

2017 President's Budget  
Economic Research Service

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## ECONOMIC RESEARCH SERVICE

### Purpose Statement

The Economic Research Service (ERS) was established in 1961 from components of the former Bureau of Agricultural Economics principally under the authority of the Agricultural Marketing Act of 1946 (7 U.S.C. 1621 - 1627). The mission of ERS is to inform and enhance public and private decision making on economic and policy issues related to agriculture, food, the environment, and rural development.

Activities to support this mission and the following goals involve research and development of economic and statistical indicators on a broad range of topics, including but not limited to global agricultural market conditions, trade restrictions, agribusiness concentration, farm business and household income, farm and retail food prices, food borne illnesses, food labeling, nutrition, food assistance programs, agrichemical usage, livestock waste management, conservation, genetic diversity, technology transfer, and rural employment. Research results and economic indicators on such important agricultural, food, natural resource, and rural issues are fully disseminated to public and private decision makers through reports and articles; special staff analyses, briefings, presentations, and papers; databases; and individual contacts. More information on ERS' program is contained on the ERS Web site at [www.ers.usda.gov](http://www.ers.usda.gov).

The ERS headquarters is in Washington, D.C. ERS does not have any field offices. As of September 30, 2015, there were 341 permanent full-time employees.

An external review of ERS' Food Access, Food Choices, and Nutrition Research Program, commissioned by ERS as part of its five-year planned program review of all major ERS research topics, was completed in March 2015. The goal of the review was to obtain an objective, rigorous assessment of the research program for ERS that focuses on topics related to the actions of and interactions among consumers, the food industry, and government as they relate to food choices, the food supply, food assistance, and regulation. The review panel found that the program has developed an exemplary record in conducting a portfolio of research and related activities that addresses the needs of stakeholders for timely, policy-relevant information on food choices, access to food by low-income households and individuals, and diet related quality. The panel rated the program as "Excellent." The results of this review are being used to sharpen the focus and impact of ERS research in this area. Subsequent reviews will cover climate, energy, and natural resources; global food supply and security; rural prosperity and a competitive agricultural system; and food safety.

ERS is funding an external committee to review the Commodity Cost and Return (CAR) Estimates data product. The University of Minnesota is coordinating the review, forming an expert committee and leading it in the following tasks: (a) to review the methods and data sources used by ERS in constructing USDA's commodity cost and return accounts; (b) to evaluate the current dissemination of the accounts and their components, in view of user needs; and (c) to provide guidance to ERS managers and the CAR team on potential improvement for methods, data, and dissemination strategies. Specifically the committee will review the annual U.S. and regional commodity cost and return estimates released semi-annually on May 1 and October 1, as well as the monthly U.S. milk cost of production estimates released during the last week of each month. On October 19, 2015, ERS hosted a kick-off meeting for a product review of the CAR data product. ERS and the University of Minnesota will jointly host a panel of economists from across the U.S. consisting of experts who will cover each of the commodities for which ERS produces cost and return estimates. The goal of the panel is to identify ways to improve the data product. The committee will complete the review in FY 2016. Committee recommendations will be used to strengthen estimates used by USDA's program agencies in the administration of policies and programs adopted in the Agricultural Act of 2014.

ERS currently maintains four geographic classification systems that divide U.S. territory along rural and urban dimensions. They were originally developed to facilitate rural research at ERS and elsewhere, but have since been adapted for policy and program uses in various federal agencies. At the request of ERS, the National Academies of Science's Center for National Statistics conducted a workshop in April 2015 on Rationalizing Rural Area Classifications. A preliminary version of the final report was released in November 2015. Beginning with insights derived from this workshop, ERS will assess these classifications in 2016 and make changes necessary to ensure their future validity and usefulness as research and policy tools.

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The Agriculture Security Operations Center (ASOC) provides a high -level enterprise assessment of the security posture of ERS within the USDA network. During FY 2015 the ASOC assessed the ERS systems and their associated processes. The assessment was performed using Federal policy and security guidelines and industry best practices while drawing upon specific experience with U.S. government networks, knowledge of current threats, and exposure to advanced forms of intrusion and complex security incidents and architectures. The outcome of the review consisted of ASOC recommendations that ERS use the 118 general security findings to determine and prioritize the next steps of action.

The ERS LAN/WAN System and its constituent system-level components located at ERS Headquarters at 355 E St., SW, Washington, D.C.; USDA Headquarters at 1400 Independence Ave., SW, Washington, D.C.; and National Information Technology Center (NITC) Enterprise Data Center (EDC) Headquarters in Kansas City, MO, are undergoing an annual security assessment to determine the risk to agency operations, agency assets, or individuals resulting from the operation of the information system in accordance with NIST 800 -53 and FISMA security requirements. This review is mandated and is being performed in accordance with USDA's Risk Management Framework. All testing will be performed by a third party contractor and results will be input into the USDA Cyber Security Assessment & Management (CSAM) tool, as required. This year's testing will be conducted in June 2016.

ERS did not have any direct Office of Inspector General (OIG) or Government Accountability Office (GAO) audits or evaluations conducted during 2015.

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Available Funds and Staff Years (SYs)  
(Dollars in thousands)

| Item  | 2014 Actual |     | 2015 Actual |     | 2016 Enacted |     | 2017 Estimate |     |
|---|-------------|-----|-------------|-----|--------------|-----|---------------|-----|
|   | Amount      | SYs | Amount      | SYs | Amount       | SYs | Amount        | SYs |
| Salaries and Expenses:                              |             |     |             |     |              |     |               |     |
| Discretionary Appropriations.....                   | \$78,058    | 340 | \$85,373    | 336 | \$85,373     | 364 | \$91,278      | 364 |
| Lapsing Balances.....                               | -507        | -   | -308        | -   | -            | -   | -             | -   |
| Obligations.....                                    | 77,551      | 340 | 85,065      | 341 | 85,373       | 364 | 91,278        | 364 |
| <u>Obligations under other USDA appropriations:</u> |             |     |             |     |              |     |               |     |
| Foreign Agricultural Service.....                   | 232         | 1   | 191         | 1   | 413          | 1   | 400           | 1   |
| Food and Nutrition Service.....                     | 4,577       | -   | 6,038       | -   | 4,000        | -   | 5000          | -   |
| Agricultural Research Service.....                  | 380         | -   | 155         | -   | 200          | -   | 200           | -   |
| Nat'l Inst.of Food and Agriculture.....             | 1           | -   | -           | -   | -            | -   | -             | -   |
| Nat'l Agricultural Statistics Svc.....              | 50          | -   | -           | -   | 10           | -   | 10            | -   |
| Risk Management Agency.....                         | 5           | -   | -           | -   | -            | -   | -             | -   |
| Office of the Chief Economist.....                  | 0           | -   | 38          | -   | -            | -   | -             | -   |
| Office of the Chief Scientist.....                  | 0           | -   | 62          | -   | -            | -   | -             | -   |
| Total, Other USDA Appropriation.....                | 5,245       | 1   | 6,484       | 1   | 4,623        | 1   | 5,610         | 1   |
| Total, Economic Research Service.....               | 82,796      | 341 | 91,549      | 342 | 89,996       | 365 | 96,888        | 365 |

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Permanent Positions by Grade and Staff Year Summary

| <u>Grade</u>                                       | <u>2014 Actual</u><br>Washington<br>DC | <u>2015 Actual</u><br>Washington<br>DC | <u>2016 Enacted</u><br>Washington<br>DC | <u>2017 Estimate</u><br>Washington<br>DC |
|--|--|--|---|--|
| Senior Executive Service.....                      | 6                                      | 6                                      | 6                                       | 6  |
| GS-15.....   | 71                                     | 69                                     | 69                                      | 69                                       |
| GS-14.....   | 78                                     | 70                                     | 70                                      | 70                                       |
| GS-13.....   | 89                                     | 86                                     | 86                                      | 86                                       |
| GS-12.....   | 52                                     | 66                                     | 66                                      | 66                                       |
| GS-11.....   | 34                                     | 34                                     | 34                                      | 34                                       |
| GS-10.....   | 1                                      | 1                                      | 1                                       | 1  |
| GS-9.....  | 15                                     | 17                                     | 17                                      | 17                                       |
| GS-8.....  | 4                                      | 2                                      | 2                                       | 2  |
| GS-7.....  | 3                                      | 5                                      | 5                                       | 5  |
| GS-6.....  | 3                                      | 2                                      | 2                                       | 2  |
| GS-5.....  | 4                                      | 1                                      | 1                                       | 1  |
| GS-4.....  | 4                                      | 4                                      | 4                                       | 4  |
| GS-3.....  | 4                                      | 1                                      | 1                                       | 1  |
| GS-2.....  | 2                                      | 1                                      | 1                                       | 1  |
| Total Permanent Positions.....                     | 370                                    | 365                                    | 365                                     | 365                                      |
| Unfilled Positions, EOY.....                       | -38                                    | -23                                    | 0                                       | 0  |
| Total Permanent, Full-Time<br>Employment, EOY..... | 332                                    | 342                                    | 365                                     | 365                                      |
| Staff-Year Estimate.....                           | 341                                    | 342                                    | 365                                     | 365                                      |

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The estimates include appropriation language for this item as follows (new language underscored; deleted matter enclosed in brackets).

For necessary expenses of the Economic Research Service, [\$85,373,000] \$91,278,000.

Lead-Off Tabular Statement

|                              |                   |
|------------------------------|-------------------|
| Budget Estimate, 2017.....   | \$91,278,000      |
| 2016 Enacted.....            | <u>85,373,000</u> |
| Change in Appropriation..... | <u>+5,905,000</u> |

Summary of Increases and Decreases  
(Dollars in thousands)

| Discretionary Appropriations:                                   | 2014<br><u>Actual</u> | 2015<br><u>Change</u> | 2016<br><u>Change</u> | 2017<br><u>Change</u> | 2017<br><u>Estimate</u> |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|
| Research Innovation for Improving Policy Effectiveness....      | \$2,500               | +\$1,000              | -                     | -                     | \$3,500                 |
| Increasing Drought Resilience.....                              | 465                   | +23                   | +\$1,000              | +\$626                | 2,114                   |
| Beginning Farmers and Ranchers.....                             | 103                   | +27                   | +350                  | +500                  | 980                     |
| Food Assistance and Nutrition Research Program.....             | 3,408                 | -                     | -                     | -                     | 3,408                   |
| Commodity Outlook Programs.....                                 | 5,717                 | -                     | -                     | -                     | 5,717                   |
| IT equipment.....   | 1,000                 | -                     | -                     | -                     | 1,000                   |
| Macroeconomic analysis.....                                     | 200                   | -                     | -                     | -                     | 200                     |
| Intramural research on the economics of invasive species....    | 835                   | -                     | -                     | -                     | 835                     |
| Situation and outlook reporting for fertilizer use and trade... | 450                   | -450                  | -                     | -                     | -                       |
| Cooperative Agreements and Collaborations.....                  | 4,494                 | -                     | -1,000                | -                     | 3,494                   |
| Interagency Agreements.....                                     | 6,009                 | -                     | -                     | -                     | 6,009                   |
| Environmental Services.....                                     | 1,105                 | -500                  | -                     | -                     | 605                     |
| Consumer Data Information Program.....                          | 5,966                 | -                     | -                     | +4,021                | 9,987                   |
| Agricultural Resource Management Survey (ARMS).....             | 6,650                 | -                     | -                     | -                     | 6,650                   |
| Homeland Security.....  | 934                   | -                     | -                     | -                     | 934                     |
| Decentralized GSA rent and DHS security payments.....           | -                     | +6,227                | +64                   | +114                  | 6,405                   |
| Pay costs.....  | 448                   | +504                  | +564                  | +758                  | 2,274                   |
| Other Ongoing Research.....                                     | 37,774                | +484                  | -978                  | -114                  | 37,166                  |
| Total Discretionary Appropriations.....                         | <u>78,058</u>         | <u>+7,315</u>         | <u>-</u>              | <u>+5,905</u>         | <u>91,278</u>           |

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Project Statement  
Adjusted Appropriations Detail and Staff Years (SYs)  
(Dollars in thousands)

| Program                           | 2014 Actual |     | 2015 Actual |     | 2016 Enacted |     | Inc. or Dec. |     | 2017 Estimate |     |
|-----------------------------------|-------------|-----|-------------|-----|--------------|-----|--------------|-----|---------------|-----|
|                                   | Amount      | SYs | Amount      | SYs | Amount       | SYs | Amount       | SYs | Amount        | SYs |
| Discretionary Appropriations:     |             |     |             |     |              |     |              |     |               |     |
| Economic Analysis & Research..... | \$78,058    | 340 | \$85,373    | 341 | \$85,373     | 364 | +\$5,905     | -   | \$91,278      | 364 |
| Total Appropriation.....          | 78,058      | 340 | 85,373      | 341 | 85,373       | 364 | +\$5,905     | -   | 91,278        | 364 |
| Mandatory - Farm Bill.....        |             |     |             |     |              |     |              |     |               |     |
|                                   |             |     | +500        |     |              |     |              |     |               |     |
| Total Available.....              | 78,058      | 340 | 85,873      | 341 | 85,373       | 364 | 0            | -   | 91,278        | 364 |
| Lapsing Balances.....             | -507        | -   | -308        | -   | -            | -   | -            | -   | -             | -   |
| Total Obligations.....            | 77,551      | 340 | 85,565      | 341 | 85,373       | 364 | +5,905       | -   | 91,278        | 364 |

Project Statement  
Obligations Detail and Staff Years (SYs)  
(Dollars in thousands)

| Program                           | 2014 Actual |     | 2015 Actual |     | 2016 Enacted |     | Inc. or Dec. |     | 2017 Estimate |     |
|-----------------------------------|-------------|-----|-------------|-----|--------------|-----|--------------|-----|---------------|-----|
|                                   | Amount      | SYs | Amount      | SYs | Amount       | SYs | Amount       | SYs | Amount        | SYs |
| Discretionary Obligations:        |             |     |             |     |              |     |              |     |               |     |
| Economic Analysis & Research..... | \$77,551    | 340 | \$85,065    | 341 | \$85,373     | 364 | +\$5,905     | -   | \$91,278      | 364 |
| Mandatory Obligations:            |             |     |             |     |              |     |              |     |               |     |
| Farm Bill                         |             |     | 500         |     |              |     |              |     |               |     |
| Total Obligations.....            | 77,551      | 340 | 85,565      | 341 | 85,373       | 364 | +5,905       | -   | 91,278        | 364 |
| Lapsing Balances.....             | +507        | -   | +308        | -   | -            | -   | -            | -   | -             | -   |
| Total Available.....              | 78,058      | 340 | 85,873      | 341 | 85,373       | 364 | +5,905       | -   | 91,278        | 364 |
| Total Appropriation.....          | 78,058      | 340 | 85,873      | 341 | 85,373       | 364 | +5,905       | -   | 91,278        | 364 |

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### Justification of Increases and Decreases

Base funding will be used for core programs of research, data analysis, and market outlook; which are directly related to mission area goals and reflect key Administration priorities. The funding change is requested for the following items:

(1) An increase of \$5,905,000 and 0 staff years for economic research (\$85,373,000 and 364 staff years available in 2016).

(a) An increase of \$758,000 for pay costs (\$154,000 for annualization of the 2016 pay increase and \$604,000 for the 2017 pay increase).

