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NATIONAL AGRICULTURAL STATISTICS SERVICE

Statement of Mr. Joseph Reilly, Administrator
Before the Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies

Chairman Aderholt, Ranking Member Farr, and members of the Subcommittee, I appreciate the opportunity to present the President's 2017 Budget request for the National Agricultural Statistics Service (NASS). NASS administers the U.S. Agricultural Estimates program, which began at the United States Department of Agriculture (USDA) in 1863. NASS also has conducted the Quinquennial U.S. Census of Agriculture since 1997, first collected by the Department of Commerce in 1840. Both the agricultural estimates and the census program align with the basic mission of NASS to provide timely, accurate, and useful statistics in service to U.S. agriculture.

Major Activities

Agricultural Estimates and the Census of Agriculture. The primary activity of NASS is to provide reliable data to meet the decision-making needs of the agricultural industry. The agency fulfills its mission through an annual agricultural estimates program and the quinquennial Census of Agriculture. NASS prepares estimates for over 120 crops and 45 livestock items that are published annually in more than 400 separate reports, of which 110 are Principal Economic Indicators of the U.S. Farmers, ranchers, and agribusinesses voluntarily respond to a series of nationwide surveys about crops, livestock, prices, chemical use, and other agricultural activities each year. Surveys are conducted during the growing season to measure the impact of weather, pests, and other factors on crop production. In many cases, NASS supplements farmer surveys with field observations and measurements of plant counts. NASS also uses administrative data from other USDA agencies, other Federal and State agencies; data on imports and exports; and other survey data to ensure official estimates accurately represent agricultural inventories.

International Programs. NASS provides technical assistance and training to improve agricultural statistical programs in other countries in cooperation with other government agencies

on a cost-reimbursable basis. The NASS international program focuses on developing and emerging-market countries in Asia, Africa, Central and South America, and Eastern Europe.

NASS assists countries in applying modern statistical methodology, including sample survey techniques. Accurate information about other countries is essential for successfully marketing U.S. farm products throughout the world. NASS has been an important contributor to the U.N. Global Strategy for Agricultural and Rural Statistics, and to the U.S. Feed the Future Program, contributing to better statistics for USDA global estimates of food supply.

Stakeholder Input. NASS annually seeks input from the public on determining priorities and improving its products and processes. It consults with customers and stakeholders through meetings of the Secretary of Agriculture's Advisory Committee on Agriculture Statistics, interaction with producers, data users meetings with agribusinesses and commodity groups, special briefings for agricultural leaders during the release of major reports, and numerous individual contacts. In response to this input, NASS continues to improve the quality and accessibility of its reports. The agency has adjusted its agricultural estimates program and published reports, and has expanded electronic access capabilities. All reports issued by NASS' Agricultural Statistics Board are made available to the public at a previously announced release time to ensure equal access to the information. All national statistical reports and data products, including graphics, are available on the web, as well as in printed form, at the time they are released. Customers can electronically subscribe to NASS reports and download them in an easily accessible format using standard software. NASS also provides free Rich Site Summary, a summary of NASS and other USDA statistical data that is produced annually in USDA's *Agricultural Statistics*, available on the NASS home page or in hard copy.

In addition, NASS conducts ongoing customer satisfaction surveys to help understand customer needs and prioritize changes to meet those needs. In 2015, the survey indicated the highest priority for data users is to improve the NASS website and QuickStats. NASS is gleaning additional information via the Foresee web-based customer satisfaction tool and website user feedback. The additional information is shaping a high priority website rebuild and reorganization.

Collaboration with Other Agencies. NASS conducts special surveys and provides consulting services for USDA agencies, other Federal or State agencies, universities, and agricultural organizations on a cost-reimbursable basis. Consulting services include assistance

with survey methodology, questionnaire and sample design, information resource management, and statistical analysis. NASS has assisted USDA agencies in programs that monitor nutrition, food safety, environmental quality, and customer satisfaction. In cooperation with State Departments of Agriculture, land-grant universities, and industry groups, NASS conducts over 130 special surveys each year covering a wide range of issues such as farm injury, nursery and horticulture, equine, farm finance, fruits and nuts, vegetables, and cropping practices.

