



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



LAND GRANT COLLEGES OF THE FUTURE

Recommendations of the National Research Council

by Michael J.
Phillips

The principal mandate of the National Research Council (NRC) Board on Agriculture is to bring the best science to the resolution of agricultural and food policy issues. Through this mandate the NRC has a keen interest in the conduct and quality of agricultural education and research and, thus, the land grant system. Land grant colleges of agriculture (LGCAs), initiated by the Morrill Act in 1862, historically have been entrusted with these functions and supported by public funds to carry them out.

The Board on Agriculture undertook a study of the land grant system because of two main observations. First, the client base for food and agricultural research and education has changed dramatically as the nation's economy has developed and its population has shifted to cities and suburbs, and the policy issues have shifted accordingly. Second, the land grant system is defined not only by its distinctive heritage but also by a set of institutional

arrangements unique within higher education in the United States. These arrangements have changed little since the system's early years despite major changes in the food and agricultural system. The institutional arrangements include

- a federally legislated mandate to embrace a three-part mission of making education accessible to students of ordinary means, conducting scientific research to underpin teaching programs, and extending research findings to off-campus users to ensure that science serves people;
- a federal-state partnership that produced at least one land grant college in every state and territory;
- a federal funding mechanism that distributes research funds and extension funds to LGCAs based on the state's or territory's share of total farm and rural population; and
- a network of separate—but not equally well supported—historically black land grant colleges.

In addition to changes in agriculture and its role in society and the economy, new developments in science and science policy and the federal funding environment motivated the NRC study of and recommendations for the land grants.

The NRC committee process

NRC studies are conducted by committees of volunteers with relevant experience and expertise. A twenty-one member study committee was convened by the Board on Agriculture. It was balanced for age, gender, and ethnicity; geographic location; and disciplinary expertise. The committee was composed of participants in the land grant system—administrators and faculty with teaching, research, and extension expertise—as well as representatives of public interest groups, state government, agribusiness, and the nonagricultural science community.

The committee divided its work into three stages. First, the committee collected, reviewed, and assessed public data and information about the LGCAs and their operating environment, and solicited expert opinions from observers of and participants in the land grant system. The committee published its historical review and collection of public data in *Colleges of Agriculture at the Land Grant Universities: A Profile* (NRC 1995).

During the second stage, the committee held public forums at land grant colleges. The forums were important means for each committee member to broaden his or her experience and to garner public input on the relationship between college activities and public needs and priorities. In the third phase, the committee synthesized and integrated information from the first two phases and published the consensus report, *Colleges of Agriculture at Land Grant Universities: Public Service and Public Policy* (NRC 1996).

Conclusions and selected recommendations

The consensus report concluded that a national science and education infrastructure that underpins continued advances of the food and agricultural system, and federal support of that system, remains squarely in the national interest. It also concluded that although the land grant system has served the nation well, there is need for change in four principal areas:

- The LGCA system must increase its relevance to contemporary food and agricultural system issues and concerns. It must also continue to develop programs that include a wider array of students, faculty, and clientele of diverse backgrounds and perspectives.
- The system must organize its programs and projects more efficiently and more in keeping with

regional and multistate requirements of many modern food and agricultural system problems. There is a need for a “new geography” for the land grant system.

- The system must reinvigorate its commitment to the linkages among teaching, research, and extension in order to fulfill its mandate of conducting science in service of society.
- The system must enhance its accountability to the public and its reputation for quality in the science community.

Twenty recommendations were developed in support of these key themes. Several address the teaching, research, or extension components individually, and other recommendations cut across these components. A significant number recommend refinements in federal policy as a means of reorienting incentives and signals in the LGCA system. Several of these recommended changes in federal policy are discussed here, but they provide only a glimpse into the full scope of the report’s topics and recommendations.

Involving the stakeholders

LGCAs have a responsibility, based on their philosophical roots and legislative mandate, to be relevant and accessible to the general public and particularly to citizens of ordinary means. However, many of today’s food and agricultural system beneficiaries, such as urban and suburban residents and environmentalists, have little knowledge of or connection to many of the LGCAs. These connections must be enhanced to ensure that resource allocation at LGCAs increasingly reflects broad and diverse national interest in the food and agricultural system, an outcome crucial to extending the colleges’ relevance into the twenty-first century.

In order to enhance these connections, the report’s first recommendation is that, in setting program priorities that guide resource allocation, LGCAs should garner effective input from a wide variety of stakeholders. In fact, receipt of federal funds should be contingent on the demonstration of such input.

Creating a new geography

Seventy-six institutions in fifty states, six territories, and the District of Columbia comprise the 1862 land grants and the historically black or 1890 land grants. If the land grant system is to adopt a research and education agenda that responds to the priorities of consumers and the many specialized needs of diverse producer groups, then it must realign organizational efficiencies by reducing duplication and strengthening multistate and multi-institutional partnerships that build upon the specializations of individual institutions.



