

SARE 2006/07

Sustainable Agriculture Research & Education Program



practical new ideas in:

livestock systems / crop management
pest management / organic farming
smart water use / community development
renewable energy / marketing



On the cover: Rob Johanson, Jan Göranson, and their sons, Carl, 15, and Göran, 10, produce vegetables, berries, hogs, chickens, and maple syrup on 160 acres. The family was featured in a SARE-funded book and video depicting the diverse farms of Maine. (See story, page 12.) Photo by Robert Mitchell

At left: SARE's Sustainable Community Innovation Grants, now awarded in two regions, foster farm-related community development. In Kentucky, a project provided vendors at farmers markets with new, profit-making tools. Photo by Jerry DeWitt

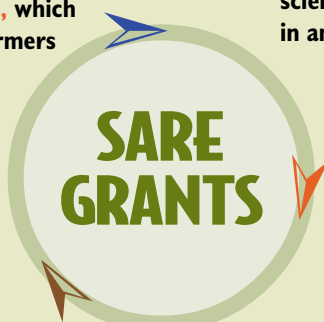
How SARE works

The Sustainable Agriculture Research and Education (SARE) program works primarily through competitive grants, which are offered through four regions—North Central, Northeast, South, and West—under the direction of councils that include farmers and ranchers along with representatives from universities, government, agribusiness, and nonprofit organizations. Since 1988, SARE has funded more than 3,000 projects, including:

Farmer/Rancher Grants – (FRGs)

Producers win grants ranging from \$1,000 to \$15,000 to conduct on-site experiments and share results with others.

Their ideas often stimulate more research through SARE's **R&E grants**, which are more effective when farmers and ranchers participate in the project, such as contributing on-farm research plots.



Research & Education Grants – (R&Es)

Ranging from \$60,000 to \$150,000 or more, these grants fund scientists, producers, and others in an interdisciplinary approach.

Key research findings spread through the agricultural community thanks to agricultural professionals in Extension, NRCS, and other agencies. Some professionals are aided by **PDP grants**.

Professional Development Grants – (PDPs)

To spread the knowledge about sustainable concepts and practices, these projects educate Cooperative Extension Service staff and other agricultural professionals.

PDP grants help agricultural professionals stay current in the most pressing topics for **farmers and ranchers**.

Other grant opportunities...

Graduate students, community development practitioners, and educators conducting on-farm research can apply for grants in some SARE regions.

SARE REGIONAL OFFICES

For requests for proposals, application deadlines, and other information, contact the regional offices. (See map on back cover for regional borders.)

North Central SARE

(hosted by the University of Nebraska and University of Minnesota)
www.sare.org/ncrsare
 (612) 625-8205
ncrsare@unl.edu

Northeast SARE

(hosted by the University of Vermont)
www.uvm.edu/~nesare
 (802) 656-0471
nesare@uvm.edu

Southern SARE

(hosted by the University of Georgia and Fort Valley State University)
www.southernshare.org
 (770) 412-4787
info@southernshare.org

Western SARE

(hosted by Utah State University)
wsare.usu.edu
 (435) 797-2257
wsare@ext.usu.edu

SARE works in partnership with the Cooperative Extension Service and experiment stations at land-grant universities to deliver practical information to the agricultural community. Contact your local Extension office for more information.

WHY 2 YEARS?

We're shifting our SARE Highlights publication schedule forward. For now, we've combined SARE's accomplishments for 2006 and 2007 in one volume. As the year turns 2008, the SARE Highlights will begin printing each January.

from the director



OUR COVER PHOTO of the Johanson/Göranson family on their 160-acre vegetable farm demonstrates the satisfying quality of life oft-cited by farmers who work hard to balance profitability, conservation, and community. One of 30 Maine farm families interviewed for a SARE-funded University of Maine study, Rob Johanson and Jan Göranson combine vegetables, livestock, and maple syrup production for sales at farmers markets and to their 175 members, who join on a sliding scale tied to income. Their supportive customers and neighbors sprung to help with cash and in-kind donations when their barn burned down 2 years ago.

The study found that half of Maine farmers produce multiple commodities in integrated approaches that consider the impact on both the environment and the community. That finding confirms the tidal wave of interest we have seen in more sustainable farming methods, evident in recent SARE surveys. Consider:

- ◆ Of the 270 producers who responded to a survey of Western SARE farmer/rancher grant recipients, 64 percent said their SARE project helped them achieve higher sales, while 41 percent said it increased net income.
- ◆ Those recipients reported environmental benefits from their projects, with 79 percent saying they improved soil quality and 69 percent increasing wildlife habitat.

◆ Farmer/rancher grant projects also have a positive spin-off effect. Survey respondents said at least five other producers tried their idea, approach, or technology on their own farms or ranches.

◆ A survey of Western SARE Extension and other advisers to farmer/rancher grantees brought the welcome news that two-thirds of those advisers recommended the approach undertaken in “their” producer’s project to others. Moreover, surveys and word of mouth tell us that most of our producer grant applicants hear about SARE grant opportunities through Extension.

