

**USDA, ECONOMIC RESEARCH SERVICE
Fiscal 2003 Performance and Resource Plan**

Statement of Agency goals and Objectives

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

ERS has five strategic goals which correspond to each of the five Department strategic goals.

| USDA Strategic Goal | Agency Strategic Goal | Agency Objectives | Programs that contribute | Key Outcome |
|--|--|--------------------------|---------------------------------|---|
| USDA Goal 1: Enhance economic opportunities for agricultural producers | Agency Goal 1: Enhance economic opportunities for agricultural producers | N/A | Economic Research and Analysis | Successful completion of planned research that enhances understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues related to the goal and that reflects the substance of related policy principles explicated in <i>Food and Agricultural Policy: Taking Stock for the New Century</i> |
| USDA Goal 2: Support increased economic opportunities and improved quality of life in rural America. | Agency Goal 2: Support increased economic opportunities and improved quality of life in rural America. | N/A | Economic Research and Analysis | Same as Goal 1. |
| USDA Goal 3: Enhance protection and safety of the Nation's agriculture and food supply. | Agency Goal 3: Enhance protection and safety of the Nation's agriculture and food supply. | N/A | Economic Research and Analysis | Same as Goal 1. |
| USDA Goal 4: Improve the Nation's nutrition and health. | Agency Goal 4: Improve the Nation's nutrition and health. | N/A | Economic Research and Analysis | Same as Goal 1. |
| USDA Goal 5: Protect and enhance the Nation's natural resource base and environment | Agency Goal 5: Protect and enhance the Nation's natural resource base and environment | N/A | Economic Research and Analysis | Same as Goal 1. |

Goal 1. Enhance Economic Opportunities for Agricultural Producers.

1.0 Project statement

| <u>Project Statement</u> | | | | | | | |
|--------------------------------|---------------|------------------------|---------------|------------------------|-----------------|----------------|------------------------|
| (On basis of appropriation) | | | | | | | |
| | 2003 Actual | | 2004 Budget | | | 2005 Estimated | |
| | <u>Amount</u> | <u>Staff Years</u> | <u>Amount</u> | <u>Staff Years</u> | <u>Increase</u> | <u>Amount</u> | <u>Staff Years</u> |
| Goal 1: | | | | | | | |
| Economic Research and Analysis | \$25,832,000 | 185 | \$27,617,000 | 197 | \$578,000 | \$28,195,000 | 197 |
| Pay Cost Included | | | | | | | |

1.1 Describe the program and explain how the program contributes to achieving the goal

Being competitive in the global economy means being able to create and sustain comparative advantages consistent with resource endowments and technical capabilities. The ERS program assesses policies and programs intended to break down trade barriers in order to capitalize on comparative advantage and identifies and analyzes market structure and technological developments that affect efficiency and profitability. Research and analysis related to facilitating risk management by farmers and ranchers, and fostering economic growth and trade capacity building in developing countries rounds out the diverse range of issues that enhance economic opportunities for agricultural producers. In this way, ERS activities provide a foundation of research, analysis, and data to support USDA goals.

On an ongoing basis, ERS develops and disseminates research and analysis on the U.S. food and agriculture sector's competitiveness. Key emphasis areas include issues relating to the World Trade Organization (WTO) and regional trade agreements, domestic policy reforms, the structure and performance of agricultural commodity markets, the economic and financial structure, performance and viability of the farm sector and different types of farms, the state of global food security; and technological innovation. For example, ERS is currently creating a patent database for agricultural biotechnology that will provide answers to some basic questions about innovations in agricultural biotechnology, such as who is patenting and licensing what technologies. This research will help policymakers assess significant policy issues relating to innovation and to the potential effects of concentration on research and market power in the agricultural inputs industry.

ERS also monitors food marketing, manufacturing, wholesaling, retailing, and food service: identifying new trends, assessing the efficiency of the food supply chain, and examining the public policy implications of accelerating changes in the structure of the agribusiness sector. Examples of current work in the food marketing area include: (a) research on the food-away-from-home market that examines whether the price and accessibility of fast food varies in different parts of major urban areas, based on minority status and/or income, and (b) an examination of product differentiation in the food marketing system, with emphasis on vertical integration strategies between food processors and food retailers.

1.2 Discuss how annual activities link to the goal listed.

ERS research and analytical activities are designed to provide policy makers and other decisions makers with an enhanced understanding of economic issues affecting the U.S. food and agriculture sector's competitiveness, including factors related to performance, structure, risk and uncertainty, marketing and market and nonmarket trade barriers. These activities support achievement of USDA Goal 1, "Enhance Economic Opportunities for Agricultural Producers."

2.0 Means and Strategies

To meet this goal, ERS will: identify key economic issues relating to the competitiveness of U.S. agriculture; use sound analytical techniques to understand the immediate and broader economic and social consequences of alternative policies and programs and the effects of changing macroeconomic and market conditions on U.S. competitiveness; and effectively communicate research results to policy makers, program managers, and those shaping the public debate regarding U.S. agricultural competitiveness.

Because ERS's economic analysis cover all aspects of USDA's mission the crosscuts between ERS research and the missions and goals of other USDA agencies are extensive and complicated. ERS's unique contribution is provision of external economic analysis. One example relating to competitiveness is ERS's close work with the Foreign Agricultural Service, World Agricultural Outlook Board, and the Office of the U.S. Trade Representative to analyze the international agriculture and trade effects of the World Trade Organization (WTO).

2.1 Selected Examples of Past Performance

Implementation and Assessment of the Farm Bill. USDA looks to ERS to take the lead role in providing comprehensive and detailed, yet understandable, information to public and private users after passage of each farm bill. On May 22 (six days after passage of the new farm bill), ERS posted an extensive, provision-by-provision "side-by-side" comparison of previous and new legislation that quickly became the most popular product ever posted on the ERS website. ERS also had major input into assessing the impacts of the new farm bill for USDA's official impact analysis. This assessment provided the groundwork for an ERS report, *The 2002 Farm Act: Provisions and Implications for Commodity Markets*, which analyzes the legislation's effects on agricultural production, commodity markets, and net farm income over the next 10 years. The results indicate that commodity market impacts are fairly small.

Agricultural Biotechnology Production and Marketing. Adoption of seed genetically modified to control insects and weeds, initially introduced in 1995, now accounts for nearly 70 percent of U.S. soybean plantings and nearly half of major crop acreage. ERS tracked the introduction of biotechnology into the agricultural production mainstream, published the first national data on adoption, and documented the impacts of adopting the technology on crop yield, pesticide use, production costs, and profits. ERS has estimated the total benefits from adoption, and their distribution between producers, biotech companies, consumers, and other stakeholders. In addition to biotech crops that already have a significant market share, ERS has examined the economics of emerging biotech crops, such as wheat. Biotech marketing issues have not been neglected, including estimating the costs of segregating biotech crops, the ramifications of differing consumer preferences and national biotech policies on trade flows, the role of the Government in facilitating market differentiation, and the economics of food labeling. ERS has also examined consumer attitudes toward biotechnology and the role of consumer preferences in shaping market trends. Research anticipating the next wave of biotechnology products for crops modified to target consumer needs, such as food with altered nutritional qualities (such as canola with high beta-carotene content), crops with improved processing characteristics (such as naturally-colored cotton), or plants that produce specialty chemicals or pharmaceuticals (such as rabies vaccine in corn), is also being undertaken. This sound research base has been invaluable in tempering exaggerated claims of costs and benefits from both sides of the debate.

Agricultural Resource Management Survey. The Agricultural Resource Management Survey (ARMS), is USDA's annual, national survey of farms. It is the primary source of information about the financial condition, production practices, use of resources, and economic well-being of America's farmers and farm households. Data and analysis from ARMS answer key questions from USDA policy officials, Congress, and other decision-makers within and outside the Federal Government about the differential impacts of alternative policies and programs across the farm sector and among farm families. ARMS also provides a rich database for researchers to understand the rapidly changing structure and characteristics of American farming. The President's fiscal year 2003 budgets for (ERS) and the National Agricultural Statistics Service (NASS) included increases for ARMS. With an increased budget, ERS and NASS are implementing enhancements to the survey's to meet current and emerging data needs, improve the

statistical quality of the survey results, and make ARMS data more readily available through web-based dissemination. With an increased budget, ERS and NASS will be able to enhance the survey's ability to meet current and emerging data needs, improve the statistical quality of the survey results, and make ARMS data more readily available through web-based dissemination.

