

Letter

A NEWSLETTER OF THE LEOPOLD CENTER FOR SUSTAINABLE AGRICULTURE VOL. 11 NO. 1 SPRING 1999

A conversation with Iowa's No. 1 Conservationist

Sustainable ag: A look back, a look ahead

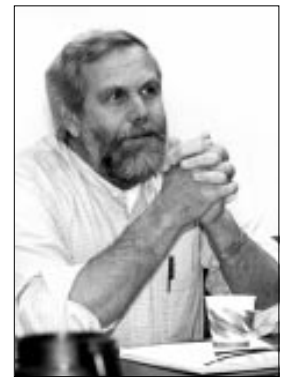
EDITOR'S NOTE: Much of the work at the Leopold Center is forward-thinking—testing and encouraging practical and responsible ways to sustain agriculture for generations to come. But where does one get a fresh look when the future seems unreachable, and the past so distant? A good place to start is with Paul Johnson, possibly Iowa's number one living conservationist.

The Leopold Center staff met with Johnson in December 1998. He was just getting settled in again, raising corn, hay, Christmas trees, dairy cattle and sheep on his farm near Decorah. In November 1997, Johnson moved back to Iowa after three years in Washington as head of the USDA's soil conservation program. Before that, he was state legislator and one of the authors of the 1987 Groundwater Protection Act that established the Center, as well as the Iowa Resource Enhancement and Protection Program. He has served on the Board of Agriculture of the National Academy of Sciences, taught forestry in Ghana, and worked for the USDA Forest Service in the Pacific Northwest. He has two forestry degrees from the University of Michigan.

Since the December meeting, Johnson has put on yet another hat. He now heads the Iowa Department of Natural Resources, the agency that oversees the state's environmental regulations, parks, hunting and fishing. This article contains excerpts of Johnson's conversation, including his views on sustainable agriculture, and the Center's work on several key programs.

Iowa is the best place in the world to show how sustainable agriculture works, or to watch its demise. Sadly, however, there are many challenges today that can hold us prisoners of our landscape rather than tenders of it.

— Paul Johnson, Iowa Department of Natural Resources director



What's the future for sustainable agriculture in Iowa?

I always pull a yellow pad from the desk to jot down my thoughts, but today I just have one thing written down: "Something will have gone out of us as a people if we ever let the remaining wilderness be destroyed." That comes from Wallace Stegner, written in 1962 when debating the Wilderness Act, but it's relevant today,

especially in Iowa. We live in the most domesticated landscape in the nation. There is very little wilderness left yet there's still a great deal of wildness. I've spent a lot of time in the woods these past few months in places where people never go. The white-throated sparrows I see in the

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*Leopold Center
announces
Keeney, Swan
retirements*

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Retirements announced at the Leopold Center

More than two decades of service to the Leopold Center come to a close with the retirements of two leaders in sustainable agriculture—the Center’s first and only director, Dennis Keeney, and one of its two associate directors, Jim Swan. The Center’s other associate director, Mike Duffy, will remain on the staff. A search for Keeney’s replacement is expected to take place this spring and summer.

In January, Keeney announced his desire to retire in the fall. Although he plans to remain active in addressing sustainable agriculture and environmental issues, Keeney’s retirement will end an era of leadership that brought state, national and international attention to the innovative center created by the 1987 Iowa Groundwater Protection Act. Among the efforts he headed at the Center were creation of multidisciplinary issue-based research teams that looked at issues such as agroecology, the impact of agriculture on human systems, manure management and cropping systems.

Swan retired at the end of Febru-

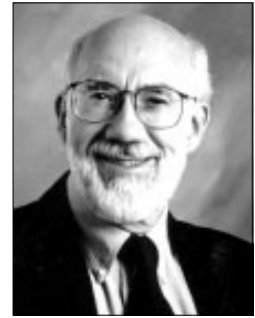
ary from both of his ISU faculty appointments with the Center and the Department of Agronomy.

During Keeney and Swan’s tenure, the Leopold Center’s competitive grants program awarded nearly \$8.1 million to support 181 research, demonstration, and education projects throughout Iowa. While at the Center, Keeney also served in leadership roles for the American Society of Agronomy, the Iowa State Water Resources Research Institute, and numerous national and international environmental and sustainable agriculture organizations and activities.

Keeney grew up on an Iowa farm, earned degrees from ISU and University of Wisconsin, and is an active advocate of native Iowa ecologist Aldo Leopold’s “Land Ethic.” He came to ISU in 1988 as an interna-



Dennis Keeney



Jim Swan

tionally recognized soil and water quality scientist.

Swan came to ISU in 1989 from the University of Minnesota, where he had been on the faculty since 1964. He earned degrees from the University of Illinois and University of Wisconsin. While at ISU, he directed extensive research in soil management including the long-term effects of reduced tillage practices.

