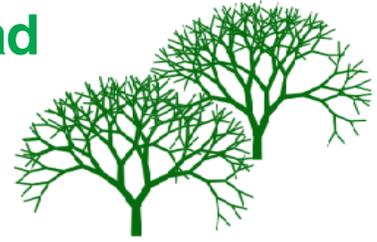


Meeting the challenges ahead

Science is often misrepresented as the body of knowledge acquired by performing replicated controlled experiments in the laboratory.

Actually, science is something much broader: the acquisition of reliable knowledge about the world. — Jared Diamond



Earlier this semester Wendy Van Dyke, a student in ISU's sustainable agriculture graduate program, presented the results of a study in which she surveyed a cross section of Iowa farmers to find out what they thought about trees on their farms. As might be expected, opinions ranged from farmers who thought trees were very beneficial to farmers who saw them simply as "big weeds." One farmer's comment caught my attention: "Here I am on a century farm," he wrote, "working myself to death and still going broke, and you want to know about trees?"

At the same time that I was reading Wendy's study I was working my way through Jared Diamond's new book, *Collapse: How Societies Choose to Fail or Succeed*. He follows up on a theme developed in his Pulitzer Prize-winning *Guns, Germs, and Steel*, in which he identified reasons why some of the past civilizations failed while others succeeded. His new work explores the failures more fully, concluding that many of the collapses were "self-inflicted ecological suicides."

The demise of Easter Island in the Pacific especially captured Diamond's attention because it serves as a powerful metaphor for our own situation on planet Earth. Easter Island was isolated in the Pacific Ocean just as we are isolated in our universe. After Easter Islanders cut down all of their trees – the source of their ecological health, including the fertility of their soil – they had no place to go, and 70 to 90 percent of the population died.

Diamond raises an interesting question as the drama of the Easter Island extinction played out.

*What did the Easter Islander
who cut down the last palm tree*

say? Did he shout, "What about jobs? Do you care more for trees than for people?" . . . Or maybe he said, "You predict environmental disaster, but your environmental models are untested. We need more research." Or, perhaps his words were, "Never fear, technology will solve our problems somehow. We will find substitutes for wood."

Diamond suspects that Easter Islanders were not stupid or imprudent. They probably followed a logical sequence of decision points, just as we do. We often

- fail to *anticipate* a problem because we have no relevant experience with it,
- fail to *see* a problem once it arrives (we can't see salinization or global warming),
- fail to *try* and solve a problem because of clashes of interest, and
- fail to address a problem because it is *deemed too difficult* to solve, given the available technology.

Given the challenges that farmers face today, it is easy to see why we may follow similar decision sequences.

Fossil fuels (the principal driver of modern industrial agriculture) are being depleted and the shortages will likely drive up prices sharply for almost everything used on farms: fertilizer, pesticides, irrigation, farm equipment and diesel fuel. These cost increases confront farmers at a time when net farm income is already lower than it was in 1929 even with government subsidies.

Climate change may bring more unstable weather conditions and more violent storms, further exacerbating the problem of soil erosion and nutrient run-off. The loss of biodiversity – partly a legacy of modern industrial agriculture – leaves us with a more brittle ecology that will not withstand further degradation, nor readily rebound from further ecological damage.

To address our current problems, Diamond argues against short-term survival strategies and reductionist research that simply develops new technologies for the current system. He advocates for broader "acquisition of reliable knowledge about the world" and our place in it. He says: "Today we are running a worldwide natural experiment. If we don't run it well, then all the world is going to end up in the situation of Easter Island."

I would say that we *do* need to know about trees – and grass, soil microorganisms and the other complex, interdependent life in a healthy biotic community. Specifically, we need the knowledge that will help us:

- **Develop farming systems that use less energy** than any systems developed to date. From an energy efficiency perspective, there are no alternative energy supplies available that can match what we had during the heady days of cheap fossil fuels. Thus, post-modern farms must be able to recycle wastes, use natural synergies, and produce on-farm energy.
- **Restore ecological systems.** Our natural ecological capital is now so eroded that we cannot maintain sustainable productivity in a post-fossil fuel era without significantly improving the quality of our soil and water, and the self-renewing capacity of the entire biotic community (a concept already stressed by Aldo Leopold in the 1940s). Self-renewing systems will likely include more perennial polycultures and take advantage of nature's inherent regenerative synergies.
- **Redesign many of our food and farming enterprises** to serve regional rather than global food systems. In a post-fossil fuel era, foods

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Grants fund training programs

GRANTS

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In eastern Iowa, the Limestone Bluffs Resource Conservation and Development (RC&D) Area will use a grant to help grape growers and wineries create the state's first grape-growing region, or American Viticultural Area (AVA). The grant will be used to collect information for the AVA application process and to create a "wine trail" in cooperation with the Iowa Department of Economic Development Tourism Office.

In addition to documenting the impacts of food sales, the new round of marketing grants is targeted to help farmers acquire the skills and training they need to compete in these markets.

