Statement of Dr. Chavonda Jacobs-Young, Acting Director
National Institute of Food and Agriculture
United States Department of Agriculture

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Subcommittee on Rural Development, Research, Biotechnology, and Foreign Agriculture

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Good morning Chairman Johnson, Ranking Member Costa, and members of the Subcommittee. Thank you for inviting me here today to participate in this timely hearing on Farm Bill programs as they relate to USDA's National Institute of Food and Agriculture (NIFA) of which I am the Acting Director. I am pleased to have this opportunity to provide some detailed information on our achievements and challenges and look forward to learning about your interests.

Agricultural science is a dynamic system that moves from farm to lab to dining table and back again. At USDA when we speak of agricultural science we mean all the activities relating to research, education, and extension and NIFA is a critical part of this.

That is why I am pleased to be leading an agency team of about 350 professionals at a time when both Congress and the Administration understand the inherent value of investing in scientific research in a smart and efficient way. One of our goals at NIFA is to elevate the standing and stature of research, education and extension within the Federal science enterprise while being effective stewards of the public trust. This is the real challenge that NIFA faces.

Mandate from 2008 Farm Bill

It's against such a backdrop that the 2008 Farm Bill (FCEA Act of 2008) created the National Institute of Food and Agriculture in support of extramural agricultural research across the nation. The 2008 Farm Bill called for the integration of programs across functions and funding methods within the Agency. As such, NIFA is comprised of four main institutes. These are the:

1. Institute of Food Production and Sustainability;
2. Institute of Bioenergy, Climate, and Environment;

3. Institute of Food Safety and Nutrition; and the
4. Institute of Youth, Family, and Community.

These institutes coordinate a mixed portfolio of competitive and capacity building programs all with the aim of enhancing the impact of food, agricultural, and natural resource sciences. In reorganizing the federal extramural research efforts in this manner, Congress took a 21st century approach in the last Farm Bill in acknowledging the broad reach and interdisciplinary nature of agricultural science.

But NIFA is not operating in a vacuum. NIFA scientists develop research partnerships with a diverse group of scientists, farmers, private sector investigators, and a wide array of higher learning institutions across the nation. In fact, these relationships are key in how NIFA identifies its priorities.

Input from Congress, The National Agricultural Research, Extension, Education, and Economics Advisory Board (NAREEEAB), as well as our many university, scientific and agricultural partners and stakeholders all feed into a decision-making process. NIFA's leadership team takes this all into consideration as it establishes broad program priorities and goals across the Agency and ensures they are aligned with broad strategic goals of the department and the mission area. These goals and informed priorities are pursued via competitive programs and capacity building programs.

While only a year and half old, NIFA has already collected a long and impressive list of accomplishments, some of which I would like to highlight in the next few minutes:

Agriculture and Food Research Initiative (AFRI)

NIFA's flagship granting initiative is the Agriculture and Food Research Initiative (AFRI). AFRI's competitive grants program supports both fundamental science and applied research and education for the nation's leading scientists. In particular, AFRI is charged with making research, education, and extension grants that address key problems of national, regional, and multi-state importance in sustaining all components of agriculture. These include farm

efficiency and profitability, ranching, renewable energy, forestry (both urban and agroforestry), aquaculture, rural communities and entrepreneurship, human nutrition, food safety, biotechnology, and classical breeding. In fact, AFRI funding was pivotal in completing the genome of agriculturally important plants and animals like wheat, rice, pigs, cattle, and chickens.

An example of recent success includes the work by a team at the University of California-Davis which has used AFRI funding to identify genes in wheat that are responsible for the plant's tolerance to freezing temperatures. Wheat breeders have long recognized the need to produce cultivars with greater resistance to freezing temperatures and this discovery may lead to improved crop production.

Another example comes from scientists in Connecticut who are investigating the use of natural plant products to reduce food borne pathogens in broiler chickens. This work will potentially lead to decreased bacterial outbreaks, improving public health, and economic opportunity for poultry farmers.

Specialty Crop Research Initiative (SCRI)

NIFA's investment in AFRI is complemented by another program: the Specialty Crop Research Initiative (SCRI). SCRI was created to help fund solutions to critical issues of the specialty crop industry. SCRI supports research in plant breeding, genetics and genomics to improve crop characteristics and appearance, environmental responses and tolerances, pest and disease management and production efficiency to name a few. SCRI's multistate, multinstitutional, interdisciplinary funding not only requires a non-federal 1-to-1 match but also requires project proposals to combine research and extension. This helps ensure that new products, processes, practices, and tools are made available to specialty crop stakeholders. Even though most SCRI-funded projects have not yet reached completion, growers and consumers are already benefiting from this investment.

For example, water availability is an issue affecting all Americans. SCRI has funded projects to reduce the amount of water needed to profitably raise crops. One project in California has the potential to reduce water use in grape production by 153 billion to 307 billion gallons per year.

This is enough water to meet the daily household water needs of over 6 million Americans for an entire year, or about the equivalent of the populations of Los Angeles and Chicago combined. Fruit growers must reduce the quantity of fruit on their trees so that the remaining fruit reaches marketable size. Until recently, U.S. growers did this either with chemicals or manual labor.