Expo to focus on innovation, partnerships

The Leopold Center is working with other groups for a June 17 conference that looks at Iowa agriculture of the 21st century. “Expo ’99: Creating a Thriving Iowa Agriculture,” at the Scheman Continuing Education Building in Ames, will show how local food system, value-added and community agriculture projects are working in Iowa, including several funded by the Leopold Center. Other sponsors are the Kellogg Foundation-funded Vision 2020 project, ISU Extension’s value-added program, and the USDA’s Sustainable Agricultural Research and Education (SARE) program. For more details, contact the Center or Ann Schultz at Vision 2020, (515) 294-2496.



LEOPOLD CENTER

The Leopold Letter is also available via World Wide Web:
URL: <http://www.leopold.iastate.edu>

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The Leopold Center for Sustainable Agriculture seeks to identify and reduce adverse socioeconomic and environmental impacts of farming practices, develop profitable farming systems that conserve natural resources, and create educational programs with the ISU Extension Service. It was founded by the 1987 Iowa Groundwater Protection Act.

The *Leopold Letter* is available free from the Leopold Center at 209 Curtiss Hall, Iowa State University, Ames, Iowa 50011-1050; (515) 294-3711; <leocenter@iastate.edu>.

Editor: Laura Miller



A matter of unfinished business

The business of forming the gentle land between two great rivers we know as Iowa began when the glaciers moved north, some 10,000 years ago. The rains fell, the winds blew, and the hills and valleys, streams and swales, great savannas and trackless prairies became part of a beautiful and gracious land with a diversity of plants and creatures. This land played gentle host to its creatures, even the native Americans, who lived on the land lightly. And the eagle swooped over the land and saw that all was good.

But while Iowa was going about the business of being formed, other business was underway. In lands far away, in a place we call the Fertile Crescent, other groups were developing ways to tame the land so that it would produce their food. The business of agriculture was born. Their success gave them great power, and soon they dominated their land and moved on looking for more. And eventually they found the great continent we call North America, and in a few years, they found Iowa, and realized this was a land most suited to agriculture.

In a twinkling of an eye, the swooping eagle saw great changes. The prairies succumbed to the plow, the swales to the tile. The gentle land shuddered under the clanging of steel and the weight of concrete. The land responded with its bounty, but there was a cost. Some of the creatures did not survive, the deep soil was stripped away by rains and wind, and the waters ran brown. The great eagle struggled with a diet that contained new and unknown substances. And he wondered of the future.

The unfinished business we call Iowa is now confronting the business we call agriculture and commerce and asking many questions. It is asking if the tools for agriculture

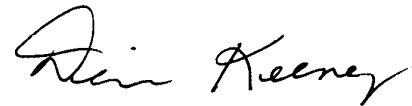
provided by the land grant universities and by agricultural industries are adequate to protect and nurture this great land. It is asking if the people of Iowa can continue to count on its agriculture for clean air and water. It is asking who will live on the land. It is asking if the business of agriculture has forgotten its people. It is asking why agriculture now regards this great land as property it can treat without regard for its inherent beauty, its creatures and its future. It is asking why agriculture more and more regards its peoples as laborers rather than as partners and lovers of the land. It is asking if the eagle has a future.

But Iowa realizes that it is not an island in the world of commerce. Larger forces dictate many of the answers to these critical questions. There are many indications that Iowa is looking at these questions and beginning to search for different ways to

do its business than it has in the past. Part of this search has been the way Iowa has embraced the concept of agricultural sustainability.

The Leopold Center has helped ask many of these questions, and provided a few answers. Iowa is a young land, and the Leopold Center is a young organization. Both have much unfinished business.

For the last 11 years I have had the great opportunity and privilege to lead the Center on its quest. In a few short months I will step aside, but rest assured, while I have much unfinished business, the Leopold Center will always be a part of me. We all must work to protect the eagle.



Dennis R. Keeney



Photo courtesy U.S. Fish & Wildlife Service

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A conversation with Iowa's top conservationist

PAUL JOHNSON CONVERSATION

(continued from page 1)

fencerows represent our wildness because no one's boxed them in yet.

In Iowa, we are blessed with wonderful land, much of which has been put into production. Although we have little wilderness left, we can have wildness in every part of this state, at every home, in every subdivision, if we put our minds to it.

Aldo Leopold spoke of harmony between people and the land. When people do well by the land, and the land does well by people, then you have sustainable communities and sustainable agriculture. But when one or the other grows poorer, you do not have sustainability.

Iowa is the best place in the world to show how sustainable agriculture works, or to watch its demise. Sadly, however, there are many challenges today that can hold us prisoners of our landscape rather than tenders of it.

What is the key issue in sustainable agriculture?

Everybody cares about water in Iowa. We get 30 inches of water every year, and our land processes it. So Iowa's water depends on agriculture and how we're performing. If we improve water for agriculture, we also improve it for bluebirds, lady's slippers, otters and eagles.

We could improve Iowa water if we could improve on just four practices: how we till the land, manage nutrients, use pesticides, and build vegetative buffers. [The Center has funded research on all four issues.]

What about tillage?

We've been talking about tillage for 60 years but you could look around last fall and it was like the parents have gone out for the night and the kids are having a big party. We had a good fall and many farmers went back to their

old ideas that good land needs to be worked at the end of a season.

