

2019 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 a broad range of economic and policy issues related to agriculture, food, natural resources, and rural America. The Agency's mission is to anticipate issues that are on the horizon, and to conduct sound, peer-reviewed economic research. ERS is also the primary source of statistical indicators that, among other things, gauge the health of the farm sector (including farm income estimates and projections), assess the current and expected performance of the agricultural sector (including trade), and provide measures of food security here and abroad. Most of the Agency's research is conducted by a highly trained staff of economists and social scientists through an intramural program of research, market outlook, and analysis. Key clientele include White House and USDA policy officials; program administrators/managers; the U.S. Congress; other Federal agencies; State and local government officials; and organizations, including farm and industry groups interested in public policy issues.

ERS develops its research program in coordination with other REE and USDA research agencies, USDA program agencies, and other external collaborators. Activities to support this mission 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, and presentations; databases; and individual contact. More information on ERS' program is contained on the ERS Web site at www.ers.usda.gov.

The ERS headquarters is in Washington, D.C. ERS does not have any field offices. As of September 30, 2017, there were 322 permanent full-time employees.

ECONOMIC RESEARCH SERVICE

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

Item	2016 Actual		2017 Actual		2018 Estimate		2019 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Salaries and Expenses:								
Discretionary Appropriations.....	\$85,373	345	\$86,757	330	\$86,168	329	\$45,000	148
Mandatory Appropriations.....	-	-	-	-	-	-	-	-
Lapsing Balances.....	-312	-	-325	-	-	-	-	-
Obligations.....	85,061	345	86,432	330	86,168	329	45,000	148
<u>Obligations under other USDA appropriations:</u>								
Foreign Agricultural Service.....	106	1	55	1	100	1	-	-
Food and Nutrition Service.....	5,145	-	3,000	-	3,000	-	-	-
Agricultural Research Service.....	188	-	90	-	0	-	-	-
Nat'l Agricultural Statistics Svc.....	-	-	10	-	10	-	25	-
Office of the Chief Economist.....	14	-	110	-	-	-	-	-
Nat'l Information Technology Ctr	-	-	66	-	-	-	-	-
Total, Other USDA Appropriation.....	5,453	1	3,331	1	3,110	1	25	0
Total, ERS.....	90,514	346	89,763	331	89,278	330	45,025	148

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Permanent Positions by Grade and Staff Year Summary

<u>Grade</u>	<u>2016 Actual</u> Washington DC	<u>2017 Actual</u> Washington DC	<u>2018 Estimate</u> Washington DC	2019 President's <u>Budget</u> Washington DC
Senior Executive Service.....	6	6	6	3
GS-15.....	67	67	65	29
GS-14.....	68	68	65	29
GS-13.....	72	74	72	31
GS-12.....	70	70	63	28
GS-11.....	34	34	34	15
GS-10.....	1	1	1	0
GS-9.....	17	17	16	7
GS-8.....	1	1	1	1
GS-7.....	3	3	3	1
GS-6.....	1	1	1	1
GS-5.....	1	1	0	0
GS-4.....	3	3	1	1
GS-3.....	1	1	1	1
GS-2.....	1	1	1	1
Total Permanent Positions.....	346	348	330	148
Unfilled Positions, EOY.....	-17	-26	0	0
Total Permanent, Full-Time Employment, EOY.....	329	322	330	148
Staff-Year Estimate.....	346	331	330	148

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Shared Funding Projects

(Dollars in thousands)

	2016 Actual	2017 Actual	2018 Estimate	2019 President's Budget
Working Capital Fund:				
Administration:				
HR Enterprise System Management.....	\$5	\$5	\$5	\$7
Integrated Procurement Systems.....	37	36	40	40
Mail and Reproduction Services.....	138	127	127	127
Materiel Management Service Center.....	45	45	41	43
Subtotal.....	224	212	212	217
Communications:				
Creative Media & Broadcast Center.....	71	71	72	78
Finance and Management:				
Financial Management Services.....	96	98	85	86
National Finance Center.....	99	97	105	106
Subtotal.....	196	195	190	192
Information Technology:				
Client Technology Service.....	294	486	481	481
National Information Technology Center.....	85	213	229	229
Enterprise Network Services.....	208	705	776	1,311
Subtotal.....	586	1,404	1,485	2,020
Correspondence Management.....				
Office of the Executive Secretariat.....	6	6	5	5
Total, Working Capital Fund.....	1,083	1,889	1,964	2,513
Departmental Shared Cost Programs:				
1890's USDA Initiatives.....	11	13	12	12
Advisory Committee Liason Services.....	2	2	2	2
Classified National Security Information.....	3	3	4	4
Continuity of Operations Planning.....	7	7	7	7
Emergency Operations Center.....	8	8	7	7
Facility and Infrastructure Review and Assessment.....	2	2	1	1
Faith-Based & Neighborhood Partnerships.....	1	1	1	1
Hispanic-Serving Institutions National Program.....	6	7	6	6
Honor Awards.....	0	-	0	0
Human Resources Transformation.....	5	6	5	5
Identity and Access Management (HSPD-12).....	24	23	21	21
Intertribal Technical Assistance Network.....	-	-	-	-
Medical Services.....	28	25	29	29
People's Garden.....	2	2	2	2
Personnel Security Branch (was PDSB).....	4	8	5	5
Pre-authorizing Funding.....	13	12	12	12
Retirement Processor Web Application.....	2	2	2	2
TARGET Center.....	5	5	5	5
USDA 1994 Program.....	2	3	2	2
Virtual University.....	7	7	6	6
Total, Departmental Shared Cost Programs.....	133	136	130	130

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Shared Funding Projects

(Dollars in thousands)

	2016 Actual	2017 Actual	2018 Estimate	2019 President's Budget
E-Gov:				
Budget Formulation and Execution Line of Business.....	0	0	0	0
Enterprise Human Resources Integration.....	7	7	7	7
E-Rulemaking.....	-	-	-	-
E-Training.....	9	-	-	-
Financial Management Line of Business.....	0	0	0	0
Geospatial Line of Business.....	7	13	13	13
Grants.gov.....	-	-	-	-
Human Resources Management Line of Business.....	1	1	1	1
Integrated Acquisition Environment - Loans and Grants.....	-	-	-	-
Integrated Acquisition Environment.....	5	1	1	1
FOIA.....	-	-	-	2
Total, E-Gov.....	29	22	22	24
Agency Total.....	1,244	2,047	2,116	2,667

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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, [~~\$86,168,000~~] \$45,000,000.

Lead-Off Tabular Statement

Budget Estimate, 2019.....	\$45,000,000
2018 Annualized Continuing Resolution.....	<u>86,168,000</u>
Change in Appropriation.....	<u>-41,168,000</u>

ECONOMIC RESEARCH SERVICE

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

Program	2016 Actual		2017 Actual		2018 Estimate		Inc. or Dec.		2019 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
	Discretionary Appropriations:									
Economic Analysis & Research.....	\$85,373	345	\$86,757	330	\$86,168	329	-\$41,168	-181	\$45,000	148
Lapsing Balances.....	-312	-	-325	-	-	-	-	-	-	-
Total Obligations.....	<u>85,061</u>	<u>345</u>	<u>86,432</u>	<u>330</u>	<u>86,168</u>	<u>329</u>	<u>-\$41,168</u>	<u>-181</u>	<u>45,000</u>	<u>148</u>

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

Program	2016 Actual		2017 Actual		2018 Estimate		Inc. or Dec.		2019 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
	Discretionary Obligations:									
Economic Analysis & Research.....	\$85,061	345	\$86,432	330	\$86,168	329	-\$41,168	-181	\$45,000	148
Total Obligations.....	85,061	345	86,432	330	86,168	329	-\$41,168	-181	45,000	148
Lapsing Balances.....	+312	-	+325	-	-	-	-	-	-	-
Total Available.....	<u>85,373</u>	<u>345</u>	<u>86,757</u>	<u>330</u>	<u>86,168</u>	<u>329</u>	<u>-\$41,168</u>	<u>-181</u>	<u>45,000</u>	<u>148</u>
Total Appropriation.....	<u>85,373</u>	<u>345</u>	<u>86,757</u>	<u>330</u>	<u>86,168</u>	<u>329</u>	<u>-\$41,168</u>	<u>-181</u>	<u>45,000</u>	<u>148</u>

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Justification of Increases and Decreases

Funding will be used for core, recurring programs of data analysis and market outlook. Proposals for ERS budget priorities reflect principles based on the Agency's role as a Federal intramural research and statistical organization. The principles identify areas where ERS is best positioned to provide information that the private sector or academia has weaker incentives or higher cost to provide, and include: 1) research that builds on unique or confidential data sources or investments at the Federal level and is inherent in the role of a Federal Statistical Agency; 2) provides coordination for a national perspective or framework; 3) requires sustained investment and large teams; 4) directly serves the U.S. Government's or USDA's long-term national goals and are not likely to be understood or valued; and 5) addresses questions with short-run payoff or that have immediate policy implications. While we also seek to inform decision making on the core of USDA programs at proposed funding levels we will focus on providing expertise in the analysis of farming and commodity markets, as well as limited information on food markets and U.S. food security.