Indian Hills Community College in Centerville will receive a two-year grant for its new Land-Based Business/Entrepreneurship program, designed to help revitalize the area's rural economy by increasing opportunities for landowners and developing regional marketing strategies for locally produced foods. Other grants to the University of Northern Iowa in Cedar Falls and the Iowa Small Business Development Center in Urbandale will be used to offer workshops and seminars for farmers and others interested in niche markets. Another project will look at contracts to expand produce marketing opportunities for farmers.

Three grants to the Iowa State University College of Business target the development of new markets for producers. One study will look at how consumers value "organic beef" and "pasture-raised beef" relative to other characteristics such as taste and appearance. A second research project will look at the effects of producer size, environmental positioning and social positioning on restaurants and grocery retailers. A third project will measure the relevant costs of production in niche markets.

No time to waste

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produced closer to home will have a competitive advantage over foods transported thousands of miles. Existing models suggest that regionalized food systems need not deprive us of a rich variety, quality or taste. The planet may no longer afford us the luxury of eating kiwi fruit from New Zealand in January, but it can indefinitely provide us with an array of locally grown foods, even for winter months.

Making these changes will be a challenge, but America's competitive advantage has always been in its inventiveness. If we focus our science, imagination and social expertise on creating this new future, our food and farming enterprises not only will survive but also thrive for thousands of years without fossil fuels and without further degrading our ecological resources.

We have no time to waste. Many of us used to think that we had another 25 years or so to design new food and farming systems. But if oil surges to \$60 a barrel this summer (as reported in *USA Today* March 5, 2005) and to \$90 a barrel before the end of 2006, as some industry experts now predict, then we need to concentrate a significant portion of our research on new systems that work for farmers and the planet in a post-fossil fuel, climate-challenged era.

The fact that experienced Iowa farmers are working hard and still having trouble making ends meet should put this research at the top of the agenda.



Quotes are from Diamond's book, *Collapse*, and from his Chafee Memorial Lecture presented at the University of California, January, 2004.

2005 Marketing Initiative Competitive Grants

- **The role of collaborative Community Supported Agriculture:** A community, state and regional study, \$13,429, 1 year, North Central Regional Center for Rural Development, ISU
- **Taste of place:** Place-based foods in Iowa, \$25,000, 1 year, Iowa Arts Council, Des Moines
- **Sustainable agriculture marketing, entrepreneurship and business planning skills,** \$22,750 for each of 2 years, Indian Hills Community College, Centerville
- **Pilot project to identify and measure the relevant costs of production for sustainable agricultural products,** \$16,000 over 2 years, ISU College of Business Department of Accounting
- **Small and midsize Iowa farmer training program:** Marketing entrepreneurship and business planning skills, \$26,000, 1 year, Strategic Marketing Services and Management and Professional Development Center, UNI
- **Reputational and environmental positioning as sources of competitive advantage for sustainable agricultural producers:** Retailer-level effects, \$24,500, 1 year, ISU College of Business Department of Marketing
- **Community economic impact assessment for a multi-county local food system in northeast Iowa,** \$24,450 for each of 2 years, Center for Energy and Environmental Education, UNI
- **Southwest Iowa institutional foods survey and producer training program,** \$18,500 over 2 years, ISU Extension, Malvern
- **Southwest Iowa Entrepreneurial Center:** An achievable product-to-market business model for small/niche ag producers, \$21,742, 1 year, ISU Extension, Corning
- **Development of a regional wine culture in Iowa,** \$14,950 over 2 years, Limestone Bluffs RC&D, Maquoketa
- **Economic viability of local food marketing for restaurant operations and growers/producers in Iowa,** \$39,672 over 2 years, ISU Hotel, Restaurant and Institution Management Program
- **Using contracts to expand produce market opportunities,** \$39,072 over 2 years, ISU Hotel, Restaurant and Institution Management Program
- **Growing Your Small Market Farm Business planning program,** \$19,600 for each of 2 years, Iowa Small Business Development Center, Urbandale
- **Development of resources for organic food processors in the state of Iowa,** \$24,400, 1 year, ISU Department of Food Science and Human Nutrition
- **A proposal to use the conjoint market analysis tool to examine the factors that influence consumer attitudes toward beef products,** \$34,399, 1 year, ISU College of Business Departments of Management Information Systems and Finance and ISU Department of Animal Science
- **Developing an integrated research and outreach program for niche pork production,** \$25,000, 1 year, Practical Farmers of Iowa, Ames
- **Market Maker for Iowa,** \$25,000, 1 year, ISU Extension Value-Added Agriculture Program
- **Organic, natural and grass-fed beef:** Profitability and constraints to production in the midwestern United States, \$31,850, 1 year, ISU Value-Added Agriculture Program and Iowa Beef Center, ISU
- **Assessing the market potential for goat meat among recent immigrants to Siouxland,** \$8,727 over 2 years, ISU Department of Sociology

ON THE WEB: www.leopold.iastate.edu/research/marketing_files/2005grants.htm.