In my area, one local group took out quarter-page ads telling people not to till soybean ground. I bet there weren't but five fields tilled in all of Winneshiek County—the ads worked. But a lot of other farmers don't feel guilty for tilling their ground. We've come a long way in 25 years but we need to push these issues because they have a direct impact on water quality.



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What about nutrient management?

We've moved ahead on nutrient management but we're slipping again. For example, demonstration plots at the northeast Iowa research farm show that anything at or above 120 pounds of nitrogen per acre is waste but farmers are still putting 200 pounds on after they apply pig manure. The "white torpedoes" [anhydrous ammonia fertilizer tanks] are still rolling over the landscape.

As far as manure nutrient management, there's a lack of public dialogue now about what has to be done and what's the right thing to do.

What about pesticide use?

We still blanket 25 million acres with

pesticides in this state every year. Now our silver bullets are in Bt corn, even though chemicals still are recommended in some cases. I'm not saying we shouldn't use any pesticides, but use them only when you need them.

Where do vegetative buffers fit in?

In Iowa we have one of the world's greatest filters, it's called good land. There are programs that pay farmers to put some of their land back into vegetative buffers, which we ought to have around every field in the state.

Why aren't more farmers building buffers? We have more than 50,000 miles of rivers and streams in this state and more than half are probably eligible for federal funding to build buffers. But this issue needs a super sell job to push the science, which the Leopold Center has helped develop.

Every road in the state has buffers along it, they're called ditches. Use the buffer initiative to get other groups involved so that all wild lands can be connected by buffers. Every farm has a connection, and let it connect to forests, wetlands and parks.

What effect does urban sprawl have on sustainable ag?

My question is not just what it's doing to the landscape but the fact that we have a lot of amateurs out there who know nothing about how to take care of the land. We don't need to just wring our hands over this, but provide information.

The buffer project would be a good way to bring farm and nonfarm communities together. I'd like to see all new landowners, whether they buy 500-acre farm, a 10-acre woodlot or a half-acre lot in a housing subdivision, to get the story that goes with their land. This would tell the land's story,

PAUL JOHNSON CONVERSATION

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A landowner's responsibility to the land

I'd like to see all new landowners, whether they buy 500-acre farm, a 10-acre woodlot or a half-acre lot in a housing subdivision, to get the story that goes with their land. This would tell the land's story, what used to be there, what's there now, and how you can keep it the way it needs to be. It would let landowners know that they bought a filter, a buffer, a home for God's creation, and a responsibility to take care of it. — Paul Johnson

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(continued from page 4)

what used to be there, what's there now, and how you can keep it the way it needs to be. It would let landowners know that they bought a filter, a buffer, a home for God's creation, and a responsibility to take care of it.

Aldo Leopold talked about learning to read the land. He said: "Once you learn to read the land, I have no fear of what you will do to it, or with it. And I know many pleasant things it will do to you." But how can you read the land if there's no teacher? You begin when you sign on the dotted line and buy property.

How can the Leopold Center best use the research?

Good science can make all the difference in the world. Perhaps we can't prove that your neighbor who puts 200

pounds of nitrogen on his fields in addition to pig manure is causing hypoxia in the Gulf, but we know he's wasting his own money. We know from our good research at ISU that we only need two-thirds of the nitrogen we're putting on our land. Pollution is waste, at the very least, so let's get going on using only what we need, where we need it and when we need it.

I think ISU research can teach us how to grow conservation commodities as well as agricultural commodities, and when they do, it will be a whole new land grant system. What you're talking about in the Leopold Center doesn't hurt production agriculture, it just calls upon them to be better at what they do. We can have top production and the eagles overhead and the otters in the rivers. It's not one or the other. You can have it all – why not?

Center funds conservationist program expansion

The Leopold Center is supporting a special project to expand the Master Conservationist program to four additional Iowa counties over the next two years. The Master Conservationist Program, modeled after the ISU Extension Master Gardener program, provides adults 32 hours of hands-on educational experiences in natural resource conservation-related topics such as ecological principles, prairies, wildlife diversity, wetlands, and sustainable agriculture. Participants are required to give back at least 32 hours of community service in some area of conservation.

The project, led by ISU Extension wildlife specialist Jim Pease, will build on a Master Conservationist Program piloted in Story County in

1997 and 1998. For more information, contact Pease at (515) 294-7429 or <x1pease@exnet.iastate.edu>.

New Website calendar for conservation events

A new calendar on the World Wide Web now lists meetings, conferences, and other activities in Iowa that relate to conservation and the environment. The Web site is a project of the Environmental Leadership Institute (ELI) with support from the Leopold Center, John Deere, the Iowa Conservation Education Council, and Iowa Natural Heritage Foundation. To list an event for free or check the calendar, go to <http://www.ecoinfo.net>.

The **Leopold Center** was one of five groups listed in *Bon Appetit* magazine's "Green Guide" for readers interested in community supported agriculture (CSA) programs. The magazine featured Fairview Gardens of Santa Barbara, California, in its January 1999 edition. "If you eat, you are responsible for the soil," says owner Michael Ableman about the link between farmer and consumer. "It's as simple as that." The Center supports several CSA programs in Iowa, and is funding an appearance by Ableman March 30 at the University of Northern Iowa (see calendar, page 12). The magazine article has resulted in several requests for information.