Organic Marketing and Production. During the last two years, ERS supported USDA's successful launch of the national program for organic production and marketing. The Department's implementation of the final rule ensured that the goals of the Organic Foods Production Act of 1990 were met including certification by a State or private agency accredited under the national program of all but the smallest organic farmers and processors. The new national program facilitates domestic marketing of organically produced fresh and processed food, and assures consumers that such products meet consistent, uniform standards. ERS had a large impact on the program through its research and data collection on pre-existing State and private organic certifying organizations, organic production practices, and organic food marketing. In September 2002, ERS, AMS, and ARS jointly hosted an OECD Workshop on Organic Agriculture that presented the latest research on organic agriculture to policy makers from European, Asian, and Latin American countries and U.S. stakeholders. Participants also visited organic farms in Maryland and Virginia. Speakers at the workshop discussed evidence on the economic, environmental and social

Global Food Security. ERS analysis of global food security continues to be used by USDA, the Agency for International Development, and the Department of State in decisions about food aid. The analysis also supports decision-making to meet U.S. commitments to the World Food Summit, where 186 countries, including the United States, committed themselves to reducing the number of undernourished people by half by 2015. In June 2002, the Secretary of Agriculture joined Ministers and Heads of State from other countries to examine progress in meeting the goal. ERS analysis informed the delegation and was included in the official documentation distributed to all participants.

Income, Wealth, and the Economic Well-Being of Farm Households. Agricultural policy is rooted in the 1930's notion that providing transfers of money to the farm sector translates into increased economic well-being of farm families. This report shows that neither change in income for the farm sector nor for any particular group of farm business can be presumed to reflect changes confronting farm households. Farm households draw income from various sources, including off-farm work, other businesses operated and, increasingly, nonfarm investments. Likewise, focus on a single indicator of well-being, such as income, overlooks other indicators such as the wealth held by the household and the level of consumption expenditures for health care, food, housing, and other items. Using an expanded definition of economic well-being, we show that farm households as a whole are better off than the average U.S. household, but that 6 percent remain economically disadvantaged.

2.2 Successes or Shortfalls

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the USDA objectives of this strategic goal, will include:

- Conducting research to fully comprehend and articulate the effects and impacts of trade agreements, political and economic structural changes, and technology developments on the comparative and competitive advantage of U.S. agriculture.
- Researching and disseminating economic intelligence about the structure, performance, information systems, new technology, and foreign direct investments in the U.S. food manufacturing, processing, wholesale, retail, and food service industries.
- Conduct economic research on new food and nonfood uses, new agricultural and forest products, alternative fuels, and new processes and other technologies that add value and ascertain their impacts on commodity markets.

Provide timely and accurate agricultural economic analysis and data on the impacts of decisions in risky situations to help farmers and ranchers make more informed production and marketing decisions.

2.3 What specific activities will move the program toward the desired goal

ERS plans a range of activities to provide policy makers and other decision makers with assessments of current programs and alternative outcomes for pending or prospective policy decisions. Results will help shape the public debate on commodity, technology, economic, and trade issues. These activities, based on the objectives of USDA goal 1 will include:

Analyzing the Effects of Counter-Cyclical Payments and Related Farm Payments. This project poses two fundamental questions. First, who benefits from the payments and what portions of the benefits remain on the farm? Second, do counter-cyclical payments influence recipients' current planting and production decisions and, if they do, then how and how much? Because counter-cyclical payments interact with other elements of agricultural programs, such as direct payments, marketing loan benefits, and crop insurance, it is necessary to investigate their interactions as well. The research addresses whether or not the payments influence production, and if so how much. This project is designed to determine how farmers perceive those payments through developing theoretical models, collecting data on farmers' supply response, and measuring how farmers alter planting decisions in response to the payments, if at all.

Global markets for high-value foods. Understanding factors affecting trade in high value food products is the centerpiece of this project with the consumers at the forefront of the supply chain. The United States has one of the most perplexing trade patterns for high value food products. This is attributable to its large productive capacity, high-income consumers, heavy involvement in overseas investment in food processing and brand licensing. This complexity and U.S. involvement in global food markets often results in misunderstandings. Questions to be addressed focus on testing hypotheses related to possible misconceptions. These include whether finished manufactured food products are under-exported by the United States, is the U.S. a net importer of high value food because U.S. exporters face higher tariffs than those imposed on U.S. imports, or does growing food demand in developing benefit the U.S. farm sector.

Market Analysis and Outlook. ERS will continue to work closely with the World Agricultural Outlook Board (WAOB) and USDA agencies to provide short-term and long-term projections of U.S. and world agricultural production, consumption, and trade. Several initiatives will increase the accessibility, timeliness, and breadth of the data and analysis. ERS is implementing dynamic outlook pages that offer the latest outlook information, data, and links through a central location on the ERS website. In addition, USDA's agricultural baseline projections will be available on a more timely basis through the release of components as they are completed.

WTO Negotiations and the Doha Development Agenda. ERS will continue to work closely with the Foreign Agricultural Service and the Office of the U.S. Trade Representative to ensure that ongoing negotiations in the Doha Development Agenda under the auspices of the WTO are successful and advantageous for U.S. agriculture. In the negotiations, the U.S. seeks to minimize farm trade distortions while maintaining some level of domestic support. Central to a successful agreement is domestic and international consensus on the trade distorting impacts of various types of domestic agricultural policies.

Decoupled Payments. A recent ERS publication is the first output from ongoing research on the potential distortions caused by U.S. policies. The report analyzes the production and trade impacts of the Production Flexibility Contract payments enacted under the 1996 Farm Act. Using the data on farm households from the Agricultural Resource Management Survey (ARMS), the report provides the first data-based analysis of direct payments, and finds little evidence that the PFC payments distorted markets.

Trade and Developing Countries. The ERS research will include analysis of several key issues related to trade and developing countries. Areas for further analysis include identification and analysis of international market conditions and policy alternatives affecting developing countries and their trade patterns and understanding the factors affecting trade in high-value foods, including trade with developing countries. With the pending change in rules governing international trade in textiles and clothing, ERS will

explore the effects of changes in the on developing countries. Analysis will also focus attention upon likely effects of the changes on U.S. farmers, and U.S. textile workers in rural communities.

3.0 External Factors

The globalization of all aspects of the food and fiber system is a major external factor affecting American agriculture. From competitive markets around the world, to diseases that know no national boundaries, to population growth and evolving diets, profound changes are taking place in agricultural markets worldwide. These changes have led to a dramatically new trade environment, threats of exotic diseases and pests to domestic production, and international controversies over the use of biotechnology. To remain competitive, the food and agriculture sector relies on research, analysis, and data to respond to these factors.

4.0 Justifications for Increases and Decreases (N/A)

5.0 Performance Measurement

Central to effective performance by ERS is successful completion of planned research that enhances understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues related to enhancing economic opportunities for Agricultural producers. Effective performance of economic research and analysis can be indicated through application of a quantitative performance assessment tool that considers factors key to successful research, including relevance, quality, and performance.

The ERS economic research and analysis will be evaluated for success in achieving these criteria using a three-category performance indicator (successful, mixed results, or unsuccessful) that reflects the interval of the point score achieved on a quantitative, research program assessment tool. A key component of evaluating agency performance in these areas will be program evaluation conducted by outside review panels. Panels will assess relevance, quality, and performance of agency programs using a quantitative assessment tool based on the assessment criteria specified below. These criteria, taken together, will provide an indication of agency performance.

| Criteria | Assessment Criteria | FY 2003 Target | FY 2004 Target | FY 2005 Target |
|-------------|---|----------------|----------------|----------------|
| Relevance | <ul style="list-style-type: none"> • Relevance of program objectives to national and customer needs • Identification of emerging issues • Portion of agricultural policy decision-events supported by ERS research and analysis | N/A | Successful | Successful |
| Quality | <ul style="list-style-type: none"> • ERS research done to disciplinary standards. • Portion of ERS research reports peer-reviewed by faculty from leading agricultural economics schools • Merit-based process for allocating extramural research funds | N/A | Successful | Successful |
| Performance | <ul style="list-style-type: none"> • Volume of ERS material that is transmitted to public and private sector users seeking economic data and analysis, primarily through electronic access. • Documentation of program plans, goals, and priorities • Stakeholder and customer | N/A | Successful | Successful |

| | | | | |
|--|---------------------|--|--|--|
| | feedback/assessment | | | |
|--|---------------------|--|--|--|

Goal 2: Support Increased Economic Opportunities and Improved Quality of Life in Rural America

1.0 Project statement

| <u>Project Statement</u> | | | | | | | |
|--------------------------------|---------------|--------------------|---------------|--------------------|-----------------|----------------|--------------------|
| (On basis of appropriation) | | | | | | | |
| | 2003 Actual | | 2004 Budget | | | 2005 Estimated | |
| | <u>Amount</u> | <u>Staff Years</u> | <u>Amount</u> | <u>Staff Years</u> | <u>Increase</u> | <u>Amount</u> | <u>Staff Years</u> |
| Goal 2: | | | | | | | |
| Economic Research and Analysis | 14,302,000 | 114 | 14,713,000 | 122 | 357,000 | 15,070,000 | 122 |
| Pay Cost Included | | | | | | | |

1.1 Describe the program and explain how the program contributes to achieving the goal

ERS research explores how investments in rural people, business, and communities affect the capacity of rural economies to prosper in the new and changing global marketplace. The Agency analyzes how demographic trends, employment opportunities and job training, Federal policies, and public investment in infrastructure and technology enhance economic opportunity and quality of life for rural Americans. Equally important is our commitment to help enhance the quality of life for the Nation’s small farmers who are increasingly dependent on these rural economies for their employment and economic support.

