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Center for Sustainable Agricultural Systems

November-December, 1998 Newsletter

Grants to Teach Sustainable Agriculture

To help provide Extension and NRCS professionals with knowledge they need to assist their clients, the North Central Region (NCR) Sustainable Agriculture Research and Education (SARE) program is calling for grant proposals from experienced educators. Funds will be dispersed through NCR SARE's Professional Development Program (PDP). Nearly \$500,000 will be available for one- to two-year grants. Individual grants have generally ranged from \$10,000 to \$80,000 each.

Priority areas for the 1999 grant portfolio are: marketing and value-added processing, farming and ranching systems-level education, economics of sustainable agriculture, sustainable weed and pest management, measuring soil quality and soil health, and emerging issues.

Applications are available Dec. 4, 1998, and proposals are due Feb. 12, 1999. Applicants must reside in the 12-state North Central region. For applications, contact: NCR SARE Office, University of Nebraska, 13A Activities Bldg., Lincoln, NE 68583-0840, 402-472-7081, sare001@unlvm.unl.edu. The PDP Call for Proposals will also be available at the NCR SARE Web site, www.sare.org/ncrsare, on Dec. 4.

Spring CSAS Seminar Series: Re-integrating Agriculture and Community in the Midwest

The CSAS, the North Central Region Sustainable Agriculture Research and Education program, and eight other entities are co-sponsoring a seminar series

designed to explore alternatives to the ongoing loss of small farms and the increasing globalization and industrialization of the U.S. food system. The just-concluded Fall series showcased several successful small farming operations. The theme for the Spring series is "Re-integrating Agriculture and Community in the Midwest."

U.S. agriculture is undergoing a massive restructuring (see *Under the Blade* article) that threatens not only the livelihood of most farmers, but also the economic vitality of many rural communities, and the food security of all Americans. Under this restructuring, money is drained from local economies to purchase highly-processed foods, local employment suffers, and local farmland is lost as farmers growing bulk commodities for sale in international markets cannot earn a profit.

The Spring seminar series looks at ways to increase local food security and keep more of the food dollar within the local community. Speakers from throughout the Midwest will describe their successes in fostering local production, processing, and marketing, and in strengthening the ties between farmers and consumers.

Videotapes of each presentation in the Fall and Spring seminar series are available from IANR Communications and Information Technology, Electronic Media, ACB 207, University of Nebraska, Lincoln, NE 68583-0918, 402-472-3035. The cost for each video is \$10 to purchase, \$5 to rent. Videos also may be viewed in or checked out in person from the CSAS office at no charge. For a list of topics and speakers for the Fall series, see <http://www.ianr.unl.edu/ianr/csas/majorSEM.htm>, or contact the CSAS office. The Web page also has abstracts of all seminars as they become available. At the conclusion of the seminars, series organizer Richard Olson will edit a report containing information from all seminars. For more information, contact Olson at the CSAS office, csas005@unlvm.unl.edu.

Co-sponsors of the series are: the UNL Institute of Agriculture and Natural Resources (Center for Sustainable Agricultural Systems, Food Processing Center, Center for Rural Community Revitalization and Development, Departments of Nutritional Science and Dietetics, Agricultural Economics, and Agronomy); USDA (National Agroforestry Center, Natural Resources Conservation Service); and the Nebraska Sustainable Agriculture Society.

Series schedule

(all seminars are at 3:00 in the UNL East Campus Union)

Date	Speaker	Topic
12 Jan	Jack Kloppenburg, University of Wisconsin	Localizing the food system: Myths and realities
19 Jan	Kate Brown, Omaha City Sprouts	Urban gardening
26 Jan	Billene Nemecek, Lincoln Farmers' Market	From hobby to hope: Lincoln's Haymarket Farmers' Market
2 Feb	Michael Pressman, 1000 Friends of Minnesota	Community strategies for preserving farms and farmland
9 Feb	Molly Bartlett, Silver Creek Farm (OH)	Community supported agriculture
16 Feb	Kamyar Enshayan, U. Northern Iowa	A tale of two chickens: Economic results of our food choices
23 Feb	Diana Endicott, Rainbow Organic Farms (KS)	Producer cooperatives
2 Mar	Neil Hamilton, Drake U. Law School	Resources and regulations for local food systems
9 Mar	Jill Gifford & Steve Wang, UNL Food Processing Center	Developing an infrastructure for local processing of agricultural products
23 Mar	Robert Karp, Field to Family Project (IA)	Growing the three sisters: Community organizing and local food systems