We’ve heard we’re also on the right track with our nationally produced information products. A survey of farmers and ranchers who received books and bulletins from SARE’s national outreach arm, the Sustainable Agriculture Network, revealed that 85 to 95 percent find SAN publications to be “very useful” or “mostly useful.” To that catalog of useful products, we’ve added books about ecological pest management and how to direct-market beef and a bulletin about smart water use. See www.sare.org/publications.

Yet, our work is far from done. As we continue to hear requests for more information about marketing, we are funding forward-thinking researchers, extension educators, and farmers and ranchers who are finding new ways to sell farm commodities and products.

Their entrepreneurial ideas—from creating value-added products that sell for a premium, to identifying and capturing new markets, to participating in new value chains—make up an increasing number of grant projects. For example, a growing subset of SARE-funded researchers and farmers are carving out new market channels based on an increasingly diverse consumer base (see stories on pages 14 and 15).

SARE is also responding to the need for energy solutions, from on-farm conservation to renewable, bio-based sources. The quest to solve our energy challenges has shone a spotlight on some of the most inventive producers in the country, many of whom are turning to alternative sources (see story on p. 13) or creating farm-based energy.

If you have thoughts about new directions we should consider as SARE approaches its 20th anniversary, we want to hear from you. Please drop me a line at jauburn@csrees.usda.gov.

*SARE Director
Cooperative State Research, Education,
and Extension Service, USDA*



PHOTOS BY RICHARD WINNETT

Building Better Grazing Systems in New York's Finger Lakes Region

For years, Richard Bossard, a dairy farmer in Steuben County, NY, wanted a better watering system for his cows. With hilly pastures and only one watering tank at the lower end of his fields, Bossard found that on hot days his 35 dairy cows, after descending for a drink, were often reluctant to return uphill.

With help from a SARE-funded grazing program that provides technical support to New York graziers, Bossard modernized. He installed a new well, a 1,100-gallon reservoir and a solar-powered pump. Gravity-fed water now has the potential to reach more than 100 acres of pasture.

“A watering system was always my goal, but there was no way I could have done this on my own,” says Bossard, who also built new geotextile fabric and gravel lanes to minimize mud and improve herd health.

The grazing program sends experts

throughout 11 western New York counties to provide hands-on pasture management help to interested farmers. The project, coordinated by the Finger Lakes Resource Conservation and Development Council, grew from the recognition that prescribed grazing is both profitable and a preferred practice to protect the water quality of the Finger Lakes, which are surrounded by rolling hills prone to erosion.

“What better land use is there than keeping land in permanent grass?” asks Richard Winnett, Finger Lakes RC&D coordinator and the originator of the grazing program. “Our goal was to curb erosion, but also to sustain small and medium-sized farms. If done properly, grazing can reduce the farm’s demand on foreign oil as well as pesticides and herbicides.”

Winnett knew there was interest from farmers in improving or convert-

Grazing mentor John Wildeman (left) reviews Bruce Harrington’s grazing plan, part of a project to improve New York livestock grazing systems. Some participants installed solar-powered fences (below).

ing to managed grazing systems and, once they hired the two grazing “advocates,” the project took off. The advocates have worked with some 100 farmers on more than 5,500 acres.

The program has helped experienced graziers like Bossard, who wanted to improve watering systems, fencing, laneways or forage, as well as farmers who wanted to convert erodible crop fields to pasture. Almost half of the farmers leveraged their participation to receive cost-share funding through a New York environmental program and the Natural Resources Conservation Service. Another grant is helping some of the RC&D Council inventory endangered nesting birds, such as the vesper sparrow and bobolink, that benefit from healthy pasture.

“I think we’ve made a significant contribution toward protecting water quality,” said grazing advocate John Wildeman. [For more information, go to www.sare.org/projects and search for LNE02-170.]





ROGER HAGERTY

Testing Profitable Forage Systems for Goats

Multicultural residents seeking familiar diets in the United States have driven the growth of goat farms by 20 percent between 1997 and 2002. Southern farmers who want to cash in on the niche market are learning more about efficient and cost-effective goat production, thanks to SARE-funded research at Tuskegee University.

The Southeast's warm, humid climate is ideal for raising the forages and browses on which goats thrive. To identify the top performers, Tuskegee University researcher Sandra Solaiman collaborated with Auburn University to test Marshall ryegrass, bahiagrass, and mimosa. Often considered a weed,

mimosa is a prime choice for goats, which like to browse on plants at least 5 inches high. Browsing helps goats avoid internal parasites by keeping their heads above ground-dwelling worms and other pests.

Ryegrass proved best in experiment station tests, with a net profit of \$58.50 per goat. Mimosa posted a profit of \$32.60 per goat. Bahiagrass was not profitable, and was the only forage that did not beat a concentrated grain diet, which yielded \$26.70 net profit per goat.

