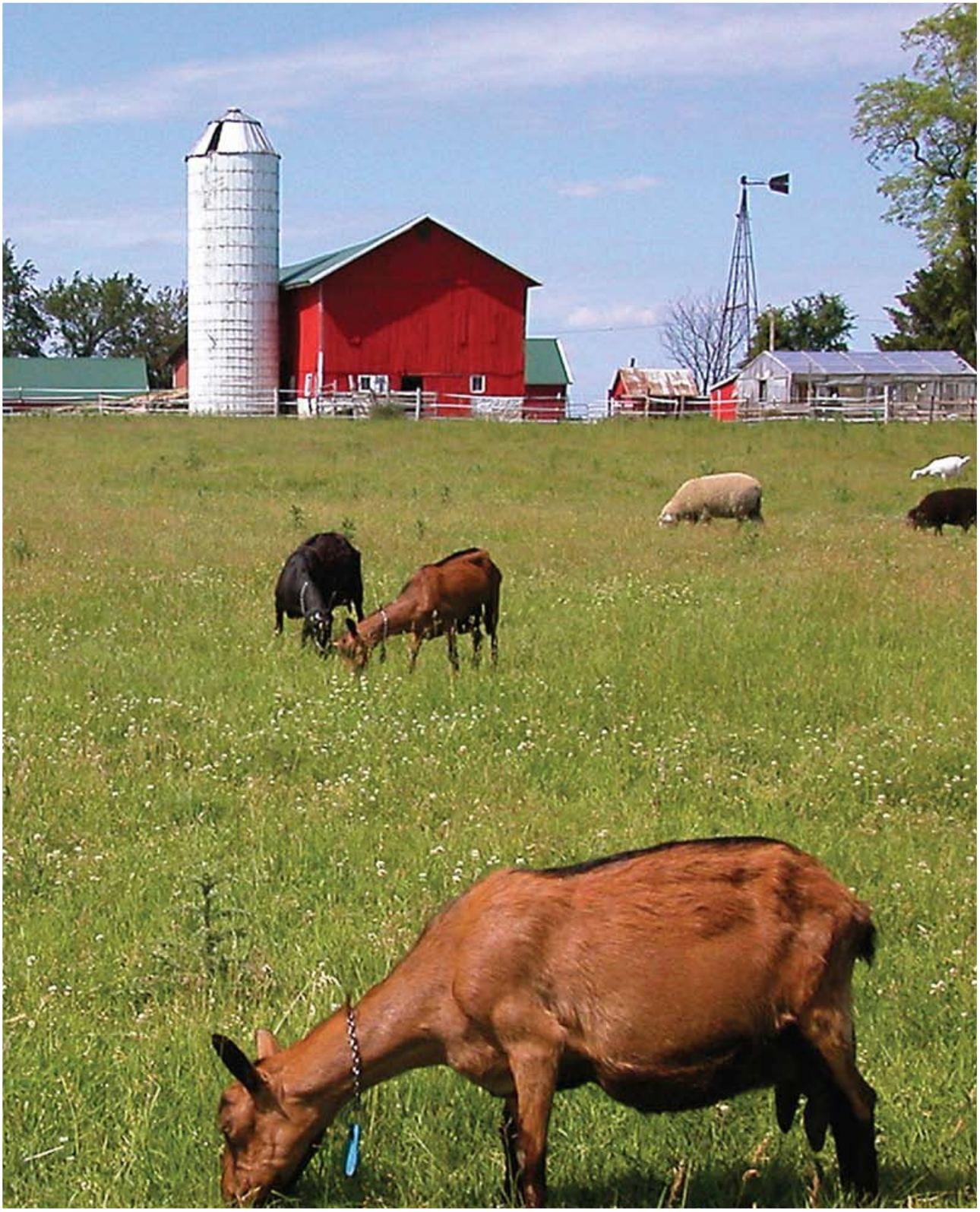
HISTORIC BARNS

Working assets for
SUSTAINABLE FARMS



Scotch Hill Farm Goats – Photo by Edward Hoogterp

WORKING ASSETS FOR SUSTAINABLE FARMS

by EDWARD HOOGTERP

When Tony and Dela Ends bought an aging farmstead northwest of Chicago, their real estate agent offered a bit of friendly advice: "Tear down the barn." The agent figured the old building was obsolete, and the Ends could earn some extra cash by selling the weathered wood to a local furniture maker. Tony Ends admits the idea was tempting. The family certainly could have used the money. And they weren't yet sure how the 100-foot-long barn would fit into their dream of a small, sustainable farm.

A dozen years later, the barn stands as the centerpiece of Scotch Hill Farm, where the Ends family makes goat-milk soap, supports a menagerie of animals and grows vegetables on the Community Supported Agriculture (CSA) model. The century-old structure houses the Ends' breeding bucks and other livestock. The upper floor, accessible by an earthen ramp, has hosted weddings, community meetings and even a barn dance. That is, when it's not filled with hay.

The barn's new steel roof was installed with help from friends and customers. And though a lifetime of maintenance remains to be done, the future of the old building seems secure. "I don't think anyone's talking about tearing it down anymore," said Tony Ends.