ERS continues to monitor changing economic and demographic trends in rural America, with particular attention to the implications of these changes for the employment, education, income, and housing patterns of low-income rural populations. Data from the 2000 Census help to provide the most up-to-date information on the current conditions and trends affecting rural areas and provide the factual base for rural development program initiatives. The rural development process is complex and sensitive to a wide range of factors that, to a large extent, are unique to each rural community. Nonetheless, ERS assesses general approaches to development to determine when, where, and under what circumstances rural development strategies will be most successful.

1.2 Discuss how annual activities link to the goal listed.

ERS research and analytical activities are designed to provide an enhanced understanding by policy makers, regulators, program managers, and organizations shaping public debate of economic issues affecting rural development, including factors related to farm finances and investments in rural people, businesses and communities, and of economic issues relating to the performance of all sizes of American farms. These activities support achievement of USDA goal 1, “Enhance Economic Opportunities for Agricultural Producers,” and USDA goal 2, "Support Increased Economic Opportunities and Improved Quality of Life in Rural America."

2.0 Means and Strategies

To meet this performance goal, ERS will: identify key economic issues relating to rural economic development and farm viability; use sound analytical techniques to understand the immediate and broader economic and social consequences of how alternative policies and programs and changing market conditions affect rural and farm economies; and effectively communicate research results to policy makers, program managers, and those shaping the public debate on rural economic conditions and performance of all sizes and types of farms.

Because ERS’s economic analyses cover all aspects of USDA’s mission, the crosscuts between ERS research and the missions and goals of other USDA agencies are extensive and complicated. For example ERS works with the Cooperative State Research, Education, and Extension Service, the Rural Business-Cooperative Service, and the Rural Utilities Service on the Rural Community Enhancement Program and the Rural Housing Program. In addition ERS rural-urban categorizations are essential to

the Department of Health and Human Services' administration of programs in rural areas. Again, ERS's unique contribution is provision of external economic analysis.

2.1 Selected Examples of Past Performance

Rural America at a Glance. ERS analyzed the ongoing changes in rural areas and assesses Federal, State, and local strategies to enhance economic opportunity and quality of life for rural Americans. In FY 2002, ERS initiated a new series of publications that reported the most current indicators of social and economic conditions in rural areas for use in developing policies and programs to assist rural people and their communities. This series of reports began with an analysis of 2000 Census data on population, employment, and poverty. The series supplemented up-to-date analyses and data found in eleven ERS rural briefing rooms on such topics as population and migration, labor and education, poverty and income, housing, transportation, and infrastructure and rural development policy. Also new in FY 2002 is the ERS Rural Indicators Map Machine, an Internet-based mapping utility that provides a visualization of indicators for rural areas by county (<http://www.ers.usda.gov/data/RuralMapMachine/>).

Rural Dimensions of Welfare Reform. The welfare reform legislation of 1996 dramatically altered the social safety net for poor Americans. Early results from myriad studies have been positive, yet many rural areas have not shared in the success of welfare reform. The impact of welfare reform does not appear to differ greatly between rural and urban areas at the national level, but when national level findings are disaggregated by State and rural-urban areas within States, welfare reform impacts on caseloads, employment, and earnings are smaller in rural than in urban areas. These smaller effects in rural areas result from differences in State welfare programs as well as in rural-urban differences in job opportunities, availability of critical work supports, and characteristics of welfare recipients. *Rural Dimensions of Welfare Reform*, edited by ERS staff and published by the W.E. Upjohn Institute for Employment Research in 2002 provided the first comprehensive look at the spatial dimensions of welfare reform, based on findings from a conference funded by ERS's Food Assistance and Nutrition Research Program. The research findings summarized in this monograph provided a strong empirical base for the 2003 policy debate on welfare reform.

Rural Amenities. Public amenities provided by a rural agricultural landscape, arising from open space and farm activity, are important to many citizens and policymakers. Widespread development of farmland in some parts of the country is spawning farmland protection programs at various levels of government and at nonprofit organizations. ERS produced a new report on rural amenities that investigated the relative importance of preserving different rural amenities associated with farmland. This report examined the legislation establishing these programs and specifically the implementation of programs in five Northeastern States. It also assessed how farmland protection programs fit into rural land conservation programs.

Wage Premiums for On-the-Job Computer Use: A Metro and Nonmetro Analysis.--An analysis of on-the-job computer use shows that such use is more common in metro areas than in nonmetro areas. A substantial wage premium, 10 to 11 percent, is associated with using a computer on the job, even after other job and worker characteristics are taken into account. However, this wage premium accounts for only a small proportion of the wage differences between metro and nonmetro areas. In nonmetro areas, the computer use wage premium is only about 6 percent. This suggests that computer literacy skills may only modestly advance the earnings of low-wage workers within their current occupations in rural areas.

2.2 Successes or Shortfalls

Research and analysis underway and planned will contribute to enhanced understanding by policy makers, regulators, program managers, and organizations shaping public debate of economic issues affecting rural development, including factors related to farm finances and investments in rural people, businesses and communities, and of economic issues relating to the performance of all sizes of American farms. Examples of these activities will include:

- Develop a comprehensive and integrated base of information about rural economic and social conditions that can be used by Federal policymakers for strategic planning, policy development, and program assessment.
- Undertake analysis that identifies how investment, technology, employment opportunities and job training, Federal policies, and demographic trends affect rural America's capacity to prosper in the global marketplace.
- Expand research to assess the effectiveness of developing profitable alternative crops and on- or near-farm processing that add value to agricultural products and enhance the economic viability of rural communities and families
- Conduct research to identify social and economic issues facing rural communities as they adjust to broad forces affecting their futures, such as welfare reform, increased foreign competition in low-wage industries, growing demand for highly-skilled labor, an aging population, and rapid growth in communities near major cities.
- Conduct research to better understand the role and effectiveness of investments in infrastructure, housing, and business assistance for sustaining rural communities, particularly in areas characterized by rapid population growth or long-term population decline.

2.3 What specific activities will move the program toward the desired goal

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the objectives USDA strategic goal 2, will include:

Understanding Rural Diversity. The economies of individual rural areas differ, as do their resources and the opportunities and challenges they face. Since the 1980s, ERS has developed county classifications of rural places that capture the rich diversity of rural America in ways that are meaningful for developing public policies and programs. These typologies are used to determine eligibility for and assess effectiveness of Federal assistance programs. ERS is currently developing classifications that reflect conditions at the beginning of this century, largely based on 2000 census data. An interactive web-based geographic information system and an analytical study to help assess the determinants and consequences of diversity in rural America will be delivered in 2003.

Rural Development Performance Indicators. USDA's Rural Development mission area operates a variety of programs designed to help improve the economy and quality of life in rural areas. Rural Development administers financial programs to support essential public facilities and services, such as water and sewer systems and housing; business loan programs to promote local economic development; and technical assistance programs to help rural areas undertake community empowerment programs. In 2003, ERS and the Rural Development agencies are designing measurable performance indicators for these programs and will develop a detailed geographic information system from census and other data to help in program planning and evaluation.

Education as a Rural Development Strategy. The No Child Left Behind Act of 2002 created a new era of increased school accountability to ensure that our public schools adequately prepare students for the increasingly high-skill "new economy" in which we now live. However, rural schools and communities present a distinctive set of challenges to education reform. Of particular concern are the effects of reforms in those rural areas with poorly funded public schools, low educational attainment, and high levels of economic distress. ERS will conduct a multi-faceted project to assess the impact of recent changes in educational policy on rural schools' capacity to provide a high quality education and to serve as an engine for local economic development activities. In April 2003, ERS, the Southern Rural Development Center, and the Rural School and Community Trust, co-sponsored a national research conference to identify successful strategies to help communities better target their economic development and school improvement efforts. An in-depth analysis of the effects of school quality on individual outcomes, such as achievement, attainment, earnings, and identification of major factors that contribute to local development efforts will be completed by 2004.

3.0 External Factors

Achievement of this goal depends on the range of external factors that affect economic activity in rural America. These factors include, but are not limited to, the levels of funding Congress provides for USDA and other programs designed to expand economic opportunities and enhance quality of life in rural America.

6.0 Justifications for Increases and Decreases (N/A)

7.0 Performance Measurement

Central to effective performance by ERS is successful completion of planned research that enhances understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues affecting rural development. Effective performance of economic research and analysis can be indicated through application of a quantitative performance assessment tool that considers factors key to successful research, including relevance, quality, and performance.