Solaiman, an unabashed goat meat booster, is filling an information need for farmers, many of whom have limited resources and want to add a supple-

Tuskegee goat researcher Sandra Solaiman sees a spike in demand for goat meat from an increasingly diverse populace.

mental enterprise. "Producers are thirsty for information," said Solaiman. "We can only compete with other production systems like beef and poultry if we're unique and efficient."

Carla Shoemaker of Notasulga, AL, has raised goats for 3 years and tested her flock on ryegrass in the winter and a naturally seeded mimosa field later in the season. She supplemented the herd's diet with hay, grains, oats and soybeans. "My main income is from goats," said Shoemaker, who participated in a video promoting the project. "We're up to \$1.25 a pound on prime goat meat."

The next step for researchers is to fine-tune a year-round goat grazing system that might run like this: ryegrass in winter, followed by a small grain, a drought-tolerant summer grass, then mimosa with a hay or grain supplement. Once they perfect the system, Solaiman hopes to provide solutions to Southern farmers seeking a market edge. With the healthy attributes of goat meat, with considerably less saturated fat and cholesterol than beef and pork, Solaiman is confident that goat meat will gain in popularity.

Another option for farmers with woodlands is to integrate goats to thin unwanted brush and produce another marketable product. "People have done it," she said. "It works." [For more information, go to www.sare.org/projects and search for LS02-141.]

Potato Growers Emulate “Model” Methods for Higher Profits

University of Idaho potato cropping specialist Bryan Hopkins went straight to the source when he wanted to learn why more potato farmers weren't using the best management practices recommended by researchers. After convening an informal farmer focus group, Hopkins learned that growers wanted to see a respected neighbor apply a new practice before they made major changes.

With a SARE grant, Hopkins found and publicized 14 “model” potato growers who use a range of growing practices that enable them to reduce their pesticide and fertilizer use while maximizing returns. At field days, demonstrations, and workshops, Hopkins showed results from his on-farm trials comparing the model grower practices alongside plots receiving higher rates of chemical fertilizers and pesticides.

Growers were wowed by the results: The model plots netted 3 percent more profit per acre than the plots with higher inputs. Similar yields and reduced costs for buying agrichemicals swung the management-heavy plots into the profit column.

The list of best management practices for potatoes, with a dozen potato scientists from three Northwest States contributing, spans more than 40 pages. They include recommendations about incorporating crop residue into soil for fertility, scouting fields to check on crop health, and incorporating green manure to reduce populations of nematodes and pathogens.

“The crux of the issue is basing it on site-specific needs,” Hopkins said. “Too many growers have a recipe approach to farming based on what worked last year, regardless of the situation. Research would say it's not the best approach. At a minimum, each field should be treated as a unique entity.”

Growers are responding. Twenty-five potato farmers have changed their practices, impacting some 110,000 acres—or one-quarter of Idaho's potato production, Hopkins said.

“Idaho soils and climate are ideal for potato production and, in an average year, you can frequently avoid intensive fungicide use,” Hopkins said. “You can watch the weather, the disease forecasting, and look for local disease pressure.

And if you don't need fungicide, don't put it on.”

Thompson Farms, a six-brother potato-growing partnership in Blackfoot, ID, participated in the research trial. The Thompsons use 3- to 4-year rotations, reducing their need to fumigate for nematodes and other soil pests. They test their crops and soil before adding fertilizer. “We're pretty conscientious,” said Ron Thompson. “If you're not conscientious right now, you're out of the potato business.” [For more information, go to www.sare.org/projects and search for LNC01-191.]

By showcasing successful potato growers, Bryan Hopkins (right), shown with Don Horneck, prompted some 25 farmers to try new conservation measures.



BRYAN HOPKINS



BALDWIN TORTO

Baiting the Trap: New Lures Ensnare Damaging Hive Beetle

Many consider honey bees the building blocks of horticulture because of their role in pollination. Their honey production is sweet, too, with 17 million pounds harvested each year in Florida alone. Yet, the Florida bee industry faces a major threat from the small hive beetle, a damaging pest that for the past decade has been feeding on pollen and contaminating honey stores. Since Florida is a common over-wintering destination for bees, the infestation has spread throughout the eastern United States and is even taking up residence in California. A serious small hive beetle infestation causes bees to abandon their hives, leaving beekeepers without honey and their bee colonies.

Responding to pleas from beekeepers, SARE-funded researchers at USDA's Agricultural Research Service and the University of Florida worked on site with beekeepers to devise a trap that

lures small hive beetles away without using purchased chemicals, which leave residues in honey. They built upon the work of Drion Boucia, a University of Florida researcher, who discovered that hive beetles release an alluring yeast.

"When the yeast grows on pollen in the hive, it attracts more beetles with a cascading effect," said Peter Teal, an ARS research leader in Gainesville. "It disturbs the bees and they leave."