At the proposed budget of \$45.0 million, ERS will provide data products and statistics for farm financial information (e.g., estimates of farm income and commodity costs of production), agricultural commodity markets, USDA's domestic and international baseline, international trade, U.S. agricultural productivity, loss-adjusted food availability, and monthly forecasts of the Consumer Price Index for food. ERS will maintain its production of the national estimates of U.S. food security. This funding level also supports the Agency's Commodity Outlook program and participation in USDA's Interagency Commodity Estimates Committees and recurring analyses for commodities covered by USDA Farm Act commodity programs. These activities include analysis for the monthly World Agricultural Supply and Demand Estimates (WASDE) reports, publication of commodity newsletters, public release of data for feed grains and other commodities, and supply and utilization tables for commodities that serve as critical inputs to the ERS Loss-Adjusted Food Availability Data. ERS will continue to provide leadership in the modeling for USDA's Agricultural Baseline Projections. Producing these statistics requires \$5.7 million to purchase the Agricultural Resource Management Survey (ARMS), U.S. food security data, and private sector commodity data and intelligence. This budget level will largely eliminate ERS' research activities, though it would support staff to develop and report the statistics and conduct research needed to ensure the sustained ability to develop meaningful measures of economic concepts in a dynamic food, farm and agricultural sector. This funding level will streamline the Department's statistical functions and focus on core data products similar to other statistical agencies within the Government.

- (1) A net decrease of \$41,168,000 and 181 staff years for economic research (\$86,168,000 and 329 staff years available in 2018).

Funding changes are requested for the following items:

- (a) An increase of \$10,000,000 to support a decrease in number of personnel.

The funding will cover costs of personnel actions to reduce ERS' workforce from 329 to 148 personnel.

- (b) A decrease of \$21,759,000 and 78 staff years for Research on Agricultural Markets and Trade, Farms, Conservation and Agricultural Research and Development (\$48,449,000 and 206 staff years available in 2018).

ERS will discontinue research relative to farm, conservation and trade policy, and on investments in agricultural research and development. ERS will also discontinue its annual estimates of international food security for low- and middle-income countries and research on international development that supports this activity. At the proposed funding level, research and extramural agreements associated with special initiatives such as on research innovations for policy effectiveness, drought resilience, new energy sources (including bioenergy, renewable energy and shale oil and gas), local and regional food markets, beginning farmers and ranchers, invasive species, and markets for environmental services will be eliminated.

With these reductions, ERS will continue to provide analysis and monthly newsletters to support participation in USDA's Inter-Agency Commodity Estimate Committees and provide modeling and data related to USDA's Agricultural Baseline Projections. ERS will refocus its international activities to ensure continued expertise and market analysis on major agricultural trading countries such as China, Brazil, and

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India, which are necessary to support the Inter-Agency Commodity Estimates Committees (ICEC) and USDA baseline development. ERS will produce high-quality, objective measures of farm business and household income and wealth, cost of production, and report on farm practice adoption. Research and data development – including the Agricultural Resource Management Survey (ARMS) – will prioritize activities necessary to ensure objective and reliable statistics as well as the capacity to interpret and predict emerging data trends and to respond to short turn-around requests for such information.

- (c) A decrease of \$16,331,000 and 73 staff years for Research and Analysis on Food Assistance, Nutrition and Diet Quality (\$18,941,000 and 93 staff years available in 2018).

ERS will continue to produce the Loss-Adjusted Food Availability Data, annual statistics to measure U.S. food security, and monthly retail food price forecasts. ERS will eliminate research and other data products on USDA food and nutrition assistance programs and on food consumption and nutrition, including all data resources related to food access and consumer food choices, including the Food Environment Atlas, Food Access Research Atlas, SNAP Data System, Fruit and Vegetable Prices, and Price Spreads from Farm to Consumer.

- (d) A decrease of \$5,266,000 for the Consumer Data Information Program (\$5,966,000 available in 2018).

The Consumer Data Information Program (CDIP) funds data purchases and research to develop new data sources that support research by ERS and the academic community on the food system beyond the farm gate. In FY 2019, with the goal to rescale core responsibilities, ERS will continue to support core data for U.S. food security statistics, but will eliminate other data purchases including retail scanner data, grocery store and restaurant location data, modules on national surveys (e.g., Eating & Health Module in the Bureau of Labor Statistics' American Time Use Survey and the Flexible Consumer Behavior Survey in the National Center for Health Statistics' National Health and Nutrition Examination Survey), investments in USDA's National Household Food Acquisition and Purchase Survey (FoodAPS), and will discontinue support for the academic community's access to restricted data for research.

- (e) A decrease of \$4,000,000 and 20 staff years for Rural Economy and Well-being Research and Analysis (\$4,000,000 and 20 staff years available in 2018).

ERS will discontinue all research and statistics related to the rural economy, some of which may be provided by public universities and non-profit institutions.

- (f) A decrease of \$2,162,000 and 10 staff years for Food Safety Research and Analysis (\$2,162,000 and 10 staff years available in 2018).

ERS will discontinue all research and data efforts related to food safety. The Department will support research related to food safety through the National Institute of Food and Agriculture (NIFA) and the Agricultural Research Service (ARS).

- (g) A decrease of \$1,650,000 for the Agricultural Resource Management Survey (ARMS) (\$6,650,000 available in 2018).

ARMS is USDA's primary source of information on the financial condition, production practices, and resource use of America's farm businesses and the economic well-being of America's farm households. Data from ARMS are critical to many components of ERS' core programs, including farm income estimates, cost of production estimates that capture the most recent changes by farmers in technology or production practices, national productivity accounts and research on farm structure, farm policy impacts, drivers of farm performance, technology adoption, and farm and conservation program participation. The FY 2019 funding levels would be sufficient for maintaining national and regional estimates from ARMS, but would require discontinuing the State-level estimates (currently produced for the 15 largest agricultural producing States). In addition, the periodicity of the crop and livestock commodity specific surveys would be lengthened.

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

State/Territory	2016 Actual		2017 Actual		2018 Estimate		2019 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Arizona.....	-	-	\$206	-	-	-	-	-
Arkansas.....	\$85	-	79	-	-	-	-	-
California.....	338	-	624	-	-	-	-	-
Colorado.....	112	-	340	-	-	-	-	-
Connecticut.....	1	-	1	-	-	-	-	-
Delaware.....	-	-	90	-	-	-	-	-
District of Columbia.....	73,953	345	68,055	330	\$86,168	329	\$45,000	148
Florida.....	68	-	65	-	-	-	-	-
Georgia.....	82	-	37	-	-	-	-	-
Idaho.....	1	-	-	-	-	-	-	-
Illinois.....	1,634	-	1,284	-	-	-	-	-
Indiana.....	78	-	108	-	-	-	-	-
Iowa.....	82	-	3	-	-	-	-	-
Kansas.....	275	-	23	-	-	-	-	-
Kentucky.....	5	-	20	-	-	-	-	-
Louisiana.....	-	-	1	-	-	-	-	-
Maryland.....	4,514	-	9,308	-	-	-	-	-
Massachusetts.....	236	-	322	-	-	-	-	-
Michigan.....	327	-	6	-	-	-	-	-
Minnesota.....	111	-	227	-	-	-	-	-
Missouri.....	328	-	235	-	-	-	-	-
Montana.....	12	-	26	-	-	-	-	-
Nebraska.....	88	-	12	-	-	-	-	-
Nevada.....	2	-	1	-	-	-	-	-
New Hampshire.....	40	-	105	-	-	-	-	-
New Jersey.....	31	-	42	-	-	-	-	-
New Mexico.....	20	-	122	-	-	-	-	-
New York.....	176	-	289	-	-	-	-	-
North Carolina.....	684	-	272	-	-	-	-	-
Ohio.....	135	-	253	-	-	-	-	-
Oklahoma.....	-	-	51	-	-	-	-	-
Oregon.....	-	-	-	-	-	-	-	-
Pennsylvania.....	163	-	19	-	-	-	-	-
Rhode Island.....	8	-	-	-	-	-	-	-
South Carolina.....	25	-	-	-	-	-	-	-
South Dakota.....	-	-	7	-	-	-	-	-
Tennessee.....	3	-	3	-	-	-	-	-
Texas.....	9	-	192	-	-	-	-	-
Utah.....	-	-	25	-	-	-	-	-
Vermont.....	-	-	1	-	-	-	-	-
Virginia.....	1,095	-	3,710	-	-	-	-	-
Washington.....	17	-	91	-	-	-	-	-
West Virginia.....	5	-	21	-	-	-	-	-
Wisconsin.....	192	-	68	-	-	-	-	-
Australia.....	13	-	4	-	-	-	-	-
Canada.....	29	-	55	-	-	-	-	-
China.....	1	-	1	-	-	-	-	-
France.....	4	-	1	-	-	-	-	-
Germany.....	2	-	1	-	-	-	-	-

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

State/Territory	2016 Actual		2017 Actual		2018 Estimate		2019 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Italy.....	1	-	1	-	-	-	-	-
Mexico.....	25	-	-	-	-	-	-	-
South Africa.....	3	-	-	-	-	-	-	-
Switzerland.....	-	-	1	-	-	-	-	-
United Kingdom.....	48	-	24	-	-	-	-	-
Obligations.....	85,061	345	86,432	330	86,168	329	45,000	148
Lapsing balances.....	312	-	325	-	-	-	-	-
Total Available.....	85,373	345	86,757	330	86,168	329	45,000	148

Note: The distribution of 2018 and 2019 funds by location has not been determined at this time.

