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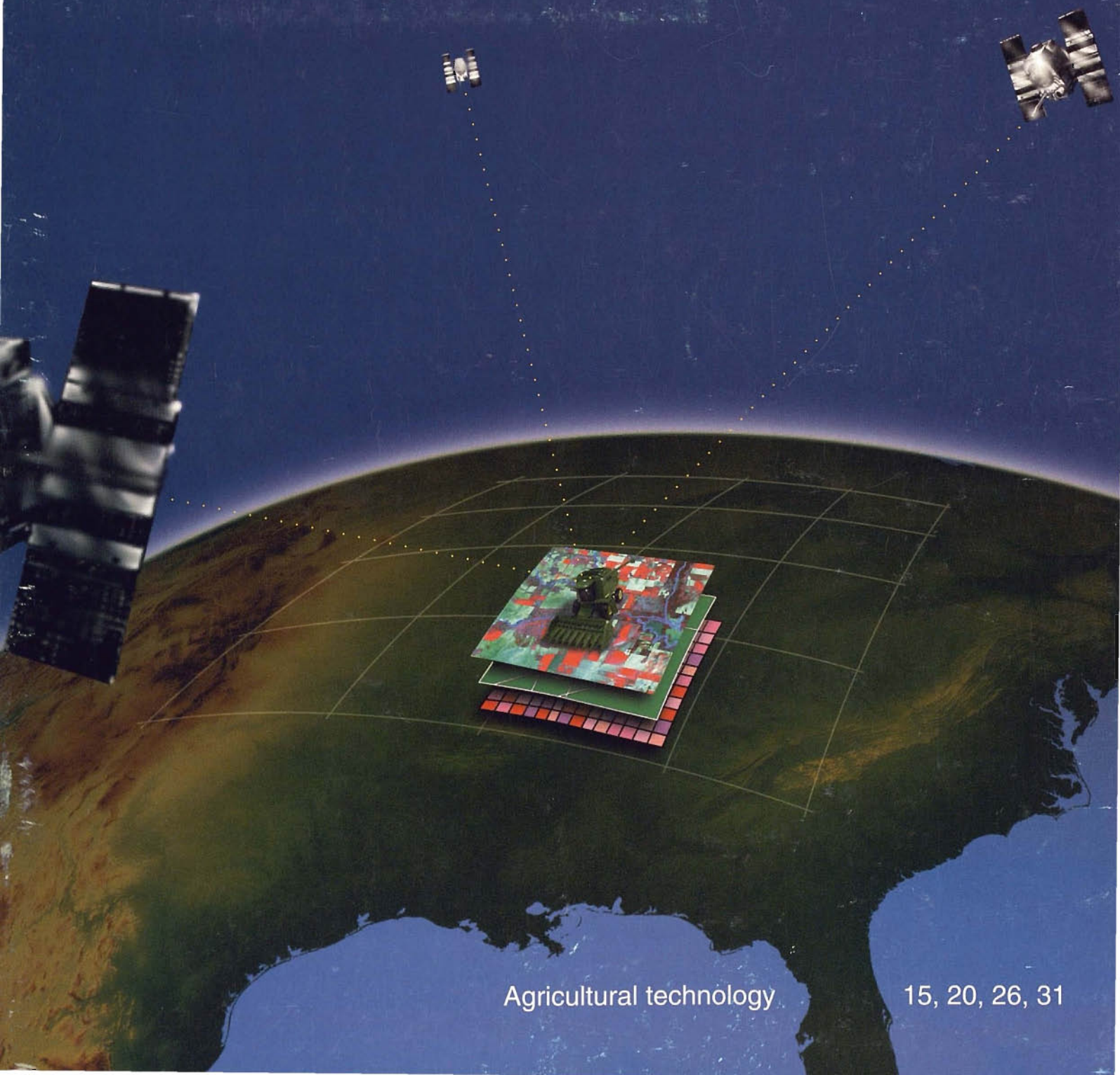
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# CHOICES

Third Quarter 1997



Agricultural technology

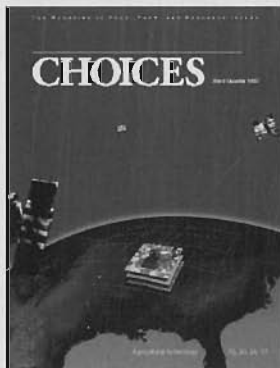
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## Findings

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

- Health information for poultry affects its consumption relatively more than its price or the price of competing meats, while generic advertising exhibits more modest and uncertain effects on meat consumption—say Kinnucan, Xiao, Hsia, and Jackson.
- Voluntary, grass roots groups of farm, ranch, environmental, and other interests can help reduce environmental problems associated with agriculture, sometimes even more effectively than top-down government regulation and tax policy—says Ayer.
- Creating new rights in our public lands, rights which can be sold and transferred to other public land users, will increase the welfare derived from those lands—says Gardner.
- Although incentive payments, such as those through the USDA's WQIP program, increase the adoption of best management practices to improve water quality, much higher incentive payments would be required to increase BMP adoption beyond current levels—says Cooper.
- GATT/Uruguay Round trade negotiations relaxed beef trade restrictions and will increase both U.S. fed and feeder cattle prices, but will reduce nonfed cattle prices—say Brester and Wohlgenant.
- Cotton farmers aiming to maximize expected net revenues should plant short-season cultivars in late May and use soil moisture information to schedule irrigations at reproduction, at least in southwest Oklahoma—say Larson and Mapp.
- Environmental regulations have little impact on comparative advantage in international grain trade—say Valluru and Peterson.
- China's beer demand and barley imports will continue to grow at significant rates—say Wang, Halbrecht, and Jensen.

