

Megan Gregory '04 has her hands in the dirt and her heart in the world.

GROUND *breaker*

By J. Trout Lowen

PHOTOGRAPHED BY ELENA OLIVO

DELIZA LOVE GARDEN



COLLEGE CAN CHANGE A PERSON. Some of us know this firsthand: a particular course, a certain professor, or an amazing learning experience had a transformative effect on who we became. It's less often true that a student transforms the institution. Although she's probably too modest to say so, Megan Gregory might be able to make such a claim. Her diligent, scholarly research on sustainable farming practices helped to seed a permanent change in how St. Olaf College's 400 acres of rolling, fertile farm land is sown and harvested each year.

"I've had other really good students, but I guess I can't think of another student that made as big an impact on the college because of the change in agricultural methods that the college now requires farmers to use," says St. Olaf Biology Professor Kathleen Shea, curator of St. Olaf's natural and agricultural lands. "[Gregory's] research showed that there was better soil quality in land that was farmed using low-till or no-till methods."

That isn't to say that the lessons of St. Olaf didn't take root in Gregory as well. She credits the college with instilling in her a commitment to a life of worth and service, a commitment she began to make good on in the volcanic hills of El Salvador soon after graduating with distinction in her dual majors, biology and environmental science. "The mission of a life of worth and service really resonated with me," Gregory recalls. "I think it is really essential to who I am today."

As a Peace Corps volunteer for more than three years in the village of El Amatón, Gregory put her technical training to work helping village residents design and develop a reliable household water treatment program, organizing reforestation and watershed management projects, and improving nutrition and household incomes by initiating projects for organic vegetable gardens, chicken raising, and commercial vegetable production.

With help from her home congregation in Grayslake, Illinois, Gregory also raised money to build two additional classrooms for the village school, allowing the school to expand its offerings from sixth to ninth grade for the first time. Church members raised \$7,000 in two weeks for what they came to call "Megan's school."

"Of course she would be horrified by that," says Pastor Greg Bostrom, one of six church members who traveled to El Amatón to help build the addition, "but that's what we called it because that was who was behind it all."

Gregory's commitment to others was well known in Grayslake, says Bostrom. She participated in all of the church's mission trips, and the speech she gave as valedictorian of her high school class was presciently titled "Life Is a Mission Trip."

But growing up in a suburban area of northern Illinois, Gregory's connection to the land didn't extend much beyond the local parks and nature areas, although she loved being outdoors. "I always sought out those patches of trees and stream and things like that," she says. "I was always interested in environmental studies from the time I was little. That's how I came to be interested in sustainable agriculture."

"It's not about a place being rural or urban that makes me feel at home. It's about people with a common vision coming together to make their community a better, more humane, more just and sustainable place to live and grow," says Gregory, at work in rural El Amatón.





As an undergraduate, Gregory was a St. Olaf Regent's Scholar, a Barry M. Goldwater Scholar, and a Morris K. Udall Scholar. As a Peace Corps volunteer, her service in El Salvador allowed her to combine her interest in sustainable agriculture with her concern for social justice. PHOTOS COURTESY OF MEGAN GREGORY.

It was during her junior year at St. Olaf that Gregory's interests in the environment and social justice found fertile ground, not only in Professor Kathy Shea's field ecology course but also in Gregory's independent research project that examined the impact of different farming practices on soil quality, including the land St. Olaf rented to farmers. At the time, most were growing corn using conventional moldboard plow and deep tillage methods — after harvest, the stubble is tilled under, leaving picturesque rows of fresh brown dirt. While widespread, the practice has come under fire from environmentalists and others because it contributes to erosion and is heavily dependent on high levels of fertilizer and pesticides and on fossil fuels that contribute to global warming.

Gregory's research looked at the impact of conventional farming alongside low- and no-till practices and diverse rotations incorporating perennial legumes on the quality of the soil and the beneficial bugs that inhabit it. Like it sounds, no-till agriculture eliminates the need to plow under the previous crop. Instead, different crops are planted annually (corn, soybeans, and then corn again, for example) to replenish soil nutrients and improve water retention. "Basically, the farmer makes two trips across the field every year," explains Professor Emeritus of Biology Gene Bakko. "He plants the seed in the spring, comes back with a combine in the fall and harvests it. The next trip is in the spring again when he plants the seed. That's no till agriculture in its simplest explanation and its best."

