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Farm Bill Primer: Agricultural Research and Extension

Since 1977, enacted farm bill legislation has included a title focused on agricultural research, extension, and education (the research title). This title contains reauthorizations, amendments, and new programs administered by the U.S. Department of Agriculture (USDA). The research title addresses research, extension, and education at land-grant universities (LGUs) and other nonfederal institutions, as well as departmental policies, programs, and research within USDA. This In Focus provides background information and discusses selected 2018 farm bill provisions and issues for the next farm bill related to agricultural research, extension, and education.

Background

The research title addresses extramural and intramural research, extension, and education activities. In *extramural* activities, federal capacity (formula) and competitive grants fund the work of nonfederal researchers and educators at LGUs and other nonfederal entities. In *intramural* activities, agency appropriations fund the work of federal scientists at federal facilities. *Agricultural extension* provides nonformal education to the nonuniversity public.

Four agencies carry out USDA's research, extension, and education activities. The National Institute of Food and Agriculture (NIFA) administers extramural programs; the Agricultural Research Service (ARS) conducts intramural scientific research; the Economic Research Service (ERS) conducts economic and social science research; and the National Agricultural Statistics Service (NASS) conducts the *Census of Agriculture* and provides official statistics on agricultural production and other farm sector indicators.

Most research title programs require annual discretionary appropriations; a few programs receive mandatory spending. Upon enactment of the Agriculture Improvement Act of 2018 (2018 farm bill; P.L. 115-334), projected mandatory outlays for the research title totaled \$694 million (FY2019-FY2023), accounting for less than 0.2% of total projected farm bill mandatory spending. In contrast, USDA research agencies received approximately \$1.5 billion in annual discretionary appropriations for FY2020 alone.

Extramural Research, Extension, and Education

NIFA administers federal funds through two primary grant types. NIFA distributes *capacity grants* (formula funds) among eligible institutions based on formulas in statute. Recipient institutions develop work plans and decide which of their own projects to support. NIFA awards *competitive grants* directly to individual projects, which eligible applicants propose, and USDA selects through a peer-review process. Most capacity grants, and some competitive grants, require nonfederal matching funds. Grants of either

type may focus on agricultural research, extension, education or some combination of the three.

LGUs: Capacity and Competitive Grants

The farm bill addresses capacity funding of LGUs (e.g., Hatch Act, Evans-Allen Act, Tribal College Endowment Fund programs). Capacity grant programs require annual appropriations and do not require reauthorization. The 2018 farm bill addressed capacity grant issues including reporting and administrative requirements, nonfederal matching funds, and capacity program eligibility.

Certain competitive grants are available only to LGUs. The 2018 farm bill established new competitive grant programs for LGUs, including Scholarships for Students at 1890 Institutions (§7117), New Beginning for Tribal Students (§7120), and Centers of Excellence at 1890 Institutions (§7213). It also amended existing competitive grant programs for LGUs (e.g., the Federally Recognized Tribes Extension Program). Competitive programs generally require annual discretionary appropriations and reauthorization with each farm bill.

Competitive Grants Not Specific to LGUs

NIFA administers a variety of competitive grant programs that are open to applicants from an array of institutions. The Agriculture and Food Research Initiative (AFRI, 7 U.S.C. §3157) is NIFA's flagship competitive grants program; eligible applicants include colleges and universities, private foundations, and other entities. Congress established AFRI in the 2008 farm bill (P.L. 110-246) and authorized annual appropriations of \$700 million. The 2018 farm bill reauthorized these appropriations through FY2023. Other competitive grant programs address a variety of agricultural research, extension, and education needs and require reauthorization to operate beyond FY2023.

The farm bill provides mandatory funds for certain competitive grant programs, including the Specialty Crop Research Initiative (SCRI, 7 U.S.C. §7632), Organic Agriculture Research and Extension Initiative (OREI, 7 U.S.C. 5925b), and Farming Opportunities Training and Outreach (FOTO, 7 U.S.C. §2279). Additional discretionary funding for these programs is authorized through FY2023.

Other Extramural Research

The Foundation for Food and Agriculture Research (FFAR, 7 U.S.C. §5939) is a nonprofit research corporation designed to leverage private funding with federal dollars to support public agricultural research. Congress established FFAR in the 2014 farm bill (P.L. 113-79) and provided a total of \$200 million in mandatory funding. The 2018 farm bill provided an additional \$185 million in mandatory

funding and required FFAR to submit to Congress a strategic plan describing a path to self-sustainability.