The ERS economic research and analysis will be evaluated for success in achieving these criteria using a three-category performance indicator (successful, mixed results, or unsuccessful) that reflects the interval of the point score achieved on a quantitative, research program assessment tool. A key component of evaluating agency performance in these areas will be program evaluation conducted by outside review panels. Panels will assess relevance, quality, and performance of agency programs using a quantitative assessment tool based on the assessment criteria specified below. These criteria, taken together, will provide an indication of agency performance.

| Criteria | Assessment Criteria | FY 2003 Target | FY 2004 Target | FY 2005 Target |
|-----------------|---|-----------------------|-----------------------|-----------------------|
| Relevance | <ul style="list-style-type: none"> • Relevance of program objectives to national and customer needs • Identification of emerging issues • Portion of agricultural policy decision-events supported by ERS research and analysis | N/A | Successful | Successful |
| Quality | <ul style="list-style-type: none"> • ERS research done to disciplinary standards. • Portion of ERS research reports peer-reviewed by faculty from leading agricultural economics schools • Merit-based process for allocating extramural research funds | N/A | Successful | Successful |
| Performance | <ul style="list-style-type: none"> • Volume of ERS material that is transmitted to public and private sector users seeking economic data and analysis, primarily through electronic access. • Documentation of program plans, goals, and priorities • Stakeholder and customer feedback/assessment | N/A | Successful | Successful |

Goal 3: Enhance Protection and Safety of the Nation's Agricultural And Food Supply

1.0 Project statement

| Project Statement | | | | | | | |
|--------------------------------|-------------|-------------|-------------|-------------|----------|----------------|-------------|
| (On basis of appropriation) | | | | | | | |
| | 2003 Actual | | 2004 Budget | | | 2005 Estimated | |
| | Amount | Staff Years | Amount | Staff Years | Increase | Amount | Staff Years |
| Goal 3: | | | | | | | |
| Economic Research and Analysis | 3,996,000 | 34 | 5,031,000 | 36 | 106,000 | 5,137,000 | 36 |
| Pay Cost Included | | | | | | | |

1.1 Describe the program and explain how the program contributes to achieving the goal

ERS food safety research focuses on enhancing methodologies for valuing societal benefits associated with reducing food safety risks; understanding consumer willingness to pay for safer food; assessing industry incentives to enhance food safety through new technologies and supply chain linkages; and evaluating regulatory options and change. ERS is working with economists at the Food Safety and Inspection Service to answer certain practical economic questions that arise in the design and implementation of food safety performance standards for meat and poultry. ERS economists are collaborating with economists from the Environmental Protection Agency and the Food and Drug Administration, as well as USDA's Food Safety and Inspection Service and Office of Risk Assessment and Cost Benefit Analysis, and Resources for the Future to organize an interagency forum for building a consensus on how to value benefits of reductions in health risk. The activity was requested by OMB to strengthen consistency and credibility of regulatory impact assessments and cost-benefit analyses in the public health area.

ERS research is designed to support food safety decision-making in the public sector and to enhance the efficiency and effectiveness of public food safety policies and programs. The program focuses on valuing societal benefits of reducing and preventing illnesses caused by microbial pathogens; assessing the costs of alternative food safety policies; studying industry's incentives, through private market forces and government regulation to adopt food safety innovations; and analyzing consumer demand for food safety and the roles of consumer information, attitudes, and behaviors.

1.2 Discuss how annual activities link to the goal listed.

ERS research and analytical activities are designed to provide policy makers and other decisions makers with an enhanced understanding of economic issues related to improving the efficiency, efficacy, and the equity of public policies and programs designed to protect consumers from unsafe food. These activities support achievement of USDA Goal 3, "Enhance Protection and Safety of the Nation's Agriculture and Food Supply."

2.0 Means and Strategies

To meet this performance goal, ERS will: identify key economic issues relating to protecting consumers from unsafe food; use sound analytical techniques to understand the immediate and long term efficiency, efficacy, and equity consequences of alternative policies and programs aimed at providing a safe food supply; and effectively communicate research results to policy makers, program managers, and those shaping efforts to protect consumers from unsafe food.

Because ERS's economic analysis covers all aspects of USDA's mission, the crosscuts between ERS research and the missions and goals of other USDA agencies are extensive and complicated. An example of these crosscuts relating to goal 3 is ERS cooperation with the Agricultural Research Service

(ARS), Food Safety and Inspection Service (FSIS), Centers for Disease Control and Prevention, Agricultural Marketing Service (AMS), and Grain Inspection, Packers, and Stockyards Administration on the National Food Safety Initiative. ERS's unique contribution is provision of external economic analysis.

2.1 Selected Examples of Past Performance

Economic Analyses of Potential Acts of Agricultural Bioterrorism. During 2002, ERS contributed to a number of Homeland Security exercises through estimation of potential economic damages of security threats and the impacts of alternative responses. Notably, the ERS SAS-USA (Security Analysis System for U.S. Agriculture) team has developed a system to analyze security-threat scenarios that builds on the Agency's commodity market expertise. The first version consists of a Food-and-Mouth Disease (FMD) scenario. Given the locations of FMD outbreaks, the system automatically generates the number of animals in the given quarantine zones, shows the spatial pattern of neighboring animal populations, displays information needed for mitigation, estimates the local economic damages, and generates a national impact analysis based on an economic model. The team is currently building a time-phase feature into the FMD scenario, developing both an Avian Flu scenario module and a food contamination scenario module into SAS-USA. The team has formed an SAS-USA Technical Advisory Group, with representation from many USDA agencies, to help assess and steer the technical direction of SAS-USA.

Calculating Costs of Foodborne Illness. ERS has become well-known for pioneering estimates of the societal costs associated with foodborne illnesses due to *E. coli* and other known pathogens. During FY 2002, ERS expanded the foodborne illness research to include estimates of mortality due to gastroenteritis of unknown cause. This research was accepted for publication in the *Journal of Infectious Disease*. ERS also developed its first interactive web-based data product, the foodborne illness calculator. "The calculator," released on the ERS website earlier this year, allows users to choose a pathogen of interest, the number and severity of illnesses, and from among several alternative methodologies employed by economists for calculating societal costs. The calculator also has homeland security applications for assessing costs of potential outbreaks due to intentional acts as well as natural occurrences.

Security Analysis System for U.S. Agriculture (SAS-USA). The first delivery, shown to the staff of the Deputy Secretary in October 2002, demonstrated the system's potential ability to speedily deliver information for decision-making. SAS-USA describes the inner workings of the U.S. agriculture/food supply chain, including resources, production, processing, distribution, and consumption. This description is based on existing databases (e.g., Agricultural Census) that are spatially enhanced to the sub-county level. SAS-USA uses economic modeling to connect the various components of the agriculture/food supply chain and to describe its upstream and downstream linkages (e.g., transactions and transportation) with other economic sectors (e.g., energy, chemical), as well as to U.S. food consumers and to international markets. Built on top of this foundation of data and models are threat scenarios such as foot-and-mouth disease, poultry virus, and food safety emergencies, all of which provide answers to what-if questions.

The second system of SAS-USA delivery in March 2003 consists of:

- A foot-and-mouth scenario that takes into account the spread of the disease with time
- A poultry-virus scenario that currently supports APHIS in managing the outbreak of exotic Newcastle disease in California
- The ability to calculate damages to 28 commodities and their economic impacts
- Information on transportation of commodities among all U.S. counties

The SAS-USA team delivers new functions every 6 months. For FY2004, the team will continue to expand threat scenarios and analysis functions to support a wider scope of decision support for emergency management. Hand in hand with these analysis activities are data acquisition and data integration that bring in an increasingly broader range of data to support the system. This combination of expanding the analysis-functionality and underlying database will make the system more robust in supporting emergency management of the agriculture/food supply chain.

2.2 Successes or shortfalls

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the USDA objectives of this strategic goal, will include:

- Conduct food safety economics research with the goal of providing a science-based, epidemiological approach to valuing food safety that is valuable to industry and policy makers.
- Provide the general public with food safety and biosecurity information and education through expanded outreach programs that address all aspects of food safety, including safe handling practices, microbiological testing and innovative food safety technologies.
- Work with Federal food safety agency partners to evaluate available foodborne illness data related to meat, poultry, and egg products and to develop more accurate measures of the effectiveness of regulatory strategies in reducing preventable foodborne illness.
- Conduct research on consumer awareness of and attitudes toward food safety risks to support education and outreach efforts to improve biosecurity, food safety, and food security
- Expand research, modeling, and rigorous risk assessments that identify emerging, potentially high-risk threats to public food safety.
- Develop research to better understand the economics of trade and invasive species. In particular, how do policies that reduce risk of exposure to new pests through trade restrictions affect commodity prices and U.S. trade?
- Integrate information from biological, epidemiological, and other sciences into economic models to develop credible and concrete bioeconomic risk assessments that will help public agencies allocate resources among programs that exclude, monitor, and control invasive species.
- Provide assessments of policies designed to exclude, monitor, and control invasive pests with regard to the economic efficiency of different prevention and control strategies for invasive species management.