Highlights of Upcoming Book: *Under The Blade*

This is the fourth in a series of articles that highlight information in a book titled *Under the Blade: The Conversion of Agricultural Landscapes*. Information in this article is from a chapter by T.A. Lyson, C.C. Geisler, and C. Schlough. Lyson and Geisler are faculty in the Department of Rural Sociology at Cornell University, and Schlough is an agriculture planning associate with Cornell Cooperative Extension. Additional authors who contributed chapters in the book are from universities around the country. The book is co-edited by Richard Olson, University of Nebraska and Tom Lyson, Cornell University. For more information, contact Richard Olson at the CSAS office, or e-mail him at csas005@unlvm.unl.edu. To order the book, see the References section of this newsletter.

Preserving Community Agriculture in a Global Economy

Agriculture is far more than just farmland. It is a complex socio-economic system in which the input and marketing sectors have become as or more important than the production sector. Neil Hamilton of Drake University writes that "Another way

of looking at the structure of agriculture is to consider who will control agriculture - who will own the land, perform the labor, market the food, and profit from agriculture?"

The structure of agriculture in the U.S. has changed significantly in the past half-century - part of a process of industrialization and globalization that is altering the agricultural landscape. These structural changes have important implications for how land is treated, including the likelihood of its conversion to non-agricultural uses.

Structural trends

Agriculture since 1950 has been characterized by large decreases in the number of farms and farmers, and a corresponding increase in average farm size (Table 1). Smaller, family-labor farms have declined substantially in number as larger, increasingly industrial-like operations have become the primary source of food and other agricultural products. The largest 9% of U.S. farms control two-thirds of all farmland, and in terms of gross sales, approximately 90% of U.S. agricultural output is produced by only 522,000 farms. Among the 271 million U.S. residents, there are only about three million private owners of agricultural land.

Table 1. Structural changes in U.S. agriculture since 1950.

Characteristic	1950	1982	1992
Number of farms	5,388,000	2,240,976	1,925,300
Average farm size (acres)	216	440	491
Farm population	23,048,000	5,620,000	4,632,000*
Farm population as percent of U.S. total	15.3	2.4	1.9

***Farm population data from 1991.**

One reason for the reduction in the number of farms is the decline in the farm sector's share of total agricultural economic activity from 21% in 1910 to less than 5% today, with the remainder controlled by the marketing and inputs sectors. Farms consolidate to capture enough of the shrinking farm share to remain viable.

A trend toward consolidation is also evident in the inputs and marketing sectors. The top 10 agrochemical companies accounted for 82% of global agrochemical sales in 1996, while the top 10 seed companies control about 40% of the global seed market. Four companies control 80% of the U.S. farm machinery market.

Three packers control the slaughter of more than 80% of the beef in the U.S., and two companies control 50% of U.S. grain exports. Six multinational corporations account for more than 46% of the retail purchases of food in the U.S.

The globalization of the economy and the increase in the power of multinational corporations have been accelerated by the adoption of world and regional trade agreements that limit the power of national, state or local governments to impose restrictions on commercial activities. As stated in *The Wall Street Journal*, GATT (General Agreement on Tariffs and Trade) "represents another stake in the heart of the idea that governments can direct economies. The main purpose of GATT is to get governments out of the way so that companies can cross jurisdictions (i.e., national boundaries) with relative ease." Under international trade rules, efforts to promote local agriculture can be challenged as unfair government intrusion in food trade.

Implications for farmland conversion

The United States is both the world's largest food exporter and importer. In the global industrial food system, U.S. corporations have no need to protect specific pieces of farmland from development - production is simply moved elsewhere. When food travels an average of 1300 miles from field to table, consumers see little reason to protect local farmland. When farmers can't make a decent living, selling to a developer is very attractive.