Some of St. Olaf's land was being farmed in a more sustainable way. Building on work done by two environmental studies students in the 1990s, in 1993 the college converted a forty-four-acre parcel of farmland from conventional agriculture to a more sustainable system of a four-crop/five-year rotation of corn, soybeans, oats/alfalfa, alfalfa, alfalfa. A three-year grant from the Minnesota Department of Agriculture's Energy and Sustainable Agriculture Program allowed more research into sustainable practices. Gregory's work, done in 2003, evaluated the impacts on soil health of deep-, low- and no-till practices,

and incorporation of perennial legumes in the conventional corn-soybean rotation.

Gregory began by talking with local farmers, among them Dave Legvold, an advocate of no-till farming. A former middle school teacher who turned to farming fulltime after he retired, Legvold has mentored a number of St. Olaf field biology students. He remembers taking Gregory on her first trip to the fields.

"She had done the sampling on St. Olaf lands and she was one sad, depressed little camper because she thought that her scientific technique was flawed because she'd found no bugs in the St. Olaf land." Legvold wasn't surprised. Chemicals used to treat corn root worm and corn bores kill beneficial organisms as well. A trip to Legvold's no-till field renewed her faith in her technique. "She came back very excited," he recalls. "She said the place is crawling with bugs."

More than just bugs, Gregory's initial research showed that conventional farming practices had the greatest negative impact on soil quality — its organic matter, structure, and biodiversity. The thoroughness of her research exceeded her professors' expectations. It was "close to being equivalent to a master's thesis," says Bakko. He encouraged her to take her investigation further the following year as a semester-length independent research project. She expanded her analysis of farming methods to include the impact on surface water, soil erosion, and economics.

Gregory's work was so good that it was accepted for publication in a peer-reviewed agricultural journal, an unusual honor for an undergraduate. Shea and Gregory also presented her findings at a national meeting of the Ecological Society of America. At that same meeting, Gregory presented a second paper on a separate project she did over the summer at the University of Miami at Ohio on land use and water pollution.

It was exciting to see her work in print, but more than that, she wanted to share her results with the farmers who could benefit from it. Working with Legvold, Gregory developed fact sheets on the three agricultural practices and their impact on soil health and water quality and prepared a PowerPoint presentation for the Canon River Watershed Partnership to use in their programs with farmers. Legvold continues to present Gregory's findings in presentations he gives for the Minnesota Pollution Control Agency. Perhaps the biggest change has been at St. Olaf, however. Expanding its efforts to be a good steward of the land, in 2004 the college converted its farmland to a corn-soybean rotation employing no-till agriculture.

New Vision Garden



COURTESY OF ELIZA BUTLER



Learn more about community gardens and urban agriculture in New York City:

New York City Community Garden Coalition: nycgcg.org

The mission of the New York City Community Garden Coalition is to promote the preservation, creation, and empowerment of community gardens through education, advocacy, and grassroots organizing.

East New York Farms: eastnewyorkfarms.org

The mission of the East New York Farms Project is to organize youth and adults to address food justice in our community by promoting local sustainable agriculture and community-led economic development.

Megan Gregory — suburban-by-upbringing, rural-by-Peace-Corps — came to New York City to begin building partnerships for a dissertation project in urban agriculture and participatory education. She remembers being nervous about this new adventure, “surrounded by concrete, skyscrapers, and people in business suits rushing to and fro. *Would I really like working here for the next three years?*,” she thought as she headed to East New York ... until she entered the New Vision Garden in Brooklyn.

“It wasn’t long before Miss Eliza put me to work helping harvest the last of the kale, gather crop residues for the compost pile, and do a bit of pruning along the garden’s perennial border,” says Gregory. “Swapping gardening stories with the community gardeners, I felt a kind of human connection that was largely missing from my life as a graduate student.”

Gregory wondered how she could feel so at home in East New York, and then it came to her: “It’s not about a place being rural or urban that makes me feel at home,” she says. “It’s about people with a common vision coming together to make their community a better, more humane, more just and sustainable place to live and grow.”

“Eighteen years ago, Miss Eliza and her neighbors looked at an abandoned lot full of rubbish, but they saw a garden, and they came together and contributed their hands and hearts and sweat to make the garden a reality. Whenever and wherever that happens ... I can find a home.”

Six months and forty garden visits later, Gregory is looking forward to working with community gardeners “in the hope of making a small contribution toward the sustainability and bounty of these spaces. And I am thankful to Miss Eliza, the New Vision Garden, and their neighbors at East New York Farms for being the first to welcome me into New York City’s gardens.”

With its patchwork of raised beds, brightly painted signs, and spaces for children, Megan Gregory felt at home in the New Vision Garden, founded and managed by Eliza Butler. In mid-March, “Miss Eliza” welcomed Gregory back to this special place.