2.3 What specific activities will move the program toward the desired goal

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the objectives USDA strategic goal 3, will include:

Traceability. Food traceability is making news as an issue in discussions ranging from homeland security, food safety, country-of-origin labeling, and genetically engineered foods. For example, the 2002 Farm Act requires retailers to inform consumers of the country of origin for beef, lamb, and pork, fish and shellfish, fruits and vegetables, and peanuts. Record keeping and traceability would be key system components necessary to assure country of origin. The objective of this project is to define traceability, explore the private and public sector rationale for adapting traceability schemes, and provide details of how food firms and the government sector are using traceability systems to meet consumer needs. Specifically, the project addresses the following questions: what is traceability; why does the private sector use traceability voluntarily; how extensive are traceability systems across the food chain, and what is being traced; when should governments intervene in the marketplace and mandate traceability; what are the benefits and costs of government mandated traceability systems; and how do private or government mandated traceability systems affect international trade.

HACCP, Food Safety Technologies, and Food Safety Performance. In 2003, this project resulted in the collection of nationally representative plant-level data on the costs of implementing HACCP requirements and investments in food safety technologies by meat and poultry slaughter and processing plants. In 2004 the new survey data will be linked with plant food safety performance data to (1) examine

technology effectiveness, e.g. by linking the data to Salmonella and HACCP performance data; and (2) create a baseline technology level which could be used to develop an index of food safety. The index may then be linked to food safety performance data to study how changes in technology lead to changes in food safety performance.

The Economics of Performance Standards for Food Safety. Recent developments, including recalls of beef and poultry products, have put food safety concerns back in the headlines. A continuing food safety debate centers on the appropriate role for performance versus process standards. Many argue that performance standards are preferable because they allow flexibility in choosing production methods, which encourage efficiency and innovation. This project analyzes issues in setting and applying performance standards in the meat and poultry industry, such as benefits and costs of alternative indicators of performance, where to apply standards along the production/supply chain, and how improved pathogen testing technologies affect the design and implementation of performance standards. ERS in collaboration with FSIS, universities, and Resources for the Future is conducting the research. A synthesis report will be prepared for publication in mid-2004.

2.4 How the agency partners with other agencies and organizations to achieve the goal

USDA's response to any threat to the agriculture/food supply chain requires the coordination of several agencies with appropriate resources and expertise. The SAS-USA team has received cooperation from many agencies in supplying data and has established working relationships with APHIS and FSIS. The team has supported several gaming exercises and has supported APHIS in evaluating economic impacts of the recent exotic Newcastle disease outbreak in California and the import-ban of beef from Canada due to mad-cow disease. The team has used the National Benchmark Accounts from the Bureau of Economic Analysis and has benefited from discussions with its members. Federal Highway Administration has supplied the Freight Analysis Framework data and the Bureau of Transportation Statistics the Commodities Flow Analysis data for the development of SAS-USA. The success of SAS-USA depends on continued cooperation with these and other agencies.

3.0 External Factors

The introduction of hazardous substances—whether accidental or intentional—may pose a threat to human health and to the environment, making prevention, early detection, identification, and rapid control or eradication a vital challenge.

Several external factors contribute to the success of the SAS-USA program. Cooperation between SAS-USA and its client agencies (e.g., APHIS, FSIS) with well-defined objectives, roles, outputs, and target dates are important contributors to success. Interactions with other departments (e.g., Bureau of Transportation Statistics, FDA) having complementary objectives, information/data, and related R/D fields and guidance from major stakeholders (e.g., the Department's Office of Homeland Security) on goals and applications of the system are other external factors affecting the program.

4.0 Justifications for increases and decreases (N/A)

5.0 Performance Measurement

Central to effective performance by ERS is successful completion of planned research that enhances understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues related to improving the efficiency, efficacy, and the equity of public policies and programs designed to protect consumers from unsafe food. Effective performance of economic research and analysis can be indicated through application of a quantitative performance assessment tool that considers factors key to successful research, including relevance, quality, and performance.

The ERS economic research and analysis will be evaluated for success in achieving these criteria using a three-category performance indicator (successful, mixed results, or unsuccessful) that reflects the interval of the point score achieved on a quantitative, research program assessment tool. A key component of evaluating agency performance in these areas will be program evaluation conducted by outside review panels. Panels will assess relevance, quality, and performance of agency programs using a quantitative

assessment tool based on the assessment criteria specified below. These criteria, taken together, will provide an indication of agency performance.

| Criteria | Assessment Criteria | FY 2003 Target | FY 2004 Target | FY 2005 Target |
|-----------------|---|-----------------------|-----------------------|-----------------------|
| Relevance | <ul style="list-style-type: none"> • Relevance of program objectives to national and customer needs • Identification of emerging issues • Portion of agricultural policy decision-events supported by ERS research and analysis | N/A | Successful | Successful |
| Quality | <ul style="list-style-type: none"> • ERS research done to disciplinary standards. • Portion of ERS research reports peer-reviewed by faculty from leading agricultural economics schools • Merit-based process for allocating extramural research funds | N/A | Successful | Successful |
| Performance | <ul style="list-style-type: none"> • Volume of ERS material that is transmitted to public and private sector users seeking economic data and analysis, primarily through electronic access. • Documentation of program plans, goals, and priorities • Stakeholder and customer feedback/assessment | N/A | Successful | Successful |

Goal 4: Improve the Nation's Nutrition and Health

1.0 Project statement

| Project Statement | | | | | | | |
|--------------------------------|-------------|-------------|-------------|-------------|-----------|----------------|-------------|
| (On basis of appropriation) | | | | | | | |
| | 2003 Actual | | 2004 Budget | | | 2005 Estimated | |
| | Amount | Staff Years | Amount | Staff Years | Increase | Amount | Staff Years |
| Goal 4: | | | | | | | |
| Economic Research and Analysis | 9,662,000 | 34 | 14,015,000 | 36 | 3,106,000 | 17,121,000 | 36 |
| Pay Cost Included | | | | | | | |

1.1 Describe the program and explain how the program contributes to achieving the goal

ERS studies the relationships among the many factors that influence food choices, eating habits, and outcomes. The roles of income, aging, race and ethnicity, household structure, knowledge of diet and health, and nutritional information are of particular interest. Obesity—including understanding its costs to individuals and society, how income and knowledge affect obesity status, and considering private versus public roles in reducing obesity—is an important focus of the current ERS program.

Through the Food Assistance and Nutrition Research Program (FANRP), and working closely with the Food and Nutrition Service, ERS conducts studies and evaluations of the Nation's food and nutrition assistance programs. FANRP research is designed to meet the critical information needs of USDA, Congress, program managers, policy officials, clients, the research community, and the public at large. FANRP research is conducted through internal research at ERS and through a portfolio of external research. Through partnerships with other agencies and organizations, FANRP also enhances national surveys by adding a nutrition and food assistance dimension. FANRP's long-term research themes are dietary and nutritional outcomes, food program targeting and delivery, and program dynamics and administration.

The program provides policy makers, regulators, program managers, and those shaping public debate timely and high quality analyses and data to enhance understanding of economic issues affecting the nutrition and health of the U.S. population including factors related to food choices, consumption patterns, food prices, food security, food assistance programs, nutrition education, and food industry structure. Such understanding underpins the capacity to understand and react to issues surrounding obesity, homeland security, and the responsiveness of the food system to consumer demands in a timely, profitable manner.

1.2 Discuss how annual activities link to the goal listed.

ERS research and analytical activities are designed to an enhanced understanding by policy makers, regulators, program managers, and organizations shaping public debate of economic issues relating to the nutrition and health of the U.S. population, including factors related to food choices, consumption patterns at and away from home, food prices, food assistance programs, nutrition education and food industry structure. Such understanding underpins the capacity to ensure equitable access to a wide variety of high-quality, affordable food. These activities support achievement of USDA Goal 4, "Improve the Nation's Nutrition and Health."

2.0 Means and Strategies

To meet this performance goal, ERS will: identify key economic issues affecting food prices and food consumption patterns; use sound analytical techniques to understand the immediate and broader economic and social consequences of the changing structure of the food industry and of policies and

programs aimed at ensuring consumers equitable access to affordable food and to promote healthful food consumption choices; and effectively communicate research results to policy makers, program managers, and those shaping the public debate regarding healthful and nutritious diets.

Because ERS's economic analyses cover all aspects of USDA's mission, the crosscuts between ERS research and the missions and goals of other USDA agencies are extensive and complicated. ERS's unique contribution is provision of external economic analysis. One example of cooperative efforts relating to this goal is ERS's priority setting process for economic research on food and nutrition. This process is launched with a conference where Federal policy officials both within and outside USDA, Congressional staff, public and private sector researchers, and representatives from public interest groups provide input to the identification of research priorities for the ERS Food and Nutrition Research Program.

