



Perspectives on the 2013 Farm Bill

Research Title:

Elements of a “clean slate” research title

By David B. Schweikhardt and James T. Bonnen

Any attempt at “clean slate” thinking on the research title of the farm bill must recognize two things: the demands facing world agriculture in the future, and the constraints of the scientific research process in agriculture posed by the nature of the economic benefits created by such research. The demands facing agriculture are best summarized by Dr. Robert L. Thompson: Will the world’s farmers be able to double production to feed the world’s larger population better than today and at a reasonable cost without damaging the environment? The major constraints facing the agricultural research enterprise as society contemplates this task results from the diffuse and non-excludable nature of the benefits derived from publicly-funded agricultural research.

The demands facing agriculture, as noted by Thompson, arise from 1) the transformation of consumers’ diets as income increases (in lower income countries, an increase in consumers’ income usually results in a transformation of consumers’ diets that increase the demand for meat and for the feed inputs used to produce meat), and 2) the increasing demands placed on limited natural resources of air, soil and water.

The constraints facing the agricultural research enterprise arise from the economic benefits resulting from that research. The benefits of research are diffuse in nature, i.e. the benefits often accrue to consumer in the form of lower prices, to producers in the form of increased income, to resource users in the form of protected environmental resources, or to other stakeholders far beyond the geographic boundaries of the unit of government financing the research. A second factor is the high cost of excluding some beneficiaries of research—the non-payers or “free riders” who benefit from research without contributing to the cost of such research, thereby leading to underinvestment in such research. This inability to exclude beneficiaries can be particularly important in addressing the latter part of Thompson’s challenge of meeting a growing demand for food without damaging the environment. Because these beneficiaries can be far beyond the geographic boundaries of an individual government, and because these beneficiaries can be costly, if not impossible, to exclude, innovations in the institutional framework for funding public agricultural research are needed.

Though it is impossible to define the precise institutional structure that is needed to finance public agricultural research in the future, some general principles that should shape such institutions can be outlined. As in the past, successful institutional structure will require a mix of funding mechanisms. U.S. agricultural research policy has recognized the geographic spillover problem in

research since its earliest days. By matching state funding efforts with national dollars, formula funding has provided at least partial compensation for the benefits generated beyond the borders of the state performing the research. At the same time, competitive grants, when aimed at more basic research problem, paid a higher share of the cost of research and provided compensation for the performance of research that had a higher share of benefit spillovers.

More recent developments in the agricultural economy present a new dimension to the agricultural research funding problem. With the integration of agricultural markets on an international basis, the benefits of agricultural research now spill beyond national borders and are ultimately transferred to consumers and resource users around the world. As with states in an earlier era, nations cannot justify the funding of research when its benefits accrue to non-paying beneficiaries beyond national borders. Moreover, to the extent that the research agenda facing agriculture includes the protection of environmental resources that are global in nature, agricultural research funding that is national in scope is likely to be inadequate to the task ahead.

Consequently, a “clean slate” research title would include institutional innovations that address:

- A wider range of funding mechanisms that would be state, regional, national and international in scope, based on the nature of the benefit spillovers generated by the research.
- A wider range of funding mechanisms that includes cost sharing (e.g., matching grants with an emphasis on finding updated funding formulas that reflect existing benefit spillover patterns), competitive grants, and other new funding mechanisms designed with the research benefit spillovers of the research agenda at hand.
- A wider range of funding partners—NGOs, private firms, sub-national regions, and other national governments—capable of addressing the full range of issues facing agriculture.
- A wider ranging effort to invest in the physical infrastructure and human capital necessary to sustain a meaningful agricultural and environmental research effort.
- A broadened research agenda that addresses the multiple dimensions of the challenge identified by Thompson—increased agricultural output that provides food security at a reasonable cost while protecting a full range of environmental resources.
- A continuing recognition of the complementary nature of the four main drivers of the economic change of increased agricultural output with reduced environmental degradation—changes in technology, institutions, human capital and bio-physical capital—and with the recognition that this complementarity implies that the degree of change accomplished is reduced if any of these factors is omitted.

Regardless of the outcome of the ongoing controversy over the 2013 farm bill, the issues confronting publicly-funded agricultural research will remain the same: addressing the multiple challenges confronting the world’s agricultural sector and addressing the unique economic problems associated with the financing of agricultural research.

David Schweikhardt is a Professor in the Department of Agricultural, Food and Resource Economics, Michigan State University, East Lansing, MI. James T. Bonnen is Professor Emeritus

in the Department of Agricultural, Food, and Resource Economics, Michigan State University, East Lansing, MI.

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