One SCRI-funded project looking at mechanical thinning techniques demonstrated $500 to $700 per acre savings in apricots and nectarines and $200 to $500 per acre savings in cherries during commercial field trials. This led to increasing adoption of this technology across the entire country. This will result in local jobs to manufacture and service the needed equipment, increased wages for workers who move from manual labor to equipment operation, and savings for consumers in the grocery store.

SCRI-funded work on biological control of insect pests (in particular, codling moth) in orchards in the Pacific Northwest demonstrated that sustainable pest management, which includes maintaining natural predators of orchard pests, can reduce annual orchard pest management costs of $2,300 by 25 percent.

Beginning Farmers and Rancher Development Program

While NIFA scientists are committed to ensuring that the scientific pipeline for the next generation of scientists is being filled, NIFA's Beginning Farmer and Rancher Development Program aims to support the pipeline of our next generation of producers. Training for beginning farmers and ranchers includes: webinars, seminars, internships, mentorships, and on-farm field days. Other training sessions have included face-to-face training events, such a regular non-credit courses or workshop sessions at farming conferences. More than 5,300 new and potential farmers participated in training events.

For example, The Western Navajo Nation Beginning Farmers and Ranchers Project engages, prepares, and supports socially disadvantaged, underserved, and limited resource beginning Navajo farmers and ranchers in eight communities covering 8,000 square miles of the Navajo Nation. The overall goal of the project is to provide Navajo community members who wish to begin farming and ranching with the skills to effectively launch sustainable agricultural

operations using traditional and contemporary agricultural techniques in conjunction with effective business practices. In the first year, the project worked with 13 chapter members through direct agricultural training and networking activities that included two roundtables, two conferences, and weekly classes in technology, business, or introductory farming and ranching to 1,000-plus participants. Fifty percent of participants are women. Seventy percent have been farming or ranching for less than one year, or do not currently farm or ranch. The project staff is comprised of four traditional Navajo locals of varying ages and educational backgrounds. All are bilingual, fluent in Navajo, and culturally sensitive to the target group's history and challenges.

Serving Minority Communities

NIFA is also working to ensure that its research and extension programs continue to expand its reach into non-traditional, diverse communities through its minority serving programs. These programs include: Hispanic Serving Institutions Education Grants Program, the Tribal Colleges Education Equity Grants Program, and the 1890 Institution Capacity Grants Program.

An example of a recent success is at Fort Valley State University (FVSU) in Georgia where the 1890 Capacity Building Grant has been essential in helping design and implement an Outdoor Forestry Classroom/Laboratory Program. One of America's challenges is to attract young people from all walks of life to the sciences and in particular the agricultural sciences to fill the pipeline for our future. This program provides hands-on and experiential learning to forestry course students, trains and prepares high school agriculture students for various forestry careers through development events, and allows use of its facilities for summer workshops for high school agriculture teachers throughout the state of Georgia. During Spring 2009, Area 3 of district # 4 of Georgia used the site to conduct forestry career development events. One hundred and fifty high school students were in attendance and had the opportunity to interact and discuss careers in the forestry industry with foresters from USDA, the Georgia Forestry Commission and Weyerhaeuser.

Another example includes, the Teaching and Research in Environmental Ecology Program at the University of Texas at San Antonio which helped recruit, retain, and financially support underrepresented undergraduate and graduate students.

Capacity Building Grant Programs

Another set of key programs are NIFA programs which build capacity for research and extension in cooperation with our university partners. These include:

a. Hatch Act programs which support research at state agricultural experiment stations;
b. McIntire-Stennis Cooperative Forestry Research program which funds research related to the use of the Nation's forest resources;
c. Evans-Allen Program, created to support agricultural research at 1890 Colleges; and
d. the Smith-Lever programs which support not only the national Cooperative Extension System but also targeted programs within the extension system on subjects like food and nutrition education, pest management, and children, youth, and families at risk.

Examples of recent successes made through these capacity building programs run across a wide range of NIFA's activities. For instance, scientists in North Dakota developed three varieties of barley which has been recommended for malting and brewing by the American Malting Barley Association. These efforts resulted in an additional $23 million in revenue for growers in 2009. In another example, researchers at the University of Georgia used advanced genomic and proteomic approaches to identify and develop strategies to improve pine tree resistance to an invasive wood wasp.

Conclusion

These are just a few examples of successes in the first two years of NIFA's existence. However, the reach and scope of future accomplishments are becoming increasingly challenging in a tight budget environment. While research outcomes can never be fixed to a certain timeline, NIFA is doing its best in this fiscal climate to make smart investments, forge enduring relationships, and engage new partners in scientific research, education and extension programs.

In addition, NIFA is committed to maximizing federal dollars by ensuring systematic monitoring and evaluation. While the scientific method requires the flexibility to replicate results, NIFA's leadership, program managers, and researchers rigorously track scientific projects through its Current Research Information System (CRIS) to avoid duplication. In addition NIFA and ARS

hold joint stakeholder meetings on scientific research to pull together research projects that are compatible and not duplicative.

NIFA has a promising future and in collaboration with our Congressional partners will continue to build on its leadership role in national agricultural scientific research, education, and extension.

I appreciate your time and would be pleased to answer any questions.