Researchers put the yeast to work for them. Collaborating with half a dozen beekeepers in a SARE on-farm research grant, they installed traps baited with yeast below each hive, separated by sliding doors drilled with conical holes. Hive beetles can squeeze through into traps, but not return.

"Female beetles lay eggs in the trap, so we routinely catch 10 times more larvae than adults," Teal said.

Teal predicts the traps will solve the

Baldwyn Torto and Charlotte Skov of the University of Florida check for small hive beetles in traps they placed in Lake City, FL, honeybee colonies. The beetles are a growing threat.

problem for small-scale beekeepers, whom he says make up 60 percent of the industry, because they typically tend their hives daily and can clean their traps. For large-scale beekeepers, who maintain up to several thousand hives, Teal and his team are hoping to develop a new trap requiring less management.

Their findings are timely. Beekeepers throughout Florida are waiting for traps to become widely available commercially. "We have a horrific pest that's redefining beekeeping," said Jerry Latner, manager of a beekeeping supply manufacturer. "If they perfect the lure, it will be a great benefit." [For more information, go to www.sare.org/projects and search for OS04-022.]



BRENDA FAYARD

Organic 101: Sharing Farm-Based Knowledge with Professionals

Several years ago, University of Georgia (UGA) extension horticulturist George Boyhan toured an organic farm as part of a SARE-funded project intended to improve the knowledge of agricultural professionals throughout Georgia.

Since then, Boyhan has embraced organic agriculture education, developing a UGA Web page on organic certification, establishing UGA's first certified organic research plot, including the first organic Vidalia onions, and organizing a research roundtable that resulted in an upsurge of interest in organic agriculture. By the time the 2-day roundtable in February 2003 was over, participants from 13 States had not only identified 25 crucial researchable issues for organic farmers, they had also formed research teams to

address some of them.

Boyhan even joined the board of Georgia Organics, a nonprofit organization that won the SARE professional development grant to build knowledge and skills in organic agriculture by training information providers.

Jim Formby, a former farm manager, also toured organic farms as part of the Georgia Organics educational project. When he bought 23 acres in Pike County, GA, in 2004, he immediately applied to Georgia Organics' Farmer-to-Farmer Mentor program, but as a student, not a mentor.

"All of my background in college and professionally had been on large farms that depended on high chemical input," he said. With land prices escalating, Formby had developed a vision

Jim Formby realized a longtime dream when he purchased a farm in Pike County, GA, on which he is using many of the practices he learned from Georgia Organics.

of a small, diversified farm with high-value products he could retail directly to the consumer. The tour defined that dream, and the Georgia Organics mentoring program cemented it.

In all, Georgia Organics reached some 250 agricultural professionals over the 3 years of their project through seven workshops and farm tours. Those events were planned with help from four farmers, who ensured they had an in-the-field realism.

By presenting at professional conferences, some of which headlined them as keynote speakers, they reached an additional 500 professionals, including Extension educators, NRCS staff, and environmental health professionals.

The events brought more researchers from land-grant universities and extension specialists to bear on the needs of Georgia's organic growers, said Mary Ann Woodie, Georgia Organics' conference coordinator. "It's all about bringing people together."

The group continues to build capacity through education. Recently, they received a SARE professional development grant to develop curricula in organic agriculture for high school teachers and a module on organic gardening for extension agents to use in their Master Gardener programs. *[For more information, go to www.sare.org/projects and search for ES99-046 and ES 03-068.]*

Two Times a Charm: Recycling Aquaculture Water on Olive Trees

To help farmers and ranchers conserve water, especially precious in the arid Southwest, SARE-funded researchers at the University of Arizona combined shrimp and olive production to test whether they could produce two commodities using less water and commercial fertilizer.

“Arizona farmers are under a lot of economic and environmental pressure to be more efficient with the water they use to produce crops,” said project leader Kevin Fitzsimmons, a researcher at the University of Arizona. “We wanted to show how to pair crops with aquaculture, running water through fish or shrimp first, then putting it on their field crops.”

Not only can farmers reap a double benefit by using aquaculture pond or tank water to irrigate crops, but they also gain extra nutrients from fish waste. Fitzsimmons and his research team set out to find out how much benefit that

effluent can provide as crop fertilizer. On a Gila Bend, AZ, shrimp farm, the team designed a plot of 120 olive trees, spaced along 10 rows. From the shrimp pond, they irrigated olive saplings and compared canopy height and trunk circumference to a set of trees watered from a well.

Effluent-treated trees grew larger than well-watered trees, supplying saplings with 1.6 to 5.6 kilograms of nitrogen per row from the shrimp waste. In the second year, they met the full nitrogen recommendation for olive trees. “A major point is that we’re using the nitrogen and phosphorus in the waste from the shrimp to replace the N and P fertilizers that farmers would otherwise have to buy,” Fitzsimmons said. “We supplied close to 100 percent of nutrients needed for the trees at that size.”