This increase will enable ERS to maintain staffing levels, which are critical to conducting research within ERS' highest priority programs.

(b) An increase of \$4,021,000 for conducting a second round of the USDA's National Household Food Purchase and Acquisition Survey (FoodAPS) (\$500,000 available in 2016).

Primary data on the food choices of American consumers, including participants in the USDA food assistance programs and other vulnerable populations are critical for understanding the evolving dietary patterns and increasing the effectiveness and efficiency of Federal programs that address food insecurity, nutritional deficiencies, and public health issues such as obesity, diabetes, and the metabolic syndrome. Yet, for over 30 years, the United States has remained among a handful of developed countries that does not systematically and continually gather data on expenditures, prices, and quantities of food bought by the Nation's households. A 2005 National Research Council of the National Academies of Science committee on "*Improving the Data Infrastructure to Analyze Food and Nutrition policies*," noted the gap and recommended several measures to strengthen the consumer data system.

ERS and the Food Nutrition Service (FNS) took a major step to fill the gap in 2009 by initiating the *National Household Food Acquisition and Purchase Survey* (FoodAPS). The survey fielded in 2012 introduced many innovations, including state-of-the-art collection methods and data linkages. The effort successfully produced never-before-available data and information on food purchase patterns of Americans, in particular of households participating in the Supplemental Nutrition Assistance Program (SNAP), other poor and low income households, and the factors that influence their choices. Since its release over the last year, the FoodAPS data have fueled 37 pertinent studies on several critical areas of concerns to program and policy officials, including: 1) factors affecting the food choices and shopping behaviors of SNAP and low-income households, 2) impact of SNAP benefits on diet quality and food security of low-income households, 3) affordability of healthy diets, and 4) the role of the local food environment and other geographic factors driving food purchase and acquisition decisions of SNAP and non-SNAP households. A two-day conference in October 2015 provided the first-hand results of these investigations.

A FoodAPS 2 will further strengthen USDA and other policy organizations' abilities to examine the relationships between food programs, policies, and food choices, and to address emerging interests in sustainable food systems and better linking of farm policies to nutrition policies. The new collection will enhance the data quality and coverage while reducing respondent burden by leveraging the lessons learnt in the first round, by taking advantage of administrative records, and by further expansion of reliance on scanner and information technologies. ERS and FNS are currently studying the FoodAPS to enhance the data quality and response rates in the next round. Several specific areas have already been identified to improve the data collection instruments, sampling design, and use of administrative records, and reduce measurement errors. A series of cognitive and pilot tests in FY 2016 will be conducted to assess the alternative approaches to develop the improved protocols for the proposed FoodAPS 2.



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With the additional funding, ERS and FNS jointly propose to field an updated and more efficient second round of FoodAPS. The effort will incorporate lessons learned from conducting the first round and is expected to feature updated web-based collection methods and real-time linkage to USDA food dictionaries and nutrition databases. Further, the second round will be strengthened by (1) adding representative populations of participants in Women, Infant, and Children (WIC) and school meal programs, (2) adding representative populations of children ages 2-5, 6-11, and 12-17, and (3) integrating the purchased foods to their “equivalent” agricultural food commodities, better linking farm to food. This initiative is motivated by a vision to regularly collect the standardized survey every 6 to 7 years.

(c) An increase of \$626,000 for Increasing Drought Resilience: Economic and Policy Drivers (\$1,488,000 available in 2016).

Agriculture is especially sensitive to droughts due to its strong reliance on water for producing and transporting food, feed and fiber. Improved understanding of factors driving farmer-led actions that can improve resilience in the face of drought events is essential for informed policy approaches to enhancing incentives adopting such practices, reducing drought vulnerability, and boosting water sustainability. For example, the 2012 drought had serious negative impacts for crop production. Yet, those impacts were smaller than expected, particularly when comparing the 2012 drought to the 1988 drought. Early evidence suggested that two of the most important factors contributing to reduced drought impacts were improved soil health associated with appropriately applied conservation practices and genetic improvements in crop breeding. Other evidence highlighted the need to consider the whole water system. For example, production effects of severe drought in California over the past few years were smaller than expected because many of California’s farmers were able to substitute groundwater for their diminished surface water supplies. In addition, approximately 20 to 30 percent of the land enrolled in the Conservation Reserve Program (CRP) contributes recharge to major aquifers. This initiative will provide a stronger evidence base for understanding the drivers of farm-level water use and response to water scarcity, drought risk, and weather variability, and implications of water shortages for domestic productivity growth.

In FY 2016, ERS will develop new data on conservation practice adoption and drought mitigation by American farmers and ranchers located in drought prone regions. That initiative focuses on variability in surface water resources and precipitation. In FY 2017, ERS will expand the analysis to examine interactions with groundwater resources, as well as to provide more regionally specific results accounting for local variation in conditions and the institutions that govern farmers’ access to water. The additional \$626,000 in 2017 will be used for cooperative agreements to focus on specific regions and for collaboration with USGS on groundwater modeling. A series of regional aquifer models, datasets, and reports emerging from USGS have the potential to change the way that ERS conducts research in this topic area. This initiative will combine USGS’s new, high-resolution, spatially explicit, regional datasets on groundwater characteristics with farm and conservation program administrative data. ERS seeks extramural funding for both efforts because research conducted by universities can target farmers and aquifers in their regions to understand specific factors that contribute to, or impede, drought resilience and the role of USDA programs. Funds will also be used to support access and technical support for developing and applying the linked hydrologic and farm level data and models. ERS will bring the researchers together on an annual basis to share research findings across projects and with USDA program managers. This initiative will provide adaptation response information in support of the USDA regional climate hubs, and complement Departmental soil health goals, and REE drought, water use and associated farm practice initiatives.

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- (d) An increase of \$500,000 to restore data collection and expand work on Beginning Farmers and Ranchers (\$480,000 available in 2016).

To accomplish the goals of USDA's beginning farmer and rancher initiatives, new farmers must succeed and become established farmers. Success may depend on how beginning farmers enter agriculture, as well as on how they manage their operations. In FY 2016, ERS will examine the challenges faced by beginning farmers and ranchers, characteristics that increase the likelihood of entry and the likelihood of success, and of policy options for increasing those likelihoods. One key strategy that will be examined is how new farmers and ranchers acquire and manage capital, including access to private and federal loans and alternative approaches to obtaining capital (e.g., leasing). The sample of new farms in the Agricultural Resource Management Survey (ARMS) will be used to assess strategies successful beginning farmers and ranchers use to overcome potential barriers. In FY 2017, the National Agricultural Statistics Service has requested \$3 million in funding to survey new and beginning farmers, and future ERS research will draw on this data.

In FY 2017, ERS will expand the analysis to examine differences in demographic characteristics of new farmers and ranchers, including socially disadvantaged, women and veterans. New farmers with different backgrounds or characteristics may more or less readily adopt new approaches to meeting changing consumer needs. Barriers to innovation in agriculture, and the effectiveness of government policies that support innovation are thus an important factor that will be considered.

The additional \$500,000 will be used for cooperative agreements to focus on specific groups of beginning farmers including minorities, veterans, and women. ERS seeks extramural funding because national surveys include only small numbers of responses from each of these groups, thus limiting the kinds of analysis that can be done. Research conducted by universities can target groups in their regions to understand specific factors that determine success and the role of USDA programs. ERS will bring the researchers together on an annual basis to share research findings across projects and with USDA program managers.

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Geographic Breakdown of Obligations and Staff Years  
(Dollars in thousands and Staff Years (SYs))

|                           | 2014 Actual |     | 2015 Actual |     | 2016 Enacted |     | 2017 Estimate |     |
|---------------------------|-------------|-----|-------------|-----|--------------|-----|---------------|-----|
|                           | Amount      | SYs | Amount      | SYs | Amount       | SYs | Amount        | SYs |
| Alabama.....              | \$1         | -   | -           | -   | -            | -   | -             | -   |
| Alaska.....               | 25          | -   | -           | -   | -            | -   | -             | -   |
| Arizona.....              | 3           | -   | \$14        | -   | -            | -   | -             | -   |
| California.....           | 239         | -   | 600         | -   | -            | -   | -             | -   |
| Colorado.....             | 68          | -   | 16          | -   | -            | -   | -             | -   |
| Connecticut.....          | 30          | -   | 141         | -   | -            | -   | -             | -   |
| Delaware.....             | 752         | -   | 128         | -   | -            | -   | -             | -   |
| District of Columbia..... | 67,012      | 340 | 67,346      | 341 | \$85,373     | 364 | \$91,278      | 364 |
| Florida.....              | 13          | -   | 72          | -   | -            | -   | -             | -   |
| Georgia.....              | 86          | -   | 434         | -   | -            | -   | -             | -   |
| Illinois.....             | 1,648       | -   | 1,901       | -   | -            | -   | -             | -   |
| Indiana.....              | 52          | -   | 365         | -   | -            | -   | -             | -   |
| Iowa.....                 | -           | -   | 87          | -   | -            | -   | -             | -   |
| Kansas.....               | 15          | -   | 91          | -   | -            | -   | -             | -   |
| Kentucky.....             | 27          | -   | 435         | -   | -            | -   | -             | -   |
| Louisiana.....            | 41          | -   | 3           | -   | -            | -   | -             | -   |
| Maryland.....             | 1,738       | -   | 1,615       | -   | -            | -   | -             | -   |
| Massachusetts.....        | 88          | -   | 832         | -   | -            | -   | -             | -   |
| Michigan.....             | 154         | -   | 167         | -   | -            | -   | -             | -   |
| Minnesota.....            | 51          | -   | 92          | -   | -            | -   | -             | -   |
| Mississippi.....          | 250         | -   | -           | -   | -            | -   | -             | -   |
| Missouri.....             | 110         | -   | 60          | -   | -            | -   | -             | -   |
| Montana.....              | 101         | -   | 35          | -   | -            | -   | -             | -   |
| Nebraska.....             | 6           | -   | 265         | -   | -            | -   | -             | -   |
| Nevada.....               | 1           | -   | 4           | -   | -            | -   | -             | -   |
| New Hampshire.....        | 1           | -   | 101         | -   | -            | -   | -             | -   |
| New Jersey.....           | 138         | -   | 3,350       | -   | -            | -   | -             | -   |
| New Mexico.....           | 249         | -   | 736         | -   | -            | -   | -             | -   |
| New York.....             | 671         | -   | 1,857       | -   | -            | -   | -             | -   |
| North Carolina.....       | 921         | -   | 439         | -   | -            | -   | -             | -   |
| Ohio.....                 | 64          | -   | 189         | -   | -            | -   | -             | -   |
| Oklahoma.....             | 30          | -   | -           | -   | -            | -   | -             | -   |
| Oregon.....               | 456         | -   | 62          | -   | -            | -   | -             | -   |
| Pennsylvania.....         | 104         | -   | 476         | -   | -            | -   | -             | -   |
| Rhode Island.....         | 3           | -   | 230         | -   | -            | -   | -             | -   |
| South Carolina.....       | -           | -   | 50          | -   | -            | -   | -             | -   |
| Tennessee.....            | 2           | -   | 4           | -   | -            | -   | -             | -   |
| Texas.....                | 173         | -   | 218         | -   | -            | -   | -             | -   |
| Virginia.....             | 1,815       | -   | 1,802       | -   | -            | -   | -             | -   |
| Washington.....           | 37          | -   | 361         | -   | -            | -   | -             | -   |
| West Virginia.....        | 1           | -   | -           | -   | -            | -   | -             | -   |
| Wisconsin.....            | 345         | -   | 346         | -   | -            | -   | -             | -   |
| Australia.....            | -           | -   | 69          | -   | -            | -   | -             | -   |
| Brazil.....               | -           | -   | 1           | -   | -            | -   | -             | -   |
| Canada.....               | 1           | -   | 31          | -   | -            | -   | -             | -   |
| Denmark.....              | 5           | -   | -           | -   | -            | -   | -             | -   |
| Germany.....              | 2           | -   | 1           | -   | -            | -   | -             | -   |
| Italy.....                | -           | -   | 8           | -   | -            | -   | -             | -   |
| Japan.....                | -           | -   | 1           | -   | -            | -   | -             | -   |
| Korea.....                | -           | -   | 1           | -   | -            | -   | -             | -   |
| Netherlands.....          | -           | -   | 2           | -   | -            | -   | -             | -   |
| Switzerland.....          | -           | -   | 1           | -   | -            | -   | -             | -   |
| United Kingdom.....       | 22          | -   | 26          | -   | -            | -   | -             | -   |
| Obligations.....          | 77,551      | 340 | 85,065      | 341 | 85,373       | 364 | 91,278        | 364 |
| Lapsing balances.....     | 507         | -   | 308         | -   | -            | -   | -             | -   |
| Total Available.....      | 78,058      | 340 | 85,373      | 341 | 85,373       | 364 | 91,278        | 364 |

Note: The distribution of 2016 and 2017 funds by location has not been determined at this time.

ECONOMIC RESEARCH SERVICE

Classification by Objects  
(Dollars in thousands)

|  | 2014<br><u>Actual</u> | 2015<br><u>Actual</u> | 2016<br><u>Enacted</u> | 2017<br><u>Estimate</u> |
|--|-----------------------|-----------------------|------------------------|-------------------------|
| <b>Personnel Compensation:</b>                         |                       |                       |                        |                         |
| Washington, D.C.                                       |                       |                       |                        |                         |
| 11   | \$36,320              | \$36,655              | \$39,405               | \$40,001                |
| 12   | 10,174                | 10,750                | 10,791                 | 10,953                  |
|  | <u>46,494</u>         | <u>47,405</u>         | <u>50,196</u>          | <u>50,954</u>           |
| <b>Other Objects:</b>                                  |                       |                       |                        |                         |
| 21.0   | 389                   | 524                   | 478                    | 478                     |
| 22.0   | 55                    | 91                    | 19                     | 19                      |
| 23.1   | 0                     | 5,512                 | 5,568                  | 5,669                   |
| 23.3   | 1,006                 | 802                   | 632                    | 632                     |
| 24.0   | 159                   | 29                    | 54                     | 54                      |
| 25.1   | 7,675                 | 7,001                 | 6,009                  | 6,290                   |
| 25.3   | 1,752                 | 1,916                 | 2,164                  | 2,063                   |
| 25.4   | 4,732                 | 6,408                 | 4,700                  | 8,721                   |
| 25.5   | 2,547                 | 4,384                 | 4,494                  | 5,339                   |
| 25.7   | 9,137                 | 8,465                 | 8,309                  | 8,309                   |
| 26.0   | 454                   | 273                   | 500                    | 500                     |
| 26.3   | 792                   | 529                   | 1,000                  | 1,000                   |
| 31.0   | 234                   | 347                   | 450                    | 450                     |
| 41.0   | 2,125                 | 1,379                 | 800                    | 800                     |
|  | <u>31,057</u>         | <u>37,660</u>         | <u>35,177</u>          | <u>40,324</u>           |
| 99.9   | <u>77,551</u>         | <u>85,065</u>         | <u>85,373</u>          | <u>91,278</u>           |
| DHS Building Security Payments (included in 25.3)..... | \$0                   | \$715                 | \$723                  | \$736                   |
| <b><u>Position Data:</u></b>                           |                       |                       |                        |                         |
| Average Salary (dollars), ES positions.....            | \$172,694             | \$176,884             | \$179,050              | \$180,974               |
| Average Salary (dollars), GS positions.....            | \$111,706             | \$113,075             | \$114,460              | \$115,604               |
| Average Grade, GS positions.....                       | 13.7                  | 13.7                  | 13.7                   | 13.7                    |