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Classification by Objects
(Dollars in thousands)

	2016	2017	2018	2019	
	<u>Actual</u>	<u>Actual</u>	<u>Estimate</u>	President's <u>Budget</u>	
Personnel Compensation:					
Washington, D.C.					
11	Total personnel compensation.....	\$37,620	\$36,872	\$37,451	\$21,942
12	Personnel benefits.....	11,325	11,082	11,266	6,601
	Total personnel comp.and benefits.....	48,945	47,954	48,717	28,543
Other Objects:					
21.0	Travel and transportation of persons.....	531	411	500	200
22.0	Transportation of things.....	74	64	75	1
23.1	Rental payments to GSA	5,611	5,903	5,021	4,687
23.3	Communications, utilities, & misc. charges.....	686	796	800	650
24.0	Printing and reproduction.....	18	9	9	4
25.1	Interagency Agreements.....	4,833	5,297	5,352	1,200
25.3	Other Services.....	3,025	5,649	5,600	3,235
25.4	Contracts.....	2,818	2,190	2,800	0
25.5	Cooperative Agreements.....	1,643	3,729	2,305	0
25.7	Data acquisition.....	14,067	12,789	12,439	5,700
26.0	Supplies and materials.....	521	258	500	200
26.3	ADP Software/Material/Supplies.....	528	630	1,000	400
31.0	Equipment.....	499	459	450	180
41.0	Grants.....	1,262	294	600	0
	Total, Other Objects.....	36,116	38,478	37,451	16,457
99.9	Total, new obligations.....	85,061	86,432	86,168	45,000
	DHS Building Security Payments (included in 25.3).....	\$795	\$606	\$606	\$568
<u>Position Data:</u>					
	Average Salary (dollars), ES positions.....	\$179,050	\$180,974	\$182,847	\$184,676
	Average Salary (dollars), GS positions.....	\$114,545	\$116,950	\$119,172	\$121,556
	Average Grade, GS positions.....	13.7	13.7	13.7	13.7

Status of Programs

Economic Research and Analysis Program

Enhance competitiveness for American farms, agriculture, and rural communities

Current Activities:

ERS conducts research that strengthens the understanding of American farms, the agricultural sector, and rural communities. This includes analysis of commodity markets, the competitiveness of U.S. farms at home and abroad, and the health of the rural economy. ERS research and analysis provides insights into market conditions facing U.S. agriculture, potential avenues for innovation and market expansion, and the effects of farm policies. The agency conducts research on the effects of new agricultural technologies and practices on farm business and sector performance as well as their implications for the changing size and organization of U.S. farms. ERS produces USDA's estimates of farm business and farm household income and identifies and analyzes market structure and technological developments that affect farm efficiency and profitability. ERS research and analysis also provides insights into how the agricultural sector is evolving in both the short and long term. Analysis of the major factors driving the outlook for agricultural commodity markets plays a central role in supporting USDA's World Agriculture Supply and Demand Estimates (WASDE), which serves as the benchmark for information on major global commodities, and the annual USDA baseline, ten-year agricultural projections that are used in the President's Budget each year.

ERS's rural research explores how investments in businesses, communities, and people affect the capacity of rural economies to prosper in a changing global marketplace. The agency analyzes how employment opportunities, Federal policies, demographic trends, and public investment in infrastructure and technology enhance economic opportunity and quality of life for rural Americans.

Selected Examples of Recent Progress:

- *Farm income indicators and forecasts measure the financial performance of the U.S. farm sector.* ERS provides authoritative information on the financial health of the farm sector, including the performance of farm businesses and well-being of farm households. In the most recent statement, ERS forecasted a rise in 2017 net cash income and net farm income relative to 2016 estimates after three years of decline. The median income of farm operator households is expected to remain level. 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 in the Bureau of Economic Analysis statistics for Gross Domestic Product.
- *Large commercial farm households experience far greater income variability over time than comparable nonfarm households.* Farm income is highly variable, and this variability can affect household welfare, agricultural production, and environmental quality. ERS researchers used 18 years of the USDA's Agricultural Resource Management Survey (ARMS) to provide new information about the extent of farm household income variability, focusing on larger scale commercial farms that produce most U.S. agricultural output (those having at least \$350,000 in gross cash farm income). For these commercial farm households, the median change in total income between years is about eight times larger than for nonfarm households. Statistical analysis also revealed that crop farms have more volatile household income than livestock farms on average, and that all categories of farm program payments (direct, counter-cyclical, conservation, crop insurance, and other) reduce household income volatility. The study was disseminated as a Council on Food, Agricultural and Resource Economics webinar, and an Agricultural Outlook Forum presentation, and has been cited by numerous media sources including Farm Policy News, AGFAX, and The Progressive Farmer.
- *USDA's Direct Farm Operating Microloan program provided better targeting and drew a larger number of new borrowers compared with traditional loan programs during 2013-2015.* The Farm Service Agency's (FSA) Direct Farm Operating Microloan program, launched in January 2013, aims to provide credit to small farms,

beginning farmers/ranchers, veterans, and farmers from historically socially disadvantaged groups (women and minorities). These loans are designed to be more convenient and accessible to nontraditional producers, with a shortened and streamlined application and relaxed criteria for managerial experience, production history, and collateral. An ERS report found that a larger share of Microloans went to groups that are targeted by the program, compared with traditional micro-sized Direct Operating Loans. Also, Microloans attracted a larger number and higher share of borrowers who are new to FSA direct loans. The report's findings have been cited in several media outlets, and led to briefings for senior policy officials and the USDA New and Beginning Farmer Working Group.

- *Dedicating Agricultural Land to Energy Crops Would Shift Land Use.* Dedicated energy crops, such as switchgrass in the U.S., have received much attention as potential renewable feedstocks for liquid fuels or bio-electricity. However, markets do not presently exist for large-scale use of these resources. An ERS study examined three “what-if” scenarios that could create a market for bio-electricity using dedicated energy crops: a subsidy for bio-electricity generation, a national Renewable Portfolio Standard, and a national cap-and-trade policy to limit carbon dioxide (CO₂) emissions. Model simulation indicates that energy crops would occupy the greatest share of cropland in the Northern Plains, Southeast, and Appalachia. Even though the impact of energy crop production on land use across the three scenarios is similar by design, the impacts on other model outputs are quite different, including the mix of electric-generating technologies, the price of electricity, CO₂ emissions, and the cost relative to a status quo reference scenario. All scenarios reduce U.S. CO₂ emissions relative to the reference scenario. Findings were published in an ERS report and *Amber Waves* article, and has already been cited in the economics literature.
- *Nearly all canola and sugar beet acres harvested in 2013 were planted with genetically engineered (GE) seeds containing herbicide-tolerant (HT) traits.* The success of GE HT corn, soybeans, and cotton led to the deregulation that enabled the commercialization of HT canola in 1998 and of HT alfalfa and sugar beets in 2005. An ERS report uses data from USDA's 2013 ARMS to examine GE adoption rates among these three crops. About 95 percent of U.S. canola acres (1.3 million acres) and over 99 percent of sugar beet acres (1.2 million acres) were harvested from GE seeds that year. In contrast, only 13 percent of U.S. alfalfa acres were planted using GE seeds; this slower adoption rate is expected because alfalfa is a perennial crop and only about one-seventh of the alfalfa acreage is newly seeded each year. Farmers who planted GE HT alfalfa in 2013 had about 17 percent higher yields than farmers who planted conventional seeds.
- *The U.S. organic sector continues to expand rapidly, with U.S. organic farm sales topping \$7.5 billion in 2016—more than double 2011 sales—and tracked U.S. organic imports and exports at record highs.* ERS published research and analysis that examined trends in the U.S. organic sector, including production and marketing characteristics. A wide segment of U.S. consumers now include organic food in their diets, and analysis shows that the organic market share has increased for major retail food categories in recent years. For example, top organic fruits and vegetables increased from a 3-4 percent market share in 2009 to a 6 percent market share in 2014, and the organic milk share increased from 11 percent to 14 percent. Although the organic sector still shows substantial regional and commodity concentration, all 50 States now have some organic production and processing. In addition, ERS added a subsample targeting organic dairy operations to the USDA ARMS that farmers received in 2017 in order to examine structural and other changes that have taken place in the U.S. organic dairy sector over the last decade. ERS researchers responded to numerous media requests for interviews and information on U.S. organic sector trends, including requests from *The Wall Street Journal*, *NPR* and others.
- *Enrollment in new crop insurance programs for upland cotton is tied to the market share of cotton at the county level.* In prior years, cotton was a covered commodity and eligible for support payments, but currently cotton producers must also purchase one of the shallow-loss insurance policies to be eligible for basic Government support. In the report, *Federal Crop Insurance Options for Upland Cotton Farmers and Their Revenue Effects*, ERS explained the mechanics of the two shallow-loss programs and provided estimates of how these programs could reduce the revenue risk of cotton producers. The report analyzes how different realized yields, harvest prices, subsidy levels, and program guarantees affected the outcomes of shallow-loss programs under expected yields and projected prices for 2014. Findings show that at the county level higher revenue risk is closely associated with lower expected revenues. Consequently, high-revenue risk counties should receive relatively

lower payments from the new shallow-loss programs. ERS economists briefed senior government officials on the report's findings.