As communities lose local farmland, they also lose the possibility of a local food system with its economic and social benefits and enhanced food security. Relocalizing the food system both requires, and is necessary for, the preservation of farmland. In a local food system, land that might otherwise be taken out of farming because it cannot profitably produce for the global marketplace can be kept in production because it serves the needs and tastes of local consumers. Farmland is transformed from simply a "substitutable" factor of production in a global food economy to an integral part of the local community.

Watershed Information Flows Along the Internet

This past summer the North Central Sustainable Agriculture Training Project co-sponsored three workshops titled *Facing a Watershed: Managing Profitable and Sustainable Landscapes in the 21st Century*. The watershed theme reflected a primary interest of midwestern educators. Everyone lives in a watershed, and

watershed boundaries define natural management units for hydrological, water quality, and other environmental issues.

Each workshop watershed in Illinois, Michigan, and Iowa was influenced by a different combination of land use pressures - urbanization, tourism, and large-scale row cropping. *Facing a Watershed* highlighted interactive and hands-on exercises tailored to regional problems. Participants went home with skills and materials they could use in local planning efforts. For educators unable to attend the workshops, the following synopses will provide an introduction to some of the resources most highly rated by participants.

Severe flooding in the late 1990s and concern about the impacts of urbanization prompted formation of the **Blackberry Creek Watershed Committee** near St. Charles, Illinois. This committee is a consortium of representatives from local and county governments, environmental and agricultural organizations, and private landowners. The Blackberry Creek Watershed Management Plan defines the existing and future needs of the watershed and identifies a set of actions to address those needs. For example, objectives for improving water quality include restoring wetlands, retrofitting stormwater facilities, and reducing agricultural runoff. Contact: John Church, Rockford Extension Center, 815-397-7714, churchj@idea.ag.uiuc.edu.

The **Grand Traverse Bay Watershed Initiative** was created in 1992 to mitigate the effects of being one of Michigan's favorite tourist destinations. The initiative is the collective work of 105 partners who conduct programs, such as a watershed festival to educate the community and Water Watch, a student-run water quality monitoring project. Every two years partners renew their Partnership Agreement to provide technical and financial assistance. The Agreement is a concise document that unifies diverse groups around a common cause. Grand Traverse Bay Watershed Initiative contact: Chris Wright, director, 616-935-1514, gtbw@traverse.com. Partnership Agreement contact: Jim Haveman, Conservation Resource Alliance, 616-946-6817.

Restoration efforts in the **Bear Creek Watershed** near Ames were begun in 1990 by the Agroecology Issue Team of the Leopold Center for Sustainable Agriculture and the Iowa State University Agroforestry Research Team. Watershed residents and landowners were surveyed at that time for their input. The focus of the work is the development and establishment of a riparian management system and evaluation of the system's effectiveness in reducing nonpoint source pollution. The four components of the system are a multispecies riparian buffer strip, streambank stabilization, constructed wetlands, and rotational grazing systems. Contact: Tom Isenhardt, Department of Forestry, 515-294-8056, isenhardt@iastate.edu.

American Farmland Trust (AFT) is the only national, private, nonprofit organization dedicated to protecting agricultural resources. The heart of AFT's

work is saving U.S. farmlands, which are essential to the optimal functioning of watersheds. Well managed agricultural land produces food and fiber, protects soil and water quality, reduces flooding, offers recreational opportunities, and contributes to state and local economies. AFT's activities include public education and technical assistance, policy research and development, and individual protection projects. Contact: 800-370-4879, <http://www.farmland.org>.

The **Conservation Technology Information Center** offers a large selection of watershed management materials in its catalog, including videos, guides, directories, maps, and kits. For example, the *Managing Conflict Guide* explains the nature and sources of conflict, assessment, and a three-stage process for resolving conflict. The *Walk Your Watershed Festival Organizing Kit* outlines practical steps of getting started, choosing activities, finding volunteers, and securing financial support. Contact: 765-494-9555, <http://www.ctic.purdue.edu>.