PHOTOGRAPHED BY ELENA OLIVO.



Gregory was still at St. Olaf when she decided she wanted to combine her interest in sustainable agriculture with her concern for social justice. The Peace Corps seemed the place to do that. Just four months after graduation she was posted to El Amatón, a rural village less than two miles from the Guatemalan border and at the base of the Volcano Chingo. The people in the village cultivated corn and beans and a small amount of coffee, but life was difficult due to a long dry season and a lack of water for irrigation and even for drinking.

She was excited about the potential for diversifying the crops and realistic about the challenges water posed. “I could see water was a priority after about an hour in the community. There was one public *chorro* (faucet) for the entire community, and in the dry season (November to May), people strap two *canteros* (big water jugs) onto horses and ride down to the river to bring water back to their homes.”

Not only was water scarce, but the water that was available was also often contaminated with bacteria and parasites. As it is in much of the developing world, contaminated water is one of the biggest killers of children under five, including the children of El Amatón. Gregory resolved to help. “I looked into the eyes of a lot of mothers who had lost kids to diarrhea and some who had lost more than one child,” she says. “That’s a very hard thing to see — that kind of resignation and hopelessness.”

Working with the community’s health committee, Gregory made improving the availability and portability of El Amatón’s water a top priority of her mission. One accomplishment she is most proud of is the installation of bio-sand household water filters that eliminate nearly 100 percent of water-borne contaminants. The multiyear project came together with help from the organization Pure Water for the World and a \$14,200 partnership grant.

Before the filters were even installed, however, Gregory says the project required a great deal of community education. “Even if you have good clean water to drink or a filter to produce that, if you don’t have good hygiene in general and in your house, or if you don’t know how to use the filter properly and maintain it, it is of no use.”

“The mission of a life of worth and service really resonated with me. I think it is essential to who I am today.”

Educating the community is also a source of pride for Gregory, who was intent in all of her projects to insure they were sustainable and made community members more self-sufficient. Local health committee members installed the filters and monitored and reported on their use each month for a year to make sure they were functioning properly and were well maintained. “That was really amazing to see them take that degree of responsibility,” she says, adding that since the installation of the filters no child in the village has died from dysentery.

During her time in El Amatón, Gregory also helped residents construct twenty fuel-efficient, smokeless, wood-burning stoves

and repair stoves in poor condition, helping improve respiratory health and reduce exposure to indoor smoke. She formed a youth ecological club, taught adult literacy classes, and helped women in the village assume greater leadership roles, something that was not an accepted part of village life.

While some men objected to their wives taking on public positions in the community, they were a small minority, says Gregory. Rather, it was the women who lacked confidence. “That was something we had to work very hard to overcome,” she explains. “The bigger barrier was the women having internalized the sense that they were not capable of public leadership positions.”

The health committee offers one example of Gregory’s success. When it was formed, the committee had just one female member. By the time Gregory left, she says, women made up half the committee.

Because of the complexity of the water projects she had undertaken, the Peace Corps extended Gregory’s two-year stay by a year and then granted her an additional four-month extension. Finally, however, Gregory’s time was up. She reluctantly left behind the village that had become her family and returned to the United States.

Gregory is now at Cornell University in upstate New York working in a combined master’s and doctoral program in agro-ecology and completing her dissertation on urban agriculture and participatory education, related specifically to community food gardens in New York City (see “New Vision Garden,” page 28).

She will be working with Green Thumb, a division of the New York City Parks Department that provides assistance to the city’s estimated 600 community gardens, over the next three years to determine whether planting cover crops, such as crimson clover, buckwheat, and oats between food crop cycles can improve the soil health and productivity of community gardens.

Like most of Gregory’s work, the project is ambitious. She plans to interview gardeners and garden coordinators at 120 sites this spring and then select forty to fifty sites for extensive mapping and sampling over the summer. Next year, she’ll select twenty-five of the gardens as test sites for the cover crops.

Although she was a little apprehensive at first about working in such a large urban area, visits to New York’s community gardens have put her at ease. “I just felt right at home,” she says.

She also sees some commonality between the village of El Amatón and the neighborhoods of New York. Certainly the areas are different in terms of resources and infrastructure, Gregory says, but both have been marginalized by the current food system, the current economic system, and the current social system.

They’re similar in another way, too. “They’re coming together to make their communities a better place to live, a more hopeful place to live, and give better opportunities to their children than they themselves had.

“And that’s definitely the kind of effort that I’d like to support,” she says. 🐾

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