- *New Noninsured Crop Disaster Assistance policy can mitigate risk more than the basic coverage.* In the report *Changes to the Noninsured Crop Disaster Assistance Program under the Agricultural Act of 2014: Their Potential Risk Reduction Impacts*, ERS focused on the effects of the Noninsured Crop Disaster Assistance Program (NAP). Before 2014, producers could only purchase catastrophic coverage under NAP. Now producers can pay a premium to purchase coverage for up to 65 percent of the approved yield at 100 percent of average market price. The research examined the effects of this change on producer income and revenue risk, as well as the makeup of NAP enrollment. Findings indicated that the new NAP policy could mitigate yield risk more than the NAP basic coverage under the previous program.
- *The ERS Commodity Outlook Program serves USDA stakeholders in the public and private sectors by delivering timely, independent and objective information about agricultural markets.* The Commodity Outlook Program reports and data products are among ERS's most widely used and ERS is committed to maintaining a strong and vibrant commodity outlook program. In 2017, ERS continued to focus on improving the user experience and accessibility to its data products, including greater use of data visualizations and the implementation of an interactive data format for the Domestic Livestock Data Series. ERS also continues to implement a strategic plan focused on the actions necessary to strengthen this program, including a staffing plan to support long-term succession planning as senior analysts retire; additional enhancements to the content and communication of commodity outlook materials; and implementing internal data and process improvements to provide high quality data in formats requested by users.
- *Rural America's economy continues to experience increased employment, falling poverty.* ERS provides up-to-date information on rural economic and demographic trends in an annual series, *Rural America at a Glance*. The latest report notes that population stabilized in rural areas in 2015, after declining every year from 2010 to 2014. Unemployment continued to decline in rural areas last year, falling close to levels last seen before the Great Recession. This is due, in part, to fewer people seeking work as the share of the rural population working remains well below pre-recession levels, while urban employment was 4 percentage points above its 2007 level. The report also notes that rural median household earnings grew by more than 2 percent in 2015, and were above their level in 2007 before the recession. The rural poverty rate had its greatest decline in 2015 since the Great Recession, although the rural poverty rate remains above the pre-recession level. The findings were communicated via a webinar and in briefings to senior USDA policy makers.
- *Rural veterans fare better economically on average than nonveterans.* Veterans can benefit their local rural communities by contributing leadership, technical, and entrepreneurial skills. ERS researchers investigated the geographic and economic status of both working-age (18-64 years old) and elder rural veterans relative to the nonveteran population. Among the study's findings are that veterans are overrepresented in rural America—18 percent of all veterans live in rural areas compared with 15 percent of the total U.S. population. Veterans have more education on average than nonveterans and have lower poverty rates and higher earnings, which has a positive effect on the demand for local goods and services. Differences are evident within the veteran population as well, with elder veterans more likely to be concentrated in completely rural counties and engaged in agriculture, while working-age veterans are more urbanized and more likely to be employed in manufacturing. The analysis was accompanied by briefings to policy makers in USDA and the Department of Veterans Affairs and is part of a longer-term ERS focus on understanding the social and economic characteristics of rural veterans and their role in contributing to rural well-being.
- *The manufacturing sector remains an important source of employment and earnings for the rural economy.* A suite of research reports and staff analysis examined trends in the size, distribution, and importance of manufacturing in the rural economy. In 2015, manufacturing jobs represented 14 percent of rural private nonfarm jobs and 21 percent of rural private nonfarm earnings. Although the rural economy lost more than one in five manufacturing jobs from 2001 to 2015, manufacturing employment and income remain an anchor of the economy in several hundred nonmetropolitan counties. Researchers investigated the factors that support or hinder rural manufacturers' survival. Despite States' focus on recruiting and retaining branch plants, smaller, independent manufacturing plants were more likely to survive during this period. Researchers also found that

access to financial capital was strongly associated with rural manufacturers' survival. The reports have been featured in a webinar, a USDA blog post, and briefings provided to the Foreign Agricultural Service and Rural Development.

- *Business innovation is common in rural as well as in urban economies.* Innovation is widely regarded as essential to dynamic and resilient local economies with long-term growth potential. ERS used a new, comprehensive measure of innovation that considers both grassroots and R&D-based innovation to identify innovation-intensive rural industries and investigate whether innovativeness accelerated post-recession and found that innovation rates are very similar among urban and rural establishments in manufacturing industries and that manufacturing makes up the bulk of the most innovative industries. Manufacturing industries with the highest share of substantive innovators in rural areas included pharmaceuticals, chemicals, computers, and plastics. The only service-providing industries with a high share of innovators in rural areas were telecommunications and wholesale electronic markets. Innovation-intensity did have some positive impact on employment. Industries in all rural areas dominated by substantive innovators added, on average, 100 more jobs from 2010 to 2014 than industries in all rural areas characterized by non-innovators. The study uses the 2014 ERS Rural Establishment Innovation Survey, the first nationally representative sample of self-reported innovation in rural areas of the United States. The survey data have been publically available to researchers at universities nationwide.

Protect and enhance the Nation's natural resource base and the environment

Current Activities:

The ERS natural resources and environmental economics research program improves understanding of the economic relationships behind Federal environmental, water and air quality regulations and programs. As part of its analysis of environmental regulations and conservation incentive policies, ERS provides 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.

ERS develops models and other analytical techniques to estimate the impacts of alternative approaches used by farmers to adapt to changing weather conditions and resource constraints as the demand for agricultural production grows. The models predict responses of farmers to USDA programs, including voluntary incentives for drought mitigation and improved soil health and nutrient management. A related area of research addresses the implications of regional drought for U.S. agriculture, including producers' production and investment decisions, and their participation in conservation and other risk-mitigating programs. ERS research on farmer responses and the implications for markets and natural resources builds on expertise in 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.

Selected Examples of Recent Progress:

- *An effective route for reducing or avoiding deforestation involves increasing overall agricultural output by increasing the yield of land for all agricultural commodities.* In the report, *International Trade and Deforestation: Potential Policy Effects via a Global Economic Model*, ERS examined the factors that influence the production of forest-risk commodities (beef, soybeans, and wood products), including consumption of these commodities in other countries and barriers to international trade and found that increasing global population and demand for food have led to rising agricultural production and demand for land and that expanded agricultural land has often come from tropical forest land. Deforestation in Argentina, Bolivia, Brazil, and Paraguay is linked with production of beef and soybeans, while deforestation in Indonesia and Malaysia is linked with production of palm oil and wood products. U.S. imports of palm oil are small relative to global production, and the United States has little influence on markets for palm oil. However, the United States is a major producer and consumer of other forest-risk commodities and—by increasing production and exports of these commodities—can reduce incentives for their production in tropical countries. With greater agricultural productivity, less area will be needed for agriculture and more land becomes available for forests. The study also shows that the effects of

removing tariffs on the production of forest-risk commodities depends on the level of exports and trade-liberalization across countries.

- *Pollinator forage suitability has been stable nationally over the past several decades, but declined in the Midwest.* Pollinator populations are under stress from a variety of sources, including pest, pathogens, pesticides, and poor nutrition. Pollinators, including honeybees, benefit from a landscape that provides diverse forage - pollen and nectar of flowering plants. An ERS report reviewed the scholarly literature on how land use and programs such as the Conservation Reserve Program affect pollinator health, and examined trends in pollinator forage quality by region as land uses and land covers have changed in the United States over the last 30 years. These efforts also led to a podcast produced by NRCS' National Conservation Training Center, a briefing with ARS pollinator researchers, and several presentations at academic conferences and policy workshops.
- *Conservation Compliance has significantly reduced soil erosion on highly erodible cropland.* Conservation Compliance ties eligibility for most Federal farm program benefits to soil and wetland conservation. An ERS report found that Conservation Compliance is effective when the incentive—the farm program benefits that could be lost due to noncompliance—exceeds the cost of meeting soil and wetland conservation requirements. Farmers' application of approved conservation systems (for example, the Highly Erodible Land Conservation program (HELC)) on highly erodible cropland significantly reduced soil erosion and may have also encouraged erosion reduction on land where approved systems were not applied. Overall, compliance incentives under the Agricultural Act of 2014 were found to vary widely across farms with cropland in highly erodible fields, to approximate the overall level of incentive that would have been provided under the an extension of the 2008 Farm Act (although incentives changed significantly on many farms), and to be significantly lower on many farms if crop insurance premium subsidies were not subject to Conservation Compliance. Compliance incentives for wetland conservation in the Prairie Pothole region of the Northern Plains are clearly larger than Compliance costs for an estimated 75 percent of wetlands that are already cropped or have characteristics favorable to crop production. The report has been featured in press articles in many publications including *Progressive Farmer*, *DTN*, the *Hagstrom Report*, *Agri-Pulse*, and *Agri-Net*.
- *Economic experiments test existing and new approaches to conservation program delivery.* Economic experiments can help inform the design and implementation of government policies. ERS, along with the ERS-funded Center for Behavioral and Experimental Agri-Environmental Policy Research, examined the use of economic experiments for building evidence to inform agricultural conservation policy. An ERS report illustrated the use of experimental approaches through a review of case studies in which experiments were used to investigate issues pertinent to agricultural policy design. Laboratory and field experiments found that the costs of operating a voluntary program using auctions could be significantly reduced when information about potential participants is provided, that farmers prefer upfront payments rather than higher, future payments for conservation, and that farmer outreach can increase re-enrollment rates in the CRP and increase voter participation in FSA county committee elections. The research informed USDA and other policymakers on how evidence-based policymaking can stretch program resources, and has led to further efficiency-improving collaborations with USDA program agencies.