In addition, the nature of contemporary food and agricultural system issues calls for regional or multi-institutional efforts. Many natural resource and environmental issues, such as watershed management, cross state lines. Many consumer issues, such as nutrition and disease, know no political boundaries. In fact, they may be endemic to similar populations located in spatially separated parts of the country. Even within the farm sector, production issues are often pertinent to producers in a region made up of all or parts of several states. In recognition of the importance of regional or other multistate and multi-institutional approaches, coupled with the need for federal funds to provide incentives for such partnerships, the report recommends that significant shares (25 percent or more) of USDA-administered funds for teaching, research, and extension should be used to provide incentives for regional centers, consortia, programs, and projects that effectively integrate and mobilize multistate and multi-institutional resources.

Integrating teaching, research, and extension

LGCA administrations, faculty appointments, budgets, and federal land grant legislation are structured along the lines of teaching, research, and extension. Although it is the historical commitment to its three-part mission that has distinguished the LGCAs, separate administrative and funding structures too often hinder integration of

the three functions and their programs. The different statuses implicitly, if not explicitly, assigned to each function by the university community contribute to the separateness.

The integration of teaching, research, and extension is valued for several reasons. Research-extension linkages, when they work well, spawn a two-way flow of insights and information that enhances the relevancy of research and uses research findings where they are most valuable to the public. Strong research-extension linkages help ensure that outreach programs reflect the most up-to-date scientific knowledge. The integration of teaching, research, and extension is of special value to students because it offers an academic experience that involves the students in both the process of scientific discovery and public service. To put a renewed emphasis on an integrated tripartite mission, the report recommends that federal formula funds for research and extension be combined into a single allocation. Further, 50 percent of the combined funds should be used to support programs, projects, and activities that explicitly integrate teaching, research, and extension or, alternatively, the work of multiple disciplines.

Enhancing accountability to the public

It is recognized that USDA-administered research funding differs from other R&D funding in the much smaller percentage allocated to individuals and projects on the basis of merit and competition.

Morrill Hall on the campus of Iowa State University.





This difference is because of (a) the relatively large share of agricultural research conducted intramurally by USDA, and (b) the use of formula funds and congressionally designated grants in allocating extramural funds to institutions. Arguments can be made for and against both formula-based funding and competitive grants. However, some of the early reasons for formula funding of state experiment stations, such as the need to draw each state into agricultural research and the site-specific nature of agricultural research, carry less weight today. Today most states provide far more financial support than is required to match federal dollars, and many types of food and agricultural research, such as nutrition, food safety, and biotechnology, have little or no location specificity. Other arguments for formula funds, such as the support they provide for structural linkages between research and extension that respond to local, state, and regional needs and for certain applied research projects that require long-term continuity, remain quite compelling.

Despite its uniqueness, agricultural research needs to enhance quality, accountability, and equity through greater use of competitive grants. The report recommends that the federal partner should increase its use of competitive grants to fund projects and individuals on the basis of merit as determined by peer review. Greater use of competitive grants in relation to formula funding and congressional earmarks will enhance quality and accountability and will lessen the perception that experiment station researchers are insulated from competition with the rest of the research community. The funding level for competitive grants should be no less than the \$500 million authorized by Congress.

Nonetheless, a continued role exists for formula funding, particularly in supporting linked teaching, research, and extension programs. The report recommends, however, that new formulas be designed and implemented by which food and agricultural research and extension funds are allocated within the land grant system. The current formulas are outdated in relation to modern food and agricultural constituencies. These formulas were generated in an era when a much higher percentage of the nation's population was rural and farm based and the nation's agricultural interests were dominated by concerns with domestic crop production and food security. Today, many issues of concern to the U.S. public, such as diet and health, families and youth at risk, and food safety, are not specific

to farm production regions, suggesting the need to rethink formulas for both research and extension. In revising the formulas, consideration should be given to variables such as states' proportionate contributions to total population, relative poverty rates, or shares of cash receipts from farm and food marketings as appropriate reflections of the LGCA system's broadened contemporary customer base.

Looking to the future

The land grant system has served the nation well, but changes are needed that reflect modern realities, challenges, and opportunities. The system must increase its relevance to contemporary food and agricultural system issues and concerns; reinvigorate its commitment to teaching, research, and public service; organize its programs and projects more efficiently and more in keeping with regional and multistate requirements of many food and agriculture system problems; and enhance its accountability to the public.

Their historical commitment to public service distinguishes the LGCAs. The tripartite tradition of teaching, research, and extension at land grant colleges is a unique institutional base on which to erect the structure of knowledge that can assure a socially, economically, and ecologically sustainable food and agricultural system. Some components of colleges of agriculture could be appropriate models for other colleges and programs of land grant universities as they seek to integrate their teaching, research, and outreach activities. ■

■ For more information

National Research Council (NRC). *Colleges of Agriculture at the Land Grant Universities: A Profile*. Washington DC: National Academy Press, 1995.

—. *Colleges of Agriculture at the Land Grant Universities: Public Service and Public Policy*. Washington DC: National Academy Press, 1996.

The author is indebted to Nicole Ballenger, deputy director, Commercial Agriculture Division, Economic Research Service, USDA, and former study director for the Committee on the Future of Land Grant Colleges of Agriculture, National Research Council, for her leadership and work to produce the consensus report discussed in this article. Sections of this article are drawn directly from that report.

Michael J. Phillips is the new director of the National Research Council's Board on Agriculture.