USDA Departmental Policies, Programs, and Intramural Research

Other research title provisions address USDA policies, programs, and intramural research. For example, the 2018 farm bill amended the purposes of federally funded agricultural research, extension, and education (7 U.S.C. §3101) to add international scientific collaboration; reauthorized and amended the National Agricultural Research, Extension, Education, and Economics Advisory Board (7 U.S.C. §3121 et seq.); and directed ERS to update a report on U.S. dairy farms (P.L. 115-334, §7607).

The 2018 farm bill also established a new pilot program within USDA's Office of the Chief Scientist—the Agriculture Advanced Research and Development Authority (AGARDA, 7 U.S.C. §3319k)—to carry out innovative research and to develop and deploy advanced solutions to agricultural threats. Congress authorized \$50 million per year (FY2019-FY2023) for AGARDA. As of this writing, Congress has not provided appropriations for and USDA has not established AGARDA.

Considerations for Congress

Capacity vs. Competitive Funding

In recent years, approximately 45% of funds appropriated for USDA research agencies was provided to NIFA and about 47% to ARS. Many believe that ARS research fills an important niche that industry and other institutions do not meet: addressing problems of national and long-term priority. On the other hand, some believe that ARS scientists have an unfair advantage over other scientists who do not have the consistent funding that ARS appropriations provide. Congress may consider the appropriate balance of intramural and extramural research funding, which could involve a review of existing programs and authorized funding amounts.

LGU Funding Equity

The 2018 farm bill addressed certain aspects of funding equity among LGU types. For example, it addressed a difference in nonfederal matching funds requirements for 1890 (historically Black) and 1862 (original) LGUs. Research and extension capacity programs require 1:1 nonfederal matching funds. However, for the 1890 programs—and not for the 1862 programs—states may request and receive a waiver for up to 50% of the required match. As such, some 1890 Institutions receive less than a 100% nonfederal match, and all 1862 Institutions receive a full match. The 2018 farm bill (§7116) addressed this by requiring USDA to report annually on federal capacity awards, including data showing which 1890 Institutions did not receive a full nonfederal match. This provision has had little effect on the provision of state matching funds to 1890 Institutions for research and extension capacity grants—total waivers granted before and after implementation were about the same, \$15.3 million (FY2018) and \$15.5 million (FY2019). Congress may consider whether—and if so, how—to address stakeholder concerns about incomplete matching funds for 1890 Institution capacity grants.

In another example, some stakeholders have argued that federal support for 1994 (Tribal) Institutions is inequitable and should be increased. In contrast to 1862 and 1890 Institutions, Congress has not established capacity grant programs specific to agricultural research and extension for 1994 Institutions. Capacity grants for 1994 Institutions consist of interest distributions from a general-purpose endowment fund and provide fewer funds on a per institution basis. Competitive grants available to 1994 Institutions provide less financial predictability than capacity grants. Congress may choose to consider the amount and type of funding it provides to 1994 Institutions.

Agricultural Research Infrastructure

Some stakeholders have raised concerns about aging agricultural research infrastructure. Many grants administered by NIFA prohibit spending funds on research facilities. The Build Back Better Act (H.R. 5376) would provide \$1 billion for the construction or improvement of agricultural research facilities at 1890 and 1994 Institutions and certain other minority-serving institutions. Congress may consider the role of federal funding, if any, in improving aging agricultural research infrastructure.

Research Innovation

The 2018 farm bill authorized the establishment of AGARDA to support innovative, high-risk, high-reward research that USDA or FFAR would not otherwise fund. As of this writing, Congress has not appropriated funds for AGARDA; its authorization expires in 2023. Congress may consider the need for federal funding of innovative research and for the flexible hiring and funding authorities granted to AGARDA.

Climate Change Research and Extension

Unpredictable weather conditions and climate change have emerged as concerns for farmers and ranchers. USDA has broad authorities to conduct agricultural research and extension, and it has funded climate change projects via departmental initiatives and certain existing programs. Stakeholders including the Food and Agriculture Climate Alliance—a diverse coalition of producers, agribusinesses, state governments, and others—have advocated for an increased focus on this topic. Congress may consider whether existing authorities, programs, and funding levels for climate change research and extension adequately address the needs of agricultural producers.

Selected CRS Reports

- CRS Report R40819, *Agricultural Research: Background and Issues*
- CRS In Focus IFI1319, *2018 Farm Bill Primer: Agricultural Research and Extension*
- CRS Report R45897, *The U.S. Land-Grant University System: An Overview*
- CRS In Focus IFI1847, *1890 Land-Grant Universities: Background and Selected Issues*
- CRS In Focus IFI2009, *1994 Land-Grant Universities: Background and Selected Issues*

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