2.1 Selected Examples of Past Performance

Understanding the Nation's Obesity Epidemic and Promoting Healthy Lifestyles. In 2002, USDA science agencies confronted the national obesity epidemic. The agencies' social scientists took major steps with new sources of data to shed new light on America's food choices and dietary habits, and to assess the roles of nutrition knowledge, food markets, and federal food and nutrition programs. USDA's measures of per capita food consumption and calorie intake helped build an understanding of nutrition issues and obesity trends in the national press, and remain the only annual source for monitoring the nation's progress toward its nutrition goals. Research on the effectiveness of dietary knowledge and information showed that when maternal nutrition knowledge is higher, childrens' diets are better, providing new support for the role of national nutrition education programs. USDA staff teamed with top academics and representatives of industry and other agencies to form a research partnership for progress on healthy eating and active lifestyles.

Food Security: Recognizing the Contributions of Faith-Based Institutions and Focusing on Children USDA conducted the first nationally representative survey of the emergency food assistance system (EFAS). This system includes food pantries, emergency kitchens, food banks and other organizations. The findings indicate that this informal network provides more than 173 million meals a year and distributes about 2.9 billion pounds of food a year. Despite the substantial amounts of food distributed by the system, the EFAS remains much smaller in scale than the Federal food assistance programs. Public and private food assistance works in tandem to provide more comprehensive food assistance than either could provide by itself. This is the first study to describe the contribution faith based and other institutions play in alleviating food insecurity and hunger.

The Bush Administration's promise to leave no child behind extends beyond education to food security. To help meet this goal, USDA developed a new indicator of children's food insecurity. This measure is derived from USDA's widely accepted indicator of household food insecurity. The household indicator has been accepted by both policymakers and scholars as a useful outcome measure of welfare reform's progress and the impacts of food assistance programs. The new measure will allow a more accurate measure of children's well being.

Understanding the Nation's Food Assistance Programs. Several important studies were completed that provide policymakers, program agencies, and others with information to improve the USDA food assistance programs. A project was completed that provided an evaluation of a pilot program to provide fruits and vegetables to schools. An analysis that examined the infant formula pricing in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) was completed for Congress. Another study provided the background, trends, and Issues surrounding the WIC program. ERS also launched The Food Assistance Landscape, a first-ever periodic publication highlighting USDA's food assistance efforts.

The Food Stamp Program (FSP) Map Machine was launched that is an interactive web-based mapping utility that illustrates program participation and benefit levels down to the county level. The map machine is used to show per capita participation, per capita benefits, changes from year to year, and more. The map's tools allow interested parties to call up tabular data for the county, State, or Nation.

Consumer Driven Agriculture. Technology brings the varied needs and evolving wants of modern consumers living thousands of miles away to the attention of farmers. Successful producers know that consumers are key to economic viability and growth and that consumers' preferences drive the evolution of the industry. Recent ERS reports have identified three broad demographic trends that will shape future U.S. food markets: more mature consumers, more diversity, and more people to feed. These trends were translated into projections of growth in food expenditures and in demand for specific commodities between 2000 and 2020. This research compares the importance of the different demographic trends to specific food and commodity market segments. Moreover, the reports examine whether the character of America's farmlands and farm businesses will change as much as the profile of our population 20 years from now.

2.2 Successes or Shortfalls

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the objectives USDA strategic goal 4, will include:

- Provide economic analysis of the food marketing system to understand factors affecting the affordability of food for American consumers.
- Provide enhanced annual estimates of the quantity of food available for human consumption and measures of disappearance and loss in the food system
- Provide economic analysis of how people make food choices, including demands for more healthful, more nutritious, and safer food, and of the determinants of those choices, including prices, income, education, and socio-economic characteristics.
- Conduct analysis of the benefits and costs of policies to change behavior to improve diet and health, including nutrition education, labeling, advertising, and regulation.
- Conduct evaluation and economic analysis of the impacts of the Nation's domestic food and nutrition assistance programs, including the Food Stamp Program; the Special Supplemental Nutrition Program, for Women, Infants, and Children; the School Lunch Program; and the Child Nutrition Programs.
- Evaluate the dietary and nutritional outcomes of USDA's food and nutrition assistance programs
- Conduct research on food program targeting and delivery to gauge the success of programs aimed at needy, at-risk population groups and to identify program gaps and overlaps
- Conduct research on program dynamics and administration, focusing on how program needs change with local labor market conditions, economic growth and recession, and how changing State welfare programs interact with food and nutrition programs.

2.3 Specific activities that will move the program toward the desired goal

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the objectives USDA strategic goal 4, will include:

Economics of Obesity. The United States has experienced rapid growth in obesity since the mid 1970s, raising national concerns about the health and well-being of affected individuals as well as about the mounting health care costs stemming from obesity-related morbidity and mortality. This project analyzes the relationships among obesity, household income, dietary patterns, educational attainment, diet and health knowledge, and access to federal food and nutrition assistance programs as well as monitors and interprets national trends in food consumption and calorie intake. In April 2003, ERS hosted an economics of obesity workshop with top health economists from around the nation. The workshop synthesized state-of-the-art knowledge of the economic causes and consequences of obesity, and identified priorities for research and data collection to build a stronger foundation for workable and effective solutions. A comprehensive report on the economics of obesity will be published in the spring of 2004.

WIC Cost-Containment Practices. WIC State agencies adopt various cost-containment practices to reduce food costs, such as limiting food-item selection of WIC participants, limiting authorized food vendors, and negotiating rebates with food manufacturers or suppliers. A recent congressionally-mandated ERS study found that cost-containment practices can be relatively inexpensive to operate, reduce food package costs, and have few adverse impacts on WIC participants in terms of participant satisfaction, program participation, and product availability.

Food Assistance and Nutrition Research Program. Through FANRP, ERS conducts studies and evaluations of the Nation's food and nutrition assistance programs. FANRP research is designed to meet the critical needs of USDA, Congress, program managers, policy officials, USDA program clients, the research community, and the public at large, concerning the design and effectiveness of food and nutrition assistance programs, diet quality, and nutrition education. FANRP research is conducted through internal research at ERS and through a portfolio of external research. Through partnerships with other agencies and organizations, FANRP is enhancing national surveys by adding a food and nutrition assistance dimension. FANRP's long-term research themes are dietary and nutritional outcomes, food and nutrition program targeting and delivery, and program dynamics and administration.

3.0 External Factors

One key to achieving the goal of a safe, well-nourished nation is to initiate and integrate a multi-disciplinary approach to issues in the areas of food security and obesity. These areas pose daunting challenges that no single discipline can solve. Teams from a wide variety of professions must work together to achieve the objective of lowering obesity rates and securing our food supplies. Likewise the marketing and product development challenges of the future will require vast expertise in multiple areas if the U.S. food system is to remain the world leader. ERS's success in this program area will depend on our ability to marshal external resources, including both people and data, to successfully meet our obligations.

4.0 Justifications for increases and decreases

Science has established strong links between diet and health. Researchers attribute about 300,000 premature deaths annually to poor diets with a price tag in the billions for health care costs and lost productivity. Obesity and overweight has been described as a national epidemic and may soon cause as much preventable disease and death as cigarette smoking. The total costs attributed to overweight and obesity are estimated to be nearly \$120 billion. Even small improvements in the average diet would yield large economic benefits. Investments in behavior research and information systems are necessary to accelerate the transfer of benefits from nutrition science to consumers.

Consumer behavioral data and research are necessary to better understand the determinants of consumer food choices including the influence of nutrition knowledge, attitudes, and awareness of diet-disease relationships. This data and information will help the Department identify and develop consistent strategies to address nutrition and obesity issues at all levels of the food system. Integrating policy across food system components can be an effective strategy for improving the nutrient content of the nation's food supply, improving access of low-income consumers to nutritious food, enhancing the nutritional literacy of the population, expediting the movement towards the Dietary Guidelines, improving the health status of the population, enhancing the effectiveness of the Nation's food security system, and lowering health care costs.

An increase of \$3 million is proposed to develop and implement the Flexible Consumer Behavior Survey Module (FCBSM). The FCBSM is an integrated, flexible, and comprehensive data module concentrating on consumer behavior, particularly dietary knowledge, attitudes, diet-health awareness. The purpose of the Flexible Consumer Behavior Survey Module (FCBSM) is to provide information to assess linkages between individuals' knowledge and attitudes about dietary guidance and food safety, their food-choice decisions, and their nutrient intakes. Combining a food intake and health survey (NHANES) with the FCBSM allows analysis of how individual attitudes and knowledge and healthful eating affect food choices, dietary status, and health outcomes.

