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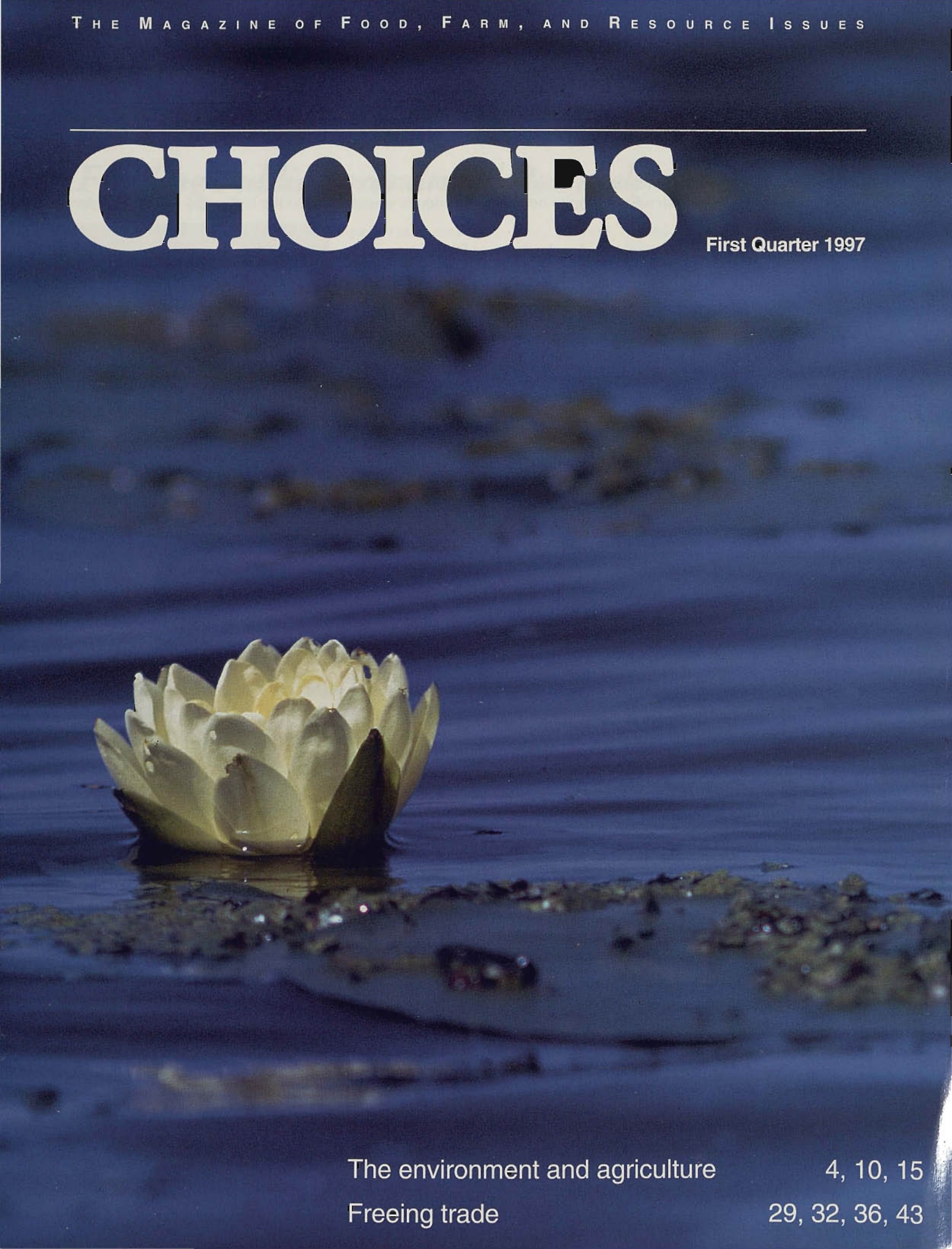
THE MAGAZINE OF FOOD, FARM, AND RESOURCE ISSUES

CHOICES

First Quarter 1997



Findings

What agricultural and resource economists are finding about food, farm, and resource issues.*

- Eliminating the Export Enhancement Program (EEP) of the U.S. and export restitution payments of the EU would not greatly affect their wheat exports nor markedly reduce wheat prices in the U.S.—say Makki, Tweeten, and Miranda.