Strengthen the international competitiveness of American agriculture

Current Activities:

ERS conducts research on the economic performance and competitiveness of U.S. agriculture in international markets. U.S. producers rely on export markets to sell agricultural and food products, to sustain and grow revenues, and to contribute to employment, particularly in rural communities. This research program examines emerging patterns of agricultural trade and the associated economic drivers including income and population growth, and domestic and trade policies, and provides information on the principal underlying factors affecting U.S. and global agricultural trade.

ERS also conducts research on the state of global food security, including factors affecting food production and the ability to import food, in Africa, Asia, Latin America and the Caribbean, and the Commonwealth of Independent States. By investigating conceptual and measurement challenges inherent in assessments of undernourishment at the

country, household, and individual level, ERS informs decision makers in the United States and throughout the world with its annual assessment of global food security.

Selected Examples of Recent Progress:

- *Employment in all sectors of the U.S. economy can benefit from increased global demand for U.S. agricultural exports.* ERS estimates that U.S. agricultural exports supported about 1.1 million full-time, civilian jobs in 2015. Yet, the economic linkages between U.S. agricultural exports and rural employment are not fully understood. In the report, *The Potential Effects of Increased Demand for U.S. Agricultural Exports on Metro and Nonmetro Employment*, ERS researchers use a model of the U.S. economy to explore the possible economic effects of a 10-percent increase in foreign demand for U.S. agricultural exports, including in various regions and economic sectors. Researchers found that total employment in all sectors of the U.S. economy (agricultural and nonagricultural) increases by about 41,500 jobs, above and beyond the approximately 1.1 million jobs currently supported by U.S. agricultural exports. ERS provide briefings to senior officials at USDA on this analysis.
- *USDA Agricultural Projections to 2026 suggest long run increases in global consumption, world trade, and agricultural commodity prices.* Each year ERS coordinates the USDA's Baseline projections for U.S. and world agriculture for the coming decade. The 2017 projections indicate that over the next several years the agricultural sector will continue to adjust to lower prices for most commodities. Steady global economic growth and persistent global demand for biofuel feedstocks will contribute to long-run increases in consumption, trade, and agricultural products prices. The 2017 long-term projections were presented at 2017 USDA Agricultural Outlook Forum and also helped shape planning for the Federal Budget. The *Projections* also supported FSA'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, with over 30,000 users accessing the final report in 2017.
- *From 2004 to 2014, the value of U.S. dairy product exports more than quadrupled.* The United States recently became the world's third-largest dairy product exporter, behind New Zealand and the European Union (EU). In the report, *Growth of U.S. Dairy Exports*, ERS discusses how U.S. policies and those of partner countries became more market oriented, allowing trade to respond to market forces. As the United States became more prominent in global dairy markets, it faced greater variability in demand and prices. In 2015, for instance, the value of U.S. dairy exports fell by almost 30 percent due to lower growth in global demand, the strength of the U.S. dollar, and the discontinuation of supply quotas in the EU.
- *China became the world's largest pork importer during 2016 as domestic prices soared above prices in pork-exporting countries.* The report, *China's Pork Imports Rise Along With Production Costs*, compared production costs and productivity measures for Chinese and U.S. hog farms to assess factors that affect the cost-competitiveness of pork in the two countries. Feed is the largest component of China's hog production costs, but marginal improvements in efficiency have not offset rising feed prices in China. U.S. producers have better feed efficiency and lower costs. ERS researchers also participated in a USDA assessment of China's pork market and advised the Foreign Agricultural Service on China pork production.
- *India emerges as a small net exporter of dairy products.* In the report, *India's Dairy Sector: Structure, Performance, and Prospects*, ERS provides a profile of India's dairy sector using available secondary data and research to examine trends in supply, demand, and trade, and the factors affecting these trends. Growth prospects for India's dairy production and trade, accounting for the structural, technical, and policy factors likely to shape that growth were examined. In addition, the research also highlights the future implications for U.S. and global dairy trade. Findings show that water buffalo and crossbred cattle account for all of the growth in the dairy herd and milk production in India, but average milk yields remain well below both international standards. Future production prospects will depend heavily on productivity gains, primarily through improved breeding and feeding practices and improved genetics.
- *Former Soviet Union Region's agricultural output has rebounded in recent years resulting in increased grain exports.* Russia's transition from a planned to a market economy during the 1990s resulted in a severe decline in agricultural gross output and the inputs used in production. By the late 1990s, the agricultural output decline had

bottomed out and growth resumed. For some products, such as grain, the production rebound created surpluses for export. In the reports, *Productivity Growth and the Revival of Russian Agriculture* and *Changing Crop Area in the Former Soviet Union Region*, ERS highlights how total factor productivity growth and increases in planting area, particularly in Russia and Ukraine, contributed to the growth in agricultural output. Findings indicate that grain area in Russia and Ukraine is likely to grow by 5 to 10 percent over the next decade, while oilseed area in both countries could expand by an ever greater amount. This increase in production contributed to Russia reducing its large imports of meat and other livestock products and becoming a major grain exporter. Information from these reports was presented to the World Agricultural Outlook Board and Office of the Chief Economist.

- *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 demand and access based on ERS's food security model, which allows for analysis of income and price changes on food security. Given projections for ongoing low food prices and rising incomes, the 2017 report projects food security for most countries in the study to improve through 2027, with food insecurity rates falling from 18 percent in 2017 to 9 percent in 2027. Food-insecure people are defined as those consuming less than the nutritional target of roughly 2,100 calories per day per person. Despite improvements over the years, Sub-Saharan Africa is projected to remain the most food-insecure region in the world.
- *A Retrospective on U.S. efforts to improve global food security.* For almost six decades, the United States has led global efforts to alleviate food insecurity, providing about half of global food aid and bilateral and multilateral support for agricultural development and trade in developing countries. Global food security has improved over the past 15 years, but challenges and opportunities persist as U.S. food security decision makers continue to prioritize and refine the global food security agenda. In order to feed a world that will have nearly 10 billion people by 2050, it is necessary to investigate the drivers of global food security and options for improvement. In the report, *Progress and Challenges in Global Food Security*, ERS analyzed factors contributing to improvements in food security and highlighted emerging issues and challenges. There have been some improvements in food security measurement, agricultural productivity, food trade, food security safety net programs, and nutrition; however, some challenges persist.

Improve the Nation's nutrition and food safety.

Current Activities:

ERS conducts research on the economic forces influencing consumer food choices and the effect of these choices on nutrition and health outcomes. To understand these relationships, ERS examines the interactions between factors such as food prices, grocery store accessibility, food labeling, household income, and household composition. Market and industry level factors examined include product offerings by firms, changes in store types and store formats, firm and consumer reactions to food safety incidences, and the role of government programs and the food system as a whole in the macro-economy.

ERS analyzes USDA's food and nutrition assistance programs, often coordinating research priorities with USDA's Food and Nutrition Service. These programs receive substantial Federal funding and affect the daily lives of millions of America's children. Long-term research themes include food security outcomes, dietary and nutritional outcomes, food program targeting and delivery, and measurement of program participation.

ERS food safety research focuses on enhancing methodologies for valuing societal benefits associated with reducing food safety risks, understanding consumer and producer responses 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:

- *An estimated 87.7 percent of American households were food secure throughout the entire year in 2016, meaning that they had access at all times to enough food for an active, healthy life for all household members.* The remaining households (12.3 percent) were food insecure at least some time during the year, including 4.9 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. An estimated 92.0 percent of households with children were food secure throughout the year in 2016. 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 and nutrition assistance programs. The authors briefed senior USDA officials on the report's findings and a webinar was presented on the day of publication to field the many press inquiries and related interest that the report generated.
- *Among working-age adults living at or below 200 percent of the Federal poverty line (FPL), lower food security is strongly associated with a higher probability of chronic disease.* Not only is lower food security strongly related to the likelihood of chronic disease in general, it is also associated with all of the specific chronic diseases examined: hypertension, coronary heart disease, hepatitis, stroke, cancer, asthma, diabetes, arthritis, chronic obstructive pulmonary disease, and kidney disease. Moreover, differences between adults in households with low and very low food security are very often significant, which suggests that looking at the entire range of food security is important for understanding chronic illness and potential economic hardship. Indeed, food security status is more strongly predictive of chronic illness in some cases even than income in this low-income population.
- *Average food spending in Supplemental Nutrition Assistance Program (SNAP) households is lower than in other U.S. households when adjusted for household size and composition, even lower than those that are eligible for SNAP but choose not to participate.* USDA's SNAP is designed to increase the food purchasing power of low-income households. A recent USDA survey—the National Household Food Acquisition and Purchase Survey (FoodAPS)—provides a unique opportunity to gain a comprehensive understanding of the food spending of SNAP households. Food-at-home spending accounts for a greater share of the total food expenditures of SNAP households than of other households. SNAP benefits account for over 60 percent of the average food-at-home expenditures of SNAP households. They also play a strong role in the food budgets of households with children and those in poverty, especially those in deep poverty. Among both SNAP households and eligible nonparticipant households, those that are food secure spend more on food than those that are food insecure. Finally, this study finds clear evidence of a cyclical pattern in the food spending of SNAP households across the benefit month. The authors briefed USDA's Office of Congressional Relations on the findings from this research.
- *Children from households with one or more obese children tend to live in more disadvantageous households and food environments than children from households with no obese children.* Childhood obesity rates in the United States have more than doubled in the past three decades. As obese children tend to become obese adults with poor health and low socioeconomic status, a better understanding of factors that may lead to obesity at a young age will aid in the development of efforts to reverse this costly trend. Using FoodAPS, ERS found that children from obese-child households are more likely to live with parents who are not married, have lower education levels, are financially constrained, and are obese themselves. Obese-child households are typically located in areas with lower access to food outlets that sell healthful foods. In urban areas, obese-child households live in areas with easier access to and greater availability of convenience stores than non-obese child households. In rural areas, obese-child households live in areas with less availability of superstores and supermarkets than non-obese child households. Surprisingly, the overall nutritional quality of acquired food is similar, except non-obese child households acquire more seafood and plant proteins, particularly from food prepared away from home.
- *USDA school meal programs generally reduce food insecurity among children from food-insecure households and also contribute to diet quality and academic performance for children from low-income and food-insecure households.* Among households with children and incomes below the Federal poverty line during the 2-year period 2014-15, 44 percent experienced food insecurity among any members and 23 percent experienced food insecurity among children specifically. Food insecurity was more prevalent in households with older children

than in households with younger children. Children were food insecure in 4.3 percent of households with only young children ages 0 to 4. Children were food insecure in 10 percent of households that included teenagers. Most studies of the National School Lunch Program, Summer Food Service Program, and Child and Adult Care Food Program found that the programs were associated with significantly lower rates of food insecurity for households with children, after accounting for assistance program eligibility and increased likelihood of food insecurity among low-income households. Participation in the School Breakfast Program had more mixed effects on food insecurity. The authors briefed USDA's Office of Congressional Relations on the findings from this research.

- *The food system accounts for a large share of fossil fuel consumption in the United States, and energy accounts for a substantial and highly variable share of food costs.* The intersection between food and energy markets suggests that public and private decisions affecting one market will have spillover effects in the other. For example, would increasing the share of population having diets that align with Federal dietary guidance reduce fossil fuel use in the U.S. food system? To address such issues, this report describes a model of the food system, energy use, and how health and other policy changes would affect energy and food consumption. The research finds, for example, that U.S. agri-food industries are more sensitive to energy price changes than nonfood industries. Analysis of alternative diets shows that there are many ways to meet the Dietary Guidelines for Americans. If Americans made a minimal dietary shift to eat more healthy foods, the food-system energy use would decrease by 3 percent. The authors presented a briefing to National Institute for Food and Agriculture (NIFA) leadership on the report's findings.
- *Access-burdened households, those that do not use their own vehicle to travel to a store and live more than 0.5 mile from the nearest SNAP-authorized supermarket or superstore, have different shopping patterns but similar outcomes compared to sufficient-access households.* Using FoodAPS's more precise measures of neighborhood store options, the authors find evidence that access-burdened households are less likely to visit a large store (supermarket, supercenter, or warehouse store) than households with a vehicle or close access (77 percent compared with 87 percent). While those with burdened access who do visit these venues do so less frequently, both groups average more than two shopping events at these stores per week (2.4 events for access-burdened households compared with 2.8 for those with sufficient access). The differences in shopping frequency do not translate to less spending at these large stores as both access-burdened and sufficient-access households spend about 58 percent of their food budget here. Access-burdened households spend a greater share of their budget at food-at-home sources (73 percent) and a smaller percentage of their food at restaurants of all types (27 percent) than households with better access (63 and 37 percent, respectively).
- *Existing food safety programs provide insight into what the Food Safety Modernization Act (FSMA) Produce Rule will mean for the produce industry.* ERS published a report *Food Safety Practices and Costs under the California Leafy Greens Marketing Agreement* that provided information on the relative costs incurred by firms participating in the established voluntary California Leafy Greens Marketing Agreement. Based on survey results on current produce food safety practices, researchers assessed how food safety practices were implemented based on several FSMA rules specifically focused on fresh produce. Results compare food safety practices and costs of adoption for different size farms or post-harvest operations, across different regions of the country, and to the extent possible for different produce commodities, providing a baseline of current practices and compliance costs for eventual assessment of effectiveness of FSMA adoption. Preliminary results from grower and post-harvest surveys and the ERS report were presented at a major scientific conference and to senior officials in USDA.
- *Chicken slaughter establishments identified as having poor or mediocre performance on Salmonella tests in one year were almost certain to improve their performance the following year.* The Food Safety and Inspection Service (FSIS) issued performance standards that eventually included public disclosure of firm compliance to those standards through the 2000s. ERS analysis of these policy changes found that the odds of an establishment with mediocre performance showing improvement in response to disclosure were about 7 to 1. For those with poor performance, the odds were much higher at 49 to 1. The adoption of an easily interpreted numerical rating of performance on *Salmonella* tests was found to be a reason for the policy's effectiveness. The decline of young chicken samples testing positive for *Salmonella* of about 60 percent over 2006-2010 enabled FSIS to reduce the

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standard for the number of samples testing positive for *Salmonella* by about half. These research findings were presented to USDA senior officials in briefings to OCE and FSIS.

Program Evaluations:

In FY 2018, ERS will conduct a program review of the farm and rural economic research of the agency. This review is part of ERS's comprehensive five-year program review cycle in which ERS engages with an external review panel of academic experts, other Federal researchers and private sector experts that visit ERS to conduct the program review that covers all of our major research program areas during the cycle. After a 1.5 day visit to ERS and a comprehensive review, the external panel submits a final report to ERS that includes both a quantitative and qualitative assessment of the research program area and a discussion of ERS strengths and areas for improvement. ERS leadership uses each year's review to determine what adjustments or enhancements should be made to a given program area. In FY 2015-FY 2017, ERS conducted program reviews for three of its major research program areas as described below.

In FY 2017, ERS conducted a program review of its markets, trade, and international agriculture research area. The results of this program review, in which ERS's research was rated as "Excellent" (9) on a 1-10 scale, demonstrated that ERS "conducts high quality, policy-relevant research on impactful topics ...routinely interacts with a wide range of customers and stakeholders, including USDA policy makers, U.S. Congress, other Federal agencies, the NGO community, academic researchers, state agencies and the general public...resulting in significant and on-going policy impacts in both the short and long run...that consistently generate high quality intelligence that informs both public and private decision makers." The review panel made recommendations that ERS provide staff with opportunities learn about frontier techniques, and increase partnerships with institutions that have complimentary skills. In response, ERS increased staff training in big data techniques and expanded professional development opportunities through short term assignments to White House policy agencies (USTR, OMB and CEA). ERS instituted a partnership with research units at the United States International Trade Commission (USITC) and identified joint projects between the two agencies focused on ways to better model non-tariff barriers and recent advances in gravity model analysis. In addition, ERS launched new collaborations with three research institutions to strengthen its forecast and projection modeling efforts for livestock and fruits and vegetables.

In FY 2016, ERS conducted a program review for its resource and environmental economics program area. The panel concluded that ERS is "undertaking high-quality and policy-relevant research...and communicating information effectively with a strong reputation for providing objective and trust-worthy information and for producing high-quality data products." ERS's research in this area was rated "Excellent" (8) on a 1-10 scale. The review panel recommended that ERS interact with key stakeholders early in the research development process to assure the greatest policy relevance of products and that it strengthen its capacity to conduct interdisciplinary research through hiring and collaborative partnerships with other Federal and academic institutions. In response, ERS is incorporating early stakeholder dialogue as an integral feature of research project development, enhanced its core agri-environmental models with additional biophysical modeling features, and has entered into collaborative partnerships with several universities to examine water resource management and farmer response to drought and other extreme weather events.

In FY 2015, ERS conducted a program review for its food economics research area. The results of this program review, in which ERS's research was rated as "Excellent" (9) on a 1-10 scale, demonstrated that ERS "has developed an exemplary record in conducting a portfolio of research and related activities that address the needs of stakeholders for timely, policy-relevant information on food choices, access to food by low-income households and individuals, and diet-related outcomes." The panel recommended that ERS improve methods to measure and communicate research output in a timely and effective manner, better integrate its food economics activities with the external professional community, and better align its data management needs with staff capabilities. In response, ERS has updated its performance metrics to better track ERS research outputs and use of its consumer data investments and their impact. Second, ERS is now organizing more workshops at its headquarters, sessions at professional conferences and webinars to better communicate with the research community and stakeholders. Finally, ERS hired a senior mathematical statistician and a research data economist dedicated to manage the data system in response to economic research staff concerns regarding data management challenges.