The Ends barn, near Beloit, Wis., represents a trend that's slowly growing throughout America's farm country. Practitioners of so-called sustainable agriculture are finding new—or sometimes old—uses for farm buildings that were abandoned or deemed obsolete by conventional agriculture. Organic farmers, pasture-based dairies and producers of natural pork and free-range chickens are among those discovering the benefits of historic agricultural buildings. In addition to continuing their original uses, barns and other buildings are being converted to farm stores, distribution centers, meeting halls, machine shops, soap kitchens and more.

Sustainable agriculture has many definitions (see page 6). The recurring theme is that, over the long haul, a farm system can succeed only if it grows healthy food, supports a strong local community and offers the farmer a decent living—all without destroying the soil or depleting natural resources. Farms that meet the "sustainable" description tend to be small, to produce a diverse mix of products, and to limit the use of synthetic fertilizers and herbicides. They rely on natural systems to build soil fertility and control insects. They try to minimize the debt loads that strap many conventional farmers. And they often produce products for local retail customers, rather than commodity markets. Though such farms still occupy only a tiny share of America's rural landscape, they represent the fastest-growing segment of the agricultural economy.

Tony Ends – Photo by Edward Hoogterp

Experts are only beginning to study the ways that preservation of historic farm buildings can play a part in this kind of farming. But the connection already is clear to many farmers. In a 2005 survey, the National Trust for Historic Preservation's BARN AGAIN! program found that old farm buildings were being used for egg production, grain storage, retail space, vegetable packaging, machine shops and other purposes, in addition to livestock shelter and hay storage. The survey was conducted electronically through the Local Harvest co-op, which is based in California and has some 4,000 members nationwide. Of 198 respondents who had pre-1950 farm buildings on their property, 98 percent said they use the structures for farm-related purposes.

Economic Benefits

The survey and subsequent interviews indicate that the use of historic buildings can carry significant economic benefits for sustainable farmers. Among those potential benefits are:

- **COST.** Even when an existing building must be restored or altered, many farmers find it less expensive than building new.
- **ENERGY EFFICIENCY.** Barns, chicken houses and granaries were built to function with minimal mechanization. Such features as passive ventilation make them more efficient to heat and cool than modern steel structures.
- **SCALE.** Small livestock producers say the design and size of old buildings tend to fit their operations, which often rely on local retail customers or sales to specialty distributors such as Niman Ranch or Organic Harvest.
- **ORGANIC USES.** The National Organic Program restricts the exposure of livestock to treated lumber. Because old farms are made from untreated wood and masonry, they can be ideal for housing livestock on organic farms.
- **MARKETING POSSIBILITIES.** Because historic barns are so closely identified with strong rural communities, they are powerful marketing tools for the farms. Many small producers sell their meat, eggs and vegetables on site through a farm stand, retail store or CSA. Customers enjoy visiting the farm, and the presence of a historic barn is among the most important elements of that farm image.

Sweeter Song Farm – Photo by Edward Hoogterp

Some historic preservation advocates believe these small farms offer the best hope of preserving something close to the traditional uses of rural architecture. "Niche marketing is the only way in which you can see an avenue for these so-called outdated buildings to become useful again," said Michael Tomlan, director of Cornell University's Historic Preservation Planning program and president of the New York State Barn Coalition. The key, Tomlan said, is that small farms must be based on successful products and marketing strategies. "You have to have a finely tuned sense of what it is you are going to raise and market," he said. "Then you work backwards to the barn...the healthy farm is the one where people are caring for it over the long haul."

Boistfort Valley Farm – Photo by Nick George

Restoration Challenges

Even when farmers recognize the benefits of their historic buildings, they often face significant challenges in restoring and adapting their historic buildings. In the National Trust survey, a number of respondents indicated they had difficulty finding information on restoration techniques and potential sources of financial

Sweeter Song Farm – Photo by Edward Hoogterp

SWEETER SONG FARM

Cedar, Michigan

This northern Michigan farm produces vegetables, herbs and flowers for local restaurants and an 80-member CSA, along with brown eggs which are sold on the farm and through a local grocery. The owners follow the requirements of the National Organic Program, and are seeking organic certification.

The 55-acre farm had been untended for years when Schwantes and Reinhardt bought it in the mid-90s. Both worked off the farm while they began restoring the land and buildings. A restoration contractor was hired to assess the barn and provide a prioritized list of repairs. The contractor repaired some rotted timbers by splicing in new wood. The steel roof was patched, but not replaced.

The lower level of the bank barn is used for cool-storage of produce awaiting distribution. The upper level is devoted to storage and may someday be converted to a machine shop. The granary is used as a workshop, with a screen-enclosed section for curing garlic. In 2005, the farm owners built a system of outdoor runs, and adapted the wooden chicken house to shelter 150 free-range laying hens.

The farm owners have received a conservation grant for setting aside a 25-acre wetland near the center of the property. There has been no financial assistance for building restoration.

Owners: Jim Schwantes and Judy Reinhardt

Barn type: Dairy barn, chicken coop, granary, built about 1925

Barn size: 40 by 60 feet

Construction type: Bank barn, timber frame, gambrel roof

Original use: Diversified farm

Current use: CSA farm

assistance. On farms that have been in continuous use, barns often are in good repair and can be adapted without a great deal of expense. But where the buildings have been ignored or neglected, the restoration can be much more difficult.

