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Mr Chairman and members of the sub-committee, I am pleased to appear before you today to discuss organizational and funding issues with respect to agricultural research. I am Professor George Norton of the Department of Agricultural and Applied Economics at Virginia Tech and a specialist in evaluating and prioritizing agricultural research and extension programs. I represent my own views as well as those of Dr. Sharron Quisenberry, Dean of the College of Agriculture and Life Sciences at Virginia Tech, and Dr. Elsa Murano, Vice Chancellor of Agriculture and Dean, College of Agriculture and Life Sciences, Texas A&M University.

Well-supported and efficiently managed agricultural and related research in natural resources and veterinary medicine is vital to healthy farm and rural economies; a safe, healthy, and nutritious food supply; environmental quality; and enhanced production of bio-based energy. Our joint federal-state partnership in agricultural and related research has helped to meet these needs and to make U.S. agriculture among the most productive in the world.

Unfortunately, productivity growth in U.S. agriculture has slowed in recent years, in part due to a slowdown in the rate of growth in research funding (Alston and Pardey, 2007; Huffman and Evenson, 2006a). At the same time, the demands on agricultural scientists have grown as the needs for research on environmental, nutrition and health, renewable energy, rural development, zoonotic diseases, and other issues have expanded. Numerous studies have documented the extraordinarily high rates of return on public investments in agricultural and related research (Huffman and Evenson, 2006b, pp. 292-296; National Academy of Sciences, 2007). Therefore, it is imperative to adequately support this research and to manage it in a way that is most efficient.

In recent years, several proposals have surfaced that would restructure how public agricultural research is conducted and supported. Some of those proposals have related specifically to how funds are allocated, others to how programs are structured, and others have addressed both. Most recently, the CREATE – 21 proposal and the Administration’s own proposal have called for reorganization of the U.S. Department of Agriculture (USDA) and for increased funding, especially for competitive grants. This morning I will address my remarks to both organizational structure and funding issues that affect agricultural and related research.

Organizational Structure

An effective organizational structure for agricultural and related research must (1) be cost efficient, (2) address local as well as national needs, (3) provide flexibility to meet changing priorities over time, (4) be sustainable in times of severe funding constraints, and (5) minimize partisan pressures on the research agenda.

The current public agricultural research structure includes USDA intramural research units (ARS, ERS, and Forest Service R&D) linked, through the USDA Cooperative Research, Education, and Extension Service (CSREES), to the state agricultural

experiment stations of the land-grant universities and other institutions. The core research capacity of USDA is essential for maintaining long term research on national issues, and research at the state agricultural experiment stations ensures responsiveness to local as well as regional and national needs. Federal support for state experiment stations leverages significant state and private resources, while encouraging individual states to address multi-state needs by partially compensating them for benefits that spill over from their research to other states.

The recent CREATE 21 proposal calls for the formation of a National Institutes for Food and Agriculture (NIsFA) run by a Director appointed by the President and reporting to the Secretary of Agriculture. The NIsFA would be comprised of six separate institutes with oversight provided by the Director on the advice of a 13 member Council of Advisors. The Council would consist of the Director, four members appointed by the Secretary of Agriculture with the concurrence of the Director, and four each by the House and Senate committees responsible for agriculture. The ARS, ERS, CSREES, and Forest Service R&D would be merged into these institutes. An earlier task force chaired by Dr. William Danforth called for establishing a new institute within USDA to focus on fundamental research, with a Director reporting to the Secretary of Agriculture. The Administration proposes to merge ARS with CSREES (without ERS and USFS R&D) and keep them all under the purview of the Undersecretary for Research, Education, and Economics within USDA.

First, it is our view that wholesale reorganization of existing entities to form new ones is seldom an efficient way to solve a problem. The inefficiencies in the transition might well outweigh the eventual benefits. The current system is relatively responsive to local stakeholders, flexible to address emerging problems, and has generated high returns. A more consolidated top-down system runs the risk of losing stakeholder support at the local level for a perhaps marginal gain. It has been argued that a consolidated Institute would reduce administrative costs, but it is not clear that science or stakeholders would gain. We need to be careful not to restructure in a way that causes more harm than good. We fail to see the need to create a virtually independent entity outside of USDA.

Second, an Undersecretary tends to have more clout than a Director, being better able to stand toe-to-toe with other sub-cabinet members of USDA and related agencies in support of his or her mission. This ability to be a champion and an advocate is important, especially when priorities and budget allocation decisions are made by the Secretary. The argument has been made that since the new set of institutes would have more independence and a single focal point, it would attract more funding, but independence and focus does not guarantee funding, especially if local stakeholders feel more alienated. The Administration's proposal to merge CSREES and ARS would also provide focus, but without the disruptions and unintended consequences that would result from forming a new entity.

Third, CREATE 21 calls for the merger of intramural and extramural funding into one budgetary line. The Administration proposes merging CSREES and ARS, but they would keep the intramural vs. extramural funding balance roughly the same as it is now. This issue is important because under a single line most of the funding might eventually go intramural, leaving little money for universities. Or, as some may argue, most of the funding might eventually go extramural, potentially crippling ARS. That would be ill-advised because ARS assures that certain types of research are conducted on a continual basis by scientists with no obligations besides research. Universities conduct research while educating the next generation of scientists. Both ARS and university research is needed to advance and sustain agricultural and related science.