Gary Wood, the shrimp farm’s owner, continues to irrigate olive trees as well



RICK THOMPSON

Desert Sweet Shrimp in Gila Bend, AZ, reuses shrimp water by piping it to 500 acres of olive trees and alfalfa hay.

as durum wheat fields from his shrimp pond, which is fed by well water. Wood, who also received a farmer/rancher grant from SARE to develop direct markets for his Desert Sweet Shrimp, calls the system “a classic example of environmental synergy.”

Fitzsimmons also tested shrimp pond sludge—shrimp waste that settles to the bottom—on tomato plots at the university’s Environmental Research Lab. The tomatoes amended with sludge in Fitzsimmons’ project produced significantly more fruit than the tomatoes in the control plot with unamended soil: 141 grams of fruit per plant compared to 39 grams in the control plants. Through field days, Fitzsimmons’ team publicized their results and, since then, close to a dozen Arizona crop farmers are trying to integrate fish and shrimp farming into their systems. *[For more information, go to www.sare.org/projects and search for SW01-062 and FW00-138.]*



KEVIN FITZSIMMONS



LINDSAY PIERCE

Conservation-Oriented Irrigation System Feeds Healthy Range

For generations, members of the Navajo Nation in northwest New Mexico have farmed 23,000 acres of rangeland on which they raise crops and livestock. Milford Denetclaw, who manages a small herd of certified Beefmaster cattle, wanted to improve the quality of the forages growing on his 28-acre slice of the range to grow healthy cattle in a profitable system. To do that, he knew he needed a better irrigation system.

With a SARE farmer/rancher grant, Denetclaw devised a conservation-oriented watering system that enabled him to sustain four varieties of cool- and warm-season grasses for his cattle.

“I wanted a place where I could have my cattle for 60 days on pasture,” he said. “I want to let the cattle harvest the grass, convert that weight and market my cattle and get my return rather than the traditional way of cutting hay and

baling it, with all of those other expenses and time. What I grow will eventually go back into my cattle.”

Previously, Denetclaw accessed water from a 1920s-era canal that siphoned water from the San Juan River. However, he had to send water across his neighbor’s field, and the sandy soil absorbed much of it before it reached his pasture. With help from his local Extension agent, Denetclaw revamped his water delivery. He built a head gate from a main irrigation canal and directed water to his fields via gated pipe. Gated pipes feature hole-pocked slide gates that regulate water flow.

In the first year, Denetclaw harvested two cuttings of hay. By the second year, he ran his cattle on the pasture through the winter, an unusual feat.

Denetclaw is pleased that he can now segregate his herd from those that

Milford Denetclaw’s new water-delivery system enables him to draw water with little waste from the San Juan River for his cattle pasture.

run on the Navajo Nation rangeland, maintaining their certified bloodline. “Most of the Navajo Nation is open range with no real way of managing it,” Denetclaw said. “Watering holes are a common gathering area for livestock, and your livestock co-mingle with others.”

Denetclaw demonstrated his renovations to other Navajo ranchers and presented a slide show during the annual conference of the Navajo Nation Soil and Water Conservation District. “As far as water delivery goes, I couldn’t ask for anything more,” Denetclaw said.

[For more information, go to www.sare.org/projects and search for FW98-030.]

Farm Mentors Teach Production, Life Skills to New Producers

Armando Arellano was a Chicago baker for more than 20 years when he saw a chance to realize his life's dream. With help from a farmer mentoring project run by a Michigan agricultural non-profit organization, Arellano traded in his baker's whites for a farmer's straw hat and today raises fruit and vegetables on his new 60-acre farm. Making good use of his city connections, Arellano trucks his products to Chicago restaurants and also sells them at his farm stand in Covert, MI.

"I was looking for something I could do to raise my kids outside the city," said Arellano, a Mexican immigrant who credits the Michigan Integrated Food and Farming Systems (MIFFS) organization with helping him get his start in farming. "When I came here, and they [MIFFS staff] told me about this farm, I just forgot about the bakery."

MIFFS received a SARE grant to bring better opportunities to minority farmers through education. That knowledge,

passed through pairing experienced farmers with aspiring ones, took advantage of the power of one-on-one learning.

"Farmers learn better from other farmers," said Barbara James Norman, a third-generation blueberry farmer in western Michigan and coordinator of the MIFFS mentoring project.

"By going one-on-one in the field and around the kitchen table, we help small farmers become more economically viable. We get them going one farm family at a time."

The program, centered on African-American and Hispanic farmers, serves a growing need in southwest Michigan. Norman selected six mentors and paired them with 14 new farmers over the 2 years of the project. MIFFS augmented with training in English language skills, integrated pest management through



Michigan State University, and proposal writing. The organization also held 10 well-attended weeks of business training using the SARE-funded "Tilling the Soil of Opportunity" course.

While they intended the mentoring to last 2 days, some farmers extended their relationships, visiting frequently to share information or assist with harvesting or marketing.