The U.S. Environmental Protection Agency (EPA) launched its new **Index of Watershed Indicators** program that provides information on 15 indicators of watershed health. For access to the data, go to <http://www.epa.gov/surf/IWI>. Specific watersheds can be called up by entering a zip code or the name of a city, and the site also contains detailed maps. The EPA Office of Water: Watershed Protection is another valuable site at <http://epa.gov/owow/watershed/>.

Decision cases tell a true story of a problem or dilemma that has no single right answer. The teaching method involves participants as active decision makers and encourages collaboration. The Clearinghouse for Decision Case Education distributes decision case materials and updates directories of teaching aids and other relevant resources. The clearinghouse is focused on decision cases developed for the areas of agriculture, food, natural resources, and the environment. The Web site is <http://www.decisioncase.edu>.

For more information, contact Heidi Carter in the CSAS office, csas007@unlvm.unl.edu.

Submitted by Heidi Carter and Richard Olson

Nordic Agroecology Program Begins August 1999

Future farming and food systems need people with broad knowledge and skills in managing complexity and change as well as communicating with the public. To meet this need, a new master of science program to begin in August 1999 in Norway will feature systems approaches to learn how natural resources, people,

and science are brought together to design and implement sustainable food systems for a growing population. Concerns are global, but applications are local and specific to needs and resources in each location.

This program in Agroecology in Scandinavia bridges ecology and agriculture, and provides a foundation for developing ecological agriculture and food systems, more often known as organic agriculture in the U.S. Although many examples are taken from ecological systems, the program is designed for all students who want to take a systems approach to study and research in food systems. The curriculum includes flexibility and access to many courses from traditional departments. As the promotional brochure states, the program is for students "who will take responsibility for their education, who seek challenges and relevance."

Study objectives for the program include learning:

- how ecology relates to agriculture
- systems thinking for complex problems
- farming and food system plans from farm to consumer
- emergent properties of systems
- communication skills and practicing them
- how to integrate natural and social science approaches

Students will learn through practical, real-world case studies, with much of the education happening outside the classroom. In addition to individualized advising, course planning and lecture-discussions with faculty, students will learn from farmers, processors, government officials and consumers who are active in the food system. Focus is on team skills and multidisciplinary learning.

The two-year program includes an introductory summer orientation in classroom and field, identifying practical constraints in the system and building context for learning. An intensive, full-time thematic semester includes 16 weeks or modules on ecology in agriculture, systems research methods, nutrient and energy flow, systems interactions and emergent properties, whole farm evaluations, farms in the landscape and community, value added on farm and in local places, economic and environmental impact analysis, and communications. Students then take two semesters of courses from the current curriculum, including ecological agriculture. A summer field experience provides practical applications of courses and helps them define a thesis topic. The MSc thesis is developed and finalized during the final semester, and presented at an international symposium in June of the second year. Students can also take the thematic semester as a stand-alone experience.

The Agroecology MSc is organized under the banner of the Nordic Forestry, Veterinary, and Agricultural University (NOVA). The courses and curriculum will be administered by the faculty of the Agricultural University of Norway (NLH).

Also participating are the agricultural universities in Denmark, Finland, Sweden and Iceland, and students will come from these Nordic countries, from the Baltic countries of Estonia, Latvia and Lithuania, and from outside the region. The course is in English. For students from the U.S., there is no additional charge for tuition and fees if there is a cooperative agreement between their university and NLH (check with your international student office). There are places for 40 students to begin each year.

For more information on the course and application procedure, please consult one of these Web sites:

NOVA: <http://www.nova-university.org/index.html>

NLH: <http://www.nlh.no/>

KVL: <http://www.agsci.kvl.dk/coem/NOVA/MSc.html>

SLU: <http://www.slu.se/>

*Submitted by Charles Francis (permanent CSAS director
on professional development leave) and Geir Lieblein, NLH, Norway*

Two On-farm Assessment Tools

The Institute for Agriculture and Trade Policy is working to reduce the environmental impacts of agriculture and improve water quality through the voluntary adoption of on-farm assessment and decision tools.