Jim Schwantes and Judy Reinhardt found that out when they bought an abandoned farm near the village of Cedar on Michigan's scenic Leelanau Peninsula. The roof of the 80-year-old dairy barn leaked, and sections of timbers needed to be cut out and replaced. Even that work had to wait. The first order of business was to add a few amenities—such as usable plumbing and wiring—to the old

Sweeter Song Farm Garlic – Photo by Edward Hoogterp

farmhouse. Once they were able to move into the house, Schwantes and Reinhardt brought in a local timber-frame expert for advice on the barn. He presented them with a 12-point plan, showing which parts needed repair first, and which could be handled later.

Today—nearly 15 years after Schwantes and Reinhardt began turning their farm plans into reality—the barn rests on a solid mix of old and new timbers. And the patched steel roof only occasionally lets in a bit of rain. A massive stone foundation keeps air cool and moist on the lower level, creating an ideal climate for temporary storage of vegetables harvested for the 80 members of the Sweeter Song Farm CSA operation. The upper level and hayloft are used now for storage. Schwantes has visions of someday building a machine shop into that space, below the timbers that support the soaring gambrel roof.

(continued on page 7)

What is SUSTAINABLE AGRICULTURE?

"Sustainable agriculture" is an umbrella phrase that covers farming systems such as those described as biodynamic, low-input, grass-based, natural, biological or permaculture. What those systems have in common is that they seek to produce healthful food and fiber, without negative impacts on the natural environment or human society.

The United States Department of Agriculture's Sustainable Agriculture Information Service describes this kind of farming as one that "produces abundant food without depleting the earth's resources or polluting its environment." Other sources say such farms must be sustainable in terms of economics, environment and equity. That means a farm can be considered sustainable only if it is profitable for the farmer, positive for the environment, and productive for the community.

America's conventional farms produce food that is both plentiful and inexpensive. Obviously, that's a good thing. But in the process, modern farming methods have been blamed for depleting soils, polluting waterways, and relying too heavily on fossil fuels for fertilizer, disease suppression and energy. (In fairness, many conventional farms have adopted such strategies as conservation tillage and integrated pest management to diminish their impact on the land.)

The emergence of huge farms—often producing a single crop on thousands of acres of land—is one factor in the decline of rural communities, which thrived in a diverse economy of small farms and merchants. Meanwhile, high debt levels and low commodity prices have strangled mid-sized farms, while large conventional farms often rely for their survival on subsidies that cost taxpayers billions of dollars each year.

Sustainable agriculture seeks to address those issues by mimicking the systems that produce healthy plants and animals in nature. Instead of spraying synthetic insecticides, for example, organic farmers battle insect pests through such strategies as crop rotation, choosing disease-resistant plant varieties, promoting soil health and providing habitat for beneficial bugs that may attack the pests.

Grass-based livestock operations plant a diverse mix of pasture grasses and forbs, then move their animals regularly to fresh pasture to imitate the effect of wild, grazing herds. Those operations may be nearly as productive as conventional methods, and often much more profitable.

While there are large farms and nationwide cooperatives involved in sustainable agriculture, many of the practitioners are small operations that market their produce locally. They may operate roadside farm stands, set up booths in one of the 4,000 farmers markets nationwide, or sell directly to local restaurants and specialty groceries.

One of the fastest-growing models is Community Supported Agriculture, or CSA, in which customers buy annual memberships that entitle them to a basket of produce each week during the harvest season. The system reduces the farmer's risk, since membership shares are paid in advance, and it assures the customer-members of a steady supply of fresh, local produce.

In some cases, sustainable operations develop on farms that initially were supported entirely by off-farm income. It's not at all uncommon to find an organic orchardist, or a goat-dairy owner who describes the operation as "a hobby that got out of hand" or "a 4-H project run amuck." In addition, some sustainable farmers have partnered informally with their part-time neighbors by making agreements to harvest hay or use fallow pasture. Whether they are engaged in agriculture full-time, part-time or not at all, many of these rural property owners have worked diligently to preserve their farm buildings.

(continued from page 5)

While the barn may be underused, other buildings of the same age are already fitting into the operation of Sweeter Song Farm. A wooden granary provides a perfect spot for curing garlic bulbs. And the addition of fencing and gates turned the old chicken coop into shelter for a flock of 150 free-range laying hens.

Tomlan, the Cornell University professor, says it's a good idea for small farms to restore and adapt buildings gradually, as cash flow allows. "Capitol being generated is limited," he said. "I'm not going to go to the bank. Why would I do that and really encumber the business with debt? It can be rehabbed as it should be, by virtue of extended maintenance, which is the best rehab anyway."

Tony and Dela Ends used that approach when they bought their 5-acre Wisconsin farmstead in the 1990s. "We started with nothing," Tony Ends recalls. "We were working three jobs. We didn't have a pick-up truck. We didn't have a walk-behind tractor." That first year, their CSA had only 5 members. The farm receipts of $1,200 came nowhere near covering the expenses. A decade later, the CSA has 80 members and the farm has access to an additional 20 acres for hay and oats. Gross annual receipts are approaching $100,000. Most of the milk from the 45 goats is turned into decorative scented soaps for sale by mail order throughout the Chicago area. A USDA rural development grant is helping to set up a marketing cooperative with other Wisconsin soap-makers.

> *If I had a lot of money I would completely redo everything. But I don't...*
> – Tony Ends –

"We just kept working at it and buying equipment as we went," Tony Ends said. "The old farmers told me: 'Don't go into debt.'" The barn has been re-roofed and

rewired over the years. The foundation, siding and timbers could still use work. "If I had a lot of money I would completely redo everything," Tony Ends said. "But I don't..."