ECONOMIC RESEARCH SERVICE

Shared Funding Projects

(Dollars in thousands)

|  | 2014 Actual | 2015 Actual | 2016 Enacted | 2017 Estimate |
|--|-------------|-------------|--------------|---------------|
| <b>Working Capital Fund:</b>                                 |             |             |              |               |
| Administration:  |             |             |              |               |
| Material Management Service Center.....                      | \$40        | \$33        | \$45         | \$46          |
| Mail and Reproduction Management.....                        | 90          | 119         | 138          | 123           |
| Integrated Procurement Systems.....                          | 28          | 35          | 37           | 36            |
| Procurement Operations.....                                  | 1           | 5           | 5            | 5             |
| Subtotal.....  | 159         | 191         | 224          | 211           |
| Communications:  |             |             |              |               |
| Creative Media & Broadcast Center.....                       | 126         | 123         | 71           | 71            |
| Finance and Management:                                      |             |             |              |               |
| National Finance Center.....                                 | 97          | 94          | 98           | 92            |
| Internal Control Support Services.....                       | -           | -           | -            | 13            |
| Financial Systems.....                                       | 98          | 94          | 96           | 97            |
| Subtotal.....  | 196         | 188         | 194          | 202           |
| Information Technology:                                      |             |             |              |               |
| NITC/USDA.....   | 191         | 169         | 85           | 98            |
| Client Technology Services.....                              | 406         | 397         | 294          | 304           |
| Telecommunications Services.....                             | 20          | 143         | 208          | 186           |
| Subtotal.....  | 617         | 709         | 586          | 588           |
| Correspondence Management.....                               | 8           | 7           | 6            | 6             |
| Total, Working Capital Fund.....                             | 1,106       | 1,218       | 1,081        | 1,078         |
| <b>Departmental Shared Cost Programs:</b>                    |             |             |              |               |
| 1890's USDA Initiatives.....                                 | 11          | 10          | 12           | 12            |
| Advisory Committee Liason Services.....                      | 1           | 2           | 2            | 2             |
| Classified National Security Information.....                | 0           | 4           | 3            | 3             |
| Continuity of Operations Planning.....                       | 7           | 8           | 7            | 7             |
| Emergency Operations Center.....                             | 8           | 8           | 8            | 8             |
| Facility and Infrastructure Review and Assessment.....       | 2           | 2           | 2            | 2             |
| Faith-Based Initiatives and Neighborhood Partnerships.....   | 1           | 1           | 1            | 1             |
| Federal Biobased Products Preferred Procurement Program..... | 1           | -           | -            | -             |
| FITARA Administration and Operations.....                    | -           | -           | 10           | 14            |
| Hispanic-Serving Institutions National Program.....          | 7           | 7           | 8            | 8             |
| Honor Awards.....  | 0           | 0           | 0            | 0             |
| Human Resources Transformation.....                          | 6           | 6           | 5            | 5             |
| Identity and Access Management (HSPD-12).....                | 25          | 24          | 24           | 24            |
| Intertribal Technical Assistance Network.....                | -           | -           | -            | -             |
| Medical Services.....  | 14          | 28          | 34           | 34            |
| People's Garden.....   | 2           | 3           | 2            | 2             |
| Personnel Security Branch.....                               | 11          | 9           | 4            | 4             |
| Pre-authorizing Funding.....                                 | 13          | 14          | 14           | 14            |
| Retirement Processor/Web Application.....                    | 2           | 2           | 2            | 2             |
| Sign Language Interpreter Services.....                      | 19          | -           | -            | -             |
| TARGET Center.....   | 3           | 5           | 5            | 5             |
| USDA 1994 Program.....                                       | 3           | 3           | 5            | 5             |
| Virtual University.....                                      | 7           | 7           | 7            | 7             |
| Visitor Information Center.....                              | 1           | -           | -            | -             |

ECONOMIC RESEARCH SERVICE

Shared Funding Projects

(Dollars in thousands)

|  | <u>2014 Actual</u> | <u>2015 Actual</u> | <u>2016 Enacted</u> | <u>2017 Estimate</u> |
|--|--------------------|--------------------|---------------------|----------------------|
| Total, Departmental Shared Cost Programs.....              | 146                | 141                | 157                 | 161                  |
| <b>E-Gov:</b>  |                    |                    |                     |                      |
| Budget Formulation and Execution Line of Business.....     | 0                  | 0                  | 0                   | 0                    |
| Enterprise Human Resources Integration.....                | 8                  | 8                  | 7                   | 7                    |
| E-Rulemaking.....  | 4                  | 3                  | -                   | -                    |
| E-Training.....  | 10                 | 10                 | 9                   | -                    |
| Financial Management Line of Business.....                 | 1                  | 1                  | 0                   | 0                    |
| Geospatial Line of Business.....                           | -                  | -                  | 7                   | 13                   |
| Grants.gov.....  | 2                  | 2                  | -                   | -                    |
| Human Resources Management Line of Business.....           | 1                  | 1                  | 1                   | 1                    |
| Integrated Acquisition Environment - Loans and Grants..... | 7                  | 7                  | -                   | -                    |
| Integrated Acquisition Environment.....                    | 2                  | 2                  | 5                   | 1                    |
| Total, E-Gov.....  | 36                 | 33                 | 29                  | 22                   |
| Agency Total.....  | 1,287              | 1,393              | 1,267               | 1,261                |

## ECONOMIC RESEARCH SERVICE

### STATUS OF PROGRAMS

#### Economic Research and Analysis Program

**Goal 1: Assist rural communities to create prosperity so they are self-sustaining, repopulating, and economically thriving.**

#### Current Activities:

ERS research explores how investments in rural people, business, and communities affect the capacity of rural economies to prosper in the new and changing global marketplace. The agency analyzes how demographic trends, employment opportunities, Federal policies, and public investment in infrastructure and technology enhance economic opportunity and quality of life for rural Americans. Equally important is ERS's commitment to help enhance the quality of life for the Nation's farmers who increasingly depend on these rural economies for employment and economic support, as well as to analyze new developments in the linkages between these farmers, consumers, and local economies.

ERS continues to monitor changing economic and demographic trends in rural America, particularly the implications of these changes for the employment, education, income, and housing patterns of low-income rural populations. The rural development process is complex and sensitive to a wide range of factors that, to a large extent, are unique to each rural community. Nonetheless, ERS assesses general approaches to development to determine when, where, and under what circumstances rural development strategies will be most successful.

ERS research and analysis provide insight into market conditions facing U.S. agriculture, potential avenues for innovation and market expansion, and strategies for managing risk. ERS produces USDA's estimates of farm income. In addition, the ERS program identifies and analyzes market structure and technological developments that affect efficiency and profitability.

#### Selected Examples of Recent Progress:

**ERS research on the farm and rural economy found the following:**

- *ERS farm income indicators and forecasts measure the financial performance of the U.S. farm sector.* ERS has a prominent role in monitoring the financial health of the farm sector including the performance of farm businesses and well-being of farm households. Published three times a year, these core statistical indicators provide guidance to policy makers, lenders, commodity organizations, farmers, and others interested in the financial status of the farm economy. ERS's farm income statistics also inform the computation of agriculture's contribution to the gross domestic product for the U.S. economy.
- *Farming is still an industry of family businesses.* The latest ERS report on the structure and finances of U.S. farm farms shows that most farms—97 percent in 2011—are family operations, and even the largest farms are predominantly family-run. Midsize and large-scale family farms account for 8 percent of U.S. farms but 60 percent of the value of production. In contrast, small family farms make up 90 percent of the U.S. farm count but produce a 26-percent share of farm output. The findings point are used to inform Departmental policies that consider the specific needs of different kinds of farms and the farmers who operate them.
- *The ERS commodity outlook program serves USDA stakeholders in the public and private sectors by delivering timely, independent and objective information about agricultural markets.* These reports and data products are among the most widely accessed ERS products, and ERS is committed to maintaining a strong and vibrant commodity outlook program. ERS is in the process of implementing a strategic plan focused on the actions necessary to continue and strengthen this program. These actions include a sustainable staffing plan to support long-term succession planning and high-quality analysis as senior

analysts retire; enhancements to the content and communication of commodity outlook material using the best technologies for data delivery and access; and implementing internal data and process improvements to minimize errors and promote more efficient use of analyst time. ERS will be implementing this plan over the course of FY 2016 and FY 2017.

- *Rural child poverty rose from 19 percent in 1999 to 26 percent by 2013.* This change, however, was uneven across the landscape. Along with the recession, an increase in rural children in single-parent households, continuing from the 1990s, was a major contributor to the rise in child poverty. Moreover, counties with the largest increases in child poverty over the decade tended to have both low young adult education levels and high proportions of children in single-parent families. This study was reported in the ERS magazine *Amber Waves* and has been the subject of a number of briefings to senior USDA policy makers and to the White House Rural Council.
- *A variety of factors lead migrants to return to their rural home communities.* Persistent population loss is a challenge for many rural communities in the United States, especially those in more remote areas lacking scenic amenities. Return migration plays a largely overlooked role in replenishing population numbers while raising education levels and increasing the social vitality of rural communities. An ERS report based on structured interviews with both returnees and non-returnees at high school reunions across the U.S. found that family-based motivations—assisting aging parents and raising children—were the primary reason for returning home to rural communities. Also important are availability of employment and a desire for attractive communities that had invested in cultural and recreational assets. Non-returnees saw limited rural employment opportunities, shopping and entertainment choices, and kid-friendly activities as barriers to returning. Returnees often brought back advanced education, job skills, and life experiences. Their entrepreneurial activities often created jobs and expanded services. The report generated significant media attention, including a USDA radio interview, and the results were presented in a webinar to the general public.
- *A disproportionately small share of grants by large foundations were disbursed to rural recipients during 2005 to 2010.* U.S. foundations disbursed more than \$45 billion in grants for public needs in the United States and elsewhere in 2010. An ERS report characterized trends and patterns of foundation grants to rural communities. About 6 to 7 percent of Foundation grant funds were disbursed to rural recipients during 2005 to 2010, less than the rural share of the population at 19 percent. The average real value of grants provided by large foundations to organizations based in nonmetropolitan counties from 2005 to 2010 was about \$88 per capita (in 2010 dollars), less than half the average provided to organizations in metropolitan counties. Differences in educational attainment and in the capacity of local nonprofit organizations account for much of the variation across counties. The report has been extensively cited in news articles published in *Nonprofit Quarterly* and other outlets.

**ERS research and analysis of U.S. agricultural structure and markets found the following:**

- *Producer participation in local food systems and the value of local food sales are growing.* ERS conducted a comprehensive study on the scope of, and trends in, local and regional foods. The congressionally-mandated study examined the development of the local and regional foods subsector, including the economics of production and its implications for economic development. In addition, farms selling local food through direct-to-consumer marketing channels were more likely to remain in business (using 2007-12 data) than all farms not using these channels. Various findings from the report were presented in multiple briefings to senior USDA policy officials. The report, which has been cited by national news media, including a story on National Public Radio and a widely-read *LA Times* article, was presented in two highly-attended webinars, and has been downloaded nearly 10,000 times.
- *Most land in farms is operated by the land owner.* The 2014 Tenure, Ownership, and Transition of Agricultural Land (TOTAL) survey, conducted by NASS and ERS, integrates data on farm finance and land ownership. The TOTAL survey collected data in the 48 contiguous states on landlords' acres rented out, income, expenses, assets, debt, race, gender, land transfer plans, and more, to provide detailed information from all agricultural land owners, whether operating or non-operating. The survey revealed that 61 percent



of all land in farms is operated by the land owner and another 8 percent is rented from other farm operators. The remainder of land in farms (31 percent) is rented from non-operator landlords. However, operator landlords typically rent out more acreage than non-operator landlords—a median of 80 acres compared to 55 acres. Data from the survey were released in August 2015 and data tabulations were published in the NASS QuickStats database and in a Fact Sheet. Several briefings on the new survey were provided to senior policy officials in USDA and initial statistical findings published in Amber Waves.

- *Mandatory price reporting for livestock transactions over the past 15 years led to some improvements in price discovery and market efficiency.* ERS conducted research on transactions in cash and futures markets since the inception of the Livestock Mandatory Reporting Act (LMRA) in 1999 to investigate its impacts on markets in the context of declining participation in cash markets in favor of alternative marketing arrangements. Specifically, ERS analyzed the LMRA's impacts on price discovery, market efficiency, and price behavior before and after passage of the 1999 Act in a report published in September, 2015. Results indicate that price discovery improved in the LMR period, with greater convergence between cash and futures markets for cattle and hogs. Additionally, market efficiency, measured as the speed at which markets absorb new information, improved in the LMR period despite declining cash-market transactions. The research found no significant differences in the behavior of prices in cash markets between the pre-LMR and LMR periods.
- *Renewable energy policies have emerged as key drivers in global markets for biofuels.* ERS research finds that since reaching record highs in 2006, prices of traditional transportation fuels have moderated to a point where policies mandating biofuel production and consumption are the primary determinants of trade in renewable fuels. If the ethanol blending rate in Brazil continues to increase, less Brazilian ethanol will be available to compete with the United States on the global market. At the same time, Brazil could continue to import U.S. ethanol to help meet its mandate. Reducing the amount of ethanol that can be derived from corn in the U.S. renewal fuel mandate could increase exports in the short run, but potentially lead to reduction in U.S. ethanol production infrastructure and thereby limit the availability of ethanol for exports in the long run. ERS briefed senior officials in USDA's Farm and Foreign Agricultural Services Mission Area on their findings in the report.
- *ERS estimates that the effects of recent decreases in energy prices on acreage and production are relatively small.* ERS research found that recent lower oil and natural gas prices led to lower projected costs of production for major field crops. In percentage terms, all changes in estimated production costs were small relative to the sizes of the energy price reductions. ERS estimated overall planting to major field crops increased by about 1.1 million acres in 2015, a relatively small gain of 0.4 percent due to lower energy prices. Estimated acreage changes were fairly small because prices for energy-related inputs fall by less than the change in energy prices, and energy-related costs represent only a portion of total operating expenses. With lower energy costs, commodity prices are expected to decrease, and overall farm production expenses in the sector are decreased. The research also indicated that lower energy prices in 2015 and also projected for 2016 will minimally increase the demand for ethanol, reflecting the increase in gasoline consumption.

**Goal 2: Ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources.**

**Current Activities:**

The ERS climate change research program develops models and other analytical techniques to predict responses of farmers to greenhouse gas mitigation options, analyze the impact of mitigation options on domestic and global agricultural markets and land and water use, and evaluate adaptation by farmers to a new climate regime through use of alternative technologies. The ERS climate change research program builds on extensive expertise on the economics of land use and land management, technology adoption, conservation program design, economics of biofuels, and value and dissemination of public investment in research and development.

In addition, ERS is continuing to contribute to USDA's efforts to improve the science behind Federal environmental, water and air quality regulations and programs. As part of its analysis of environmental regulations and conservation incentive policies, ERS research continues to provide insight into developing policies for controlling nonpoint source pollution. More generally, ERS research analyzes the economic efficiency, environmental effectiveness, and distributional implications of alternative designs of resource, conservation, environmental, and commodity programs and their linkages.