The flexible survey module will provide insights into diets, knowledge and information levels, health status and will help policymakers respond to current and unforeseen events and disruptions, price changes, and their interactions with the U.S. food and agriculture system. Such understanding would provide a basis for ensuring that consumers enjoy a low cost, safe, secure, and nutritious food supply, enhanced health and productivity, and would enable farmers to prosper as they encounter new ways of doing business in global markets.

The FCBSM will also benefit other USDA and non-USDA agencies by:

- Improving production and marketing decisions by allowing customized modules addressing topical issues like biotech attitudes (Agricultural Marketing Service).
- Linking consumption patterns with behavioral decisions to improve nutrition education messages and campaigns (Cooperative State Research Education and Extension Service; Food, Nutrition and Consumer Services).
- Improving understanding of the relationship between diet and health and associated interventions (Centers for Disease Control, National Cancer Institute, National Institutes of Health).
- Helping to improve the nutritional targeting of WIC, School Lunch, and Food Stamp Program (FNCS).
- Providing a data platform to promote and enhance behavioral research and policy analysis (ERS).

ERS has a track record of developing partnerships with agencies, departments, and other public and private entities. Our partners including the Centers for Disease Control, Agricultural Research Service, National Cancer Institute, and many land-grant universities, including University of California, Davis; Texas A&M; Rutgers; Iowa State University; and the University of Minnesota. Many external partnerships have also been developed in the course of implementing and operating the ERS Food Assistance and Nutrition Research Program.

Performance Target: Progress toward Healthy People 2010 Obesity Goals

| | |
|-----------------------|--|
| FY 2000 Actual | <ul style="list-style-type: none"> ▪ Food security survey ▪ Research on diet patterns, nutrients, and development of adolescent obesity ▪ Research eating patterns, diet quality, and obesity in children |
| FY 2001 Actual | <ul style="list-style-type: none"> ▪ Food security survey ▪ Research on the development of eating patterns and dietary behaviors that predict child obesity ▪ Research on the ecological predictors and development of persistent childhood obesity ▪ Research on diet quality and its relationship to obesity in rural Alabama African American children |
| FY 2002 Actual | <ul style="list-style-type: none"> ▪ Food security survey ▪ Research on the development of eating patterns and obesity ▪ Research on U.S. trends and associations of eating patterns with BMI throughout the lifecycle ▪ Research on children’s diets and consumer knowledge and awareness of nutrition |
| FY 2003 Target | <ul style="list-style-type: none"> ▪ Survey development and pretest ▪ Staff development ▪ Obesity conference ▪ Updated food consumption data, research on the role of economics and demographics on obesity ▪ Food security survey ▪ Research on economic incentives and food choices ▪ Fruit and vegetable pilot study for the National School Lunch Program |
| FY 2004 Target | <ul style="list-style-type: none"> ▪ Preliminary FCBSM survey development |

| | |
|-----------------------|---|
| | <ul style="list-style-type: none"> ▪ Development of household obesity typologies ▪ Study of economic incentives and food choices ▪ Research on labeling and consumer information options ▪ Food security survey ▪ National conference on obesity |
| FY 2005 Target | <ul style="list-style-type: none"> ▪ Conduct FCBSM ▪ Release FCBSM data ▪ Food security survey ▪ FCBSM analysis team operational |

5.0 Performance Measurement

Central to effective performance by ERS is successful completion of planned research that enhances understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues relating to the nutrition and health of the U.S.. Effective performance of economic research and analysis can be indicated through application of a quantitative performance assessment tool that considers factors key to successful research, including relevance, quality, and performance.

The ERS economic research and analysis will be evaluated for success in achieving these criteria using a three-category performance indicator (successful, mixed results, or unsuccessful) that reflects the interval of the point score achieved on a quantitative, research program assessment tool. A key component of evaluating agency performance in these areas will be program evaluation conducted by outside review panels. Panels will assess relevance, quality, and performance of agency programs using a quantitative assessment tool based on the assessment criteria specified below. These criteria, taken together, will provide an indication of agency performance.

| Criteria | Assessment Criteria | FY 2003 Target | FY 2004 Target | FY 2005 Target |
|-----------------|---|-----------------------|-----------------------|-----------------------|
| Relevance | <ul style="list-style-type: none"> • Relevance of program objectives to national and customer needs • Identification of emerging issues • Portion of agricultural policy decision-events supported by ERS research and analysis | N/A | Successful | Successful |
| Quality | <ul style="list-style-type: none"> • ERS research done to disciplinary standards. • Portion of ERS research reports peer-reviewed by faculty from leading agricultural economics schools • Merit-based process for allocating extramural research funds | N/A | Successful | Successful |
| Performance | <ul style="list-style-type: none"> • Volume of ERS material that is transmitted to public and private sector users seeking economic data and analysis, primarily through electronic access. • Documentation of program plans, goals, and priorities • Stakeholder and customer feedback/assessment | N/A | Successful | Successful |

Goal 5. Protect and Enhance the Nation’s Agricultural Resource Base and Environment

1.0 Project statement

| Project Statement | | | | | | | |
|--------------------------------|-------------|-------------|-------------|-------------|----------|----------------|-------------|
| (On basis of appropriation) | | | | | | | |
| | 2003 Actual | | 2004 Budget | | | 2005 Estimated | |
| | Amount | Staff Years | Amount | Staff Years | Increase | Amount | Staff Years |
| Goal 5: | | | | | | | |
| Economic Research and Analysis | 14,882,000 | 108 | 15,281,000 | 116 | 340,000 | 15,621,000 | 114 |
| Pay Cost Included | | | | | | | |

1.1 Describe the program and explain how the program contributes to achieving the goal

ERS is expanding its research program on invasive species that affect livestock and crop production and the programs to control them. This activity contributes to Departmental efforts to prevent or control invasive species. An important concern is reducing the economic risks of invasive species to U.S. agriculture while preserving economic gains from trade and travel. ERS and APHIS created an Invasive Species Working Group to suggest how economic analyses can better contribute to pest risk assessments and control decisions by both the public and private sectors. ERS staff are currently identifying important economic and methodological issues and research gaps in order to facilitate research planning under the Invasive Species Initiative.

ERS is continuing to contribute to the Department's efforts to improve the science behind Federal water quality regulations and programs. ERS recently estimated the costs of meeting new animal waste regulations proposed by the Environmental Protection Agency (EPA) for Concentrated Animal Feeding Operations (CAFOs) and completed a draft report describing the implementation costs at the farm, regional, and national levels. Given their expertise acquired from the research program, ERS played a central role on USDA's CAFO Rule Assessment Team. ERS comments, research findings, and data led EPA to conduct new and improved analyses of the proposed regulations' potential impacts on the farm community and to reconsider some of their proposals.

As part of its analysis of environmental regulations and conservation incentive policies, ERS is evaluating the coordination of policies to achieve multiple goals from agricultural operations. ERS is continuing to explore the benefits of coordinating environmental quality policies across different media (e.g. air and water) when pollutants originate from the same source (e.g. confined animal feeding operations). ERS research continues to provide insights into the development of policies for controlling non-point source pollution.

One important aspect of the new Farm Bill is the shift in emphasis in conservation support from land retirement to conserving while farming. Recognizing this shift, ERS has launched a research project to examine the two primary working lands programs – the Environmental Quality Incentives Program (EQIP) and the new Conservation Security Program (CSP) – individually and in combination. That project will fill a large gap in the knowledge base relating to the implications of the myriad of decisions necessary to design a working lands program. Many decisions needed to implement current working land programs have yet to be made or may be revisited over the next few years. Importantly, this project will focus on coordination between EQIP and CSP, an issue that has yet to be addressed in research or in the policy process.

1.2 Describe how annual activities link to the goal listed.

ERS research and analytical activities are designed to provide an enhanced understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues relating to development of Federal farm, natural resource, and rural policies and programs to protect and maintain the environment while improving agricultural competitiveness and economic growth. These activities support achievement of USDA Goal 5, "Protect and Enhance the Nation's Natural Resource Base and Environment."

2.0 Means and Strategies

To meet this goal, ERS will: identify key economic issues relating to interactions among natural resources, environmental quality, and the agriculture production system; use sound analytical techniques to understand the immediate and broader economic and social consequences of alternative policies and programs to protect and enhance environmental quality associated with agriculture; and effectively communicate research results to policy makers, program managers, and those shaping public debate regarding agricultural resource use and environmental quality.

Because ERS's economic analyses cover all aspects of USDA's mission, the crosscuts between ERS research and the missions and goals of other USDA agencies are extensive and complicated. For example, ERS works with the Natural Resources Conservation Service (NRCS) and the Farm Service Agency (FS) to support formulation and implementation of the Conservation Reserve, Swampbuster, and the Environmental Quality Incentives programs. Such activities bring ERS staff in close cooperation with the Department of Interior and the Environmental Protection Agency, as do ERS efforts to improve understanding of the economics of integrated pest management and resource-conserving production practices. ERS's unique contribution is provision of external economic analysis.