- Even though the former Soviet Union may be moving toward self-sufficiency in wheat production, over the next several years weather will likely cause that important wheat producer and consumer to be a net exporter in some years and a net importer in others—say Jones, Li, Devadoss, and Fedane.

- Consumer demand for fresh pork chops is more accurately reflected in information from tasting the chop than from photographs or visual inspection—say Melton, Huffman, Shogren, and Fox.

- Because of their bargaining power, retailers/buyers of California's iceberg lettuce receive most of the benefits from swings in lettuce harvest, while producers face relatively low lettuce prices and increased price volatility—say Sexton and Zhang.

- Reductions in price supports for milk will benefit consumers and taxpayers, but even larger benefits may occur from improvements in the environment as farmers shift out of milk production and into forestry on marginal agricultural land such as that found in parts of Wisconsin—says Plantinga.

- Nitrate runoff from irrigated lettuce production in the Salinas Valley of California can be reduced more efficiently by a tax on water than by a tax on nitrogen—say Larson, Helfand, and House.

- Oregon's Measure 5, a limit on property taxes, will increase state output and incomes, at least in the short run, but this growth will not provide enough new taxes to offset property tax losses—say Waters, Holland, and Weber.

- Eliminating toxic contamination from New York's freshwater fish would benefit New York residents, on average, by up to an estimated $63 per year, an amount summing to scores of millions of dollars—say Montgomery and Needelman.

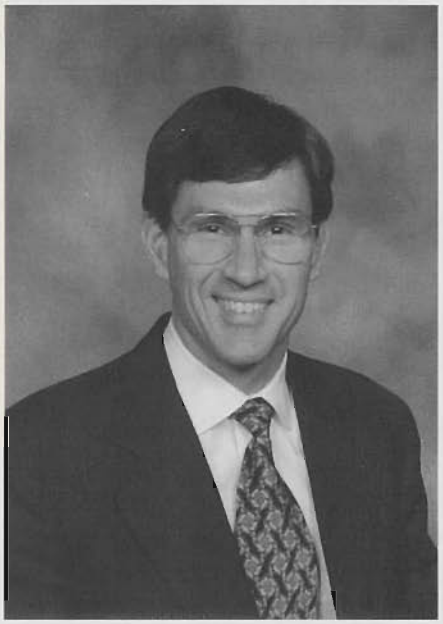
- To protect an additional 5 percent of the world's tropical forests, U.S. residents would be willing to pay a one-time fee of $21–$31 per household, and most residents favor cost sharing by industrialized countries to protect remaining rain forests—say Kramer and Mercer.

*Findings are taken from recently or soon-to-be published research in the *American Journal of Agricultural Economics, Journal of Agricultural and Resource Economics, Review of Agricultural Economics, Journal of Agricultural Economics Research, Journal of Agricultural and Applied Economics, Agricultural and Resource Economics Review, Land Economics, Journal of Environmental Economics and Management, Agribusiness—An International Journal,* and other journals that publish the research findings of agricultural and resource economists. Abbreviated citations are found on page 14.

ON OUR COVER—The cover photo of a wild water lily was taken by photographer Carl Kurtz who often focuses his camera on the prairies, wetlands, and wildlife of Iowa. Several authors in this issue focus their attention on resolving agricultural and environmental conflicts.

by Wallace Huffman ■ **Guest Editorial**

Funding Public Agricultural Research



Wallace Huffman is professor of economics at Iowa State University and author of various publications on funding and the impacts of public agricultural research.