* * *

Leopold Center director **Dennis Keeney** was elected president of the Iowa Environmental Council in January. He will complete the unexpired term of Des Moines attorney Charlette Hubbell, who is in the Netherlands. The Council, formed in 1994, is an alliance of 57 organizations and 300 individual members working to protect the natural environment through public policy, research and education, coalition-building and advocacy. Hubbell's term ends in September.

* * *

Jim Russell, Iowa State University animal science professor who leads the Leopold Center's Animal Management Issue Team, has received an Industry Merit Award from the Iowa Forage and Grassland Council. The Center has funded several of Russell's research projects on rotational grazing and other Management Intensive Grazing (MIG) systems. Also honored were northeast Iowa dairy producers **Dennis and Cheryl Cline**, Postville, for their work on MIG systems. The Clines hosted a Center-funded pasture walk.

Sustainable agriculture:

By Neil D. Hamilton, law professor and director, Agricultural Law Center, Drake University

Editor's note: Since 1987, Hamilton has served on the Leopold Center Advisory Board and has been involved in many other efforts to promote sustainable agriculture beyond Iowa. Last May, he spoke to the Fifth World Congress on Agrarian Law in Brazil about the role of law in promoting sustainable agriculture. This is a summary of his remarks, published in the current issue of the Drake Journal of Agricultural Law (3:423-431).



Farmers will not change how they produce crops in order to protect the environment unless they have knowledge and information about how the new practices will work and the effect these practices will have on their productivity and profitability.

Sustainable agriculture is one of the most important developments in American agriculture in the last half century. It has the potential to be a unifying concept that could address both environmental and social needs of agriculture in countries throughout the world. It will be impossible for any nation or the world to progress far on the path toward sustainable development if it does not examine agriculture. Sustainability must start from the ground up and agriculture is the place to begin. If food production systems and our relation to the natural resources we use to raise food are not grounded on the principles of sustainability, our future is in doubt.

Eight lessons from the U.S. experience with sustainable ag

1. It is important to develop commonly understood and accepted definitions of what is meant by "sustainable" agriculture. The role of definitions is essential, not just in helping clarify the goals to be promoted and in gaining support for the efforts, but also in trying to develop mechanisms to measure the effectiveness of any programs adopted.

2. We must recognize that the communities affected by "sustainable" agriculture are much broader than just the farming sector. The research and education sector, farm groups, input suppliers, farm lenders and landowners are affected by agricultural policies, and can either be allies in promoting sustainability or obstacles to its adoption. The ability to gain their involvement is, in part, a function of whether they perceive that a shift

to sustainable practices might threaten them. Farmers and landowners also are relying on paid consultants to perform certain farming practices, which gives these outside experts a larger role in how alternative farming practices, as identified by research, are adopted.

3. We must appreciate the fundamental role of education and research in providing the basis for sustainable agriculture. The concept of sustainability is an attractive ideal but it will remain only an ideal unless actual practices and policies are developed to help implement sustainability in the fields. Farmers will not change how they produce crops in order to protect the environment unless they have knowledge and information about how the new practices will work and the effect these practices will have on their productivity and profitability. That is why funding for research and education is fundamental in efforts to adopt sustainable farming practices.

4. It is important to identify the legal and institutional biases that shape agricultural practices. One basic theme of sustainable agriculture is to promote adoption of farming practices that have less adverse impacts on the natural environment. Development of alternative practices is an important step, as is increased awareness and acceptance of the negative impacts that common farming practices may cause. However, the availability of alternatives and the awareness of current problems will not always lead to change. A variety of other influences help determine how and why agriculture functions, including such things as land tenure practices (i.e., short-term leases that lock producers into exploitive land practices), lending practices that may hinder the adoption of alternative methods of production or crop diversification, attitudes of farmland owners who may desire short-term maximization of returns rather than longer term stewardship of the land, and governmental programs that may encourage production of certain crops rather than more balanced systems.

5. We must consider social and human needs in promotion of sustainable agriculture. While most work in sustainable agriculture has been agronomic, it is important to recognize the important link between the economic and social structure of agriculture and developing

What have we learned?

sustainable agricultural systems. For any agricultural production system to be sustainable, it cannot just deal with soil and water or price and income, but also must consider farmers, their families, and the rural communities that make up the cultural structure of an agrarian system. Farmers and their families are the transfer agents for knowledge and wisdom across generations.

6. It is important to accept the need for evolution and flexibility in public programs that promote sustainable agriculture. A central lesson in the United States recently has been that as the public accepts the importance of sustainable agriculture, publicly funded programs designed to do so will evolve. Much of the U.S. effort to limit the impact of agriculture on the environment has involved paying farmers to promote soil conservation and limit water pollution. Good examples are programs such as the popular Conservation Reserve Program, which uses ten-year contracts to retire erodible land from production, and the Wetland Reserve Program, which buys permanent conservation easements from farmers who restore wetlands on formerly drained fields. While these programs may not be promoted as “sustainable agriculture,” the direct effect of the efforts clearly is to improve farming practices and protect environmental resources.