### **Selected Examples of Recent Progress:**

#### **ERS research on climate change found the following:**

- *Climate change is likely to increase the use of genetic resources for adaptation to heat and drought stress.* Crop genetic resources are an important foundation of U.S. and global agricultural production. An ERS study released in April 2015 that reviewed the types and uses of genetic resources found that demand for crop genetic resources from the U.S. National Plant Germplasm System (NPGS) has increased rapidly in recent years, even as the NPGS budget has fallen in real dollars. Two types of technical change could reduce the costs of accessing genetic resources and thus increase their use—improvements in genetic resource collection, conservation, characterization, and evaluation methods; and increased efficiency in incorporating valuable genetic traits into commercial crop varieties. Since no single country possesses all the genetic resources it requires within its borders, institutional factors such as international agreements and intellectual property rules can promote or hinder greater use of crop genetic resources. USDA policy officials were briefed on the report and committees and the findings were covered in over a dozen news feeds and blogs.

#### **ERS research on conservation, water, and environmental issues found the following:**

- *Implementation of the Evidence and Innovation Agenda continues as experiments are used to test existing and new approaches to program delivery.* ERS, along with the ERS-funded Center for Behavioral and Experimental Agri-Environmental Policy Research, is collaborating with USDA agencies on randomized controlled trials to generate evidence for policy use. A randomized controlled trial among rural farmers, which showed how outreach can significantly improve participation in FSA's micro loans programs, was completed, leading to a briefing with FSA policy officials. Active field and lab experiments include "nudges" looking at what initiatives and incentives are best suited for encouraging participation in Chesapeake Bay Conservation Programs. In addition, an ERS study published in 2015 on auctions in USDA conservation programs set out conditions under which auctions are likely to increase cost-effectiveness—environmental gain per dollar of program expenditure. Alternative auction mechanisms were investigated via economic experiments performed in classroom laboratories. Briefings on the report were provided to multiple USDA policy officials and researchers. A webinar reached a broader audience.
- *ERS research examined the issues related to the declining effectiveness of glyphosate and choices for managing increased resistance to it.* Glyphosate is the most widely used herbicide in the United States; it is highly effective at controlling a variety of weeds, relatively inexpensive and flexible in use, and less environmentally damaging than the herbicides that it replaced. However, glyphosate's effectiveness is declining as weed resistance mounts, potentially reducing crop yields and increasing costs. The study, released in April 2015, finds that reliance on glyphosate by many growers as the sole herbicide to control weeds is the primary factor underlying the evolution of resistant weeds. Glyphosate resistance is more prevalent in soybean production than in corn; soybean producers have been more likely to use glyphosate exclusively and on more acres than in corn production. Managing resistance—by using glyphosate in fewer years, combining glyphosate with one or more alternative herbicides, and avoiding glyphosate application in consecutive seasons—is a cost effective strategy compared to ignoring resistance. The benefits from managing resistance are greater when neighboring farmers all act to manage resistance than when a single farmer does so. Findings from the report were presented through multiple briefings to USDA policy officials and were also published in a peer-reviewed journal.

- *The cost, biophysical impacts, and benefit valuation of wetland restoration and protection efforts vary widely from place to place, depending on a host of factors.* An ERS study released in February 2015 found that the cost of restoring a wetland ranges from \$170/acre in the Western Dakotas, Montana, Arkansas, and Louisiana to \$6,100/acre in major corn-producing areas and along the Northern Pacific Coast. The values society places on the eight benefits examined in this report—duck hunting, carbon sequestration, flood protection, nitrogen removal, species protection, open space, sediment removal, and groundwater recharge—are often difficult to estimate, and vary widely when dollar amounts can be estimated. But even with this incomplete information, it is clear that in some areas, such as the western Prairie Pothole Region, the benefits of wetland preservation far exceed the costs. Senior policy officials in the Natural Resource and Environment mission area were briefed on the report findings.
- *The 2012-2015 droughts in California are having a major impact on agriculture. A variety of mechanisms influence how those impacts are felt by farmers, crop and livestock consumers, and the food sector.* ERS updates regularly its web-based information on factors that drive the impacts of droughts in California. By drawing on existing ERS research and bringing new analysis to bear, ERS researchers provide the public and policy makers with information on how factors like groundwater pumping, commodity market adjustments, crop insurance, and changes in planted acreage are diffusing and mitigating the drought impacts. This research has been widely viewed and has generated direct inquiries for additional information from USDA policy makers, the press, the White House (Office of Science and Technology Policy), the Subcommittee on Water Availability and Quality, and the State Department.

**Goal 3: Help America promote agricultural production and biotechnology exports as America works to increase food security.**

**Current Activities:**

ERS conducts research on technological innovation in agriculture, the economic performance, structure and viability of the farm sector and of different types of farms, and the state of global food security. ERS effectively communicates research findings to policy makers, program managers, and those shaping the public debate. The research program identifies key economic issues and uses sound analytical techniques to understand the immediate and broader economic and social consequences of alternative policies and programs related to the sustainability and use of biotechnology in U.S. agriculture, including policies to promote trade of U.S. products.

ERS has a broad program of work examining the production and marketing characteristics of the U.S. organic sector. Ongoing activities include research on the adoption of certified organic farming systems across the U.S., analysis of consumer demand and prices in specific markets, and surveys of organic producers and markets.

The ERS research program includes an ongoing assessment of global food security. ERS provides research, analysis, and information on food security, including factors affecting food production and ability to import food, in Africa, Asia, Latin America and the Caribbean, and the Commonwealth of Independent States to decision makers in the United States and throughout the world. ERS is also investigating conceptual and measurement challenges inherent in assessments of undernourishment at the country, household, and individual level with experts in academia and international organizations. An annual report provides ERS' up-to-date assessment of global food security.

**Selected Examples of Recent Progress:**

**ERS research on technological innovation and investment found the following:**

- *Increased production in U.S. agriculture since the end of World War II has been driven almost entirely by gains in productivity rather than increases in farm inputs.* An ERS study finds that while output grew at 1.49 percent per year between 1948 and 2011, most of that—1.42 percent—is attributed to increases in total factor productivity (TFP). This is in contrast to the rest of the U.S. economy, where increases in output rely largely on greater use of labor, materials, and capital inputs. The ERS study also finds that over time, the mix of agricultural inputs used has shifted, with increased use of intermediate goods such as fertilizer and

pesticides and less use of labor and land. The output mix changed as well, with crop production growing faster than livestock production. Slowing growth in U.S. crop yields during the 1990s led to concerns about a possible productivity slowdown in the U.S. farm sector. Based on econometric analysis of historical TFP data, the study finds no statistical evidence that long-run U.S. agricultural productivity growth has slowed over time. However, model-based future TFP growth scenarios show that if annual public research expenditures remain constant and fail to keep up with inflation, the annual rate of TFP growth is projected to fall from the historical average of 1.42 percent to 0.86 percent by 2050. These findings were reported in a briefing to USDA policy officials and in Congressional testimony by senior USDA officials.

**ERS research on the organic sector found the following:**

- *Organic field crops have been profitable compared with conventional field crops primarily due to the significant price premiums paid for certified organic production that more than offset the additional economic costs.* ERS research finds that organic corn and soybean production was profitable at price premiums paid for organic crops during 2011-14. Organic wheat was less profitable than conventional wheat during 2011-12, but profitability improved during 2013-14. Despite potentially higher returns, the adoption of organic field crops among U.S. producers remains low, likely due to the challenges of organic production such as lower yields and effective weed control. Findings of this research were disseminated via a webinar sponsored by the USDA Organic Working Group targeting the US Organic Grain Collaborative, made up of companies and associations in the organic sector, and investors/venture capitalists interested in organic agriculture.

**ERS research on global food security found the following:**

- *Food security is projected to improve for many developing countries.* ERS publishes the International Food Security Assessment to inform U.S. policymakers as well as international donor organizations of the food security situation in 76 low- and middle-income countries. The report provides projections of food availability and access—including food gaps and the number of food-insecure people. The findings indicate that food security is projected to improve between 2014 and 2015. Additional analysis found that 38 of 76 countries met or exceeded the World Food Summit goal of reducing by half the number of food-insecure people between 1995 and 2015. However, food security is projected to worsen slightly over the next decade with both Asia and Sub-Saharan Africa contributing to the increase in food-insecure people. A new approach to measuring food security was also introduced, providing a framework that allows for analysis of the effects of change in income and prices on food security. ERS briefed the Office of the Chief Economist on the findings of the report. The researchers were also invited to present their findings at the 29<sup>th</sup> International Conference of Agricultural Economists in Milan in August, 2015, and were interviewed by the Voice of America about the report's results for North Korea.
- *ERS research suggests that households do not distribute calories equitably across all household members in developing countries, and that the depth of undernourishment for certain household members may be greater than traditional household consumption surveys suggest.* Specifically, it was found that household heads in Bangladesh consume an inequitable share of household calories, where approximately 70 percent of heads were adequately nourished in households that did not have enough food available to meet each member's daily energy requirements. Alternatively, in households with enough food available to meet each member's daily energy requirements, approximately 30 percent of women and children were actually undernourished. The findings suggest that accounting for the intrahousehold distribution of food is important to the implementation of programs, such as Feed the Future, seeking to improve the nutritional status of women and children.

**ERS research on global agricultural markets found the following:**

- *USDA Agricultural Projections to 2024 suggest long run increases in global consumption, world trade, and agricultural commodity prices.* Each year ERS coordinates the Department's Baseline projections for

U.S. and world agriculture for the coming decade. The 2015 projections indicate that the agricultural sector will adjust to lower prices for most farm commodities in the near term, as prices decline from highs in recent years. For crops, production response to lower prices will result in reduced acreage planted. In the livestock sector, lower feed costs will provide economic incentives for expansion. Longer run developments for global agriculture reflect steady world economic growth and continued global demand for biofuel feedstocks, which combine to support increases in consumption, trade, and prices of agricultural products. The 2015 long-term projections were presented in a session at the February 2015 USDA Agricultural Outlook Forum. The projections also helped shape the FY 2015 Budget, and supported the Farm Service Agency's estimation of budget costs for farm program commodities. In addition to its importance for USDA's policymakers, the annual Baseline projections report and related data products are essential references for public and private decision makers, receiving over 100,000 page views annually on the ERS website.

- *The joint effects of sanitary and phytosanitary measures and tariff rate quotas maintained by the European Union (EU) significantly impede U.S. meat exports.* ERS investigated the effects of EU non-tariff barriers on trade in the context of the proposed Transatlantic Trade and Investment partnership (T-TIP), a trade agreement under negotiation between the U.S. and EU. The research provided in-depth analysis of the multifaceted nature of the EU's protection structure of its meat market. The EU's limited TRQ and its ban on beef hormones were assessed as the primary constraint for U.S. beef market access. Required pathogen reduction treatments on poultry products were identified as a de facto ban on U.S. exports. U.S. pork access is impeded by a collective set of policy barriers related to ractopamine and other SPS restrictions. These findings were reported to senior USDA officials in a series of briefings.
- *Easing trade and travel restrictions could stimulate increased levels and a wider variety of U.S. agricultural exports to Cuba.* ERS research on the past, present, and possible future of U.S.-Cuba agricultural trade indicates that the United States is already one of Cuba's leading suppliers of agricultural imports (primarily chicken meat, corn, soybean meal and soybeans) due to a loosening of the U.S. economic embargo on Cuba in 2000 that allows for U.S. sales of agricultural products and medicine to Cuba. The executive actions announced in December 2014 and June 2015 allow sales of agricultural equipment to small farmers, and permit U.S. firms to establish offices and warehouses in Cuba. These actions by themselves could foster some additional agricultural trade with Cuba, including increased US exports of rice, wheat, nonfat dried milk, and other commodities, but a remaining prohibition on extending credit to Cuban buyers will likely limit the rate of growth. ERS briefed senior USDA officials, the National Security Council, and the Arkansas State Government on the report's findings.
- *China's accumulation of large cotton stockpiles to support prices for its domestic producers from 2011 – 2013 has introduced a new degree of uncertainty into world cotton markets.* ERS research finds that China's price support policy drove world cotton stocks to nearly double the average levels over the past half century, and global cotton markets face a difficult and costly transition if policy shifts in China return world stocks to normal levels with anything other than a long period of transition. China's policymakers have signaled their intentions to alter their cotton support to reduce the link between income and price support, shifting from nearly complete reliance on price supports to a much greater reliance on income subsidies to farmers. New policies supporting cotton production sector will have to comply with its obligations as a member of the World Trade Organization. How China will deal with the unprecedented level of stocks accumulated in the past is uncertain, but lower imports by China is highly likely over several years. ERS briefed Congressional staff on the potential market impacts and implications for U.S. cotton producers under different Chinese policy scenarios.

**Goal 4: Ensure that all of America's children have access to safe, nutritious, and balanced meals.**

**Current Activities:**

ERS studies the relationship among the many factors that influence food choices and health outcomes. At the household level, research focuses on food price trends, income, and individual characteristics such as age, race and ethnicity, household structure, knowledge of diet and health, and nutrition education. At the industry level, research

focuses on the interaction among firms, consumers, and government programs and policies. Children's food access, food security, and child and adult obesity continue to be important foci of the ERS research program. ERS research related to adult and child obesity includes approaches taken from behavioral economics to investigate how psychological mechanisms related to food choices might contribute to poor dietary quality and obesity.

Through its food assistance and nutrition research and by working closely with USDA's Food and Nutrition Service, ERS studies and analyzes the Nation's nutrition assistance programs. These programs receive substantial Federal funding and affect the daily lives of millions of America's children. Long-term research themes include dietary and nutritional outcomes, food program targeting and delivery, and measurement of program participation. ERS research is designed to meet the critical information needs of USDA, Congress, program managers, policy officials, the research community, and the public at large.

ERS food safety research focuses on enhancing methodologies for valuing societal benefits associated with reducing food safety risks, understanding consumer response to food safety incidents, assessing industry incentives to enhance food safety through new technologies and supply chain linkages, and evaluating regulatory options and change. ERS research also investigates the safety of food imports and the efficacy of international food safety policies and practices.