For example, NASS conducts the Agricultural Resource Management Survey (ARMS) in collaboration with USDA's Economic Research Service. ARMS data are the primary input for the Nation's farm income statements—one of the country's Federal principal economic indicators. These data are the basis for much of the targeted analysis conducted by USDA economists on the Farm Bill and other important issues. The Natural Resources Conservation Service (NRCS) and NASS have also collaborated together to conduct the Conservation Effects Assessment Program. This is a multi-agency effort to quantify the environmental effects of conservation practices and programs and develop the science base for managing the agricultural landscape for environmental quality. Project findings are used to guide USDA conservation policy and program development and help conservationists, farmers and ranchers make more informed conservation decisions.

An Enhanced Research Program. NASS is conducting a number of statistical and survey research projects to improve methods and techniques for collecting, processing, and disseminating agricultural data.

NASS is developing model-based estimation techniques to improve the statistical reliability of published forecasts/estimates and to provide accurate measures of error. A model that incorporates multiple data sources, including current and historical data, and administrative/auxiliary information has been developed for State-level corn and soybean yields and is being transferred into production. Time series techniques are being utilized to model estimates of hogs and pigs as well as cattle. Efforts are now focused on incorporating shocks to the system, such as the Porcine Epidemic Diarrhea Virus, in a manner that allows valid State estimates reflecting the spatial effect of the shock. NASS has worked collaboratively with consultants from outside of the agency to develop the methodology for all of these endeavors.

NASS uses its area frame both as a stand-alone frame to estimate numbers of farms and a wide variety of commodities, and as a measure of incompleteness for its list surveys—including

the Quinquennial Census of Agriculture. New methods were used in adjusting the estimates and measures of uncertainty for those estimates were published for the 2012 Census of Agriculture. Similar techniques have been developed to adjust the area frame's estimate of the number of farms for misclassification; measures of uncertainty are developed for each estimate. Refinements to the model that lead to more precise State estimates are being explored.

NASS is beginning to explore methods to estimate the probability of obtaining a response for each of the data collection modes (mail, telephone, and personal interview). Instead of developing a model for each survey, initial efforts will focus on developing models that work across surveys, but account for differential response due to the length of the survey. Once models are developed a study will be initiated to assist in guiding data collection decisions. Future research will evaluate the impact of using this information on statistical estimation.

Since the release of the 2012 Census of Agriculture, feedback from NASS's Agricultural Statistics Advisory Committee and the public has led NASS to re-evaluate how it quantifies the contribution of women and new/beginning farmers. In response, NASS commissioned the National Institute of Statistical Sciences, as a neutral third party, to establish an expert panel on behalf of NASS. The purpose of the panel, which met in April 2015, was to provide guidance on how to improve reporting for women and new/beginning farmers, given the diversity in organizational structure of modern farms. Based on the panel's feedback, NASS revised the questions relating to women and young/beginning farmers for the 2017 Census of Agriculture. These are currently undergoing cognitive and content testing.

NASS is operationalizing significance editing, a statistical data editing and selective editing methodology developed by Statistics Canada. This methodology reduces the time and effort spent manually reviewing and correcting survey questionnaires without damaging the quality of the resulting data and focuses the manual effort on ensuring the accuracy of the survey responses that strongly impact the survey results. NASS will test the significance editing system on the operational hog survey program in 2016 with implementation in other survey programs to follow. This research will reduce costs associated with manual editing of questionnaires and result in higher data quality due to a consistent automated edit.

A new approach to the use of mobile mapping is being explored. Initial indications are that farms can be identified using maps on the iPad with a slight increase in the data collection time. If additional studies in 2016 and 2017 show these data can be collected efficiently using the

iPad, enumerators would no longer need the large area maps, substantially reducing development costs.

An automated stratification method, developed within NASS, was used for construction of the area frame in 2015. Stratification is based on the percent cultivation determined from the Cropland Data Layers and is followed by manual review and editing. With this approach, the stratum for new area frames are more homogeneous, which will lead to more precise estimates while reducing labor costs.