The United States has developed a very successful R&D system for agriculture. It is a system of shared cost and performance. The federal government provides about 24 percent of all agricultural research funds, while state governments provide 16 percent and the private sector assumes the remaining 60 percent. In contrast, federal agencies actually perform about 15 percent of the research, compared to 31 percent carried out by state agencies and 54 percent conducted by private businesses. Thus, the federal government and private sector transfer, on net, funds to state institutions for performing agricultural research.

Public expenditures on R&D are justified by the existence of large social (collective) benefits relative to private (one individual or company) benefits. The U.S. Department of Agriculture (USDA), with its Agricultural Research Service and Economic Research Service, performs most of the federal government's in-house agricultural research, and the State Agricultural Experiment Stations (SAES)–vet med schools conduct most state agricultural research. The in-house USDA research is all federally funded, and its justification hinges on conducting research that benefits the nation and requires specialized resources. The SAES–vet med schools have federal, state, and private funding for research. Both the federal and private components have been receiving considerable attention.

For federal funding of state-level agricultural research, a tension exists between "formula" and "competitive grant" funding. Formula funding of state agricultural research, where states share federal funds based on a legislated rule, originated in the politics needed to pass the original (1887) and amended Hatch Act legislation. However, to obtain formula funds, states must at least match the federal formula funds with other research funds. Thus, if a state accepts federal formula funds for SAES research, it agrees to spend at least twice the formula amount on agricultural research. This has been a strong inducement for states to help support agricultural research. The research agenda is set by SAES directors whose primary clientele reside in their respective states. With formula funding, the federal government has no real input into the choice of research projects undertaken by SAES scientists.

Although the USDA's competitive grant program started in 1977, it expanded significantly during the late 1980s and early 1990s. With this program, the research agenda is set at the national level. Scientists across a broad range of institutions compete for these funds. The proposals rated highest by a peer review panel are awarded the research funds. Significant research sources are invested in proposal preparation and evaluation, and these come from other resources, for example, "uncommitted" federal formula or state government research funds. Additional transactions costs are imposed when grant awards do not cover the resource cost of completing a "funded" project. Some state directors and research administrators favor and others disapprove of the direction set by federal competitive funds and the leveraging which these funds often require.

Clearly, federal formula and competitive grants programs contain dramatically different economic incentives for research at the state level. Research discoveries are uncertain and a diversity of incentives and approaches generally leads to better social outcomes. This is an argument for finding the proper balance of research topics and funding mechanisms and seems to require further examination of the issues.

Private sector investments in R&D are affected by the type and strength of intellectual property rights (IPRs) to innovations. The strengthening of IPRs to biological materials over the past twenty-six years stimulated the rapid growth of private R&D for agriculture. The private sector allocates about 10 percent of its R&D funds to SAES–vet med school research. It primarily supports R&D leading to marketable products and processes. Public performance of research with private sector funds raises conflicts of interest. Private firms want exclusive rights to innovations. The private interests may also redirect public resources to the pursuit of private interests and greatly change the composition of innovations produced. State and federal taxpayers may find these terms unsatisfactory. Hence, much is at stake as state institutions seek funding for and manage their agricultural research activity.

Wallace Huffman

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A graduate research assistant in the Department of Agricultural and Resource Economics at Colorado State University, **Jennie S. Hughes** began her career eight years ago in Togo, West Africa. There she developed small agricultural projects to balance economic and environmental objectives. Her research interests now include the sustainability of U.S. soil conservation policy and the economics of the Hidrovia project.

Paul C. Huszar is a professor of agricultural and resource economics at Colorado State University. He was part of the Wetlands for the Americas team which criticized the initial Hidrovia feasibility study and raised serious environmental issues regarding its construction and operation.

Dennis Avery is director of the Center for Global Food issues, a project of the Hudson Institute in Indianapolis. He served nine years as the only agricultural analyst in the U.S. Department of State. Avery has published a book and speaks internationally on agriculture and the environment.

Fred Hitzhusen is professor of resource economics and is on the graduate faculty of Environmental Sciences at The Ohio State University. His primary research and public service activities at OSU involve the economics of renewable energy, sustainable agriculture with emphasis on off-site soil sediment and water quality costs, recycling FGD wastes from electric power plants, and the delivery and financing of nonmetropolitan or rural government services.