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Summary of Budget and Performance

ERS conducts research to inform programs and policies whose aims include the following four goals:

- Greater economic strength for American farms and communities
- Increased international competitiveness for American agriculture
- Improved nutrition for all Americans
- To protect and enhance the Nation’s natural resource base and the environment

To that end, ERS research is consistent with USDA Strategic Goal 1 as it provides information to USDA program agencies that can enhance program efficiency and effectiveness. Previously, ERS provided information across four key outcomes as described below that align with USDA Strategic Goals 2 (Objectives 2.1, 2.2, and 2.3), 3 (Objectives 3.1 and 3.2), 4 (Objective 4.1), 5 (Objective 5.1), and 7 (Objectives 7.1, 7.2, and 7.3). Under the proposed funding levels for FY19, ERS would no longer be able to provide research and data related to Objectives 2.3, 4.1, and 7.1.

ERS research, statistics, and data provide enhanced understanding by policy makers, regulators, program managers, and those shaping public debate of economic issues affecting:

- Farm business and household income (aligns with USDA Goal 2);
- Trade of U.S. agricultural products and strategies to reduce trade barriers and increase markets for U.S. products (aligns with USDA Goals 2 and 3);
- Federal farm and natural resource policies and programs that respond to the need to protect and maintain the environment while improving agricultural competitiveness and economic growth through the adoption of economically and environmentally sustainable technologies (aligns with USDA Goal 5); and
- The efficiency, efficacy, and equity of public policies and programs related to domestic food prices and availability (aligns with USDA Goal 7).

Key Performance Measures:

ERS has developed a set of performance measures to demonstrate the use of our research findings, market analysis, and data programs to inform and improve decision making by policy makers, regulators, program managers, and those shaping the public debate on important socioeconomic issues. Current Key Performance Measures are presented in the table below and explained after the table:

Performance Measures:	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Target	2019 Target
Inform policy officials and stakeholders on policy issues through briefings on research findings (number of briefings)	44	51	68	57	50	40	18
Provide research, data, and analysis on policy relevant issues at the request of key decision makers and policy officials (number of staff analyses produced)	518	515	553	511	419	450	200
Use in Government decision-making documents (number of Federal Register notices, Congressional documents, and other Federal rules and reports)	34	50	47	46	46	45	20

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citing ERS research and/or data)							
Number of ERS website page views (million)	8	7	7.6	7.8	7.8	7.2	3.2
Customer satisfaction with the ERS Website (score on a 0-100 scale from Foresee website satisfaction survey)	74	75	74	72	72	75	75
Percent of scheduled key statistical indicators released on time	n/a	n/a	97%	96%	91%	95%	95%
Percent of staff analyses delivered on time	n/a	n/a	98%	98%	98%	98%	98%
Annual Program Review score (1-10 scale, with 1-3=needs improvement, 4-7=adequate, and 8-10=excellent)	n/a	n/a	Excellent	Excellent	Excellent	Excellent	Excellent

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 Under Secretaries, USDA and other Federal program agency heads, White House, and Congressional staff.

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.

Use in Government decision-making documents:

This measure tracks the number of instances that ERS research findings, data or analysis is cited in publications by the White House (CEA, NEC, OMB, etc.), Government Accountability Office, other Federal rules and regulation reports, Congressional Research Service, Congressional Budget Office, the Congressional Record, and rules published in the Federal Register. 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 page views on the ERS 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.

Annual Program Review Score:

In 2015, ERS updated its schedule and topic focus for annual program reviews in order to cover the breadth of research topics covered by agency output over a five-year period. Each annual review covers a subset of ERS research topics and the specific program area is reviewed by an external panel of experts in the topic area. In addition to a long-form narrative review, the panel is asked to score the ERS research topic on a scale of 1-10 with 8-10 considered a rating of 'Excellent.' ERS has the objective of achieving a score of 'Excellent' each year.

Selected Past Accomplishments Toward Achievement of Key Outcomes:

ERS has four key outcomes that drive the research and statistics produced by the agency. To make progress across these four key outcomes, ERS provides research, data, and analysis to enhance the understanding of policymakers, regulators, program managers, and those shaping debate on economic and policy issues.

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 identifies key economic issues related to rural economic development, farm viability, rural household prosperity and well-being, and competitiveness. ERS uses 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 effectively communicates 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:

- Developed 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.
- Analyzed 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.
- Conducted 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.
- Developed 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 was also used as an input for other agencies: the Bureau of Economic Analysis' (BEA) National Income Staff used 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 were provided to the Council of Economic Advisors, and the estimates were 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.
- Working closely with the World Agricultural Outlook Board, the Foreign Agricultural Service, and other USDA agencies, ERS conducted market analysis and provided short- and long-term projections of U.S. and world agricultural production, consumption, and trade. The market analysis and outlook program enhanced the quality, transparency, and accessibility of data and analytical information. Program enhancements improved data access technologies and provided advanced graphing tools and applications to enhance the delivery of information through automated feeds.
- Provided timely, accurate agricultural economic analysis and data on the impacts of policies and changes in market conditions to inform decisions by policy makers, farmers, and ranchers in highly variable and evolving agricultural markets.

Selected Past Accomplishments toward Achievement of Key Outcome 1:

Past accomplishments toward achievement of the key outcome include analyses of:

- Innovation and growth among rural businesses
- Rural manufacturing sector resilience
- Family farms
- Producer participation across the food supply chain
- Farm household income volatility
- USDA Microloans for farmers; and
- Effects of tax policy on farm households.

Selected Accomplishments Expected at the FY 2019 Proposed Resource Level:

ERS will produce farm financial data products and statistics, including estimates of farm income, commodity costs of production, data and information on agricultural commodity markets, and long term projections of the economic health of the agricultural sector through the annual Agricultural Baseline projections. These activities will include analysis used for the monthly USDA World Agricultural Supply and Demand Estimates (WASDE) reports, publication of commodity newsletters, public release of data for feed grains and other commodities, and supply and utilization tables for commodities that serve as critical inputs to the ERS Loss-Adjusted Food Availability Data. Producing these statistics requires continued investments in conducting the annual Agricultural Resource Management Survey (ARMS), and private sector commodity data and intelligence. Foundational research on the farm economy that directly supports these data and statistics will be conducted as detailed below. (Under proposed cuts for FY 2019, ERS would no longer have sufficient staff and budget to conduct research, analysis or data development on the rural economy):

Returns to Farming for US Farm Households. The financial picture of farm operator households has evolved significantly over the past 30 years. There are a greater number of large farms, with higher average sales value. At the same time, more than half of farm households lose money on their farming operation in any given year. ERS research will investigate the broad economic picture of farm households and the financial benefits of operating a farm, as well as changes in these benefits over time. The analysis will also increase understanding of the role Federal farm programs and tax policy play in the financial well-being of farmers and their families.

Energy Development on Agricultural Lands: Ownership of Land and Mineral Rights. Royalties from unconventional oil and gas production can be a significant component of farmers' income in specific regions of the U.S., yet there is limited information about how such production in rural areas has affected farmland ownership and farming in general. ERS research on energy development on agricultural lands will document patterns in farmland leasing across landowner types and estimate differential effects of shale development on farm-based and household income and wealth by resource ownership groups.

Developing a Stochastic USDA Baseline for Policy Analysis. USDA's Baseline (long-term) projections are prepared annually and released to the public in a Departmental report each year. Projections cover production, consumption, prices, and trade for major agricultural commodities and regions, as well as aggregate indicators for the sector, such as farm income and US agricultural exports and imports, and are used in the President's Budget. In years past, projections have not included the stochastic (uncertain) nature of markets. ERS research will explore the impacts of including this random feature in the USDA Baseline model to provide a greater understanding of long-run outcomes and uncertainty due to random factors in markets.

Updated Commodity Cost and Returns Estimates. ERS produces annual cost and returns estimates for nine crop commodities, as well as hogs and milk. The annual estimates update baseline estimates with information on changes in input and commodity prices, while the baselines are set using data on technologies, production processes, and expense shares from commodity-specific questionnaires of the ARMS. ERS will set new baselines for wheat with surveys from the 2017 ARMS, and will design soybeans and beef cow-calf questionnaires for the 2018 ARMS to help set a new baseline estimate (the surveys are completed by spring of the year following the reference year).

Continuing Trends in Production Cost and Productivity Growth. The collection of data for this project using the Agricultural Resource Management Survey (ARMS) enables researchers to look beyond the annual estimation of national and regional commodity production costs, to further examine costs and returns over time and by production system and technology. Periodic commodity versions of the ARMS solicit information on production systems, input use, conservation practices, and technology adoption for the specific commodity surveyed. ERS research will examine changes in costs and returns for agricultural commodities over time, along with changes in the use of technology and production systems. Commodities of interest include corn, cotton, hogs, peanuts, and rice.

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 need to protect and maintain the environment while improving agricultural competitiveness and economic growth through the adoption of economically and environmentally sustainable technologies.

ERS identifies key economic issues related to interactions among natural resources, environmental quality, and the agriculture production system. ERS uses 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 as well as the risks faced by agricultural producers due to weather-related uncertainties. ERS effectively communicates research results to policy makers, program managers, and those shaping public debate on agricultural resource use and environmental quality.