7. We must recognize the role of natural systems as the foundation for promoting sustainable agriculture. When reduced to its essence, sustainable agriculture may simply mean developing farming systems that are more in harmony with nature than the conventional practices they replace. The idea of recognizing and working with natural systems was a fundamental principle in the writings of Aldo Leopold, whose book, *A Sand County Almanac*, and essay, “The Land Ethic,” have greatly influenced public officials responsible for promoting sustainable agriculture in the United States. A prime example is the value of using a watershed approach to address water quality. Political jurisdictions often do not fit the manner in which water moves and is used. Using natural watersheds to create the legal jurisdictions necessary to address water quality protection issues can promote sustainability. Similar efforts are seen in the value of restoring wetlands, the need to preserve unique and prime farmlands, the treatment of ground and surface water as interconnected, and using field buffer strips to improve water quality.

8. We need to make “sustainable agriculture” important to consumers using the “food system” concept. References to the food system are appearing in discussions of America’s agricultural sector, however, the term is new and perhaps not widely understood. A food systems approach recognizes that agricultural production is only one part of a larger system, which encompasses other economic activities and policy considerations. By viewing agriculture as only one part of a multi-faceted food system, broader public questions and the connections between “farming” and these other issues can be made clearer. These broader questions relate to opportunities for local food production, food access for the poor and hunger assistance, farmland protection, and promotion of alternative markets. This food system approach builds on existing links within in the local economy and political system. It also can help local officials ask questions that might otherwise go unasked, such as opportunities for increasing local production of food.

Opportunities for future work

We have several important opportunities to promote sustainable agriculture. One, sustainability cannot be separated from price and income support issues and international trade in agriculture policy debates. Instead, sustainability can be the organizing theme upon which policies are based and the standard against which their performance is measured.

Two, efforts to promote sustainable agriculture will largely depend on information and research. If farmers can be shown alternative methods that protect the environment as well as the economic viability of their operations, they will adopt them.

Three, it is essential to incorporate social and human issues as they relate to the structure of agriculture. The current drive toward industrialization of American agriculture, especially in livestock production, threatens much of the present structure of agriculture. Of all the contradictions in American attitudes and policies toward agriculture, the most alarming may be the divergence between the traditional structure of agriculture, which is best suited by attitude and ability to protect the environment, and the structure we are putting in place through industrialization. Can the agriculture we are building yield the harvest we desire?

For any agricultural production system to be sustainable, it cannot just deal with soil and water or price and income, but also must consider farmers, their families, and the rural communities that make up the cultural structure of an agrarian system.

Farmers' thoughts on sustainable agriculture

By Mike Duffy, Center associate director and professor of agricultural economics

What do farmers think about sustainable agriculture? What sustainability issues do they view as important? The Leopold Center tried to answer these questions by conducting a random sample telephone survey of Iowa farmers' attitudes and knowledge of sustainable agriculture as part of its recently completed university review process. Their responses provided considerable food for thought! The results from this survey, along with recommendations from the review team, will be used to guide the Center's programming over the next five years.

Familiarity with sustainable agriculture

When asked their familiarity with the term sustainable agriculture, 12 percent of the respondents said that they were very familiar with the term, and 48 percent were somewhat familiar. The remaining 40 percent said that they were not familiar with the term sustainable agriculture. Farmers who described themselves as very familiar with sustainable agriculture tended to be younger, better educated, and farmed more acres than those who were not familiar or somewhat familiar with the term (see Table 1). Those who were not familiar with sustainable agriculture were more likely to have annual sales less than \$50,000.

A follow-up to this question asked farmers what sustainable agriculture meant to them. Almost a third (31 percent) offered no answer and another 16 percent said they did not know. Land preservation was the most frequently given answer (15 percent), followed by reduced inputs (13 percent). No other response was given by more than 10 percent of the respondents. Profitability was listed as a component of sustainability by just 6 percent of the respondents.

Change in sustainability since the 1980s

The survey respondents were asked how they perceived the change in the sustainability of Iowa agriculture since the 1980s. Almost half of the respondents (46 percent) felt that Iowa agriculture was more sustainable, whereas almost a third (31 percent) felt that it was less sustainable. Ten percent saw no change, and the remaining seven percent were uncertain.

There was very little difference in demographic characteristics between those who felt that Iowa agriculture was more or less sustainable than in the 1980s (see Table 2). However, those who were uncertain about the sustainability of Iowa agriculture tended to be younger, with less education, and had smaller farms.

Farmers also were asked their reasoning for the response they gave regarding changes since the 1980s. Almost a third (31 percent) of the respondents either gave no answer or said they didn't know why they felt as they did.

Twenty-six percent of the farmers who said Iowa agri-

culture was more sustainable cited the increase in no-till farming, and another 17 percent identified reduced erosion. Improved farming practices in general were cited by 10 percent of those who felt Iowa agriculture was more sustainable. Better education was responsible for increased sustainability, according to another 10 percent.