With help from Norman, who was assigned as his mentor, Arellano wrote a successful application for a USDA Farm Service Agency loan and purchased his farm in Covert in Michigan's famed fruit belt. "They've been so good to me," Arellano said. "Any time I have a problem, they help me." After going to a MIFFS Web development workshop, he launched a website promoting his farm. [For more information, go to www.sare.org/projects and search for LNC02-215.]

John Parks (above) and Earl Robinson (left, in red) benefited from mentors who helped them launch small fruit operations as part of an immigrant-focused program.



PHOTOS BY BARBARA NORMAN



ROBERT MITCHELL

Maine Farmers Design Systems, Involve Community

To better understand what farming really looks like in Maine, and what works for many of the producers who contribute to a \$1.4 billion industry, University of Maine researchers received a SARE grant to survey farmers and conduct in-depth interviews. They contacted hundreds of Maine farmers and prompted them to define themselves along a range of production styles. The researchers then packaged those responses into a book and two videos intended to better inform other growers and the public about profitable, environmentally sound farms with strong ties to their communities.

Close to half of Maine farmers were either “designers” who combined a complex series of enterprises into an integrated biological system, or “evolvers” who started with conventional farms but were in transition to a farm produc-

ing several products in a more holistic fashion. Together, those farmers have gained a presence statewide, becoming the subject of a task force co-chaired by Maine’s first lady that seeks to strengthen local agriculture.

“It’s changed the language and discussion in Maine,” said project leader Stewart Smith, adding that their work demonstrates that smaller volume, local farmers can not be overlooked. “State policy is clearly swinging toward recognizing two different agricultures that need different types of support.”

The profiles, 30 of them interviewed and 19 featured on a video that aired on Maine public television, share common traits, such as being more connected with their communities, operating smaller but more complex systems, selling higher-value products to direct markets, and deciding to keep off-farm jobs.

Jan Göranson was one of 30 farmers whose direct-market approaches were profiled on a video that aired on Maine public television.

“What drove me in this direction was to figure out how a biological system fit into the environment,” said Dave Colson, a vegetable farmer featured on the video. “My values called for a family-sized farm that was manageable by a family.” While profit margins were tight initially, “we did make it, and the farm has generated a positive income ever since.”

The project also strengthened the fledgling Maine Sustainable Agriculture Society by helping publish a quarterly newsletter and establishing its Farm Fresh Connection, which links Maine growers with a network of institutional and retail outlets.

In a related SARE grant, the project team collected footage for a 2-hour professional development video to inform agricultural educators about managing risk, sustainable practices for large farms, and marketing, from the farmers’ point of view. The video was the centerpiece of half-day workshops for Extension, Farm Service Agency, and Natural Resources Conservation Service staff and was also shown to University of Maine students. To view the Maine farming study publication, go to www.umaine.edu/mafes/elect_pubs/sare/SARE_Final_Report_Oct04.pdf. [For more information, go to www.sare.org/projects and search for LNE99-122 and ENE01-063.]



NANCY NYLEN

Farmers Turn on to Renewable Energy and Conservation

When Brookfield Farm in Amherst, MA, began building a new barn in 2003, its community members wanted to generate solar power. Two years later, Brookfield installed a solar electric system on the roof to power walk-in coolers and the office computer for their 520-member community-supported farm operation. They expect to save some \$600 a year in electricity costs.

To reach that point, Brookfield Farm had to harness more than the sun's rays. They approached the Center for Ecological Technology (CET), which, with help from a SARE grant, connected them with engineering, electrical and solar energy consultants. To pay for it, Brookfield landed a Massachusetts energy grant and received \$15,000 in donations from its members—who pay a fee in exchange for weekly supplies of food.

"It's a good time to be talking about solar power, so people were very receptive," said Jeff Tober, Brookfield assistant farm manager, who led the solar energy project. "Part of the purpose of the farm is to educate consumers about the issues of sustainability. Why not

have locally grown energy as well as locally grown produce?"

Brookfield was one of 34 farms to work with CET, which helped Berkshire-area farmers improve their energy efficiency and install renewable energy systems. Gould Farm in Monterey, MA, mounted photovoltaic panels on a barn roof to power refrigerators that store value-added products. While a Massachusetts energy company owns the system, the non-profit farm pays below-market rates for electricity, saving \$120 a year.

Much of CET's work involved identifying grant programs for interested farmers. "While the technology that turns sunlight into electricity is easily adaptable and works in many locations, the challenge with solar energy is that it's expensive," said Ruth Dinerman, CET communications director. "There's an enormous amount of enthusiasm, but in many cases it's not matched with resources to make it happen."

More farmers benefited from the project by improving their energy efficiency following recommendations

Owners of Gould Farm in Monterey, MA, save money by using solar energy to power the lights and refrigerators in their barn.

identified with help from CET audits. Dairy farmer Randy Jordan invested in a variable frequency drive that reduces the power needed to operate the milking machine, saving as much as \$4,750 a year. Fifteen farmers replaced their light bulbs with energy-efficient compact fluorescent bulbs, saving up to \$900 a year. Other farmers invested in air sealing, saving up to \$150 a year, and still others improved insulation.

