**Statement of the Agriculture and Food Research Initiative (AFRI) Coalition**

Submitted to the House Appropriations Subcommittee

On Agriculture, Rural Development, Food and Drug Administration, and Related Agencies

On the Fiscal Year 2018 Appropriation for the United States Department of Agriculture

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The Agriculture and Food Research Initiative (AFRI) Coalition is pleased to submit the following testimony on the Fiscal Year (FY) 2018 appropriation for the Department of Agriculture's (USDA) Agriculture and Food Research Initiative (AFRI), administered by the National Institute of Food and Agriculture (NIFA). **We urge the Committee to provide at least $420 million for AFRI in FY 2018.** The AFRI Coalition, comprised of more than forty scientific societies and agricultural research advocacy organizations is dedicated to raising awareness of the importance of federally-funded agricultural research, including AFRI. Investments in research programs overseen by USDA are responsible for scientific breakthroughs that benefit Americans' daily lives – ensuring a safe, nutritious, affordable and plentiful food supply.

AFRI is the largest USDA competitive grants program. It funds fundamental and applied research, extension, and education in support of our nation's food and agricultural systems. First created in the 2008 Farm Bill and reauthorized in the 2014 Farm Bill, AFRI complements other USDA research programs by funding cutting-edge science to meet 21st century challenges in public health, food production, national security, and global competitiveness. Congress provided $350

million in FY 2016, and $375 million in both the Senate and House Agriculture Appropriations bills for FY 2017. Nearly a decade after its founding, however, the program has yet to reach its authorized level of $700 million a year. Why is this a problem? Without adequate funding for agriculture science, valuable research is never performed; students and farmers miss out on education and training opportunities; companies settle for undertrained workers, slowing their growth and the economy; and America loses its position of global agricultural leadership.

Food, agriculture, and natural resources research has been woefully underfunded over recent decades. In the past four years, for example, over 75 percent of AFRI proposals deemed worthy by expert review panels go unfunded due to budget constraints. In FY 2014, only $270 million of the $1.1 billion in projects recommended for funding by AFRI's review panels received support, leaving thousands of innovative projects unfunded. Research supported by AFRI aims to solve critical scientific, agricultural, and societal problems, and underfunding such research projects undermines agricultural productivity. Current trends in agricultural yields, which have been steadily increasing even as land use decreases, rely heavily on basic and applied research, and the future of our food and agricultural systems, a basis for human health, rely on it as well. The potential for returns on agriculture research funding makes it an opportunity that cannot be oversold – for every federal dollar spent on publicly funded agriculture research, $20 or more is generated in the U.S. economy.[1]

Importantly, AFRI-funded researchers do not work in a vacuum; they also regularly collaborate with government scientists and extension officers to share information and extend the reach of

[1] OECD (2016), *Innovation, Agricultural Productivity and Sustainability in the United States*, OECD Food and Agricultural Reviews, OECD Publishing, Paris. *http://dx.doi.org/10.1787/9789264264120-en*

their research. For example, AFRI-funded researchers collaborated with USDA's Agricultural Research Service (ARS) and Animal and Plant Health Inspection Service (APHIS) throughout the 2014-15 Highly Pathogenic Avian Influenza (HPAI) outbreak. This outbreak was the worst ever experienced in the United States; officials were forced to kill nearly 50 million birds, egg prices increased by 50.6 percent, and egg shortages were seen across the country. Coordinated planning by ARS, APHIS, and AFRI-funded researchers enabled the development and deployment of innovative vaccines that mitigated the impact of the outbreak and extension work that prepared an international cohort of workers to prevent the virus's spread. Such collaborations, which provided an expansion of expertise and a stockpile of vaccines, are even today proving their worth as avian influenza is again being detected in Tennessee and Georgia. A strengthened commitment to investments in science for food and agriculture is essential to maintain and grow our nation's food, economic, and national security.

In addition to traditional research collaborations, AFRI-funded scientists rely on the objective food, agricultural, rural economic and resource statistics, and market information provided by the USDA's National Agricultural Statistic Service (NASS) and Economic Research Service (ERS). These two small USDA agencies compile statistics and publish market information with outsized impacts on the U.S. economy. Moving research through the "solution supply chain" not only means finalizing new tools and technologies for the consumer, it also means helping scientist inventors and investors navigate economic risk in the agricultural, food, and resource marketplace. Intramural research and statistical resources, such as ERS's Agricultural Resource Management Survey (ARMS), assist AFRI researchers to develop products based on the needs of the market, boosting the impact of these innovations and their potential for success.