Among farmers who felt Iowa agriculture was less sustainable today than in the 1980s, lower profits was the most frequent reason cited (18 percent), followed by bigger farms (16 percent), and increased use of chemicals (11 percent). No other reason was cited by more than 10 percent of the respondents.

It is interesting to note that some of those who felt that Iowa agriculture was more sustainable and those who felt it was less sustainable gave the same reason for their opinions. Profitability, diversity and government programs were

About the survey

When: August 1998

Interviewers: Iowa Agricultural Statistics Service

Response: 1,036 useable surveys (some did not answer all questions posed)

***Average age:** 54.7 years

***Average education:** 13 years

Average farm size: 426 acres (66 percent listed farming as principal occupation)

****Farms by category:** Non-commercial (sales less than \$50,000), 41 percent; small commercial (sales between \$50,000 and \$250,000), 46 percent; and large commercial (sales greater than \$250,000), 12 percent.

Questions about sustainable agriculture

(tables compare demographic characteristics based on responses to these questions):

1. How familiar are you with the term sustainable agriculture?
2. Since the 1980s do you think Iowa agriculture has become more or less sustainable?
3. How important is it for Iowa to adopt more sustainable methods?

*Similar to the 1997 Census of Agriculture in Iowa. The Census defines a farm as any place that sold or normally would have sold \$1,000 worth of agricultural products in a year.

**Using the same categories, the 1997 Census found 50 percent, 36 percent and 14 percent, respectively.

factors noted by both groups. In addition, more chemical use was cited by 11 percent of those who felt Iowa agriculture was less sustainable, and yet 7 percent of those who felt Iowa agriculture was more sustainable cited less chemical use.

Importance of adopting sustainable methods

Survey respondents were asked how important it was for Iowa to adopt more sustainable farming methods. Four percent of the respondents said that it was not important. More than a third (34 percent) said it was somewhat important, and 62 percent said that it was very important for Iowa to adopt more sustainable methods.

Table 3 shows that those who did not feel it was important tended to be younger, had less formal education, and farmed more acres. They also had a higher sales volume and a greater tendency to identify farming as their principal occupation.

Most serious environmental issue

When asked, "In your opinion, what is the single, most important environmental issue facing Iowa today?" almost one-third (31 percent) of the respondents identified water pollution. Pollution in general was the response of another 7 percent of the respondents and air pollution was specifically cited by 1 percent.

Large hog production units were identified by 21 percent of the respondents as the single biggest environmental issue. Ten percent of the respondents cited agricultural chemicals,



9 percent manure, and another 9 percent cited erosion as the greatest environmental challenge facing Iowa today.

Critical issues

Based on the initial analysis of survey data, some of the key issues for farmers are the very ones that the Leopold Center and other proponents of sustainable agriculture struggle with in terms of future programs. Pollution, especially water pollution, continues to be a major concern for Iowa farmers. New ways to prevent pollution or more familiarity with existing control methods need to be developed and presented to the farmers.

Yet only 12 percent of the survey respondents said that they were very familiar with the term sustainable agriculture and the descriptive terms regarding the meaning of sustainable agriculture. Almost half of those surveyed (47 percent) either didn't respond when asked what sustainable agriculture meant to them, or they said they didn't know.

Profitability, protecting the environment, and support of rural communities are the three traditionally accepted components of sustainable agriculture. Only a handful of the respondents were aware of more than one aspect to the definition of sustainable agriculture. The environmental aspects were the most frequently mentioned in the meaning of sustainable agriculture, and only 6 percent of the respondents identified profitability as a component.

This suggests that we need to a better job of defining sustainable agriculture and its relevance to the farming community. Those who expressed more familiarity with sustainable agriculture tended to be younger, were better educated, and operated larger farms.

The current financial situation in Iowa agriculture and the debacle in the hog and cattle industries have created an opportune moment to get people thinking about options and alternatives to conventional farming practices. It is unrealistic to think that all farmers will someday embrace sustainable agriculture. However, the more we can encourage people to think about it, and the more we can help them to appreciate what it means, the more likely it is that we will move towards a truly sustainable agriculture for all Iowans.

Table 1: How familiar are you with the term "sustainable agriculture"?

	Age	Education	Years Farming	Acres Farmed	% Fulltime Farmers*
NOT	56.1	12.2	31	375	63
SOMEWHAT	53.5	13.1	30	476	68
VERY	52.9	13.6	28	538	58

Table 2: Is Iowa more or less sustainable than it was 10 years ago?

	Age	Education	Years Farming	Acres Farmed	% Fulltime Farmers*
MORE	53.5	12.9	29	485	67
LESS	53.2	13.0	30	408	64
SAME	55.8	13.6	31	576	60
UNCERTAIN	52.8	12.7	30	360	64

Table 3: How important is it for Iowa to adopt sustainable methods?

	Age	Education	Years Farming	Acres Farmed	% Fulltime Farmers*
NOT	53.7	11.6	28	565	76
SOMEWHAT	53.9	12.8	30	513	71
VERY	54.9	12.9	30	397	62

* Respondents who indicated farming was their principal occupation.