\*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 and Applied Economics*, *Agricultural and Resource Economics Review*, *Land Economics*, *Journal of Environmental Economics and Management*, *Agribusiness—an International Journal*, and other journals which publish the research findings of agricultural and resource economists. Abbreviated citations are found on page 45.



ON OUR COVER—Technology and agriculture. It's a recurring yet ever-intriguing theme, because so much is changing so fast, and we know it will alter our lives—hopefully for the better. Cover artist Tom Hiatt helps capture our wonder of technology and agriculture, while several authors in this issue—writing on the new superseeds, electronic water markets, cyberfarm, and precision farming—bring us back down to earth with a sound footing for understanding emerging agricultural technologies.

## *Policy versus Policy*



*Paul W. Barkley is professor and interim chair of the Department of Agricultural Economics at Washington State University.*

In January 1995, the 104th Congress was seated amid clamor for reinvention of government. This was not just campaign rhetoric: the Congress ushered in a period of rapid policy changes.

Policy change is not new in the United States. Independence from England required the formation of new codes and rules. The opening of the continent's interior required land policies to be changed dozens of times, and entire industries were affected by the anti-trust policies of the late nineteenth century. No era, however, saw so many policy changes as the New Deal period of the 1930s. This period should be revisited from time to time because of the lessons it provides regarding the relationships among institutions and policies and the possible conflicts that may arise as a result of the coincidence of two well-meaning and well-crafted programs. The

Agricultural Adjustment Act of 1933 and subsequent laws were designed to raise farm income without needlessly increasing the retail price of food. The AAA used numerous devices to accomplish this purpose, but most were centered on reducing supply by restricting the use of inputs. After some failed experiments, this approach to supply control became a major feature of domestic agricultural policy.

At this same time drought and strong winds were carrying away the topsoil of the Central Plains, and heavy rains were continuing to wash away the older soils of the Southeast. In each case, millions of acres were rendered unproductive. Then, as now, "unproductive" was an unacceptable notion to the American public and its policy makers. As a result, the Soil Erosion Service, soon to become the Soil Conservation Service (and quite recently to become the Natural Resource Conservation Service) was born to keep soil in place and to "make two blades of grass grow where one grew before."

Although not frequently described as being at cross purposes, the supply-reducing rules of the AAA and the soil-conserving and soil-building efforts of the SCS were policies that, while being individually laudable, were producing incompatible results. The more soil that was "saved" by the SCS, the harder the AAA had to work in order to reduce supply and maintain farm incomes. And both activities required scarce public dollars.

Our policy dialog does not reflect on such blatant inconsistencies and make them lessons for contemporary policy makers. What lesson is here? The systematic lesson is that differences in goals may cause differences in the way we compare and analyze policies. The

AAA's effort was necessary in order to keep farm income high enough to insure that bankruptcies slowed and farms were maintained. This was a need-it-now policy. The SCS, however, was a future-oriented agency that appealed to the Malthusian fear of shortages. Thus, one agency was using current policies to fight current problems while the other was using current policies to mitigate future problems. Cast in these terms, the inconsistencies turn into costs: How much are you willing to pay to maintain economic order today, and how much will you sacrifice in order to save a productive resource for a future generation? The questions are difficult, but they will not go away. Contemporary examples of similar conflicts arise in conjunction with such programs as the Conservation Reserve Program and the Endangered Species Act.

Who is to watch for these problems? Certainly economists have the tools to work with potential policy conflicts at several levels of intensity. The early lessons of economics—supply, demand, opportunity cost, comparative advantage, present value, and the like—provide useful approaches to sorting out possible conflicts. And the conflicts will surely grow in number as time passes and more of government is reinvented. The plea is for some of the present day's well-trained economists to step back from the study of small parts of the economy and take the broader view—one broad enough to discern when a possible inconsistency may arise among the many new institutions and policies needed to control or regulate resource use in the nation's food and environmental systems.

*Paul W. Barkley*

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**Gregory L. Poe** is assistant professor in the Department of Agricultural, Resource, and Managerial Economics at Cornell University. His research, extension, and teaching is in environmental and agricultural policy, and his primary research interests are nonmarket valuation, applied welfare economics, and the interface between agriculture and the environment.