### **Selected Examples of Recent Progress:**

#### **ERS research on food choices and health outcomes showed the following:**

- *Supplemental Nutrition Assistance Program (SNAP) participants are less likely to drive their own car to do their primary food shopping and more likely to get rides from someone else or take public transit. However, these differences in transportation mode do not translate into differences in the types of stores used for grocery shopping among SNAP households.* The National Household Food Acquisition and Purchase Survey (FoodAPS) is the first survey to collect unique and comprehensive data about food purchases and acquisitions for a nationally representative sample of U.S. households. In March 2015, ERS published a report that compared shopping patterns of SNAP households to low- and higher income nonparticipant households and found that many households bypass the store that is closest to them to shop at another store. For example, among SNAP households, the nearest store was, on average, 2.0 miles from the household, but the store primarily used for grocery shopping was, on average, 3.4 miles from the household. Multiple intramural and extramural research projects are underway using FoodAPS with reports focusing on general food expenditures and WIC participant shopping behavior planned for release in 2016.
- *An estimated 86 percent of American households were food secure throughout the entire year in 2014, meaning that they had access at all times to enough food for an active, healthy life for all household members.* The remaining households (14 percent) were food insecure at least some time during the year, including 5.6 percent with very low food security because the household lacked money and other resources for food, resulting in reduced food intake and disruptions in eating patterns for one or more household members. Additional research focused specifically on children shows that an estimated 90.6 percent of households with children were food secure throughout the year in 2011, which denotes that all household members had consistent access to adequate food for active, healthy lives. The ERS food security statistics are widely recognized as the benchmark for measuring food security in the U.S., and support decision making on USDA food assistance and nutrition programs.
- *Following Dietary Guidance need not cost more, but many Americans would need to re-allocate their food budgets to do so.* Behavioral changes can improve diet quality, but major improvements would require Americans to change how they allocate their food budgets across food groups. Most Americans across all income levels consume poor diets. Behavior changes, such as preparing food at home instead of eating out, are associated with improvements in diet quality. To realize the much larger improvements in diet quality required to meet the *Dietary Guidelines for Americans*, ERS research found that many Americans would need to reallocate their food budgets, spending a larger share on fruits and vegetables and a lower share on protein foods and foods high in solid fats, added sugars, and sodium. Briefings on this topic to senior

USDA and other policy officials informed discussions of the upcoming release of the *2015 Dietary Guidelines*.

- *An estimated 1,249 calories per capita per day are lost from the food supply.* ERS published the latest estimates on the amount and value of food loss in the United States. These estimates are for more than 200 individual foods using ERS's Loss-Adjusted Food Availability data. In 2010, an estimated 31 percent, or 133 billion pounds, of the 430 billion pounds of food produced was not available for human consumption at the retail and consumer levels. This amount of loss totaled an estimated \$161.6 billion, as purchased at retail prices. For the first time, ERS estimates of the calories associated with food loss are presented in this report. The top three food groups in terms of the share of the total value of food loss at the retail and consumer levels are meat, poultry, and fish (30 percent), vegetables (19 percent), and dairy products (17 percent). Food loss data from ERS is used to support USDA's Food Waste Challenge initiative and also provides a model for other countries' efforts to estimate food loss.
- *Households living in low-income, low food-access areas have only slightly lower diet quality than other households and this difference is partially alleviated when these consumers travel farther from their homes to purchase food.* About 10 percent of the U.S. population lives in low-income areas more than 1 mile from the nearest supermarket. The diet quality of these consumers may be compromised by their food environment. Some may be unable to reach supermarkets regularly or without effort, instead buying food from closer stores that offer less healthy food products. ERS investigated the correlation between households that live in low-income, low-access areas and their purchases of 14 major food groups that vary in dietary quality using supermarket scanner data. Briefings on this topic to senior USDA and other policy officials informed discussions of continuing efforts to improve food access for low-income households across the U.S.

**ERS research on USDA's food and nutrition assistance programs found the following:**

- *ERS linked 2008-12 SNAP administrative records to data from the U.S. Census Bureau's American Community Survey (ACS) on the use of SNAP and other public assistance programs to provide better information on SNAP receipt than that which would be estimated by the ACS alone.* SNAP provides food and nutrition benefits to low-income households based on a formula that adjusts the benefit amount a household receives based on monthly need. ERS assessed the extent to which SNAP reaches the poorest households, also known as benefit targeting, by estimating benefit receipt by annual household income relative to poverty. Estimates of SNAP targeting toward low-income households improve when using either of two measures of intensity of SNAP participation relative to measures of ever-in-the-year participation. Replacing survey-based data on SNAP benefit receipt with administrative records of SNAP benefit receipt and adjusting the survey households to more closely reflect administrative SNAP units also improves estimates of targeting to low-income participants. Briefings to senior official at FNCS and FNS informed decision makers about the effect of more expansive data on participation measures.
- *School meal programs are adjusting to stronger nutritional standards, but face challenges in maintaining paid lunch participation to meet revenue goals.* School foodservice programs face ongoing tradeoffs between meal cost, student participation, and nutrition quality. Changes mandated by the Healthy, Hunger-Free Kids Act of 2010 strengthened nutritional standards for meals and competitive foods and set minimum levels for paid meal revenues, while new options allow more schools to offer free meals to all students at reduced administrative burden. An ERS review of recent research results and new data on school lunch participation rates suggests that while many school districts have adjusted to new standards, maintaining paid meal participation remains most challenging for smaller and more rural districts. Briefings to senior USDA officials on this topic have informed USDA efforts to help States meet the challenges related to improving nutrition within allotted budgets.

**ERS research on the safety of the nation's food supply found the following:**

- *Cost estimates of foodborne illnesses data provide Federal agencies with consistent, peer-reviewed estimates of the costs of foodborne illness that can be used in analyzing the impact of Federal regulations.*

ERS's Cost of Foodborne Illness data product, produced in collaboration with the Food Safety and Inspection Service, provides detailed data about the costs of major foodborne illnesses in the United States, including identification of specific disease outcomes for foodborne infections caused by 15 major pathogens in the United States, associated outpatient and inpatient expenditures on medical care, associated lost wages, and estimates of individuals' willingness to pay to reduce mortality resulting from these foodborne illnesses. It also provides stakeholders and the general public with a means of understanding the relative impact of different foodborne infections in the United States. Cost estimates of foodborne illnesses have been used to help inform food-safety policy discussions, and these updated cost estimates provide a foundation for economic analysis of food safety policy.

- *New surveys on food safety practices.* ERS launched an initiative to collect primary data on current food safety practices for produce growers and post-harvest firms to provide a baseline of compliance costs prior to the full implementation of the Food Safety Modernization Act (FSMA). The surveys will be completed by NASS in January 2016, and ERS will use the data in estimating the potential economic impacts of FSMA provisions on the fresh produce and animal feed sectors.
- *Consumers respond differently to foodborne disease outbreaks of different severities.* A case study of pathogen-related recalls of cantaloupe in 2011 and 2012 suggests consumers' food purchase responses take into account the relative risk severity of specific pathogens. Information from news media apparently plays a role. Federal health and safety officials warned consumers away from cantaloupes in 2011 and again in 2012. The warnings occurred under similar market conditions but were for contamination by two different foodborne microorganisms that posed entirely different health risks. After consumers were informed about the risk with the higher fatality rate, the demand for cantaloupes fell and consumers substituted other melons. No such shifts in demand were evident under the lower fatality risk, despite more illnesses attributed to it.
- *Establishments that bid on contracts to supply the USDA's National School Lunch Program had relatively higher levels of food safety, as measured by fewer samples of meat testing positive for Salmonella, than other establishments supplying ground beef to the commercial market.* In December of 2014, ERS published a report that examined the food safety performance of suppliers of ground beef to the National School Lunch Program (NSLP) and found evidence of strategic behavior in which managers use information about their establishment's past food safety performance to decide whether to bid on contracts to supply the NSLP. Research results from this report were presented at multiple briefings to senior USDA officials.



ECONOMIC RESEARCH SERVICE

Summary of Budget and Performance  
Statement of Department Goals and Objectives

The Economic Research Service (ERS) was established in 1961 from components of the former Bureau of Agricultural Economics principally under the authority of the Agricultural Marketing Act of 1946 (7 U.S.C. 1621-1627). The mission of ERS is to inform and enhance public and private decision making on economic and policy issues related to agriculture, food, the environment, and rural development.

ERS has four strategic goals that correspond to the four programmatic USDA strategic goals. To achieve these goals, ERS provides research, data, and analysis to enhance the understanding of policy makers, regulators, program managers, and those shaping debate on economic and policy issues.

**USDA Strategic Goal 1:** Assist rural communities to create prosperity so they are self-sustaining, repopulating, and economically thriving.

| Agency Strategic Goal   | Agency Strategic Objectives  | Programs that contribute       | Key Outcome   |
|---|--|--------------------------------|---|
| <b>Strategic Goal 1:</b><br>Assist rural communities to create prosperity so they are self-sustaining, repopulating, and economically thriving. | <b>Objective 1.1:</b> Enhance Rural Prosperity<br><br><b>Objective 1.2:</b> Create Thriving Communities<br><br><b>Objective 1.3:</b> Support a Sustainable and Competitive Agricultural System | Economic Research and Analysis | Enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues affecting rural development, rural well-being, farm business and household income, and rural communities. |

**USDA Strategic Goal 2:** Ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources.

| Agency Strategic Goal  | Agency Strategic Objectives   | Programs that contribute       | Key Outcome   |
|--|---|--------------------------------|---|
| <b>Strategic Goal 2:</b><br>Ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources. | <b>Objective 2.1:</b> Restore and Conserve the Nation's Forests, Farms, Ranches, and Grasslands<br><br><b>Objective 2.2:</b> Lead Efforts to Mitigate and Adapt to Climate Change<br><br><b>Objective 2.3</b> Protect and Enhance America's Water Resources | Economic Research and Analysis | Enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues related to developing Federal farm, natural resource, and rural policies and programs that respond to the challenges of climate change and the need to protect and maintain the environment while improving agricultural competitiveness and economic growth. |

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**USDA Strategic Goal 3:** Help America promote agricultural production and biotechnology exports as America works to increase food security.

| Agency Strategic Goal   | Agency Strategic Objectives  | Programs that contribute              | Key Outcome  |
|---|--|---------------------------------------|--|
| <p><b>Strategic Goal 3:</b> Help America promote agricultural production and biotechnology exports, as America works to increase food security.</p> | <p><b>Objective 3.2:</b> Ensure U.S. Agricultural Resources Contribute to Enhanced Global Food Security</p> <p><b>Objective 3.2:</b> Enhance America’s Ability to Develop and Trade Agricultural Products Derived from New Technologies</p> <p><b>Objective 3.3:</b> Support Sustainable Agriculture Production in Food-Insecure Nations</p> | <p>Economic Research and Analysis</p> | <p>Enhanced understanding by policy makers, regulators, program managers, and organizations shaping public debate of economic issues related to adoption of economically and environmentally sustainable technologies to support enhanced food security, factors affecting trade of U.S. agricultural products (including products produced using biotechnology), strategies to reduce trade barriers and increase markets for U.S. products(including biotechnical exports)</p> |

**USDA Strategic Goal 4:** Ensure that all of America’s children have access to safe, nutritious, and balanced meals.

| Agency Strategic Goal  | Agency Strategic Objectives   | Programs that contribute              | Key Outcome   |
|--|---|---------------------------------------|---|
| <p><b>Strategic Goal 4:</b> Ensure that all of America’s children have access to safe, nutritious, and balanced meals.</p> | <p><b>Objective 4.1:</b> Increase Access to Nutritious Food</p> <p><b>Objective 4.2:</b> Promote Healthy Diet</p> <p><b>Objective 4.3:</b> Protect Public Health by Ensuring Food is Safe</p> | <p>Economic Research and Analysis</p> | <p>Enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues related to improving the efficiency, efficacy, and equity of public policies and programs relating to domestic food prices and availability at home, consumer food choices, nutrition and health outcomes, nutrition assistance programs, and protecting consumers from unsafe food.</p> |

**Key Performance Measures**

**Inform policy officials and stakeholders on policy issues through briefings on research findings**

Central to the mission of the ERS is the delivery of research findings, data, and analysis to key public and private decision makers. Briefings for senior policymakers ensure that the results of the Agency’s research program are made available to, and used by, those who make decisions and implement public policy decisions related to agriculture, food, the environment, and rural development. This measure tracks briefings for such officials as the Secretary of Agriculture and senior advisors, USDA Undersecretaries, USDA and other Federal program agency heads, and White House and Congressional staff.

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**Provide research, data, and analysis on policy relevant issues at the request of key decision makers and policy officials**

This measure demonstrates that ERS research, market analysis, and data are used by decision makers. Requests from decision makers for rapid-response answers to key policy issues provided by ERS (“staff analysis”) provide evidence that the Agency’s research program helps support informed decision making by policy officials, including the Secretary of Agriculture and senior advisors, USDA Under Secretaries, USDA and other Federal program agencies, and White House and Congressional staff.

**Federal Register Notice and other Government use**

This measure tracks the number of rules published in the Federal Register that cite ERS research findings, data or analysis, plus instances where ERS research is cited in publications by the Government Accountability Office, the Congressional Research Service, the Congressional Budget office, and the Congressional Record. This measure demonstrates that ERS research findings, data, and analysis are used to support decision making and implementation of policies and programs.

**Visits to the ERS website**

This measure tracks the number of times information on the ERS website is accessed (FY 2012). In FY 2013-2015, the criteria for this measure changed to reflect the number of page views on the website. This measure demonstrates that the outputs from the ERS research, market analysis and data program are sought and used to support both public and private decision making on issues related to agriculture, food, the environment, and rural development.

**Customer satisfaction with the ERS Web site**

ERS uses a Web-centric approach to communicating with customers -- all ERS research, data, and other information disseminated by the agency are available through the ERS Web site. This measure is an indicator of customer satisfaction with the ERS Web site using a survey based on the American Customer Satisfaction Index (ACSI). The measure tracks satisfaction of Web site users and provides a basis for comparison with similar government and private sector Web sites. The target for this measure is at or above the average rating for government Web sites in the Information/News category.