Listening to Farm Agencies

Like Ends, many small farmers are comfortable seeking advice and financial assistance from such agricultural agencies as the cooperative extension service and USDA. But few have used the resources of historic preservation groups.

That's a disconnect that preservation groups should address, according to Rod Scott, a self-proclaimed barn-hugger and a board member of the Iowa Historic Preservation Alliance. Sustainable farmers—indeed all farmers—tend to be unaware of historic preservation resources, according to Scott, who has lobbied Congress to include barn-preservation incentives in the 2007 farm bill.

"(Sustainable farm organizations) have everything to do with farm preservation, and nothing to do with preserving the architecture on the farm," he said. Bridging that gap should be a priority for historic preservation groups, according to Scott. If farmers are getting their information though cooperative extension, 4H and the Farm Bureau, then preservation activists should work to educate those groups, he added. "It can't just be environmental stewardship. It's got to be environmental and cultural stewardship," Scott said.

Conventional farmers and agriculture organizations can recite a familiar litany of reasons why old dairy barns, tobacco barns, chicken houses, wooden granaries and other farm buildings are obsolete. The buildings were designed for a time when farm power was supplied by animals or by very small tractors. In those days, a dairy herd of two dozen cows was about all a farmer could handle. So barns were scaled for that number of animals, with feed storage up above. Likewise, pork and poultry operations were limited to a size that a single family could operate, largely with manual labor.

But the advent of powerful tractors, large round hay bales, bunker silos, automated grain bins and other mechanized systems let farms expand beyond the capacity of the old-style farm buildings.

New production and marketing methods led to huge, highly specialized farms with thousands of cattle or swine, or many times that number of chickens.

In these systems, the historic buildings seemed irrelevant. A century-old dairy barn may be too small to house the tractors used on a large farm, let alone the thousands of animals. Swine and poultry are often raised in total confinement systems, requiring air handling and sanitation conditions that cannot be duplicated in traditional structures. As farms grew bigger, they also

Arvid Jovaag – Photo by Edward Hoogterp

became more specialized. In a report titled "Milestones in U.S. Farming and Farm Policy," Carolyn Dimitri and Anne Effland of USDA noted that average farm size increased from 195 acres in 1945 to 441 acres in 2000. During the same years, the number of commodities produced on a typical farm fell from 4.6 in 1945 to 1.3 in 2000.

Reinventing Farm Diversity

Meanwhile, sustainable farmers are re-inventing a less energy-intensive form of production and increasing the diversity of the products. Many are finding that the old buildings perfectly fit their needs.

Arvid Jovaag, of Austin, MN, shelters Percheron horses and breeding boars in an 1870 livestock barn. He uses a separate 60-year-old building to house the hogs he raises for Niman Ranch, a nationwide distributor of "natural" pork. Niman pays a premium for pigs raised to its exacting standards, which ban the use of antibiotics and require that animals have access to fresh air and space to run. Hogs raised that way generate fat and marbling that increase the flavor of the meat. Some consumers also consider the system more humane.

Wooden box stalls inside Jovaag's pig barn let the sows get out for fresh air and feed. The building seldom needs heat, even during Minnesota winters, and passive ventilation keeps the air fresh inside. "That was a state-of-the-art hog barn in 1949." Jovaag said. "...Now we think it's state-of-the-art again with our system."

In addition to hogs, Jovaag raises free-range beef cattle on the pastures of his 470-acre farm. He worries that much of American agriculture has gotten too far away from the natural systems of farming. "Everything's been based on cheap energy," he said. "Now we're down that road and it's hard to get back."

Working with nature is an important part of the philosophy at Boistfort Valley Farm, a certified-organic operation near Curtis, WA. And a 75-year-old wooden barn gives nature a big assist, according to Mike Peroni, who runs the farm with his wife Heidi and their son, Mason. "This old barn houses 80 to 100 cliff swallows, which are fantastic at eating insect pests, especially cucumber beetles," Peroni said. The weathered wood below the eaves is an ideal surface for swallow nests, while bug-eating bats live in the mow below the gambrel roof. Barn owls also help keep rodents under control. "All of those features are the sort of thing you don't find in new structures," Mike Peroni said. "This is the largest integrated pest management facility that I've ever seen."

The Peronis bought the farmstead in 2002, after farming at another location for a number of years. In addition to their own 20 acres, they lease several large parcels from nearby property owners. The Boistfort Valley Farm CSA provides organic vegetables to 200 members, many of them in Seattle and Tacoma.

> *That was a state-of-the-art hog barn in 1949. Now we think it's state-of-the-art again with our system.*
> – Arvid Jovaag –

The barn, with stanchions on the first floor and hay storage above, was constructed as part of a small dairy about 1930. The farm had converted to a beef operation and dissolved into bankruptcy before Mike and Heidi Peroni bought it out of foreclosure. Four years after they bought the farm, the couple is still working to repair the barn's leaky roof and replace part of its deteriorating wooden foundation. (Because of a high water table in the Boistfort Valley, barns there are built entirely above ground, unlike eastern

Ketvertis Farm, Levering, MI – Photo by Tammy Ketvertis

Jovaag Farm – Photo by Edward Hoogterp

JOVAAG FARM

Austin, Minnesota

Arvid and Lois Jovaag bought this southern Minnesota farm from relatives in 1981. They now have 470 acres, with about 320 in crops. The white, wooden barn has been altered significantly over the decades. Doors that allowed wagons to drive through from one side to the other were removed and a lean-to structure added sometime in the first half of the 20th century. "It's interesting to see all the changes over the years," Arvid Jovaag said. "It takes some detective work to determine how this barn's been used. That's kind of fun."

