



The Agricultural Establishment: Giving Farmers Too Much of What They Want and Not Enough of What They Need

by George R. McDowell

Massive changes are afoot in American agriculture. How the agricultural establishment responds may determine the long-run vitality of agriculture in the United States. *Agricultural establishment* refers to the constellation of organizations and agencies involved in the support and regulation of farming and of commerce in products produced or required on farms. Included are the agricultural committees of the U.S. congress and state legislatures, federal and state departments of agriculture, the research and extension programs of land-grant colleges of agriculture, and associated agricultural, farmer, commodity, and industry organizations at county, state, and national levels.

A subset of the agricultural establishment is the *agricultural knowledge and information system* (AKIS). It generates and conveys the new knowledge needed to address problems affecting agriculture. Central in the AKIS are the USDA and land grant universities' research and extension efforts. The AKIS also includes publicly supported market information systems and private sector initiatives. Private sector research and information support production, marketing, processing, and sale of food and fiber products in for-profit settings.

Political processes affecting the public AKIS perform well for some types of knowledge and poorly for others. Political markets contributing to agenda setting in the public AKIS focus primarily on the improvement and management of on-farm agricultural technology. Knowledge about dealing with the many other forces of change in American agriculture have lower priority on research and

Forces of Change Affecting American Agriculture

Significant forces of changes for U.S. agriculture sector are listed below:

- Public spending on agriculture and farming is increasingly challenged within the American political system.
- Farming will receive continuing environmental scrutiny, and farmers will often lose to environmental interests.
- Consumers' food products are increasingly linked to commodity attributes at the production level.
- Disintermediation—fewer transactions and actors in the food and fiber system—is driving the structure of markets.
- The internationalization of markets increases the complexity of finance and marketing for many agricultural commodities.
- The potential for scale and size economies in agricultural production will exceed expectations.
- Consumer concerns about food safety and environmental degradation may affect food production and processing more than agricultural production risks.
- The infrastructure—roads, bridges, other—serving agriculture and rural communities is in disrepair.
- The scientific advances in agriculture have changed, including the opportunity to patent plant and animal genetic materials.
- Farmers appear to own an ever smaller proportion of the land they farm. As other claims on land use intrude, maintaining viable-sized farms of proximate land parcels becomes an increasing problem.
- Federal information infrastructure that supports small farms is significantly reduced or in decline.

Demand for solutions to perceived ills of large processing firms will grow.

extension agendas. For example, arguably much of the economic incentive for vertical integration within U.S. agriculture comes from discrepancies between publicly established commodity grades and standards and changing consumer preferences.

“Choice” beef is not much related to tenderness or fat concerns of consumers.

If the agricultural establishment is to deal effectively with the issues facing American agriculture, the ways the listed issues are addressed must be considered. Insight into the response of the agricultural establishment to these forces is gained by examining the agenda of the public AKIS.

The Agenda of the Agricultural Knowledge and Information System

For brevity, the forces of change identified in the box on the previous page are grouped into the following categories:

- The performance of national and international markets;
- local, state, national, and international policies affecting agriculture;
- performance of firms and institutions serving and regulating farming and agricultural markets—both public and private, both inputs and commodities; and
- on-farm technology and its management.

Current priorities of the agricultural extension part of AKIS can be inferred by the proportion of resources committed to programs in these four categories. At any of the land-grant universities, the number of full time equivalents (FTEs) of agricultural extension specialists can supply evidence. At Virginia Tech in 2000, 89% of the 72 agricultural extension specialist FTEs were committed to on-the-farm technology and its management with only 11% to address everything else, including food technology, and work with farm input suppliers and markets. In Minnesota in 2003, the numbers were 72% committed to on-the-farm issues and 28% on off-farm agricultural profitability issues. In Colorado in 2004, the split is 65% and 35% respectively; in Iowa, 69% and 31%; and in Kentucky, it is 86% and 14% respectively.

Although not all of Virginia Tech’s on-farm extension specialist time addresses increased production—environmental adjustments in production receive considerable effort—the focus still is predominantly on management of farm technology. Though only anecdotal, the Virginia, Minnesota, Colorado, Iowa, and Kentucky examples are symbolic of the resource commitments within agricultural extension throughout the United States. If

field staff FTEs in agricultural extension are added to the campus-based specialists’ numbers in any state, the preponderance of resources committed to on-the-farm technology will become even more emphatic.

Insight to the research orientation of the public AKIS is revealed by an examination of the National Research Initiative (NRI) administered by the USDA. As the major source of federal, non-formula funds to agricultural science, the spending of the NRI represents the agricultural establishment’s priorities for the public research side of the AKIS. Table 1 summarizes the categories of research and the funding allocations for 1999, 2000, and 2001.