**Key Performance Measures**

| Annual Performance Goals, Indicators, and Trends  | 2010 | 2011 | 2012     | 2013   | 2014   | Fiscal Year 2015 |          |         | Target 2016 | Target 2017 |
|---|------|------|----------|--------|--------|------------------|----------|---------|-------------|-------------|
|   |      |      |          |        |        | Target           | Actual   | Result  |             |             |
| Inform policy officials and stakeholders on policy issues through briefings on research findings (number of briefings)  | n/a  | n/a  | 45       | 39     | 48     | 45               | 65       | Exceeds | 45          | 45          |
| Provide research, data, and analysis on policy relevant issues at the request of key decision makers and policy officials (number of staff analyses produced) | n/a  | n/a  | 487      | 518    | 515    | 500              | 553      | Exceeds | 500         | 500         |
| Federal Register Notice and other Government Use (number of notices citing ERS research and/or data)  | n/a  | n/a  | 44       | 34     | 50     | 40               | 47       | Exceeds | 40          | 40          |
| Visits to ERS Web site (FY 2012); Number of page views (FYs 2013-   | n/a  | n/a  | 4.6 Mil. | 8 Mil. | 7 Mil. | 8 Mil.           | 7.6 Mil. | Met     | 8 Mil.      | 8 Mil.      |

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|  |     |     |     |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2015) using Adobe Cloud software   |     |     |     |     |     |     |     |     |     |     |
| Customer satisfaction with the ERS Website (score on a 0-100 scale from Foresee website satisfaction survey) | 74  | 73  | 72  | 73  | 75  | 75  | 75  | Met | 75  | 75  |
| Percent of scheduled key statistical indicators released on time   | n/a | n/a | n/a | n/a | n/a | 98% | 98% | Met | 98% | 98% |
| Percent of staff analyses delivered on time  | n/a | n/a | n/a | n/a | n/a | 95% | 95% | Met | 95% | 95% |
| <b>Allowable Data Range for Met</b> Target is considered met if actual is within 5% of target                |     |     |     |     |     |     |     |     |     |     |

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| <b>Data Assessment of Performance Measure:<br/>Inform policy officials and stakeholders on policy issues through briefings on research findings</b>                            |
| <b>Data Source</b> Information maintained in the ERS Program Information Management System (PIMS) that records all requests for briefings by policy officials and stakeholders |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

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| <b>Data Assessment of Performance Measure<br/>Provide research, data, and analysis on policy relevant issues at the request of key decision makers and policy officials</b>  |
| <b>Data Source</b> Information maintained in the ERS Program Information Management System (PIMS) that records all requests for research, data, and analysis from USDA, Federal government, Congressional and other key public and private decision makers |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

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| <b>Data Assessment of Performance Measure<br/>Federal Register Notice and other Government Use</b>  |
| <b>Data Source</b> Notices published in the Federal Register and by reports/web postings from other Government agencies (Government Accountability Office, Congressional Research Service, other Federal agencies) are regularly reviewed to obtain evidence that ERS data, analysis or research findings were cited in Federal rulemaking, recommendations, and policy analyses. |
| <b>Completeness of Data</b> Complete and final  |
| <b>Reliability of Data</b> No material inadequacies   |
| <b>Quality of Data</b> Some published examples of use in decision making may be attributed to USDA rather than ERS specifically. Some Congressional Research Service reports may not be publicly available.   |

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| <b>Data Assessment of Performance Measure<br/>Visits to ERS Web site</b>                               |
| <b>Data Source</b> Adobe Site Cloud analytic software used to analyze the Agency's website performance |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

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| <b>Data Assessment of Performance Measure<br/>Percent of Staff Analysis Delivered on Time</b>  |
| <b>Data Source</b> ERS Program Information Management System (PIMS) data are analyzed to compare the due date of each request with the date the information was delivered to the customer. |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

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| <b>Data Assessment of Performance Measure<br/>Customer satisfaction with the ERS Website</b>   |
| <b>Data Source</b> Foresee Customer Analytics Software used to survey visitors to the ERS website. Visitors are randomly asked to evaluate their visit experience along a number of dimensions, and the results are aggregated and reported on a scale of 1 to 100. The Foresee analytic software is an industry standard for analysis of customer satisfaction with their website experience. |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

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| <b>Data Assessment of Performance Measure<br/>Percent of scheduled key statistical indicators released on time</b> |
| <b>Data Source</b> Content management system for the ERS website maintained by the agency.                         |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

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| <b>Data Assessment of Performance Measure<br/>Percent of staff analyses delivered on time</b>  |
| <b>Data Source</b> Agency Program Information System (PIMS) used to track and record external requests for information and analysis, which identifies the date the information was requested and the date the information was delivered to the customer. |
| <b>Completeness of Data</b> Complete and final   |
| <b>Reliability of Data</b> No material inadequacies  |
| <b>Quality of Data</b> High  |

**Causes of Variance or Changes in Trends**

ERS met or exceed targets all six performance measures.

**Analysis of results:** ERS met or exceed targets all six performance measures.

One measure did not meet the target: Visits to the ERS website. The target for FY 2014 was 8,000,000 million page views; the actual performance measure was 7 million page views. During the first few weeks of October 2013, the ERS website was taken offline due to the Federal government shutdown. Analysis of historical website data suggests that the shutdown resulted in several hundred thousand fewer page views than during the previous fiscal year.

**Actions for unmet measures:** N/A

**Challenges for the future:** To maintain the high quality of the information used to construct our performance measures.

**Changed Key Performance Indicators:** ERS developed and implemented a new suite of performance measures starting in FY 2012. Data for prior years are not available. ERS added two new performance measures for FY

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2015: The percent of scheduled statistical indicators released on time, and the percent of staff analyses delivered on time.

**Other Indicators:** No other measures were used.

**Program Evaluations**

ERS initiated a five-year cycle of program reviews in 2014. Over the five-year cycle the reviews will evaluate the effectiveness of the ERS program of economic research and analysis to enable better informed decisions on food, natural resource, rural, and agricultural policy issues. A panel of peer reviewers are selected from areas of related research, private, and public sector organizations to objectively evaluate and provide retrospective and prospective assessment of programs. In February 2015 seven panel members reviewed the Food Economics Division’s Food Access, Food Choices and Nutrition areas. .

| <b>Strategic Objective and Program</b>   | <b>Title</b>   | <b>Findings and Recommendations/Actions</b>   |
|--|--|---|
| <p><b>Strategic Goal 4:</b><br/>Ensure that all of America’s children have access to safe, nutritious, and balanced meals.</p> <p><b>Objective 4.1:</b><br/>Increase Access to Nutritious Food</p> <p><b>Objective 4.2:</b><br/>Promote Healthy Diet</p> | <p>Review of ERS’ Food Access, Food Choices, and Nutrition Program.</p> <p>Completed<br/>February 2015</p> | <p><b>Finding:</b> Overall, the panel rated the program under review as 8.5 on a scale of 10, with 10 being excellent.</p> <p><b>Recommendations:</b> The panel found that the work of ERS supports USDA’s strategic goals related to these areas, that the research areas had four core strengths which enable quality research, and that there were three areas for improvement to research relevance and productivity.</p> <p><b>Conclusions:</b> The ERS management is completing a plan to follow through on recommendations. Progress has already been made on hiring staff needed to carry out recommendations.</p> <p><b>Hyperlink:</b> n/a</p> |

**Selected Accomplishments Expected at the FY 2017 Proposed Resource Level:**

**Key Outcome 1:** Enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues affecting rural development, rural well-being, farm business and household income, and rural communities.

ERS will identify key economic issues related to rural economic development, farm viability, rural household prosperity and well-being, and competitiveness. ERS will use sound analytical techniques to understand the immediate and broader economic and social consequences of how alternative policies and programs and changing market conditions affect rural and farm economies and households. ERS will effectively communicate research results to policy makers, program managers, and those shaping the public debate on rural economic conditions and performance of all sizes and types of farms. Examples of these activities include the following:

- Developing a comprehensive, integrated base of information on rural economic and social conditions that can be used by Federal policy makers for strategic planning, policy development, and program assessment.
- Analyzing how investment, technology, Federal policies, demographic trends, increased foreign competition in low-wage industries, and growing demand for highly skilled labor affect rural America’s capacity to prosper in the global marketplace.
- Conducting research to better understand the role and effectiveness of investments in infrastructure, housing, and business assistance for sustaining rural communities, particularly in areas with rapid population growth or long-term population decline.
- Providing timely, accurate agricultural economic analysis and data on the impacts of decisions in risky situations to help farmers, ranchers, and policymakers make more informed production and marketing decisions.

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- Researching and disseminating economic intelligence about the structure of, performance in, information systems of, new technology in, and foreign direct investment in the U.S. food manufacturing, processing, wholesale, retail, and food service industries.

### Selected Past Accomplishments toward Achievement of the Key Outcome FY 2015:

Future research and analysis will build on the successes of past performance to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate needs of policy makers and decision makers. Examples of recent progress are listed in the section on Status of Program. Past accomplishments toward achievement of the key outcome include: an analysis of trends in rural child poverty; analysis of the factors that lead migrants to return to their rural home communities; analysis of family farms; analysis of producer participation in local food systems and the value of local food sales; analysis of farm operators and land ownership; analysis of mandatory price reporting for livestock transactions; and analysis of how renewable energy policies influence global markets for biofuels.

### Selected Accomplishments Expected at the FY 2017 Proposed Resource Level/Challenges for the Future:

*ERS will conduct the following research on the rural and farm economy:*

Rural Communities' Role in Rural Business Innovation. Innovation is increasingly regarded as the key to national and local economic prosperity. Preliminary results from the 2014 Rural Establishment Innovation Survey (REIS) confirm that substantive innovators are found in both urban and rural environments, dispelling conventional wisdom that innovation is a predominantly urban phenomenon. The next phase of the research will investigate whether innovation-intensive industries and regions recovered from the Great Recession faster. Linking the REIS to secondary and administrative data on capital and broadband availability will inform decision making about programs and policies for creating jobs, developing new markets, and increasing competitiveness for rural businesses and communities.

Rural Community Health and Economic Development. Although substantial research has investigated how various factors influence the decision of physicians to work in rural areas, little research has sought to understand what rural communities themselves can do to attract and retain primary health care providers, or how attracting health care providers affects the economic prospects of rural communities. ERS will address these issues based on a survey of health care providers and interviews with rural community leaders and health facility administrators. Research identifying successful approaches that some rural communities are using to address these needs which could be adopted or adapted elsewhere will inform government efforts to improve access to primary health care and promote economic development in rural areas.

The Role of SNAP in the Rural Economy. ERS research will compare the rural impacts of the Supplemental Food Assistance Program (SNAP) to those in urban areas and to impacts of other Federal programs targeted to rural areas, such as agricultural commodity and rural development programs. Although SNAP is the largest USDA program, little research has investigated the economic effects of SNAP in rural areas. The project will examine how SNAP affects household savings and consumption decisions, impacts of SNAP on earnings in rural vs. urban communities, and impacts of SNAP compared to impacts of agricultural commodity programs nationally and in selected regions.

Analysis of the Rural Rental Housing Program. ERS research will examine the current allocation of USDA's Section 515 housing and the communities served, areas presently underserved or at risk of becoming underserved, the factors contributing to the risk of loss of affordable rental housing, and the communities and populations likely to be affected. Since 1963, Section 515 Rural Rental Housing program has made subsidized direct loans to developers to finance affordable, multi-family rental housing in rural areas for low and moderate income families, elderly people, and persons with disabilities. Section 521 Rental Assistance is available for units in Section 515 housing to keep rents at or under 30% of tenant incomes, yet supplying these units faces growing challenges. This research will inform policy makers concerned about the need for affordable rental housing in rural areas.

Forecast of Farm Income, Assets and Debt. ERS annually develops and published estimates of farm income, assets and debt (balance sheet) through the ERS web site. Three times each year, ERS provides updated income and balance sheet forecasts that reflect the most recent information available on production, prices and quantities of

crops, livestock, products, and other outputs and services generated from farms. The information is also used as an input for other agencies: the Bureau of Economic Analysis' (BEA) National Income Staff use this information in developing their estimates of gross domestic product (GDP) and National Income Accounts and estimates of Personal Income and Outlays, and Corporate profits. Forecast data are provided to the Council of Economic Advisors, and the estimates are also used by BEA's Regional Economic Measurement Division in developing a system of regional economic indicators that help form the basis for dissemination of Federal Revenue Sharing funds.

New Farm Entrants: Demographics, Financial Performance, and the Future of Agriculture. Beginning farmers and ranchers face challenges above and beyond those of established operators, particularly in terms of their needs for financial capital and the physical assets necessary to develop long-term profitability. Beginning farmers are also a diverse group, and their capital needs vary significantly by age and reason for entering farming. ERS researchers will analyze the role of physical and financial capital on farm entry and transition, and the variation in capital use by demographic and farm-level characteristics.

Large-Scale Farms in the United States. Farm production continues to shift to larger operations. ERS will analyze this shift, for different regions and commodities, and assess reasons for its continuation. The study will also focus on the attributes of very large U.S. farms using a new top sales class of \$10 million or more. ERS will examine size and growth, management, ownership, commodity focus, and financial performance of the largest farms.

Implications of Changing Land Values for Financial Stress and Land Ownership. ERS research will examine the potential vulnerability of the farm sector to changes in agricultural land values, interest rates, and commodity prices. Farm real estate values reached record highs in 2013, but forecasts indicate a slowing rate of appreciation, or possibly even a decline in land values caused, in part, by lower commodity prices and rising interest rates.

Farmland ownership, land acquisitions, and land use. ERS research will apply the new Tenure, Ownership, and Transition of Agricultural Land database, which includes information on nonoperating farmland owners, to a number of policy questions, including the importance of farmland ownership, relative to farmland rentals, in order to understand if and when access through purchase or leasing is desirable. An overview of how landowners acquired and plan to transfer their land, and of leasing agreements will offer insights into the future availability of land. The report will identify the incentives/disincentives/drivers to owning or renting land; the nature of farmland leases; and how land use and land rights influence rents and ownership.

*ERS will conduct the following research on U.S. agricultural markets:*

Market Analysis and Outlook. ERS, working closely with the World Agricultural Outlook Board, the Foreign Agricultural Service, and other USDA agencies, conducts market analysis and provides short- and long-term projections of U.S. and world agricultural production, consumption, and trade. The market and outlook program enhances the quality, transparency, and accessibility of data and analytical information. Planned program enhancements include improved data access technologies, including interactive data portals, advanced graphing tools, mobile friendly access, and applications to enhance the delivery of information through automated feeds.

Value of Public Situation and Outlook Programs in a Big Data Era. ERS will conduct research on how the role and the value of USDA's situation and outlook program information is affected by the increasing availability of big data which private vendors utilize to provide information about commodity markets to market participants who pay for their services. The analysis will use public USDA reports and daily futures prices over the past five decades to examine long term patterns in relative forecast errors, patterns in market surprise, and patterns in price reaction conditional on relevant market conditions.

*ERS will conduct the following research on farm and commodity policy:*

Analysis of USDA Risk Management Programs. American farmers face risks from weather and markets for the inputs they purchase (e.g., energy, labor) and products they sell. ERS will continue to provide research that analyzes the environment in which farmers operate and USDA's risk management programs. Research will include an analysis of the effects of farm management decisions on revenue risk exposure and on the cost of downside risk, and will evaluate how the farm's financial environment (e.g., savings) may change the demand for federal crop insurance. ERS has a series of studies underway on the risk management policies and programs under the 2014 Farm



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Bill programs as well as Federal Crop Insurance. The new programs are legislatively linked to each other and to traditional crop insurance either explicitly or implicitly, making farmer choices interdependent across programs. A synthesis report is planned that will bring together findings from the individual studies, including the Noninsured Crop Disaster Assistance Program, Livestock Indemnity Program, and Stacked Income Protection Plan. The synthesis report will focus on the risk management implications of the new programs, a common thread that links the designs and choices among the various new options. Finally, ERS will conduct research using behavioral economics tools to investigate how farmers might respond to potential changes in the design of different programs.

Options for improved microloan targeting. In 2013, USDA's Farm Service Agency (FSA) launched the Microloan program in response to possible credit constraints among nontraditional and niche-type operations and among certain types of farmers, including beginning and historically disadvantaged farmers. Microloans are part of the traditional Direct Operating Loans program run by FSA but have a lower maximum loan size (\$50,000), a simplified application procedure, and relaxed requirements for some of the eligibility criteria that require applicants to demonstrate experience and managerial ability. This study will be based on a partnership between ERS and FSA to implement a field experiment targeting historically underserved populations of farmers, presenting results from a field experiment targeting certain types of farmers.

*ERS will conduct the following activities related to homeland security:*

Analysis of Animal Disease Outbreaks. ERS researchers will collaborate with Federal and academic researchers to examine how economic variables and factors affect animal and crop disease outbreak assessments. This work will examine how economic analysis can help to develop clearer views of actual and hypothetical outbreaks, and to more fully identify what factors are significant in measuring the success of a mitigation or prevention efforts. This research focuses on efforts to introduce economic components into epidemiological analysis that will allow analysts and decision makers to include social (e.g., impacts on rural communities) considerations and expand the number of criteria that may be used to determine effective outbreak responses. ERS will continue to invest in the data and analytical capacity needed to provide the current market context and data needed to support USDA Homeland Security event assessments and planning efforts, and support the USDA Highly Pathogenic Avian Influenza MAC. In addition, ERS is contributing expertise as subject matter experts to the Department of Homeland Security, Science and Technology Directorate, for the Agro-terrorism Risk Assessment, and the NSTC Foreign Animal Disease Threats Interagency Working Group.