The Jovaags reinforced the lean-to and poured a new concrete foundation under one wall. "There was no footing under there. It's amazing how the barn has stood," Arvid Jovaag said.

The original board-and-batten siding remain on the upper walls. The farm's breeding boar is housed in an old horse stall in the barn, which is also used to house new calves and a bull. Hay is stored on the second level.

The hog barn needed only moderate repairs to meet the Niman Ranch standards, which require that animals have access to sunshine and space to run. An LP gas heater was installed to control temperature from the hogs, but it's seldom used because the barn's natural insulation and ventilation keep it warm and dry. The farm received USDA grant assistance to begin natural pork production.

Owners: Arvid and Lois Jovaag

Barn type: 1870 Dairy barn with early 20th century addition; 1940s hog barn

Barn size: 70 by 40 feet

Original use: Crop and livestock farm

Current use: Crops, grass-fed beef, hogs for Niman Ranch

"bank barns" where livestock quarters on the lower floor are built partly into the earth.)

Mike Peroni estimates that putting a new steel roof on the barn and completely repairing the foundation could cost about $35,000. He hopes to cut that cost by doing as much work as possible by himself. Once the structure is dry and sound, the birds and bats will get some company. "I would definitely use that second story for curing garlic and to store onions," Peroni said. The ground floor would provide a break room for the farm's eight employees, along with space to store winter squash and perhaps other produce.

The barn itself is part of the farm's marketing effort. "We kind of sell ourselves. We have open houses, we get kids out here for hayrides," Peroni said. "Nothing represents the whole package like the old barn."

Getting Cows Out of the Barn

Some of America's most profitable small farms are grass-based dairy operations, in which cows get most of their nutrition by grazing in carefully managed pastures. In those dairies, the cows spend most of their time outdoors. A barn designed to confine a few dozen animals can easily be converted to a milking parlor that will handle a hundred or more in a grazing system.

Vance Haugen, a dairy farmer and agricultural extension agent based in LaCrosse, WI, has helped some 400 farmers build modern milking parlors into old barns. "Putting the parlor into the existing barn costs

DAHLBERG FARM

Eastman, Wisconsin

This "typical Wisconsin red barn" was built in the 1950s, using methods from 100 years earlier. Red oak timbers were cut on the farm and assembled with pegs and dowels. It originally was used for a beef operation, and later converted to a small dairy, with stanchions for 24 cows. Roger Dahlberg, an experienced dairyman, bought the 170-acre farm in 1979 and operated it with conventional methods for nearly 20 years. In 1998, he converted to a grazing system, in which the cows spend their days and nights on pasture and come to the barn only at milking time.

The system cuts the use of machinery and petroleum, eliminates plowing, tilling and the use of pesticides, and significantly reduces erosion.

"It's the best thing I've ever done for my cows and my farm," Dahlberg said. Wisconsin Cooperative Extension designed an eight-place milking parlor to make milking more efficient. Installation was done by Dahlberg, with help from other grazing dairymen. It involved building a concrete-lined pit in the barn floor, and relocating milk lines from the old stanchions. A gravity feed from a metal bin in the hayloft brings a ration of grain to each cow at the milking stations.

Cost of the work was $4,300, which included $100 worth of rib-eye steaks for the volunteer crew.

Dahlberg Farm – Photo by Edward Hoogterp

Owner: Roger Dahlberg

Barn type: Dairy Barn, built 1955

Barn size: 30 by 50 feet

Construction type: Timber frame, gambrel roof

Original use: Beef cattle

Current use: Milking parlor for pasture-based dairy farm

Farmer's Market – Photo by Jim Lindberg

one-fourth to one-eighth as much as a new building," Haugen said. "We destroy the former function, but we don't destroy the form. It's a great way to keep the look...Farmers like the looks of the old barn, and it's located where it maintains the old traffic patterns that have worked for generations."

Managed grazing, sometimes called intensive rotational grazing, is a new twist on traditional management of dairy and beef cattle. Cows are let out into a small section of pasture, and moved to a new paddock as soon as they've grazed down the first area. The system keeps the animals on fresh pasture, instead of the hay and silage they would eat in a traditional confinement system. "They spread the manure for you and they harvest your crop," said Roger Dahlberg, a Wisconsin dairyman who converted to grazing in 1998.

Dahlberg's barn was set up with stanchions for 24 head of cattle. In that configuration, he had to walk down the full row of cows and bend down behind each animal to attach milking equipment. After he expanded his herd to 48, he would milk half the herd, shoo them outside, bring in the other animals from a covered free stall area and start the process over again. If he hadn't found a better way, he said, his aching knees would have forced him out of business.