ERS supports the USDA Food Quality Protection Act activities and Integrated Pest Management and Related Programs crosscut through its research on how economic issues affect farmers' choices among alternative pest management practices and technologies. ERS supports the Invasive Non-Native Species crosscut by improved economic estimates of the risks posed by non-native weeds.

ERS supports the USDA biotechnology Coordinating Council and interdepartmental efforts with FDS and EPA in the USDA Biotechnology crosscut through research addressing both product impacts for farmers and industry behavior and potential impacts from industry concentration in this area. Research and related data collection efforts are designed to capture this rapidly emerging and turbulent technological change.

2.1 Selected Examples of Past Performance.

Manure Management for Water Quality.—This report seeks to provide an objective assessment of the impacts that restrictions on the land application of animal manure would have on the costs to animal feeding operations. Results suggest that livestock and poultry farms' net income could decline by more than \$1 billion (around 3 percent), but the outcome depends heavily on the extent to which cropland operators are willing to use manure and the degree to which price increases mitigate cost increases. Consumers could face higher prices for animal products. Net returns in the crop sector could increase by more than \$400 million as manure nutrients replace commercial fertilizer.

Crop Production Practices.—Phase II of the Agricultural Resource Management Survey (ARMS) is USDA's primary source of information about the current status and trends in crop production practices for major crops (corn, soybeans, wheat, and cotton). This survey also obtains data on U.S. farmers' agricultural resource use, as well as data to assess potential environmental impacts associated with crop production practices. The ARMS survey yields annual data summaries for field-level data by crop, including: irrigation technology and water use, nutrient use and nutrient management practices, crop residue management practices, pest management practices and pesticide use, and crop seed variety. Data summaries are available for production years 1996-2000 (1996-98 and 2000 for wheat).

Linking Land Quality, Agricultural Productivity, and Food Security.—As rising populations and incomes increase pressure on land and other resources around the world, agricultural productivity plays an increasingly important role in improving food supplies and food security. This report explores the extent to which land quality and land degradation affect agricultural productivity, how farmers respond to land degradation, and whether land degradation poses a threat to productivity growth and food security in developing regions and around the world. Results suggest that land degradation does not threaten food security at the global scale, but does pose problems in areas where soils are fragile, property rights are insecure, and farmers have limited access to information and markets.

2.2 Successes or Shortfalls

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the objectives USDA strategic goal 5, will include:

- Provide better understand of the dynamics of land use change associated with agricultural production, including changes in the use of public lands for grazing
- Integrate information from biological, epidemiological, and other sciences into economic models to develop credible and concrete bioeconomic risk assessments, that will help public land management agencies and other agencies charged with invasive species control allocate resources among programs that exclude, monitor, and control invasive species.
- Provide assessments of policies designed to exclude, monitor, and control invasive pests with regard to the economic efficiency of different prevention and control strategies for invasive species on public lands.
- Provide more accessible summaries of the current state of cropping practices employed on U.S. cropland using data from the Agricultural Resource Management Survey.
- Expand and enhance the coverage and depth of economic survey information providing information on the production practices, costs, returns and farm income outcomes for major crops and increase the geographic resolution of results.
- Publish research analyzing and assessing current and expected conservation policies affecting use of natural resources and the environment in the areas of land retirement programs, working lands programs, and conservation compliance programs.
- Characterize how changes in land management and shifts in agricultural land use—particularly the movement of land into and out of crop production—and the economic and environmental effects of these changes, including impacts on carbon sequestration, soil erosion, biodiversity, and nutrient management. Determine what economic and policy factors have prompted shifts between crop production and other land uses.
- Provide an assessment of the extent and spread of contracting and other structural change in production agriculture and outline the basic economics underlying why farmers and processors have made these changes. Summarize evidence on the environmental and economic effects of contracting and highlight emerging policy issues created by expanded contract use and structural change, including impacts on animal waste management.

2.3 What specific activities will move the program toward the desired goal

Future research and analysis will build on the successes of past performance, such as the examples cited above, to deepen understanding of issues explored, highlight new policy concerns revealed by prior analysis, and anticipate upcoming needs of policy and decision makers. These activities, based on the objectives USDA strategic goal 5, will include:

Program of Research on the Economics of Invasive Species Management. The rising potential for invasive pest incidents, brought about by increased global commerce, prompted ERS to launch a research program on the economics of invasive species policies and programs that affect food, agriculture, or natural resources, and are managed by USDA. The research program, which will be supported by extramural research agreements with universities and other external cooperators, covers three critical topic areas: the Economics of Trade and Invasive Species, Bioeconomic Risk Assessments

of Alternative Pests and Diseases, and Policies To Manage Damage Caused by Invasive Species. The three Priority Research Areas highlight economic research priorities identified by ERS, in consultation with USDA's Animal and Plant Health Inspection Service (APHIS) and other USDA agencies and offices with programs related to invasive species, as appropriate for competitive grants or cooperative agreements.

Manure Management for Improving Both Air and Water Quality. EPA has proposed new air emission standards that would require animal feeding operations to take steps to reduce ammonia emissions to the atmosphere. Farms may be faced with new air quality requirements after adjusting to costly requirements to meet water quality goals. An evaluation of joint optimization of technology choice to meet air and water goals would illustrate the economic benefits of coordination across regulatory policies affecting CAFOs. This project will compare the economic and environmental implications of single-medium and coordinated policies for reducing nitrogen emissions from animal feeding operations. In each scenario, policies would be based on current or imminent air and water policy options being proposed by EPA. Analyses will assess costs of alternative technologies for storing, transporting, applying, and processing livestock residues at both national and regional scales. Links to environmental process models will provide estimates of how different policy approaches affect regional air and water quality.

Conservation Policy on Working Lands. The Farm Security and Rural Investment Act of 2002 redresses the past imbalance in USDA conservation programs toward land retirement, by providing a major increase in funds to promote stewardship on working lands. This project identifies issues in the design of working land policies and the potential economic and environmental impacts of alternative designs. It also considers how the findings could apply to the implementation of the Environmental Quality Incentive Program, the prominent working land program to date, and the newly introduced Conservation Security Program, the first ever entitlement agri-environmental program. These two programs pursue similar environmental goals, but they differ in terms of eligibility, payment base, and incentive structure.

Agricultural Trade and the Environment. With globalization, world markets increasingly influence domestic agricultural activity and, thus, environmental byproducts. This project analyzes (1) how trade liberalization may affect the environment, (2) the trade effects of achieving specific environmental goals with various environmental/conservation policy tools, and (3) how environmental policies might retain the economic gains from trade liberalization while minimizing environmental harm. By providing information on the distribution of costs and benefits due to globalization, the results will help policymakers coordinate trade and environmental policies to address domestic and global environmental concerns.

3.0 External Factors

Agricultural lands are co-mingled with urban and developing land as part of watersheds and ecosystems. Activities taking place in parts of forests, lands or watersheds outside USDA influence can offset the effects of improved management on agricultural land, so that the state of the whole watershed may fail to improve as much as expected.

4.0 Justifications for increases and decreases (N/A)

5.0 Performance Measurement

Central to effective performance by ERS is successful completion of planned research that enhances understanding by policy makers, regulators, program managers, and those shaping the public debate of economic issues relating to protecting and enhancing the nation's agricultural resource base and environment. Effective performance of economic research and analysis can be indicated through application of a quantitative performance assessment tool that considers factors key to successful research, including relevance, quality, and performance.

The ERS economic research and analysis will be evaluated for success in achieving these criteria using a three-category performance indicator (successful, mixed results, or unsuccessful) that reflects the interval of the point score achieved on a quantitative, research program assessment tool. A key component of evaluating agency performance in these areas will be program evaluation conducted by outside review

panels. Panels will assess relevance, quality, and performance of agency programs using a quantitative assessment tool based on the assessment criteria specified below. These criteria, taken together, will provide an indication of agency performance.

| Criteria | Assessment Criteria | FY 2003 Target | FY 2004 Target | FY 2005 Target |
|-----------------|---|-----------------------|-----------------------|-----------------------|
| Relevance | <ul style="list-style-type: none"> • Relevance of program objectives to national and customer needs • Identification of emerging issues • Portion of agricultural policy decision-events supported by ERS research and analysis | N/A | Successful | Successful |
| Quality | <ul style="list-style-type: none"> • ERS research done to disciplinary standards. • Portion of ERS research reports peer-reviewed by faculty from leading agricultural economics schools • Merit-based process for allocating extramural research funds | N/A | Successful | Successful |
| Performance | <ul style="list-style-type: none"> • Volume of ERS material that is transmitted to public and private sector users seeking economic data and analysis, primarily through electronic access. • Documentation of program plans, goals, and priorities • Stakeholder and customer feedback/assessment | N/A | Successful | Successful |