potato digger.



(c) The Hefty G is used for planting (both seeding and transplanting) and for fertilizing. This tractor was converted to an electric motor in 2008. The Gandy fertilizer spreader is attached to the back of the tractor.

(d) Adam and Laura bought this Allis Chalmers WD 45 from the farm's previous owners and use it for pulling wagons and spraying.

(e) Their second International Harvester 140 is used for cultivating with the basket weeder (shown under Production Models and Methods/Field Production).