NASS continues to explore methods to improve the Cropland Data Layer and the CropScape and VegScape web portals. In 2015, the 2014 Crop Frequency Data Layer was released for the first time. This provides the frequency with which corn, soybean, wheat and cotton have been planted. NASS, in collaboration with the University of Florida, is also building a decision support system that extends their AgroClimate tool to integrate remote-sensing-based crop condition indicators, climate data from both ground-level stations and gridded data, and crop growth model information. This decision support system includes a crop phenology tool that can forecast critical crop growth stages.

Models of yield and acreage for corn and soybeans have been developed based on remotely sensed data. Further progress on the yield model will require incorporating crop stage. Research is focused on understanding the associations in crop stage and remotely sensed data. Collaborations with the University of Florida and the University of Nebraska are focused on identifying yield models that incorporate remotely sensed data, crop stage, and on-farm data. Along with these collaborations, NASS is participating in the USDA partnership with the JASON group, an independent group of scientists which advises the Federal Government on matters of science and technology.

NASS's research program, which is focused on innovation and enhancement in statistical methods, business processes and data products in support, sustainment and improvement of NASS programs, has allowed the development of new statistical models for the estimating program; computer applications to improve data editing and imputation; progress on model development that inform data collection approaches; developed a new tool using remote sensing data—Crop Frequency Data Layer; and further benefited from computer-based processing technology.

2017 Budget

The agency's 2017 budget request is $176.6 million, a net $8.2 million increase over the 2016 level. Of the requested level for 2017, $134.5 million is for the Agricultural Estimates Program – an $8.2 million increase over 2016 -- and $42.7 million is for the Census of Agriculture Program – the same as the 2016 enacted level. This funding level is necessary to support new initiatives for the Agricultural Estimates Program and to prepare the mail out and data collection systems of the 2017 Census of Agriculture Program.

Agricultural Estimates

Annually, NASS issues over four hundred agricultural estimates reports that are critically important in assessing current supply and demand in agricultural commodities. Producers, agribusinesses, farm organizations, commodity groups, economists, public officials, and others use the data for decision-making. The statistics NASS collects and disseminates ensure buyers and sellers have access to the same official statistics at the same pre-announced time, and leveling the playing field. The free flow of information minimizes price fluctuations for U.S. producers, makes commodity markets more efficient, and makes our Nation's agricultural industry more competitive. The data has become increasingly important as producers rely on future contracts to manage risks.

NASS proposes an increase in funding for the new and beginning farmers and ranchers initiative to support publishing key baseline statistics at the regional level. This is one of the Department's priorities, as it would provide a gauge of the effectiveness of programs implemented by the Department for this population. Information will be compiled on farmers and ranchers who have been in business for 10 or fewer years and create the ability to independently analyze trends within the beginning farmer population.

An increase in the Geospatial Improvement Initiative (GIS) is proposed for 2017 to enhance the current satellite-based agricultural statistics monitoring program. It will research and institute systems to provide satellite based crop condition, soil moisture, crop progress (phenological development of crops), and crop yields. This will leverage strategic cooperative partnerships with university partner, USDA Climate Hubs and the National Oceanic and Atmospheric Administration Regional Climatic Centers.

NASS produces weekly crop progress reports from April through November. The reports provide planting, fruiting and progress, as well as overall crop condition for selected crops in major producing States. This is one of the NASS reports most closely followed by the agricultural industry. The new GIS program will lead to improved reports; specifically an objective measure of crop condition and soil moisture can be recorded on a local level. This allows farmers to understand their crop progress relative to neighboring areas and the rest of the Nation, which could provide a foundation for making management decisions with respect to their crops.

In 2015, the chemical use program crop rotations were restored to previous 2010 levels, allowing more frequent data on major row crops, and fruit and vegetable chemical use data on an alternating year basis. At the funding level requested in the 2017 budget, NASS will continue publishing the chemical use data series at the restored level.

The chemical use data collected by NASS have been used in building a database for the USDA Pesticide Data Program. This database is used by the Department to evaluate the safety of the Nation's food supply. Additionally, the implementation of the Food Quality Protection Act (FQPA), in 1996, increased the need for actual, reliable chemical use data. FQPA requires the Environmental Protection Agency (EPA) to conduct an accelerated review of tolerance levels for re-registration of pesticide products. Part of the review includes using actual chemical usage data that only growers can provide. The absence of these data has created difficulties for EPA and industry to effectively conduct and analyze these reviews. In the absence of actual data, EPA is often in the position to assume maximum label rates are being applied on all acreage. This has the potential of over-estimating actual pesticide usage.