**Key Outcome 2:** Enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues related to developing Federal farm, natural resource, and rural policies and programs that respond to the challenges of climate change and the need to protect and maintain the environment while improving agricultural competitiveness and economic growth.

ERS will identify key economic issues related to interactions among natural resources, environmental quality, and the agriculture production system. ERS also will use sound analytical techniques to understand the immediate and broader economic and social consequences of alternative policies and programs to protect and enhance environmental quality associated with agriculture. ERS research analyzes the economic effects and cost effectiveness of resource, conservation, environmental, and commodity programs and their linkages. Topics include USDA's conservation programs and environmental policies addressing water and air quality and climate change associated with agricultural production. ERS will effectively communicate research results to policy makers, program managers, and those shaping public debate on agricultural resource use and environmental quality.

Examples of these activities include the following:

- Characterizing implications of conservation and environmental policy design. Conservation policy design is generally limited to defining the subset of producers eligible to participate in a program, constructing the incentive structure, and selecting program participants from among willing bidders. ERS research examines options for using market forces to improve the economic, environmental and distributional performance of programs. Design features examined include the baseline level of performance necessary to receive payments or participate in markets, options for targeting specific producer types (e.g., socially disadvantaged farmers), regions, or environmental attributes, the use of auctions for soliciting high benefit or lower cost offers, and

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procedures for selecting participants from among all program applicants.

- Characterizing policy drivers for land management and land use change. Farm and environmental policies, including farm programs, biofuel policies, conservation programs and climate policies, may encourage farmers to modify cropping patterns, to change their crop management practices, to expand cropland and/or to retire cropland. ERS research examines whether and to what extent changes in land management and land use would occur under alternative policy specifications.

### Selected Past Accomplishments toward Achievement of the Key Outcome FY 2015:

Future research and analysis will build on the successes of past performance to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy makers and decision makers. Examples of recent progress are listed in the section on Status of Program. Past accomplishments toward achievement of the key outcome include: analysis of how climate change may increase the use of genetic resources for adaptation to heat and drought stress; analysis of choices for managing declining effectiveness of and resistance to glyphosate; analysis of wetlands restoration programs; analysis of the impacts of the drought in California; and analysis using behavioral economics of how alternative auction mechanisms could increase the cost-effectiveness of USDA conservation programs.

### Selected Accomplishments Expected at the FY 2016 Proposed Resource Level/Challenges for the Future:

*ERS will conduct the following research on climate change:*

#### Understanding the mechanisms for adapting to, and mitigating, the impact of drought and related weather events.

The recent droughts in California had a major impact on agriculture and demonstrate the need to understand better how farmers, crop and livestock consumers, and the food sector react to drought and related extreme-weather events. ERS will continue to provide the public and policy makers with updated information about farmer behaviors and market adjustments in the face of drought, as well as the role of government programs in reducing farmers' financial risk. ERS researchers will continue to analyze the impacts of these policy and behavioral mechanisms, such as farmer decisions about practices and the use of crop insurance, and their ability to reduce the economic and environmental costs of climate and water variability.

Research, Productivity and Adaptation to Climate Change in Global Agriculture. ERS research will provide a quantitative assessment of the future research and development (R&D) spending required for adaptation to climate change on a global scale. While there is ample evidence that R&D spending is closely associated with raising agricultural productivity, there is very limited information on how much R&D spending may be required to maintain or accelerate total factor productivity growth in agriculture, especially in the face of changing climate conditions. An important consideration is the role of R&D spillovers, both across geographic boundaries and across sectors.

*ERS will conduct the following research on conservation, water, and environmental issues:*

Conservation Compliance. To maintain eligibility for most agriculture-related federal programs, Conservation Compliance requires farmers to implement approved conservation systems on highly erodible cropland and refrain from draining wetlands. The Agricultural Act of 2014 eliminated Direct Payments and Countercyclical Payments—which previously accounted for a large proportion of compliance incentives—but also created “shallow loss” programs and linked crop insurance premium subsidies to Conservation Compliance requirements. ERS research will investigate the effectiveness of conservation compliance, changes in incentives due to the Agricultural Act of 2014, and the effectiveness of these incentives in protecting highly erodible cropland and wetlands.

Economics of Reducing Nutrient Losses from Agriculture in the Mississippi Atchafalaya River Basin. ERS research will examine the economic consequences of reducing nutrient losses from agriculture to the Gulf of Mexico and its implications for improving environmental quality. Every summer, a large hypoxic zone forms in the Gulf of Mexico. Low dissolved oxygen in the Gulf is a serious environmental concern that can impact valuable fisheries and disrupt sensitive ecosystems. Reducing agricultural nutrient losses has been a major conservation goal for USDA and many Mississippi Basin states. However, despite years of investment in conservation measures, most

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cropland does not meet criteria for good nutrient management. ERS expects to publish a report in FY 2017 that examines policy options for reducing nutrient losses in the Mississippi/Atchafalaya River Basin.

The Economics of Antibiotic Use in Livestock. Antimicrobial resistance has been an area of focus during the past two decades as USDA plays a dual role in protecting animal agriculture and public health. ERS research will support this effort by extending our analyses of the uses of antibiotics in livestock agriculture. The results to be published in 2017 will provide baseline data, in advance of the implementation of new FDA rules at the beginning of 2017. ERS will also assess efforts to develop new animal antibiotics. Research will summarize the development process for new animal drugs in private industry, public labs, and academia, the regulatory process for review and approval of new animal drugs, and provide an assessment of the policy options available to speed the development and introduction of new drugs,

Policy Options for Improving USDA Conservation Programs. ERS is collaborating with USDA conservation program managers to provide evidence on cost-effective approaches to designing and implementing voluntary conservation programs. In particular, ERS is partnering with USDA's Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS) to implement randomized experiments to test which outreach strategies are the most effective at enrolling non-participant farmers, underserved farmers, and participant farmers that have expiring contracts. Research findings will address conservation activities aimed at improving water quality in the Chesapeake Bay watershed and examine options for increasing the effectiveness of technical service providers.

Livestock Producer Responses to Environmental Regulations. ERS will study the efficacy of Concentrated Animal Feeding Operation (CAFO) environmental regulations mandated in 2003 by examining how livestock and crop operations responded to the rules. Specifically, the study will investigate, according to the relative degree of regulation; changes in the land base for manure application; changes in manure nutrient application rates on regulated operations; and changes in manure application on nearby non-regulated operations. Since States also have specific environmental regulations, the research will also utilize a compendium of State-level CAFO regulations, previously developed at ERS, to separately identify the separate impacts of Federal and State regulations.

**Key Outcome 3:** Enhanced understanding by policy makers, regulators, program managers, and organizations shaping public debate of economic issues related to adoption of economically and environmentally sustainable technologies and factors affecting trade of U.S. agricultural products (including products produced using biotechnology).

ERS will identify key economic issues related to the competitiveness and sustainability of rural and farm economies, including economic factors guiding the development and adoption of new technologies and production systems to support food security and trade. These activities include the following:

- Supporting the USDA Biotechnology Coordinating Council and interdepartmental efforts with the Food and Drug Administration and the Environmental Protection Agency through research that addresses impacts for farmer and industry behavior. Research and related data collection efforts are designed to capture the broad effects of this technology.
- Providing information on changes in technology of food production and adoption of new agricultural inputs and practices that have significant implications for the way in which the Nation's food supply is produced.
- Developing and disseminating research and analysis on the U.S. food and agriculture sector's performance in the context of increasingly globalized markets. Key emphasis areas include free trade agreements, domestic policy reforms, and the principal drivers of structural changes in global supply and demand.
- Producing an annual assessment of the prevalence and depth of food security in developing and transition countries. ERS is developing new model capabilities, including the ability to assess the impact of changes in food prices, which will be used to analyze selected countries in the 2017 report.

### Selected Past Accomplishments toward Achievement of the Key Outcome FY 2015:

Future research and analysis will build on the successes of past performance to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate needs of policy makers and decision makers. Examples of recent progress are listed in the section on Status of Program. Past accomplishments toward achievement of the key outcome include: analysis of the drivers of increased production in U.S. agriculture;

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analysis of the profitability of organic field crops; analysis of Chinese cotton policy and its effects on world markets; analysis of how easing trade and travel restrictions to Cuba could affect U.S. agricultural exports to Cuba; and analysis of the effects of sanitary and phytosanitary measures and tariff rate quotas maintained by the European Union (EU) on U.S. meat exports.

### Selected Accomplishments Expected at the FY 2017 Proposed Resource Level/Challenges for the Future:

*ERS will conduct the following research on the organic sector and production technologies:*

Developments in Markets for U.S. Organic Exports. ERS research will examine developments in the U.S. organic export market. In addition to developing absolute and relative measures of organic trade performance over time, by commodity, and by trading partner, ERS will analyze the impact of equivalency agreements on observed trade flows. Analysis will test the extent to which observed increases in U.S. organic exports can be attributed to these agreements as compared to changes in market fundamentals.

Trends in retail organic price premiums, 2004-2010. Organic foods are one of the most rapidly growing sectors in the retail food market. ERS will examine retail organic price premiums using 2004-2010 data to estimate the organic price premium for 18 food product categories including eggs, dairy, meats, fresh produce, grains and a variety of processed foods.

Adoption of Genetically Engineered (GE) Seeds in Alfalfa, Canola, and Sugar Beets. USDA currently reports annual data on acreage planted to GE varieties for three major crops—corn, cotton, and soybeans—and information on other crops is limited. However, ERS included questions on GE acreage for alfalfa, canola, and sugar beets in the 2013 Agricultural Resource Management Survey (ARMS). ERS research will draw on ARMS estimates and industry reports to assess adoption of GE seeds for alfalfa, canola, and sugar beets, as well as the farm and operator attributes of adopters, the specific GE varieties that have been adopted, and the varieties in the regulatory pipeline.

*ERS will conduct the following research on global agricultural markets and food security:*

International Food Security Assessment. ERS produces an annual assessment of the prevalence and depth of food security in low-and middle-income countries. ERS makes available the full historical database used for the model projections on its website. In addition, ERS is developing new model capabilities, including the ability to assess the impact of changes in food prices and income on demand which will make the model capable of addressing all four dimensions of food security—availability, access, utilization and stability. ERS complements its annual food security assessment with research on food security in selected countries and regions. ERS will analyze key dimensions of food security, including agricultural productivity, trade, climate change, safety nets, and nutrition, as well as data and measurement challenges.

The Next Horizon: The Agricultural Trade Policy Landscape in 2016 and Beyond. ERS will analyze the implications of the changing agricultural traded landscape to inform agricultural trade policy formulation as negotiators seek to further reduce trade barriers to U.S. exports. The analysis will quantify the gains from trade that would result from specific reforms to nontariff import barriers; export restrictions and subsidies; and domestic support policies, tariffs and tariff-rate quotas in both developed and developing countries. ERS will extend its analysis of Non-Tariff Measures (NTMs) to other major participants in global markets, including China, India, and Russia, to establish a basis for more comprehensive assessments of NTMs, including interaction effects with other trade barriers, in selected commodity markets. ERS will also analyze the potential impacts of regulatory convergence among trading partners on issues such as genetic modification in crops, beef hormones, feed additives, and residue limits.

China's Livestock Sector and Implications for U.S. Exports. ERS research will examine the impacts of China's support policies, productivity, food safety requirements, and overall structural change on its livestock sector to ascertain its future import demand. The research will focus on China's livestock sector development over the last three decades and provide a review of policy measures, technical change, and trends in domestic production, meat and dairy imports, and productivity measures such as feed conversion and milk-per-cow ratios over time.

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*ERS will conduct the following activities related to homeland security:*

Analysis of Animal Disease and Risk Assessments. ERS will be actively working through interagency activities with USDA APHIS and researchers associated with the DHS Science and Technology Directorate's Foreign Animal Disease and the Economic Consequences Working Group. ERS analysts will continue to serve on the Department of Homeland Security Interagency Bioterrorism Risk Assessment Working Group for the National Biodefense Analysis Countermeasures and Biological Threat Characterization Centers, and will continue to serve on review committees for the Bioterrorism Risk Assessments (BTRA). The collaborative efforts of ERS researchers provide BTRA stakeholders with credible and impartial analytic support to inform biodefense investments. These efforts directly support the USDA goal to help America promote agricultural production and biotechnology exports, as America works to increase food security.

**Key Outcome 4:** Enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues related to improving the efficiency, efficacy, and equity of public policies and programs relating to domestic and global food prices and availability, consumer food choices, nutrition and health outcomes, nutrition assistance programs, and protecting consumers from unsafe food.

ERS will identify key economic issues affecting food prices, food access and availability, food consumption patterns, and food safety. ERS will use sound analytical techniques to understand the immediate and long-term efficiency, efficacy, and equity consequences of alternative policies and programs aimed at ensuring access by children and adults to safe, nutritious, affordable, and adequate meals. ERS ongoing research will also explore factors that can improve the effectiveness and efficiency of USDA Food and Nutrition Assistance programs. ERS will effectively communicate research results to policy makers, program managers, and those shaping efforts to promote abundant, safe, and healthful food at home and abroad. Examples of these activities include the following:

- Providing economic analysis of the food marketing system to understand factors affecting the availability and affordability of food for American consumers.
- Providing annual estimates of the quantity of food available for human consumption, and measures of disappearance and loss in the food system.
- Providing economic analysis of how people make food choices, including demands for more healthful, nutritious, and safer food, and of the determinants of those choices, including prices, income, education, and socio-economic characteristics.
- Conducting analyses of the benefits and costs of policies to change behavior to improve diet and health, including nutrition education, labeling, advertising, and regulation.
- Conducting economic analyses of the impacts of the Nation's domestic nutrition assistance programs, including the Supplemental Nutrition Assistance Program (SNAP); the Special Supplemental Nutrition Program for Women, Infants, and Children; and the Child Nutrition Programs.
- Conducting research on food program targeting and delivery to gauge the success of programs aimed at needy and at-risk population groups, and to identify program gaps and overlaps.
- Conducting research on program dynamics and administration, focusing on how program needs change with local labor market conditions, economic growth and recession, and how changing State welfare programs interact with food and nutrition programs.
- Providing food safety information through publications, web materials, and briefings that address the economics of food safety, including consumer knowledge and behavior, industry practices, the relationship between international trade and food safety, and government policies and regulations.
- Working with Federal food safety agency partners to evaluate available food borne illness data related to meat, poultry and egg products, and to develop more accurate measures of the effectiveness of regulatory strategies in reducing preventable food borne illness.

### Selected Past Accomplishments toward Achievement of the Key Outcome FY 2015:

Future research and analysis will build on the successes of past performance to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy makers and decision makers. Examples of recent progress are listed in the section on Status of Program. Past accomplishments toward achievement of the key outcome include: an analysis of the food safety of chicken served

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in the National School Lunch Program; a study of how low-income, low-access households differ in food purchase behavior and diet quality as compared to other consumers; and a study estimating the economic burden of foodborne illness.