Pesticide Decision Tool (PDT) facilitates the adoption of environmental impact assessment in the selection and management of pesticides in arable crop production. The approach is to integrate environmental criteria with non-environmental decision factors such as production cost, persistence (carry over) ratings, and resistance risk ratings. Qualitative categories of high, intermediate and low for each soil type and pesticide active ingredient indicate the relative likelihood that a pesticide will leave the site of application via runoff or move

down through the soil below the root zone. Three modes of water contamination are considered: groundwater contamination via leaching; surface water contamination via dissolved pesticides, and via pesticides adsorbed to soil particles. A project description is available at: <http://www.iatp.org/enviroag/pesticidessummary.htm>. IATP is seeking participants, collaborators, and sponsoring organizations for field implementation and technical review and improvement in 1999. Efforts will concentrate on corn and soybeans in the Midwest, but other crops and regions will be considered.

Nutrient Management Yardstick is a system that tracks nutrients entering and leaving a farm. See <http://www.iatp.org/enviroag/yardsticksummary.htm>.

For additional information, contact John Vickery, Institute for Agriculture and Trade Policy, 2105 First Ave., S., Minneapolis, MN 55404-2505, 612-870-3430, jvickery@iatp.org.

Beef Home Study Courses Begin Fifth Year

The *Beef Basics* home study courses will again be offered across Nebraska this year. These courses are designed to assist beef producers and farm and ranch managers in making management decisions for improving profitability. Topics address reproduction, genetics, selection, nutrition, health, and forage utilization at a basic level. Over 4000 producers from 40 states have participated in *Beef Basics* courses. Last year's producers estimated that they would save over \$16 per cow using the management and production ideas presented in the home study courses. For more information, contact Bud Stolzenburg, 800-657-2188, cnty2664@unlvm.unl.edu, or see <http://www.ianr.unl.edu/beefbasics/index.htm> (where you can enroll electronically).

Resources

Under the Blade: The Conversion of Agricultural Landscapes. \$25. This new (December 1998) book edited by Richard Olson (U. of Nebraska) and Thomas Lyson (Cornell U.) examines the patterns, causes and consequences of current land use decisions in the U.S. It examines farmland loss from several

perspectives, and then integrates the results into policy recommendations (see related article in this newsletter). Westview Press, 5500 Central Ave., Boulder, CO 80301-2877, 303-444-3541. To order a \$5 course examination copy, call 1-800-386-5656.

A Guide to USDA and Other Federal Resources for Sustainable Agriculture and Forestry Enterprises. Free. Features information on federal programs that spearhead innovations in agriculture and forestry. Addresses resources in value-added and diversified agriculture and forestry, sustainable land management and community development. Written for farmers and ranchers, entrepreneurs, community developers and conservationists. North Central Region SARE Office, 402-472-7081, sare001@unlvm.unl.edu, <http://www.attra.org/guide>.

Alternatives in Agriculture. \$10. The 1998 annual report of research on the Thompson farm in Iowa updates all previous reports, and includes major changes in fertility, economics, and livestock research. Chapters cover fertility, cover crops, alternative weed management, rotation of crops and tillage, water quality and soil health, economics, livestock, and farming systems and the viability of rural communities. Thompson On-Farm Research, 2035 190th St., Boone, IA 50036-7423, 515-432-1560.

Two new reports published by the Wallace Institute examine soil quality's contribution to environmental health, and industrialization in U.S. rural communities. *From the Ground Up: Exploring Soil Quality's Contribution to Environmental Health*, by Edward Jaenicke of the University of Tennessee, investigates the current state of scientific knowledge on soil quality and points out research gaps that must be filled before soil policy can target potential social benefits. *Agricultural Industrialization in the American Countryside*, by Emery Castle of Oregon State University, offers an approach for rural communities as they face conflicts resulting from the spread of industrialization, particularly large confined animal feeding facilities. The reports are \$10 each from the Wallace Institute, 9200 Edmonston Road, #117, Greenbelt, MD 20770; 301-441-8777. Also available at <http://www.hawiaa.org>.

Did You Know...

USDA announced in October that it is creating a Council on Small Farms and a new office at USDA that will deal specifically with small farm issues. The effort will be headed by Adela Backiel, currently Director of Sustainable Development.