At Brookfield Farm, Tober and others are thrilled by the 3.8 kilowatt solar system, which supplies 20 to 50 percent of their electricity. "It's great to see the meter spinning fast on sunny days," says Tober, who often shows the system to other farmers and business owners and will highlight it at a popular annual organic farming conference in the summer. "We want to use as little as possible from the grid." [For more information, go to www.sare.org/projects and search for LNE02-163.]

SHANE OPATZ, EAU CLAIRE LEADER TELEGRAM



Marketing Meat to Culturally Diverse Families and Communities

To expand sales of their lamb and goat meat, Larry Jacoby and Judy Moses built new connections with the growing populations of Mexican and Somali immigrants in western Wisconsin. Their efforts—advertising in multiple languages, promoting visits to their 140-acre farm in Downing, WI, and attending customer weddings, among them—have resulted in a substantial increase in annual sales.

“We like working with a variety of people, it fits our interests intellectually,” said Judy Moses, who, with husband Jacoby, received a SARE farmer/rancher grant to explore new ways to promote to culturally diverse customers. “Once you get into their network, you’re in. When we have goats for sale, the word spreads quickly and customers come.”

Now, they sell almost all of their goats and about 40 percent of their lambs to ethnic customers at premium prices. In busy periods during the Muslim month of Ramadan, Christmas and New Year’s holidays, monthly sales of adult goats, kids, and 80-pound

lambs surge. In 2005, they sold more than 500 live goats and lambs during the holidays at an average of \$100 each.

Moses and Jacoby learned a lot over the 2 years of their grant project about how to reach new customers, many of whom speak limited English, come to the farm at all hours, and want to slaughter their animals according to religious customs.

Moses’ co-worker at her off-farm job, a Somali native, sparked the project by suggesting that local Somalis, many of whom work at a Barron, WI, turkey processing plant, craved fresh goat meat. While Moses and Jacoby tried ads in ethnic magazines, established a multilingual website and posted information on bulletin boards and tourist information centers, the word-of-mouth method brought the most customers. A friend who worked at the processing plant encouraged some of her Somali co-workers to visit Moses’ and Jacoby’s Shepherd Song Farm, where they raise about 400 goats and 300 lambs annually on pasture.

In keeping with tradition, the Soma-

The diverse livestock—among them meat goats and guardian dogs—raised by Larry Jacoby and Judy Moses is matched by their varied customer base.

lis wanted *halal* slaughtering practices involving a Muslim imam. Moses found a State-inspected processor 14 miles away willing to slaughter goats in the preferred manner with the local imam present to supervise. Moses and Jacoby adapted in other ways, too, growing accustomed to unannounced visits from families, some of whom liked to pick up animals in the midst of the winter holidays. Many of those visitors bought 10 to 20 goats at one time. They even bartered occasionally, with Jacoby swapping lamb for a new pair of leather boots imported from Mexico, among other items. Customer relations soared.

“Mexican and Somali families have sought us out,” Moses said. “These families purchase something more than food—a memory of their heritage while strengthening family bonds.” [For more information, go to www.sare.org/projects and search for FNC03-491.]



AMANDA ROLLING

Research Shows Nutritional Benefits of Pasture-Raised Products

Health-conscious consumers interested in increasing their intake of certain fatty acids in meat and dairy are driving the growth of pasture-raised livestock systems. To meet that demand, farmers in Iowa and Wisconsin asked their local Resource Conservation and Development Council to help measure the presence of those fats—conjugated linoleic (CLA) and omega-3—in their beef and milk.

Sixteen farmers wanted to maximize the CLA and omega-3 acid content of their beef and milk and take proof to their customers. “Producers had heard about CLA and wanted to find out what you do to raise an animal that has higher CLA in the food product,” said Lora Friest, NRCS coordinator of the Northeast Iowa RC&D, which paired with Iowa State University (ISU) researchers on a SARE-funded project assessing CLA concentrations.

One of the omega-3 fatty acids, linolenic acid has an anti-inflammatory

effect in the body, which may lessen heart disease, said Don Beitz, an ISU professor of animal science and biochemistry. In lab tests on animals, CLA helped prevent cancer and heart disease.

Project partners split groups of animals on participating farms to compare CLA content of milk and beef raised on pasture versus hay, silage, and corn. Their results confirmed that beef and dairy products from grazing animals contain higher CLA content than food from non-grazing animals: 3- to 4-fold greater in milk and 1½ to 2 times greater for beef.