As part of the President's National Strategy for Combating Antibiotic Resistant Bacteria, USDA is charged with the development of practical mitigation strategies to limit or reduce the prevalence of Antimicrobial Resistance. To address this growing problem, NASS requests funds for new survey instruments to collect data on cattle, hogs, and poultry. These new data can be used to establish a baseline antibiotic use in these livestock and help track antibiotic use and strengthen the knowledge and evidence base to allow for other agencies (that do more in-depth research work) to use NASS collected data as a starting point to go forward with more probing type questions.

NASS requests additional funding for a new special study that will focus on the modern farm structure and its contributors. Although the vast majority of today's farms continue to be run by a single operator or by spousal partners, the large farms that produce a substantial percentage of the Nation's food tend to have more complex business structures. This study will also include farms now operated by veterans, women, and beginning farmers. The purpose of this new study is to implement the finding from a National Academy of Sciences panel convened in 2015 to explore ways to improve data collection and information reporting on today's complex farm business structures and farmer characteristics. Survey questions will be developed and tested for inclusion in the 2017 Census of Agriculture and the ARMS.

In meeting the stakeholders and congressional needs of providing data for the ever changing agriculture landscape and providing more information with the new 2017 initiatives, NASS will suspend the 2016 Floriculture survey program and the 2016 Noncitrus Fruit and Nut Preliminary summary report but will publish a final 2016 Noncitrus Fruit and Nut summary in July of 2017.

Census of Agriculture

The Census of Agriculture is taken every five years and provides comprehensive data on the agricultural sector at the national, State, and county level. The Census of Agriculture is the only source for this information on a local level and is extremely important to the agricultural community.

NASS published 2012 Census of Agriculture data for all 50 States and also Puerto Rico but due to sequestration did not cover the outlying areas. NASS makes all data publicly available on its website. NASS issued a preliminary release of 2012 Census of Agriculture data in February 2014 that contained high level estimates at the U.S. and State level. In May 2014 NASS released the full Volume I series of data at the U.S., State and county level.

In addition to the in-depth large publication released in May 2014, a number of special tabulations were subsequently released. Those include State and county profiles; Congressional District Profiles; Watershed Publication; Race, Ethnicity and Gender Profiles and Specialty Crop Report.

The 2017 budget request included resources for NASS to continue producing the vital Current Agricultural Industrial Reports (CAIR). These surveys are part of the Census of Agriculture and, as such, are required by law. Commodities covered in these reports include:

Oilseeds, Beans & Nuts; Fats and Oils; Cotton Manmade Fiber Staple & Raw Linters; Flour Milling Products, and Grain Crushing's & Co-Products Produced. NASS published the first CAIR report February 19, 2015. This request supports estimation requirements for NASS, the Economic Research Service, the World Agricultural Outlook Board, and the USDA Chief Economist. Private industry uses CAIR data to monitor the effect of international trade on domestic production, evaluate the relationship between company and industry performances, conduct market analyses, assess current business conditions, and plan future operations.

Following the 2012 Census of Agriculture, NASS identified improvements to the Electronic Data Reporting instrument used for capturing online Census of Agriculture responses as one of the Agency's top priorities. In 2016, NASS successfully deployed the new instrument that will improve the respondent experience during the 2015 Census Content Test. Based on results from this test NASS will continue to focus on enhancements through 2017.

The 2017 budget includes funding for on-going mail list improvement activities as NASS finalizes the initial census mail list prior to a December 2017 mail out. Funding also includes printing the 2017 Census questionnaire and correspondence materials that will be sent out to over three million potential farms across all 50 states and Puerto Rico.

NASS's dedication to research and continued process improvement will ensure the organization remains relevant and viable to fill the urgent need for timely, accurate, and useful statistics in service to U.S agriculture.

This concludes my statement, Mr. Chairman. Thank you for the opportunity to submit this statement for the record.