Earth-friendly pork: A niche market waiting to happen

By E. Anne Larson,
Communications specialist

Good news—and possibly a new market—await Iowa pork producers who have the know-how and inclination to produce pork in environmentally friendly ways.

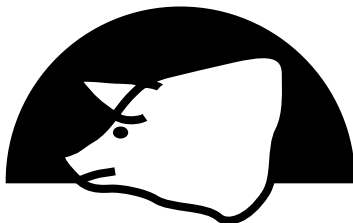
Recently completed research funded by the Leopold Center suggests that one way to add value to pork production is to capitalize on meat produced in ways that benefit the environment. Work done by ISU economics professor James Kliebenstein and graduate student Sean Hurley suggest that consumers may be willing to pay nearly \$1 more for a package of pork chops produced under a system that improves air, groundwater and surface water quality.

What's more encouraging is that participants in the willingness-to-pay research experiment came from diverse markets: Iowa Falls and Ames in Iowa; Raleigh, North Carolina, and Corvallis, Oregon. In each of these areas, 62 percent of the randomly selected participants would pay a premium for pork raised in a system that offered

FOOTPRINTS

“When I started farming 23 years ago we didn't use the most powerful chemicals on the market, we didn't flood the land with fertilizer, and we still made a good living. I felt that I was in control of my operation. Our gross revenue to expense ratio was 3 to 1. Today, we are on the cutting edge, using GMOs, changing crop varieties almost yearly, using chemicals as if we farmed in Europe, and our revenue to expense ratio has dropped to 1.25 to 1, on a good year, just enough to pay the grocery bill. The one bright spot is that we know a year will come with good yields and good prices, and for awhile we can forget our problems.” — *Lloyd Fear, a Manitoba farmer and correspondent for @g World Wide, a feature of Successful Farming magazine's electronic newsletter <<http://agriculture.com>>*

maximum environmental benefits. Those systems were described as operations with an 80 to 90 percent reduction in odor, and 40 to 50 percent reductions in potential groundwater and surface water contamination.



The researchers surmise that “as the [pork] industry develops methods that help sustain or improve the environment, there is a segment of society that will support a market for such products.”

Prior to developing their research methods, Kliebenstein and Hurley met with pork production groups, animal scientists and agricultural engineers to develop realistic scenarios of various pork production methods and their effects on the environment. The economists then conducted a conventional attitudinal survey and a sealed-bid auction process in which randomly selected consumers used real money and real products to determine their willingness to pay for goods. During four different rounds of bidding, the experiment participants began with no information other than the appearance of the packages, to increasing information about the various systems under which the pork loin chops were produced.

In the final round of bidding for the two-pound packages, bids ranged from \$3.61 for a package with no

environmental attributes connected to it, to \$5.13 for the package with three environmental attributes. The study also found a steady increase in the premium participants were willing to pay as more attributes were attached, rising 12 to 16 percent for odor and groundwater benefits, to a 37 percent increase for the triple-attribute package. Single-attribute packages had a slightly higher average bid than the typical “no attribute” package.

Interestingly, more than 90 percent of the auction participants said they would buy a meat product that had environmental attributes specified on the label. This appears to mesh with recent research in the United Kingdom showing that there are premiums paid by consumers for “free range” pork. What's next for the economists' study? “We plan to conduct an in-store study to show actual consumer behavior in purchasing actual pork products with these environmental attributes,” says Kliebenstein. “The limited number of in-store studies tend to show that premiums paid in in-store studies are about half as much as in auction experiments.”

Regardless, the research shows promise for niche market development for producers who use environmentally friendly systems, and perhaps offers some incentive for Iowa pork producers to adopt such systems.

Further information about the research is available by contacting Kliebenstein at <jklieben@iastate.edu> or (515) 294-7111, or Hurley at <shurley@iastate.edu>, or (515) 294-8891.

Hoops on video

A 40-minute video produced by the Center for Rural Affairs features research that was funded by the Leopold Center about the economics of raising hogs in hooped structures. “Pork, the Other Producers: A Better Way to Raise Hogs” shows ISU researcher Mark Honeyman and Dave Struthers, a pork producer

from Collins who uses hoops. The video also looks at changes in the pork industry and ways that independent family farmers can compete. The video is available for \$10 (which includes shipping) from the Center for Rural Affairs, P.O. Box 406, Walthill, NE 68067.

NEWS & NOTES

Leopold Advisory Board member **Sally Puttmann** was featured in the December 1998 newsletter of Ag Connect, a nonprofit corporation that helps build new family farm operations in Iowa. Puttmann of Kingsley was interviewed about a long-time business partnership with a younger farmer. Puttmann also is profiled in Dan Looker's book, *Farmers for the Future*, and a front-page story in the February 6 issue of *Iowa Farmer Today*.