AFRI-funded scientists work on specific, time-limited projects, often with a national or regional focus. But long-term research and locally-driven research, both essential for boosting agricultural productivity over decades, is also struggling. In addition to AFRI, NIFA provides support for research at our nations' land-grant universities' (LGUs) and for the national Cooperative Extension Service in the form of capacity funds. Capacity funds give these institutions the long-term, reliable support necessary to maintain the specialized personnel and facilities required for complex, applied research and Extension work. Just as AFRI-funded scientists rely on collaborations with USDA scientists to extend the impact of their work, they also often depend on the foundational support of physical infrastructure and specialized personnel funded by NIFA capacity funding. Capacity funding also requires matching state or local funds, thus stretching federal dollars. With capacity in place, these institutions stand ready to respond to emerging threats, such as avian flu, wheat rust, and citrus greening, as well as to any emerging priorities identified by Congress, the Administration, and the rural and agricultural communities.

In addition to research, AFRI provides funding for the education and training of nearly 2,500 undergraduate, graduate, and postdoctoral students for careers in the food, agricultural, and natural resources sciences. Increased funding for AFRI will help close a critical shortfall of graduates in the agricultural sciences and attract the next generation of scientists necessary for the future of our society. According to a 2015 Purdue University study, however, graduates in these programs are only sufficient fill about 60 percent of the expected annual openings.[2] Professors see student interest, but a lack of funding for graduate student support narrows the pipeline, leaving companies

[2] USDA Employment Opportunities for College Graduates 2015-2020. A. Goecker, E. Smith, J. M. Fernandez, R. Ali, R. Goetz. 2016.

scrambling to fill positions with undertrained graduates from other fields and slowing the overall growth of the agricultural sector.

Companies need a steady supply of agriculturally trained workers because new scientific discoveries today fuel the innovation supply chain of tomorrow – boosting U.S. competitiveness, creating jobs, and spurring new business and industries. Moreover, high-tech innovations, products, and tools developed by the private sector are underpinned by federally supported research. The great strides in soil science and fertility, precision agriculture, next generation plant breeding techniques, international trade models, and advanced, sensor-based farm management would not be possible without this investment in public research. Scientific inquiry is at the heart of our Nation's agricultural system.

Food, agriculture, and related industries account for almost $1 trillion in economic output – 5.7 percent of U.S. Gross Domestic Product. These industries employ nearly 10 percent of the U.S. workforce, providing over 17 million jobs across the country. An additional 58,000 jobs are created annually in the food, agriculture, and natural resources industries. America's farms directly employ 2.6 million people and contribute $177 billion to the U.S. economy. At home, the productivity and profitability of our nation's farmers underpin the viability and health of our nation's rural economy, and abroad, the farm economy contributes to a positive trade balance, expanding the market for U.S. agricultural products. U.S. agricultural exports are valued at $133 billion. Each of these benefits stem from continued federal support of agriculture research.

Increased funding for AFRI, and publically funded agricultural research writ large, will help to spur new research innovations that fuel our economy, safeguard our food security, and conserve our nation's resources. Greater agricultural research funding will rapidly accelerate our ability to solve pressing challenges facing agriculture, attract and retain the next generation of scientists and farmers alike, and advance innovations benefiting all Americans.

While U.S. public research capacities remain robust and competitive, there is a question as to whether our leadership in food, agriculture, and natural resources can be sustained. Federal funding for food and agriculture research has remained flat for over two decades, while developing countries have significantly increased their investments in research. China's public agricultural research spending surpassed the U.S.'s in 2009.[3] Congress has the ability to reverse this trend and restore the United States as the global leader in agriculture.

We understand the difficult task ahead and urge Congress to make AFRI funding a priority. We stand ready to work with you to ensure America's agricultural research enterprise remains strong and continues to drive new innovations in the years to come. We appreciate the opportunity to provide written testimony and would be pleased to assist the Subcommittee as it considers the FY 2018 appropriation for AFRI. Thank you.

**About the AFRI Coalition**: The AFRI Coalition is a coalition of diverse scientific societies and science advocacy organizations dedicated to highlighting the important role of federally-funded agricultural research, including AFRI, in advancing economic and environmental sustainability,

[3] https://www.ers.usda.gov/amber-waves/2016/november/us-agricultural-rd-in-an-era-of-falling-public-funding/

enhancing nutrition, promoting health and fostering vibrant rural communities. The AFRI Coalition is united behind fully funding AFRI. To learn more about the Coalition or to see a list of members, please visit: http://africoalition.org