### Selected Accomplishments Expected at the FY 2017 Proposed Resource Level/Challenges for the Future:

*ERS will conduct the following research on food choices, food safety, and health outcomes:*

Using Behavioral Economics to Help Consumers Buy Healthier Foods in Low-Income Area Grocery Stores. This study will provide descriptive statistics, such as average Healthy Eating Index (HEI) scores, the amount of time spent shopping and traveling to grocery stores, and general knowledge of MyPlate and label use among individuals living in food deserts. Researchers will then apply key findings from behavioral economic studies to consumer food purchasing behavior to develop a set of possible strategies for increasing healthier food choices in grocery stores. The results will inform decision making about ways to encourage healthier food choices.

Examining the dietary quality of Americans from 1977 – 2010. Understanding secular trends in diet is important for assessing research needs and formulating dietary policy. However, ERS researchers have encountered major data limitations – limited and dated nutrient and food serving's data available in the 1977-78 Nationwide Food Consumption Survey (NFCS) and 1989-91 Continuing Survey of Food Intakes by Individuals (CSFII). These data shortcomings will be addressed by utilizing current state of food composition knowledge to conduct a comprehensive analysis of U.S. dietary trends.

The 2011 Food Safety Modernization Act (FSMA) and the Fresh Produce Industry. Using new survey data collected through a joint ERS/NASS initiative, ERS researchers will assess pre-implementation food safety practices relative to several FSMA rules specifically focused on fresh produce. Results will compare food safety practices and costs of adoption for different size farms or post-harvest operations, for different regions of the country, and to the extent possible for different produce commodities. The research will provide a baseline for eventual assessment of effectiveness of FSMA adoption.

Estimating Food Attributable Fractions of Foodborne Illness from Time Series Data. Reliable measures of the relative role of different foods in foodborne illness caused by specific pathogens are critical to government's and industry's ability to target food safety interventions effectively. This collaborative study between ERS, the Centers for Disease Control and Prevention, and the U. of Calif., Berkeley will use Nielsen HomeScan time series data on food consumption and FoodNet foodborne illness surveillance to estimate the relative contributions of specific foods to illnesses caused by major foodborne pathogens.

*ERS will conduct the following research on USDA's food and nutrition assistance programs:*

Characteristics of School Districts Implementing Farm-To-School Programs. This project will identify school district characteristics associated with participation in farm to school activities during 2011-12. Farm to school activities include procurement of local food for school meal programs as well as educational activities such as field trips to farms and edible school gardens. The study will provide insights into priorities for assistance, both in terms of geography and problems faced.

Sorting Out the Effects of Expanded Categorical Eligibility, Income Volatility, and Other Policy Changes on SNAP Using Administrative Data. In the 2000s, many States expanded the definition of eligibility for SNAP to include individuals who qualified for non-cash assistance from Temporary Assistance for Needy Families (TANF) or related programs. These policies raised the gross income limit and removed the asset limits in many states. Some analysts ascribe the large rise in SNAP caseloads since 2008 to these policies, while others find that changes in unemployment explain most of the increase. This research will identify the sources of eligibility of SNAP participants using the Survey of Income and Program Participation (SIPP) 2008 panel linked to State level SNAP administrative data. SNAP administrative data from New York, Texas, and Georgia will be linked to the SIPP in order to show which individuals in the SIPP sample truly participated in SNAP.

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Strategic Goal Funding Matrix  
(Dollars in thousands)

| Program/Program Items  | 2014<br>Actual | 2015<br>Actual | 2016<br>Enacted | Increase<br>or<br>Decrease | 2017<br>Estimate |
|--|----------------|----------------|-----------------|----------------------------|------------------|
| <b>Department Strategic Goal: Assist rural communities to create prosperity so they are self-sustaining, repopulating, and economically thriving.</b>  |                |                |                 |                            |                  |
| Economic Analysis and Research   | \$28,319       | \$30,794       | \$31,041        | +\$791                     | \$31,832         |
| Staff Years  | 131            | 131            | 139             | -                          | 139              |
| <b>Department Strategic Goal: Ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources.</b> |                |                |                 |                            |                  |
| Economic Analysis and Research   | 10,865         | 11,816         | 12,106          | +728                       | 12,834           |
| Staff Years  | 45             | 46             | 48              | -                          | 48               |
| <b>Department Strategic Goal: Help America promote agricultural production and biotechnology exports as America works to increase food security.</b>   |                |                |                 |                            |                  |
| Economic Analysis and Research   | 19,263         | 21,421         | 21,448          | +193                       | 21,641           |
| Staff Years  | 87             | 87             | 92              | -                          | 92               |
| <b>Department Strategic Goal: Ensure that all of America's children have access to safe, nutritious, and balanced meals.</b>   |                |                |                 |                            |                  |
| Economic Analysis and Research   | 19,104         | 21,534         | 20,778          | +4,193                     | 24,971           |
| Staff Years  | 77             | 77             | 85              | -                          | 85               |
| <b>Lapsing Balances.....</b>   | <b>507</b>     | <b>308</b>     | <b>-</b>        | <b>-</b>                   | <b>-</b>         |
| <b>Total Costs, All Strategic Goals.....</b>   | <b>78,058</b>  | <b>85,873</b>  | <b>85,373</b>   | <b>+5,905</b>              | <b>91,278</b>    |
| <b>Total Staff Years, All Strategic Goals....</b>  | <b>340</b>     | <b>341</b>     | <b>364</b>      | <b>-</b>                   | <b>364</b>       |

**Economic Research Service  
Full Cost By Department Strategic Goal  
(Dollars in thousands)**

**Strategic Goal 1: Assist rural communities to create prosperity so they are self-sustaining, repopulating and economically thriving.**

|                                       |  | <b>Dollars in thousands</b> |                       |                        |                         |
|---------------------------------------|--|-----------------------------|-----------------------|------------------------|-------------------------|
| <b>PROGRAM</b>                        | <b>PROGRAM ITEMS</b>   | <b>FY 2014 Actual</b>       | <b>FY 2015 Actual</b> | <b>FY 2016 Enacted</b> | <b>FY 2017 Estimate</b> |
| <b>Economic Research and Analysis</b> |  |                             |                       |                        |                         |
|                                       | Salaries and Benefits  | \$17,792                    | \$18,211              | \$19,283               | \$19,283                |
|                                       | Pay Costs  | 0                           | 0                     | 0                      | 291                     |
|                                       | Data Acquisition   | 3,306                       | 2,774                 | 2,618                  | 2,618                   |
|                                       | Extramural Program   | 1,536                       | 1,740                 | 1,740                  | 2,240                   |
|                                       | Contracts  | 1,203                       | 1,695                 | 1,195                  | 1,195                   |
|                                       | Interagency Agreements   | 2,622                       | 2,545                 | 2,053                  | 2,053                   |
|                                       | Direct Costs   | 668                         | 548                   | 648                    | 604                     |
|                                       | Indirect Costs   | 1,192                       | 3,281                 | 3,504                  | 3,548                   |
|                                       | <b>Total Costs</b>   | 28,319                      | 30,794                | 31,041                 | 31,832                  |
|                                       | <i>FTEs</i>  | 131                         | 131                   | 139                    | 139                     |
| Performance                           |  |                             |                       |                        |                         |
| Measure: Portfolio                    | Qualitative assessment by external experts of  |                             |                       |                        |                         |
| Review Score                          | the relevance, quality, and performance of ERS research portfolios to enable better informed decisions on food and agricultural policy issues. |                             |                       |                        |                         |
|                                       |  | Excellent                   | Excellent             | Excellent              | Excellent               |
| <b>Total for Strategic Goal</b>       |  |                             |                       |                        |                         |
|                                       | <b>Total Costs (program, direct, indirect)</b>   | 28,319                      | 30,794                | 31,041                 | 31,832                  |
|                                       | <i>FTEs</i>  | 131                         | 131                   | 139                    | 139                     |

**Strategic Goal 2: Ensure our national forests and private working lands are conserved, restored and made more resilient to climate change, while enhancing our water resources.**

|                                       |  | <b>Dollars in thousands</b> |                       |                        |                         |
|---------------------------------------|--|-----------------------------|-----------------------|------------------------|-------------------------|
| <b>PROGRAM</b>                        | <b>PROGRAM ITEMS</b>   | <b>FY 2014 Actual</b>       | <b>FY 2015 Actual</b> | <b>FY 2016 Enacted</b> | <b>FY 2017 Estimate</b> |
| <b>Economic Research and Analysis</b> |  |                             |                       |                        |                         |
|                                       | Salaries and Benefits  | 6,110                       | 6,395                 | 6,771                  | 6,771                   |
|                                       | Pay Costs  | 0                           | 0                     | 0                      | 102                     |
|                                       | Data Acquisition   | 2,569                       | 2,508                 | 2,508                  | 2,508                   |
|                                       | Extramural Program   | 440                         | 499                   | 499                    | 844                     |
|                                       | Contracts  | 212                         | 410                   | 210                    | 210                     |
|                                       | Interagency Agreements   | 896                         | 702                   | 702                    | 983                     |
|                                       | Direct Costs   | 223                         | 182                   | 217                    | 202                     |
|                                       | Indirect Costs   | 415                         | 1,120                 | 1,199                  | 1,214                   |
|                                       | <b>Total Costs</b>   | 10,865                      | 11,816                | 12,106                 | 12,834                  |
|                                       | <i>FTEs</i>  | 45                          | 46                    | 48                     | 48                      |
| Performance                           |  |                             |                       |                        |                         |
| Measure: Portfolio                    | Qualitative assessment by external experts of  |                             |                       |                        |                         |
| Review Score                          | the relevance, quality, and performance of ERS research portfolios to enable better informed decisions on food and agricultural policy issues. |                             |                       |                        |                         |
|                                       |  | Excellent                   | Excellent             | Excellent              | Excellent               |
| <b>Total for Strategic Goal</b>       |  |                             |                       |                        |                         |
|                                       | <b>Total Costs (program, direct, indirect)</b>   | 10,865                      | 11,816                | 12,106                 | 12,834                  |
|                                       | <i>FTEs</i>  | 45                          | 46                    | 48                     | 48                      |



**Strategic Goal 3: Help America promote agricultural production and biotechnology exports as America works to increase food security.**

|                    |   | Dollars in thousands |                |                 |                  |
|--------------------|---|----------------------|----------------|-----------------|------------------|
| PROGRAM            | PROGRAM ITEMS                                     | FY 2014 Actual       | FY 2015 Actual | FY 2016 Enacted | FY 2017 Estimate |
|                    | Salaries and Benefits                             | 11,839               | 12,095         | 12,807          | 12,807           |
|                    | Pay Costs   | 0                    | 0              | 0               | 193              |
|                    | Data Acquisition                                  | 2,198                | 2,145          | 2,145           | 2,145            |
|                    | Extramural Program                                | 1,114                | 1,262          | 1,262           | 1,262            |
|                    | Contracts   | 1,022                | 1,415          | 1,015           | 1,015            |
|                    | Interagency Agreements                            | 1,855                | 1,452          | 1,452           | 1,452            |
|                    | Direct Costs                                      | 446                  | 366            | 433             | 404              |
|                    | Indirect Costs                                    | 789                  | 2,186          | 2,334           | 2,363            |
|                    | <b>Total Costs</b>                                | <b>19,263</b>        | <b>20,921</b>  | <b>21,448</b>   | <b>21,641</b>    |
|                    | <i>FTEs</i>                                       | <i>87</i>            | <i>87</i>      | <i>92</i>       | <i>92</i>        |
| Performance        |   |                      |                |                 |                  |
| Measure: Portfolio | Qualitative assessment by external experts of     |                      |                |                 |                  |
| Review Score       | the relevance, quality, and performance of ERS    |                      |                |                 |                  |
|                    | research portfolios to enable better informed     |                      |                |                 |                  |
|                    | decisions on food and agricultural policy issues. | Excellent            | Excellent      | Excellent       | Excellent        |
|                    | <b>Total for Strategic Goal</b>                   |                      |                |                 |                  |
|                    | <b>Total Costs (program, direct, indirect)</b>    | <b>19,263</b>        | <b>20,921</b>  | <b>21,448</b>   | <b>21,641</b>    |
|                    | <i>FTEs</i>                                       | <i>87</i>            | <i>87</i>      | <i>92</i>       | <i>92</i>        |

**Strategic Goal 4: Ensure that all of America's children have access to safe, nutritious and balanced meals.**

|                                       |   | Dollars in thousands |                |                 |                  |
|---------------------------------------|---|----------------------|----------------|-----------------|------------------|
| PROGRAM                               | PROGRAM ITEMS                                     | FY 2014 Actual       | FY 2015 Actual | FY 2016 Enacted | FY 2017 Estimate |
| <b>Economic Research and Analysis</b> |   |                      |                |                 |                  |
|                                       | Salaries and Benefits                             | 10,753               | 10,704         | 11,335          | 11,335           |
|                                       | Pay Costs   | 0                    | 0              | 0               | 172              |
|                                       | Data Acquisition                                  | 1,064                | 1,038          | 1,038           | 1,038            |
|                                       | Extramural Program                                | 1,582                | 2,262          | 1,793           | 1,793            |
|                                       | Contracts   | 2,295                | 2,888          | 2,280           | 6,301            |
|                                       | Interagency Agreements                            | 2,302                | 2,302          | 1,802           | 1,802            |
|                                       | Direct Costs                                      | 415                  | 343            | 402             | 376              |
|                                       | Indirect Costs                                    | 693                  | 1,997          | 2,128           | 2,154            |
|                                       | <b>Total Costs</b>                                | <b>19,104</b>        | <b>21,534</b>  | <b>20,778</b>   | <b>24,971</b>    |
|                                       | <i>FTEs</i>                                       | <i>77</i>            | <i>77</i>      | <i>85</i>       | <i>85</i>        |
| Performance                           |   |                      |                |                 |                  |
| Measure: Improve                      | USDA policy makers implement new local            |                      |                |                 |                  |
| Low Income                            | foods initiatives as a result of new data and     |                      |                |                 |                  |
| Household Access                      | information on community, local food market,      |                      |                |                 |                  |
| to Fresh, Local,                      | and food assistance program characteristics, and  |                      |                |                 |                  |
| Healthy Food                          | analysis of effective alternatives for improving  |                      |                |                 |                  |
|                                       | access to fresh, local foods.                     | No                   | No             | No              | Yes              |
| Performance                           |   |                      |                |                 |                  |
| Measure: Portfolio                    | Qualitative assessment by external experts of     |                      |                |                 |                  |
| Review Score                          | the relevance, quality, and performance of ERS    |                      |                |                 |                  |
|                                       | research portfolios to enable better informed     |                      |                |                 |                  |
|                                       | decisions on food and agricultural policy issues. | Excellent            | Excellent      | Excellent       | Excellent        |
|                                       | <b>Total for Strategic Goal</b>                   |                      |                |                 |                  |
|                                       | <b>Total Costs (program, direct, indirect)</b>    | <b>19,104</b>        | <b>21,534</b>  | <b>20,778</b>   | <b>24,971</b>    |
|                                       | <i>FTEs</i>                                       | <i>77</i>            | <i>77</i>      | <i>85</i>       | <i>85</i>        |
|                                       | <b>Total Costs, All Strategic Goals</b>           | <b>77,551</b>        | <b>85,065</b>  | <b>85,373</b>   | <b>91,278</b>    |
|                                       | <b>Total FTEs, All Strategic Goals</b>            | <b>340</b>           | <b>341</b>     | <b>364</b>      | <b>364</b>       |