* * *

Kamyar Enshayan, a University of Northern Iowa professor working on a community food systems project funded by the Center, has helped two institutions and a restaurant buy more food from local producers. In 1998, he worked with UNI, which spent 11 percent of its June-to-October produce budget on locally grown produce, and Allen Memorial Hospital in Waterloo, which bought 22 percent of its fresh produce locally from June to December. Rudy's Tacos, a Waterloo restaurant, increased its total local and regionally grown and processed purchases from 37 to 47 percent. Enshayan's work was featured in the Fall 1998 newsletter of the Ohio Ecological Food and Farm Association.

* * *

The **Leopold Center** won first place for its 1997-98 Annual Report in the Region III Best of NAMA contest sponsored by the National Agri-Marketing Association, and will now go to national competition. The report, which was printed on recycled paper cut in the shape of the Leopold logo, was written and managed by Center editor **Mary Adams** and designed by Juls Design, Ankeny. NAMA is an organization of marketing public relations professionals who promote agriculture at both state and national levels. The regional competition had more than 400 entries in 70 categories.

FROM THE FIELD: Steve Weis

Photo courtesy Practical Farmers of Iowa



Steve Weis (left) shared his experiences during a 1997 field day, and was a panelist at the 1999 Swine System Options conference.

"It's a lot harder to raise hogs now than it was 22 years ago. But you wouldn't know that from what you read. The magazines all tell you it's as simple as feeding your animals a certain antibiotic. I'm trying to get things back to a more natural environment, which I think reduces stress."

Sustainable ag broadens his options

Bigger may not be better, Osage farmer Steve Weis realizes after 22 years. Weis joined the family farm operation in northern Iowa after he received his animal science degree from Iowa State University in 1977. The Weis family is still in business, and their 1,000-acre operation includes a mixture of grain and livestock. Although some pigs are raised in traditional confinement buildings, they also use open-air lots, open-front buildings, and three hooped structures with deep bedding.

"Always choosing the conventional low-margin, high-input option is something we'll be battling forever in agriculture," Weis says. "My family's having a real struggle with some of these issues right now. Five or six years ago I began to have big misgivings about always taking the high-tech approach and I've really tried to change directions to be more sustainable."

In 1997, he received a producer grant from the USDA's Sustainable Agriculture Research and Education program to compare hoops with conventional systems. He found that hoops are cheaper to build, but hogs raised in them require some extra time to manage.

Other changes in his operation are toward alternative veterinary medicine. A local elevator prepares feed without antibiotics. Animals are given antibiotics only when they are sick and vaccinations are kept to a minimum, too, in favor of kelp, probiotics and other nutritional additives. Weis attributes his pigs' comparable growth to lower levels of stress, which also relates to the environment inside the hooped buildings.


He said he would like to turn some land into grazing or pasture-farrowing, and possibly raise organic crops someday. "We've had this mindset about row-crops for so many years, and that bigger is better, but there are other options," he says.


* * *


Moving cattle to fresh pasture every day earned accolades for **Dave Lubben** of Monticello in the recent edition of *The Furrow* published by the Deere Corporation. Lubben recently retired as *ex officio* member of the

Leopold Center Advisory Board representing Practical Farmers of Iowa. He said the practice, known as management-intensive grazing, resulted in more family time when his wife and children helped with the 20-minute daily chore.


CALENDAR OF EVENTS


March 9—Chariton Valley Beef Workshop, 16 sites over the ICN. Contact: Joe Sellers, ISU Extension, (515) 774-2016. 

March 10—Forage Management and Grazing Systems Workshop, Peosta (Northeast Iowa Community College). Contact: Brian Lang, ISU Extension, (319) 382-2949. 


March 16—Designing and Evaluating Grazing Research Symposium, Des Moines. Contact: Jim Russell, (515) 294-4631. 

March 22—Moving Up the Food Chain: Unique Marketing Ideas and Niche Options for Added Pork Profits!, Dordt College, Sioux Center. Contact: Dave Stender, ISU Extension, (712) 225-6196.

March 30, 7 p.m.—Sustainable and Community-Based Seminar with Marc Abelman (farmer, photographer and author of *From the Good Earth*), University of Northern Iowa, Cedar Falls. Contact: Kay Theusen, UNI Museums, (319) 273-2188. 


March 30, June 22 and July 30—Wallace Area Forage Management Course, Lauren Christian Farm, Lewis. Contact: Carroll Olsen, ISU Extension, (712) 769-2600. 

June 17—Expo '99: Creating a Thriving Iowa Agriculture, Scheman Continuing Education Building, Ames. Contact: Ann Schultz, Vision 2020, (515) 294-2496.

July (date TBA)—Water Management Community Forum (Des Moines and Racoon River Watersheds), Des Moines. Contact: Roger Wolf, (515) 226-6236. 

October 5-7—Building on Leopold's Legacy: Conservation for a New Century, Madison, Wis. Contact: Michael Strigel, Wisconsin Academy of Sciences, Arts and Letters, (608) 263-1692.

October 27—On-farm Composting Workshop, Crowne Plaza Hotel and Bluestem Composting Facility, Cedar Rapids. Contact: Garth Frable, Iowa Recycling Association, (515) 265-1596. 

 Events marked with this logo are co-sponsored by the Leopold Center.



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