Grazing turned out to be that better way—for him, for the environment and for the future of his dairy barn. Following Haugen's design, Dahlberg and a group of neighbors dug out a pit at one end of the barn, poured new concrete, and installed an eight place milking parlor. Now, the cows spend

most of their lives outdoors. At milking time, Dahlberg rounds them up on an ORV, and walks them to a holding area outside the barn. They enter in groups of eight, and he can stand upright in the pit while he attends to the business end of his cows. Each animal gets a ration of grain while in the milking parlor. Otherwise, all their nutrition comes from the pasture.

> *Putting the parlor into the existing barn costs one-fourth to one-eighth as much as a new building.*
> – Vance Haugen –

The system uses far less petroleum, no herbicides at all, and only a small amount of purchased fertilizer. Because the fields are never plowed, there is little erosion into the creeks that cross the farm and feed the Kickapoo River. Grazing farms generally see a small drop in milk production, but that is more than offset by the reduction in the cost of equipment, fuel and chemicals.

The farms can be as profitable as much larger conventional dairies. "There's no correlation between size and profitability," said Haugen. "We've got some folks who are making unbelievable profits with grazing. It's a no-brainer."

Fewer Farms, Fewer Barns

America has been losing its historic agricultural buildings for decades, and for a variety of reasons. But one statistic stands out: From 1930 to 2000, the number of farms in America dropped by two-thirds. That's a decrease of more than 4 million farms (from 6.3 million in 1930 to 2.1 million in 2000) and it means that literally millions of barns and other agricultural structures have lost their original reason for existing. The total acreage of agricultural land hasn't changed that much, since the size of the average farm nearly tripled in the same 70 year period. Often, two or more farms were combined into one, and the "extra" buildings torn down or left to molder.

The result is obvious in any traditional agricultural region. Drive any two-lane road through Wisconsin's dairy land, and you're sure to pass leaning,

unpainted barns with holes in the siding and cracks in the roofs, seemingly waiting for a few more years, snowstorms and winds to put them out of their misery.

Barn preservation groups and private property owners have stepped in to restore thousands of old barns. But in many cases, restored barns aren't used for agricultural purposes. Instead, they find new life as community centers, gift stores, museums, offices, private homes, bed-and-breakfasts, or simply beautiful, historic shells used to store an owner's boat, camper, and other toys. No one would deny that such uses are preferable to losing the buildings altogether. But today, sustainable agriculture may be the best hope for finding agricultural uses for historic barns, chicken houses and piggeries.

The continued agricultural use of historic farm buildings may depend on policies that encourage the growth of sustainable agriculture. This cannot be accomplished by preservation groups alone, but must be part of a long-term strategy to support small-scale agriculture.

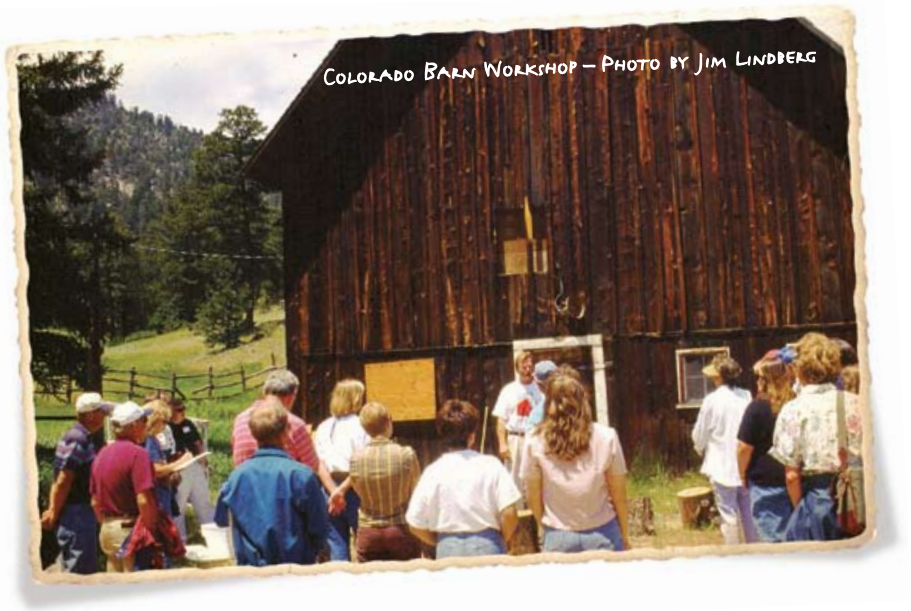
Bridging the Gap

Here are some strategies that may help to bridge the gap between historic preservationists and sustainable farmers.