Dan Specht, a beef and pork producer in McGregor, IA, saw a difference in CLA content in beef from steers raised 100 percent on pasture. While he used to sell his beef to a cooperative, he has eliminated grain from the steers’ diets and now sells his product with a “grass-fed” label at various markets for a premium price. “I’m sensitive to my bottom line and what I can make money

Researchers confirmed that raising livestock on pasture, as on Dan Specht’s Iowa farm, increases the presence of certain fatty acids that have human health benefits in beef and milk.

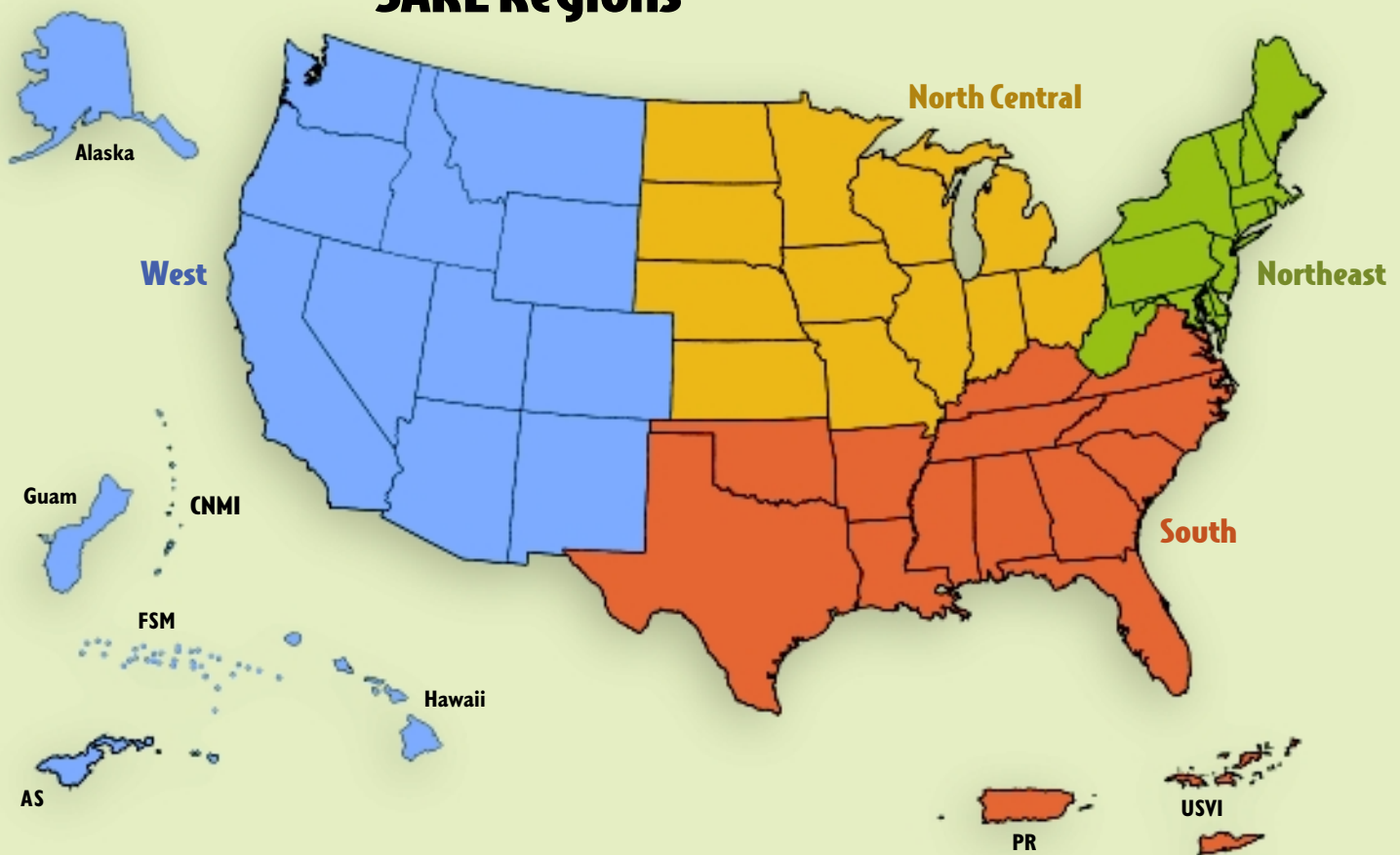
on,” Specht said, “and the greatest demand out there is for grass-fed organic beef.”

The evidence for the health benefits of omega-3s and CLA is mixed, with data stronger for some fatty acids than for others, according to Kate Clancy, author of the 2006 study, *Greener Pastures: How Grass-Fed Beef and Milk Contribute to Healthy Eating*.

“The amounts of the fatty acids in grass-fed foods are relatively small on a per-serving basis,” Clancy said. “We need more research on what levels are needed in the diet to produce a health benefit. And we don’t want to forget that there are many environmental and animal health benefits from grazing.” [For more information, go to www.sare.org/projects and search for LNC01-191.]

SARE works to increase knowledge about—and help farmers and ranchers use—practices that are profitable, environmentally sound, and good for people and communities.

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