Fourth, CREATE 21 calls for specific percentages to be used in allocating resources (such as basic vs. applied, competitive versus formula). This approach reduces valuable flexibility. The Administration proposes to maintain the flexibility to allocate funds in the way that makes the most sense at the time. Sometimes that may mean more for certain areas of study than others, or more for basic versus applied research (or vice versa), depending on the situation. From Dr. Murano's experience in Washington, the more flexibility you give the agencies, the better the money is spent. So, forcing the spending to be done a certain way is potentially inefficient and wasteful.

Funding

Critical funding issues for agricultural and related research are: (1) how to enhance and sustain research funding over time, (2) who sets the research agenda, and (3) relative costs of alternative funding mechanisms.

CREATE 21 calls for doubling of expenditures on agricultural and related research over seven years. While this is certainly a laudable objective, it may be a difficult goal to achieve. However, there is little question that failure to achieve sufficient growth in such research funding in recent years has constrained productivity growth and hindered our ability to achieve other research goals. Simply put, agricultural and related research is starved for resources.

The evidence is clear that agricultural and related research pays high returns. Improving agricultural productivity is essential as international trade and trade reforms continue to grow in importance; as the need for agriculture to supply fuel as well as food and feed expands; as specialty crops grow in importance, as the sustainability of our natural resource base remains under constant pressure; and as the complex linkages among human and animal health, nutrition, and food safety continue to demand attention.

The need is great, but making a case that agricultural and related research is a high priority for funding requires expressions of need by local and regional in addition to national constituencies. Reorganization will not buy much if local interest groups do not have a voice in establishing priorities. USDA uses various advisory groups to help set the

national agricultural research agenda. National priorities, however, can imperfectly mirror local and regional needs.

The agenda for agricultural and related research must strike a balance among issues of importance to local, regional, and national stakeholders. Because crops, livestock, and forests are sensitive to geo-climatic and economic conditions, many important agricultural and natural resource research problems are local or regional in nature. Currently about 60 percent of U.S. public agricultural research is conducted at State Agricultural Experiment Stations (SAESs) and most of the rest by USDA intramural units. A little over 10 percent of SAES funding comes from the combination of Hatch formula funds and competitive National Research Initiative Grants (Huffman et al., 2006). The formula funds provide a stable base of top scientists that successfully leverage significant state support for agricultural and related research. Together these federal and state resources pay for the core human and physical capacity that allows states to respond to local and regional priorities.

In recent years, competitively funded programs have grown at the expense of core capacity programs, both intramural in USDA and at SAES. An appropriate balance in the growth of both types of funding is needed, because formula funds facilitate long-term high-payoff research. They support salaries of scientists and fund research infrastructure. They help SAESs respond quickly to local crises and they leverage state funds. They minimize transactions costs of scientists so they spend more time on research and less on writing grant proposals.

The time scientists spend writing grant proposals has become significant, and coupled with the short run nature of grants reduces opportunities for conducting long-term high-payoff research. Competitive grants are excellent for funding cutting-edge science needed to solve national problems for which the research can be of shorter duration. They are less well suited for funding long-term research capacity that is required to meet local and regional in addition to national needs. When these needs are neglected, support from broad-based constituencies tends to erode.

Conclusion

We caution against drastic reorganization of agricultural and related research in USDA, and for an appropriate balance in formula (block-grant) and competitive funds. Programs currently in place to ensure accountability and flexibility to changing stakeholder needs should be enhanced. The U.S. agricultural sector has outperformed the non-farm sectors in the U.S. economy for decades in terms of multi-factor productivity growth (Huffman and Evenson, 2006b, page 299). The current public agricultural research system is effectively responding to the scientific revolution in biological sciences that is underway, but it is under-funded given the high rates of return to research and the need to continue to pursue a broad research agenda.

References

Alston J.M. and P.G. Pardey, "Research Funding and Farm Productivity, Implications for U.S. Farm Policy," power-point presentation at the Farm Foundation Conference: *Funding Research and Extension to Assure the Future of U.S. Agricultural Competitiveness*, Washington, D.C., March 14, 2007.

Huffman, W.E. and R.E. Evenson, "Do Formula or Competitive Grant Funds Have Greater Impact on State Agricultural Productivity?" *American Journal of Agricultural Economics* 88(Nov. 2006a):783-798.

Huffman, W.E. and R.E. Evenson, *Science for Agriculture: A Long-Term Perspective.* 2nd Edition. Ames, IA: Iowa State University Press, 2006b.

Huffman, W.E., G.W. Norton, G. Traxler, G. Frisvold, and J. Foltz, "Winners and Losers, Formula Versus Competitive Funding of Agricultural Research," *Choices* 21 (4) 4th Quarter 2006, pp. 269-274.

National Academy of Sciences Committee on Science, Engineering, and Public Policy, *Rising Above The Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, National Academies Press, Washington, DC, 2007.