Combining the NRI categories for the plant and animal systems and, arbitrarily, one half of the natural resources and the environment category, shows 66.4% of the resources on primarily production issues on average over the three years. Just as with extension resources, some of the natural resources category is included with other on-the-farm directed research, because much of it addresses insights about environmental impacts of farming technologies. Though less dominant than the agricultural extension commitments as described earlier, on-the-farm technology and its management also dominate the public research agenda. The 10.6% in the NRI for trade, markets, policy (3.8%), and new products and processes (6.8%) over the three years closely resembles the FTEs committed to before- and after-the-farm gate insights by Virginia Tech extension. Research on any need to change commodity grades and standards commensurate with changing consumer preferences would have belonged in the markets, trade, and policy research category. It might have meant more tender beef and much less vertical integration in agriculture.

The Political Economy of AKIS Agenda

This discrepancy between the public agenda of the AKIS and the needs of farmers is partly the result of market failure in political markets. To establish this argument, consider the following necessary conditions for an extension program to earn and collect support from clientele (McDowell, 2001):

- *Positive net benefit*: Programs must generate a positive net benefit to participants.

Table 1. Research divisions and funding levels supported by the national research initiative (NRI), USDA.

Category	FY99		FY00		FY01		3-year average
	\$ million	%	\$ million	%	\$ million	%	%
Natural resources and the environment	19.1	17.2	20.5	17.2	17.5	16.5	17.0
Nutrition, food quality, and health	14.9	13.4	16.0	13.4	18.0	17.1	14.6
Plant systems	38.2	34.4	41.0	34.4	34.8	32.8	33.9
Animal systems	27.0	24.3	29.0	24.3	24.7	23.3	24.0
Markets, trade, and policy	4.3	3.9	4.6	3.8	3.9	3.7	3.8
New products and processes	7.6	6.8	8.2	6.9	7.0	6.6	6.8
Total	111.1	100	119.3	100	105.9	100	

Note. Data from CSREES/USDA, 1999, <http://www.reeusda.gov/crgam/nri/programs/progdesc/intro.htm#FUNDING>, and 2002 Minnesota Competitive Programs Grant Workshop, <http://www.reeusda.gov/nri/>.

- *Attribution:* Most of the net benefits must be attributable to extension (AKIS).
- *Solicitation:* Collection of political capital usually involves a separate transaction. Clients must be identifiable for support solicitation. In agriculture, solicitation is most often accomplished through farm organizations.
- *Political action:* Acting politically for extension must cost clients less than their past and anticipated future benefits.

Now consider the information necessary to inform farmers about off-the-farm issues. Much of this information is or looks like public policy education versus a recommendation on fertilizer or pesticide applications. Many such insights involve collective or strategic actions. Even farmers' adoption of some new production technology directed at specialized markets will be more a strategic decision than how-to-do-it production decisions. Educational programming along these lines creates a substantially different relationship between the extension educators and farmers.

A Peanut Example

By way of illustrating the dilemma of education for strategic behavior, farmers in the peanut growing areas of the United States needed to learn that peanuts are called "groundnuts" virtually everywhere else in the world. Farmers who understood they are growing groundnuts would be better informed about actions by the World Trade Organization and in international markets and would more likely have made strategic adjustments in their farm businesses. However, when price supports to peanuts were high and farmers were counting on their political power to sustain quotas, holding an extension

program about the threat of world markets in groundnuts was a nonstarter—no perceived positive net benefit. Now, in 2004, when peanut growing areas are experiencing great economic dislocation because of loss of peanut quotas and reduced support prices, extension programming generates considerable interest, but it is likely too late to make much difference and is viewed as bringing bad news.

Giving Farmers What They Need, Not What They Want

Farmers want information that has the greatest comfort and span of control in day-to-day farming practices. Farmers prefer knowledge they can act on from their tractor seats—whether it helps them the most or not. Other insights that more profoundly affect their profitability, but are more complicated to understand, do not elicit the same political support. Extension efforts in price risk management and forward contracting have that experience. Farmers simply do not believe some dire policy prospects will come to pass, because farmers have extensive experience with last-minute bailouts by the legislative part of the agricultural establishment. In addition, some insights they get from the AKIS will not be attributed to the AKIS because of the great array of related information from many other sources. These are the circumstances of political market failure, the result of which is the public AKIS giving farmers what they want instead of what they need in a changing world.

In 1999, dairy extension specialists attending the American Dairy Science Association meetings informally agreed that Monsanto had the best dairy extension program in the country. Information

about on-the-farm technology and its management will increasingly come from the private sector. The public AKIS has overinvested in this area and underinvested in generating the things farmers need. The role of public investment in on-farm technology should increasingly be an objective check on the implications and efficacy of private agricultural knowledge and information in the food system.

In the face of this situation and in spite of what farmers say they want, unless the agricultural establishment acts to increase support of research and extension on the policy, strategic, and business needs of farmers and opportunities for market expansion, a further decline and effective end will come to the public agricultural knowledge informa-

tion system (AKIS). With the demise of the public AKIS will come a more rapid decline of agriculture in the American economic portfolio.

For More Information

Blank, Steven C. (1998). *The end of agriculture in the American portfolio*. Westport, CT; London: Quorum Books.

McDowell, George R. (2001). *Land-grant universities and extension into the 21st century: Renegotiating or abandoning a social contract*. Ames, IA: Iowa State University Press.

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