Claiming that it "has produced absolutely nothing" to reduce the health risks of pesticides for children, The Environmental Working Group resigned on 10/27/98 from a White House panel studying how to phase out use of toxic pesticides. Consumers Union and several other groups represented on the panel said they

may also resign in protest or sue the agency. The panel, made up of farmers, chemical companies, physicians and green groups, was appointed by Vice President Gore last spring after farm and industry groups complained that the EPA was moving too quickly to ban powerful pesticides that have been linked to health problems.

Pollution and other environmental factors cause 40% of deaths worldwide and climate change will make matters worse, Cornell University scientists found in a study released 9/30/98. After studying population trends, climate change, increasing pollution levels and emerging diseases, 11 graduate student researchers led by Cornell ecology professor David Pimentel concluded that increased temperatures caused by global climate change will further encourage growth of human diseases and prod development of new illnesses. They predicted millions of people would become "environmental refugees," fleeing their homes in a desperate search for food.

Humans have destroyed more than 30% of the natural world since 1970, according to a report published on 10/1/98. The Worldwide Fund for Nature (WWF) gave details of its Living Planet Index (LPI), which analyzes the deterioration of the world's forest, freshwater and marine ecosystems between 1970 and 1995. The decline of natural wealth is blamed on over-consumption by the industrialized world.

Despite an increase in the U.S. population of about 40 million people between 1980 and 1995, a new government report shows Americans are using 10% less water. Reasons for the decrease include conservation programs, improved irrigation techniques, and efficient industrial use.

World Food Day was observed on October 16 in 150 countries with the theme "Women Feed the World," stressing women's key role in food production and appealing for equality between women and men.

A last-minute rider added to the omnibus appropriations bill passed in October delays the methyl bromide ban, originally scheduled for 2001, until 2005.

Claiming that an estimated 1 million American children living on or near farms are "awash in pesticides" from contamination of the air, drinking water, house dust and even work clothing worn by their parents in the fields, the Natural Resources Defense Council, along with more than 50 other groups, signed a petition in October asking the EPA to designate farm children as a special group needing protection. Pesticides have been linked to higher rates of brain cancer, leukemia, learning disabilities and other disorders, according to the American Public Health Association. The chemicals pose a greater risk to children than adults because of a child's developing nervous system and body.

1999 Events

Contact CSAS office for more information.

Jan. 8-9 - Great Plains Regional Vegetable Conference, St. Jo, MO

Jan. 11 - Organic Crop Training, Hastings, NE

Jan. 19 - Organic Crop Training, Tecumseh, NE

Jan. 21-22 - Farm Marketing into the Next Millenium - joint conference of the North American Farmers' Direct Marketing Association and the Great Lakes Vegetable Growers Convention, Grand Rapids, MI

Feb. 5-6 - Northern Plains Sustainable Agriculture Society's Annual Winter Conference, Bismarck, ND

Feb. 17 - Leopold Center conference, Swine System Options, Ames, IA

Feb. 23-25 - Advanced Organic-Biodynamic Vegetable Production Workshop, St. Croix, MN

Feb. 26-27 - US EPA/U. of Michigan Workshop: A Life Cycle Approach to Sustainable Agriculture Indicators, Ann Arbor, MI

Feb. 27 - Annual Meeting of Nebraska Sustainable Agriculture Society, Aurora, NE, <http://www.netins.net/showcase/nsas/>

Mar. 8-10 - International Conference on Emerging Technologies for Integrated Pest Management: Concepts, Research, and Implementation, Raleigh, NC, <http://ipmwww.ncsu.edu/ipmconference/>

June 12-16 - 6th Conference on Agroforestry in North America: Sustainable Land-Use Management for the 21st Century, Hot Springs, AR, tclason@agctr.lsu.edu

http://www.missouri.edu/~afta/Sixth_Conf.html

June 14-16 - XXVIII International Congress Work Sciences in Sustainable Agriculture, Horsens, Denmark

<http://www.sp.dk/~cgs/ciosta/>

Oct. 12-15 - Second National Small Farm Conference: Building Partnerships for the 21st Century, St. Louis, MO

For additional events, see: http://www.sare.org/wreg/view_notice_adm.pl

<http://www.agnic.org/mtg/>