ERS identifies 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 agricultural productivity growth, international trade and food security.

Examples of these activities include the following:

- Characterized 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 examined options for using market forces to improve the economic, environmental and distributional performance of programs. Design features examined included compliance mechanisms that link program benefits to environmental performance, 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 procedures for selecting participants from among all program applicants. ERS research has also examined economic implications of environmental regulations on farms.
- Examined policy drivers for land management and land use change. Farm and environmental policies, including farm programs, water resource policies, and conservation programs, as well as fundamental changes in commodity demand (diet and trade), may encourage farmers to modify cropping patterns, to change their crop management practices, to expand cropland and/or to retire cropland. ERS research examined whether and to what extent changes in land management and land use would occur under alternative policy specifications.

Selected Past Accomplishments toward Achievement of Key Outcome 2:

Past accomplishments toward achievement of the key outcome include:

- Analysis of how Conservation Compliance requirements have affected highly erodible cropland and wetlands;
- Analysis of trends in pollinator forage quality due to changes in U.S. land use;
- Analysis of policy options for reducing nutrient loss in the Mississippi/Atchafalaya River Basin;
- Analysis of farmer choices to increase drought resilience; and
- Farm profits associated with the adoption of precision agriculture technologies.

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Selected Accomplishments Expected at the FY 2019 Proposed Resource Level:

ERS will conduct the following research that directly supports core data and statistics on the adoption and use of farm practices and productivity. (Under proposed funding levels for FY 2019, ERS would no longer have sufficient staff and budget to conduct research on conservation policies or environmental issues.):

Herbicide Resistant Weed Management in Corn. Weed resistance to the herbicide glyphosate (popularly known as Round-up) is a growing problem in field crops, and there are also emerging concerns with insect resistance to seeds genetically engineered with the Bt toxin. ERS has elicited information on pesticide use, seed choices, and resistance management practices from farmers in the 2016 Corn Production Practices questionnaire of the ARMS. ERS research will evaluate farm strategies to manage weed and insect resistance, and track how those strategies have changed since the earlier 2010 ARMS corn survey; the research will also draw on related ARMS soybean surveys for 2006 and 2012.

Precision Agriculture in Soybean Production. On-farm natural resource stewardship is an important consideration during crop production. Precision agriculture can affect both production and stewardship by making use of information technologies to target site-specific, intensive management of farm production. The 2012 Agricultural Resource Management Survey of soybean production allows close examination of the association between information technology farming methods and best management practices that influence on-farm resource stewardship, farm profitability and production. ERS research will analyze the soil and nutrient conservation impact of using global positioning system maps, field machinery self-steering equipment, and variable rate input applications in soybean production.

Key Outcome 3: Enhanced understanding by policymakers, regulators, program managers, and organizations shaping public debate of economic issues related to factors affecting trade of U.S. agricultural products and strategies to reduce trade barriers and increase markets for U.S. products.

These activities include the following:

- Developed and disseminated research and analysis on the U.S. food and agriculture sector's performance in the context of increasingly globalized markets. Key emphasis areas included trade agreements, domestic policy reforms, and the principal drivers of structural changes in global supply and demand.
- Provided 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 and sold.
- Produced an annual assessment of the prevalence and depth of food security in developing and middle-income countries.

Selected Past Accomplishments toward Achievement of Key Outcome 3:

Past accomplishments toward achievement of the key outcome include analyses on:

- The drivers of increased production in foreign markets and implications for U.S. agriculture;
- Chinese agriculture and its effects on world markets;
- The effects of sanitary and phytosanitary measures quotas maintained by the European Union (EU) on U.S. exports; and
- The changing agricultural traded landscape to inform agricultural trade policy formulation to further reduce barriers to U.S. exports.

Selected Accomplishments Expected at the FY 2019 Proposed Resource Level:

ERS will produce monthly trade data and quarterly trade outlook reports. These data and statistics on U.S. trade include U.S. agricultural exports and imports, volume and value, by country and by commodity and international baseline projections that will indicate supply, demand, and trade for major agricultural commodities for selected countries. ERS research related to international trade will focus on issues most closely related to the core data and statistics to ensure continued expertise and market analysis on major agricultural trading countries such as China,

Brazil, and India, which are necessary to support the Inter-Agency Commodity Estimates Committees (ICEC) and USDA Agricultural Baseline projections development.

Global Price Determination in Specialized Markets. While price in a given region reflects local (current and expected) supply and demand fundamentals, important agricultural commodities are often traded internationally, meaning that regional prices are also affected by the prices—and therefore the fundamentals—of their trading partners. While past ERS research examined shifting production and trading patterns and the U.S. role in price determination for major agricultural commodities (e.g. corn, soybeans, wheat), current research will look at more specialized markets (e.g. livestock, berries, sugar, and thin markets) and bring together over-arching themes that have emerged in how agricultural prices are determined.

Competition in China/U.S./Brazil Soybean Trade. China's rise in soybean imports since the 1990s is one of the most prominent developments in global agricultural trade. ERS research will document the growth in China's soybean imports and the role of the U.S. and Brazil as major suppliers, and review how policies in the three countries contributed to the growth, and investigate factors that determine prices. A series of Chinese initiatives have not slowed China's growing reliance on imports, but aggressive expansion by state-owned Chinese companies has diluted the role of multinational grain traders. ERS research will analyze firm-level import data for over 100 importing companies. Multinationals and Chinese state-owned companies now hold similar shares of imports. This research will determine if there is a dominant price advantage held by multinationals.

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 food prices and availability at home, consumer food choices, nutrition and health outcomes related to nutrition assistance programs, and protecting consumers from unsafe food. (Under proposed funding levels for FY 2019, ERS would no longer have sufficient staff and budget to conduct research on food choices as related to Food Assistance Programs or research related to food safety.)

ERS identifies key economic issues affecting food prices and availability, food acquisition patterns, food markets, and food safety. ERS uses 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 explores factors that can improve the effectiveness and efficiency of USDA Food and Nutrition Assistance programs and effectively communicates 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:

- Conducted 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.
- Provided national estimates of U.S. household food insecurity, an annual measure of the share of households that lack consistent access to adequate, healthful food.
- Conducted analyses of the benefits and costs of food assistance program policies that affect diet and health outcomes, including nutrition education, behavioral nudges, and regulations.
- Conducted 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.
- Conducted research on how program needs changed with local labor market conditions, economic growth and recession, and how changing State welfare programs interact with food and nutrition programs.
- Provided economic analysis of the food marketing system to understand factors affecting the availability and affordability of food for American consumers.
- Provided annual estimates of the quantity of food available for human consumption, and measures of disappearance and loss in the food system.
- Provided 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.

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- Worked with Federal food safety agency partners to evaluate available foodborne illness data related to meat, poultry and egg products, and developed more accurate measures of the effectiveness of regulatory strategies in reducing preventable foodborne illness.

Selected Past Accomplishments toward Achievement of Key Outcome 4:

Past accomplishments toward achievement of the key outcome include:

- A detailed analysis of SNAP household food spending patterns compared to those of eligible non-participating households and higher income households;
- A study of the close relationship between food insecurity and chronic disease; and
- A study estimating the effect of public disclosure of poor food safety performance in chicken slaughter establishments on subsequent safety of the products.

Selected Accomplishments Expected at the FY 2019 Proposed Resource Level:

ERS will produce core data products and statistics on food security, food availability, and food prices. Annual domestic U.S. food security data provides an estimate of how many households in the U.S. are food secure, while ERS's Food Availability (Per Capita) Data System (FADS) includes three distinct data series on food and nutrient availability for consumption. Both of these data products allow USDA to better understand the current economic conditions related to feeding all U.S. households. ERS's Food Price Outlook provides forecasts of retail food prices in the U.S. based on current and anticipated market conditions. Supporting research on food security, food availability, and food prices are described below.

Food Insecurity in Working Age Veteran Households. Food insecurity, as a measure of well-being, for veterans and their households is relatively unstudied. In this study, ERS will use data from the Current Population Survey Food Security Supplement (CPS-FSS)—supplemented with administrative data on veterans from the Department of Veterans Affairs (VA)—to examine the prevalence, severity, and trends of food insecurity among working-age veterans and their households. ERS will explore the correlates of food insecurity among veterans.

Economics of Food Loss and Estimates. Policy interest in food waste reduction requires accurate measures of food loss. ERS plans to provide updated estimates of consumer-level food loss and newer approaches to estimate purchases and consumption of Loss-Adjusted Food Availability (LAFA) commodities to inform efforts to reduce food waste.

Improving and Expanding ERS Food Price Forecasts. ERS's Food Price Outlook is one of the agency's most impactful data series. ERS plans to expand its Outlook with improved forecasts to better inform policy, industry, and the public. Additionally, expenditure forecasts are of immediate relevance to food assistance programs and food supply chain managers. Adding Producer Price Index estimations and forecasts in addition to the current Consumer Price Index forecasts will enable ERS to evaluate price transmission throughout the food supply chain to identify sources of market power and potential distortions. For example, our models will identify asymmetric, incomplete, or staggered price transmission as it occurs in the supply chain.