1. Preservation groups and sustainable agriculture organizations must find ways to work together for government policies that encourage both historic preservation and sustainable farms. At present, most federal programs to encourage historic preservation are located in the Interior Department. But farmers are more comfortable dealing with the Department of Agriculture. Barn preservation programs might be more effective if farmers had more opportunities to access them through the Agriculture Department.
2. Beginning farmers must have better access to existing educational materials. Most people do considerable research into production and marketing before entering the sustainable farming sector. But many are unaware of publications from BARN AGAIN! and the National Park Service, which offer advice on renovation and repair of old farm buildings.
3. Preservation activists must reach out to farmers. The relationship between these groups has been one of mutual apathy, if not outright distrust. Even when they understand the economic benefits of restoring and adapting old farm buildings, sustainable farmers seldom make use of resources offered by historic preservation groups. Despite such effective programs as BARN AGAIN!, some farmers continue to view historical preservation as one more form of regulation. Simply put, they don't want the government or well-meaning non-profit groups to tell them what to do with their buildings. Barn preservation groups may have fed into this misperception by concentrating their efforts on restoration and preservation of particularly scenic or historical structures, while paying less attention to the "working landscape" of farmsteads and buildings. Preservation groups need to make clear that they can offer expertise on such issues as tax incentives, marketing and structural analysis. Leaders of both communities should work together for programs that recognize links between the esthetic and economic value of agricultural buildings.
4. In rapidly developing areas on the metropolitan fringe, agriculture and preservation groups should work together to catalog fallow land that might be incorporated into sustainable farm operations. This landscape is often a mix of housing developments, hobby farms, traditional agriculture operations, sustainable farms and land held for recreation or investment. Farmers working near Chicago, Pittsburgh and Seattle have made deals with surrounding land owners to lease fields as small as five acres for pasture or cropland. These arrangements often are made for less than the true value of the land, since non-farm landowners may feel good about the sustainable management of their fields. Maintenance of small pastures and hayfields has the dual effect of providing context for surviving farm buildings, and providing an increased land base to help small farmers stay in business.

(continued on page 14)

> *All of those [natural pest control] features are the sort of thing you don't find in new structures.*
> – Mike Peroni –



Colorado Barn Workshop – Photo by Jim Lindberg

Phased Restoration of FARM BUILDINGS

King Farm "Before" – Photo by Janis King *King Farm Foundation Repair – Photo by Mary Humstone* *King Farm "After" – Photo by Mary Humstone*

Sustainable farmers often work with limited budgets and under a business plan that requires them to keep debt to an absolute minimum. That means restoration and repair of farm buildings can take place only in phases as funds become available.

Here are some tips for phased restoration of historic agricultural buildings. More detailed restoration information is available through publications of the National Park Service, the National Trust for Historic Preservation, state historic preservation offices and other sources.

1) **Consider your needs.** The markets and products defined in your business plan will largely determine the use of your farm buildings. For example, a livestock farm may need animal housing immediately, but an organic vegetable operation may have little use for the barn for several years after start-up.

2) **Assess the resource.** Conduct a visual inspection of the building. Wooden timbers can survive indefinitely, so long as they are dry and not in contact with the earth. That means the first place to look for deterioration is at the foundation and the roof. Look for cracks or bulges in masonry foundation walls, and for rot in sill timbers. Above your head, inspect for light coming through holes in the roof, and for streaks that could indicate water leaks. Check to be sure that joints between structural timbers are tight. Sight the exterior walls from each corner and use a plumb line or a level to determine whether the building is straight and plumb. Open doors and windows to check their alignment with the structure.

3) **Call in an expert.** No matter what the apparent condition of your barn, a consultation with an experienced restoration contractor will be money well spent. Go through the inspection process again. Discuss your plans for the building. Get a detailed priority list of proposed repairs and alterations, including what should be done first, what can wait, what you can do yourself and what will require a contractor. Ask if the building is safe to use in its present condition, or if immediate repairs are needed. A local expert is best. He'll be familiar with historic construction methods in your area and such issues as soils, water tables, snow loads and wind. Finding such a person can be tricky. Check with the cooperative extension service. Ask other barn owners. Try a Web search for "barn restoration" plus your state. Contact your State Historic Preservation Office, which may have a list of contractors.

4) **Develop your plan.** What conditions must be addressed to prevent further deterioration? Depending on the building's condition, the roof often must come first, followed by repairs to any foundation and structural problems. There are many options to consider. For example, the best type of roof is usually the one that came with the barn. But if budget or other considerations make it impossible to replace century-old cedar shakes, a steel roof may be the best answer. Schedule the phases of restoration carefully, to match the farm's needs and anticipated cash flow. Also, plan to take advantage of any available financial assistance. A 10 percent federal tax credit is available for work on buildings that date from 1936 or earlier. Designated historic structures may be eligible for larger breaks. Check with the State Historic Preservation Office at www.nationaltrust.org/help/statewide_org.asp, with state barn preservation organizations or with national programs such as BARN AGAIN! at www.barnagain.org for details.

5) **Take care with structural changes.** Farmers often see a need to enlarge doorways, move structural timbers, raise ceiling levels or make other alterations to adapt an old barn to new uses. These old buildings are surprisingly adaptable, and changes often can be engineered without harming the integrity of the building. For example, clear interior space may be created by using trusses to transfer weight from interior structural members to the outside walls. Such changes should not be taken lightly. Even moving or enlarging a door requires a careful analysis to ensure that the overall structure remains sound. When possible, exterior alterations should consider the historic integrity of the building. Historic buildings can be vital marketing tools for on-farm retail sales and agritourism operations.

SCOTCH HILL FARM

Rock County, Wisconsin

This small farmstead in the rapidly suburbanizing area between Chicago and Madison, Wis. had been unused for a number of years when Tony and Dela Ends bought it in 1995.

The family owns just five acres, but has access to another 20 acres provided by a nearby property owner.

The long, narrow barn, 105 by 30 feet, was shored up with cables sometime in the past. New metal roof panels were installed with help from the Ends' CSA customers. The lower level of the barn houses a small menagerie, including the bucks used to breed the farm's dairy goats. The upper level is used for hay storage, and has also been the site of a wedding, a barn dance and community meetings. The farm owners installed new wiring and electrical boxes.