Professor emeritus at both the University of California, Davis, and Brigham Young University, **B. Delworth Gardner's** recent fields of study are agricultural and resource policy, economic development, and medical economics. He has specialized particularly in the economics of western water development and the public lands. He received the AAEA's Quality of Communication Award in 1996 for his book, *Plowing Ground in Washington: The Political Economy of U.S. Agriculture*.

**Janis Olmstead** is a PhD candidate in the Department of Agricultural and Resource Economics at the University of California, Berkeley. She has worked closely with Westlands Water District to develop and implement the WaterLink electronic marketing system. Her current research includes an analysis of the effect of transaction costs on water market participation and a study of the effect of water markets on water conservation technology adoption.

**David Sunding** is an extension economist at the University of California at Berkeley. Prior to that, he was a senior economist on the President's Council of Economic Advisers. He is the principal investigator on the water conservation project described in this issue.

**Douglas Parker** is assistant professor in the Department of Agricultural and Resource Economics at the University of Maryland. His recent research and extension programs have focused on the use of water markets to

allocate agricultural water supplies, designing pricing mechanisms to encourage efficient agricultural water use, and promotion of education and cooperation among competing groups over agricultural and wetlands preservation. Parker is currently the executive director of the International Water and Resource Economics Consortium, which promotes research and education in the field of resource economics, with an emphasis on water issues.

**Richard Howitt** is a professor of agricultural and resource economics at the University of California, Davis. His most recent work concerns the application of market structure in the reallocation of natural resources.

Professor and chair of the Department of Agricultural and Resource Economics, and director of the Center of Sustainable Resource Development at the University of California, Berkeley, **David Zilberman** has been on the faculty at UC Berkeley since 1979. His recent work focuses on the economics of technological change and risk, and environmental and resource problems in agriculture, in particular, water and pesticide problems.

**Steve Sonka** is the director of the National Soybean Research Laboratory, holds the Soybean Industry Endowed Chair in Agricultural Strategy, and is a professor of agricultural management at the University of Illinois at Urbana-Champaign. Sonka is also a partner in Agricultural Education and Consulting, a business and financial management consulting firm based in Champaign. His interest in both the use of information technology and the decision-making processes within agricultural firms naturally led him to the World Wide Web and its application to farm and agribusiness management, which he writes about in this issue.

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**Karen Coaldrake** recently joined Context Consulting in Des Moines, Iowa, after serving as a coordinator with the food and agribusiness management program at the University of Illinois at Urbana-Champaign. While at the university, she developed an interest in the use of information and communication technologies in agriculture, which culminated in her involvement as a member and co-chair of the Champaign County Network (CCNET) Agribusiness Task Force, described in an article co-authored with Steve Sonka.

**Stan Daberkow** is an agricultural economist with USDA's Economic Research Service. His work at ERS involves analyzing the economic and environmental impacts of agricultural policies, cropping practices, pesticide regulations, agriculturally oriented information technologies, and agri-chemical use. He is currently serving on an interdepartmental working group examining the relationship between the information technology R&D community and federal agencies.

**Gerald Carlson's** latest research attempts to assess the pesticide savings, resistance management costs, and overall benefits of transgenic cotton, corn, and soybeans. A professor of agricultural economics at North Carolina State University, his major research areas for the past few years are pesticide economics, pest management, and resource economics related to agricultural technologies. Carlson is also involved with economic evaluations of pesticide cancellations, and area-wide pest management.

**Michele Marra** is associate professor and extension economist in the Department of Agricultural and Resource Economics at North Carolina State University. Her recently published research has been in the area of agricultural production and policy and their environmental implications; topics have in-

cluded the economics of pest management, technology adoption, sustainable agriculture, decision making under uncertainty, and applied resource economics.

An ag economist at the University of Georgia, **Bryan Hubbell** is interested in the interface between agriculture and the environment. His current research explores the economic and environmental impacts of agricultural biotechnology, integrated pest management and pesticide reduction, and the environmental impacts of structural changes in agriculture.

**John W. Siebert** is associate professor of agricultural economics at Texas A&M University, where he teaches undergraduate and graduate courses in agribusiness. From 1985-95 Siebert served as vice president of California Cooperative Creamery, where he was responsible for procurement and sales of \$1 million in daily milk. Prior to that, he was an extension economist at the University of California, Davis, conducting marketing research for the dairy, poultry, cherry, and fig industries.

**Mark Stephenson** began his career on the production side of the dairy industry; following degrees in dairy science from Michigan State University, he worked for Cooperative Extension in that state. Stephenson is currently a member of the faculty of Cornell's Department of Agricultural, Resource, and Managerial Economics, where his work focuses on dairy markets and policy issues at the farm and processor levels.

**David Anderson** is an assistant research scientist at Texas A&M University, where his work focuses on livestock and dairy policy and marketing. Recently he has been involved in research alternatives to the Basic Formula Price for milk. Prior to his current position, Anderson worked as an ag economist at the Livestock Marketing Information Center in Denver.

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