Craig B. Davis is a professor of natural resources, environmental science, and plant biology at The Ohio State University. His recent research has involved wetlands ecology and management, and environmental security issues. He was co-chair of the U.S.-Russian Agreement on Cooperation on Nature Protection, and is secretary general of the International Society for Environmental Education.

A professor of agricultural and resource economics at the University of Arizona, **Paul Wilson** teaches and conducts research in agribusiness economics. One of his innovative new classes will analyze the political economy of private sector and public interests in environmental conflicts.

Gary Thompson is associate professor of agricultural and resource economics at the University of Arizona. He teaches production economics and operations research to undergraduate and graduate students. His research focuses on the economics of highly perishable crops such as fresh vegetables in the western United States and Mexico, cut flowers and french beans in Kenya, and organic produce.

Since 1985, **Roberta Cook** has been the extension marketing economist in the Department of Agricultural Economics at the University of California, Davis. She conducts an applied research and industry outreach program focusing on the marketing and international trade of fresh fruits and vegetables.

Azzeddine Azzam is a professor of agricultural economics at the University of Nebraska, Lincoln. His studies of market power

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The American Agricultural Economics Association
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Editor
Harry W. Ayer, PhD
Department of Agricultural and Resource Economics
University of Arizona
Tucson, AZ 85721

Managing editor
Sandra Clarke
1110 Buckeye Avenue
Ames, IA 50010-8063

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King Graphics
Grand Junction, Iowa

Printer
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Center spread design
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in the meat packing industry are well-known, and are summarized in his most recent publication, *Assessing Competition in Meatpacking: Economic History, Theory, and Evidence.*

John Schroeter is an associate professor of economics at Iowa State University. Recently, he participated in a series of empirical studies of the meat packing industry, many of them done collaboratively with Azzam. Schroeter teaches both undergraduate and graduate classes, and has taught introductory microeconomics to nearly 1,400 ISU students over the past ten years.

Seamus J. Sheehy is a professor of agricultural economics at the University College Dublin, where he was hired in 1964 as their first agricultural economist. His particular interests are agricultural policy and Third World development. In general, his research at UCD has addressed the practical problems arising in Irish Agriculture, which have, to a great extent, been conditioned by the Common Agricultural Policy of the European Union.

William T. Coyle has been with the Economic Research Service, USDA, since 1977. He is currently heading up the USDA's Asia Initiative to develop and administer a program of work on prospects and impediments to agricultural trade in Asia.

A member of the Washington State University agricultural economics faculty, **Desmond O'Rourke** is a founder and the director of the IMPACT (International Marketing Program for Agricultural Commodities and Trade) Center, which systematically explores international marketing opportunities for Pacific Northwest agricultural products.

Professor and Eminent Scholar **Andrew Schmitz** holds the Ben Hill Griffin III Endowed Chair in the Department of Food and Resource Economics at the University of Florida. Schmitz has served as a consultant to many public and private organizations, including the U.S. Department of Agriculture, the Environmental Protection Agency,and the U.S. Agency for International Development.

W.H. Furtan is professor of agricultural economics at the University of Saskatchewan. He teaches agricultural policy and does research in the areas of farm policy, agriculture trade, and technological change.

Harvey Brooks is the cooperative chair of agricultural marketing and business in the Department of Rural Economy at the University of Alberta. Brooks has extensive experience in grain marketing in Canada and world trade in grains, having previously worked at the Canadian Wheat Board in a variety of positions, most recently as head of the Corporate Policy Group.

Richard Gray is associate professor of agricultural economics at the University of Saskatchewan, currently on sabbatical leave at Montana State University. His research has examined many contemporary trade and policy issues. In addition to five years of experience with the Saskatchewan Department of Agriculture as a grain market analyst, he operated the family grain farm at Indian Head, Saskatchewan, for ten years.