Both the chicken coop and the barn are used to house poultry, including some heritage breeds.

A soap kitchen, built into the old machine shed, helps the family to add value to the goats' milk. Ends has received USDA Rural Development grants to teach soap-making to other goat dairies as part of plan to create a regional cooperative. The product is marketed in Madison and in the Chicago suburbs.

Ends Barn – Photo by Edward Hoogterp

Owners: Tony and Dela Ends

Barn type: Gable roofed ramp barn, late 19th century, metal machine shed, cement block poultry house

Original use: Beef cattle

Current use: CSA, goat dairy, soap maker

(continued from page 12)

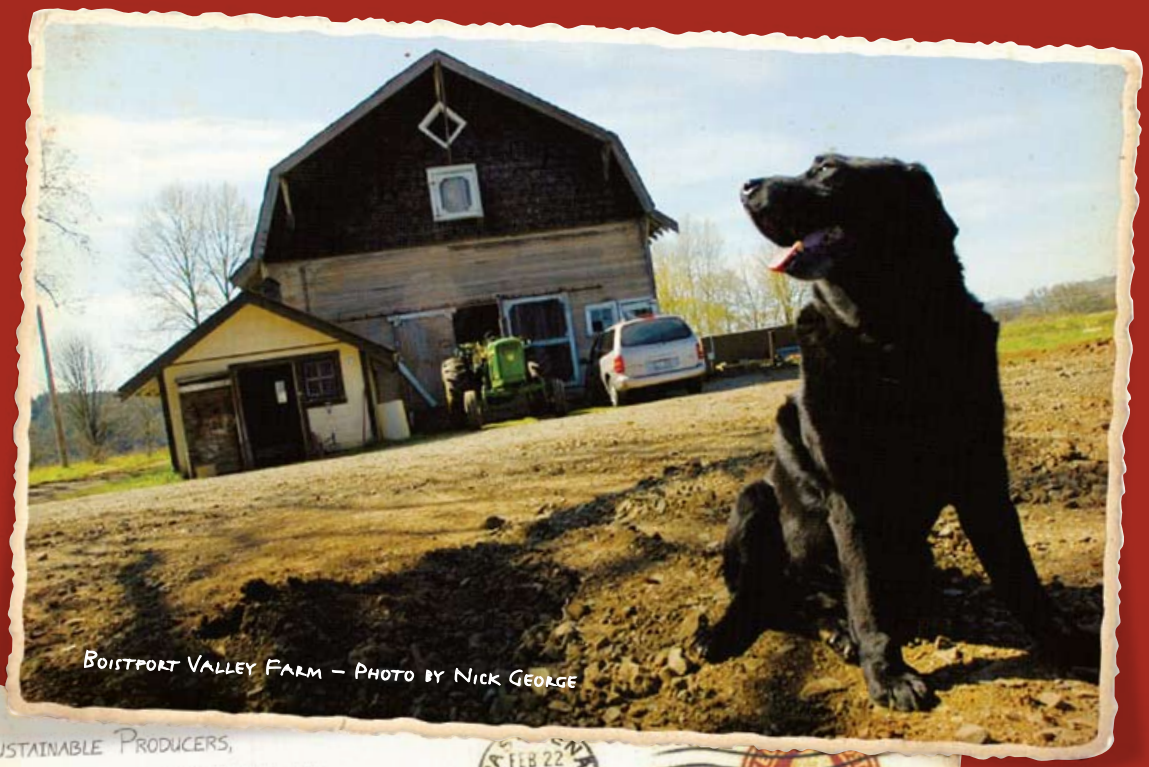
5. Expand links between experienced farmers and young people seeking to enter the business. More than almost any other profession, modern farming demands a blend of management expertise, experience and hard physical labor. Sustainable methods require all that, plus an understanding of biological principles and a commitment to sustainability. Unfortunately, many of America's most successful sustainable-farm operators are approaching middle age—or well past it. They find that their knees complain when they kneel to weed rows of organic salad, that their backs groan when they lift a bale of hay, that their fingers balk at milking the goats twice a day. The biggest challenge facing sustainable agriculture—and all of agriculture for that matter—may be in finding ways to transfer the knowledge and commitment of these aging farmers to a new generation. Some of this work is already being accomplished through farm conservancies, internships and mentoring programs. Much more must be done if the agricultural and cultural benefits are to be sustained into a new generation.

Scotch Hill Farm – Photo by Edward Hoogterp

The message is clear (not to mention obvious): Without farms there is no need for barns.

Send Us YOUR STORY

Are you using an older barn as part of your sustainable farm or ranch? If so, we hope you will tell us your story and send a few photos. We'll post the best examples on our website, www.nationaltrust.org.



Boistfort Valley Farm – Photo by Nick George

Dear Sustainable Producers,

We would like to learn more about how older barns and farm buildings are being used for sustainable agriculture. To share your story, please send your information to us at the address on the right. We are particularly interested in:

* The size of your farm or ranch.
* What do you produce on your farm?
* How do you use your older barn or farm buildings?
* Have you made any repairs or changes to these buildings to meet your needs?
* What kinds of additional information or assistance do you need?
* Please include a few photos if possible.

We hope to hear from you.
Thanks very much!

FEB 22 8 AM 2007 CAL.

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Copy by Edward Hoogterp, a Michigan-based writer and small farmer.
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