FY 2005 President's Budget Proposal

A Summary of the President's FY 2005 Budget Proposal for CSREES-USDA as Presented to the Congress of the United States

USDA United States Department of Agriculture

February 2004

Advancing Knowledge for the Food and Agricultural System

Overview

The mission of CSREES is to advance knowledge for agriculture, the environment, human health and well-being, and communities. In support of this mission, the FY 2005 CSREES Budget Proposal will:

- expand efforts in response to critical national issues such as agricultural security;
- address nutrition, food choices, and the growing obesity epidemic;
- provide new opportunities for discovery and advancing knowledge through competitive programs such as the National Research Initiative and Integrated Activities;
- promote diversity and opportunity through support to minority-serving institutions, and improved outreach to under-served communities; and
- sustain a system of support through our research and extension base programs.

The above efforts will enhance responsiveness and flexibility in addressing critical agricultural issues.

■ **CSREES, through cooperative efforts with the Animal and Plant Health Inspection Service, has established a unified network of public agricultural institutions to identify and respond to high-risk biological pathogens in the food and agricultural system.** The network will increase the Nation's ability to protect its agriculture by identification, containment, and minimization of disease threats. CSREES will support educational and professional development for personnel in securing the Nation's agricultural and food supply. The program will develop and promote curricula for higher education programs that support the protection of animals, plants, and public health. The program also is designed to support interdisciplinary degree programs that combine training in food sciences, agricultural sciences, medicine, veterinary medicine, epidemiology, microbiology, chemistry, engineering, and mathematics (statistical modeling) to prepare food system defense professionals.

■ **The study of food choice has broad applicability to promoting appropriate dietary practices that maintain health and decrease the risk of chronic diseases in the American population.** Food choice behavior is influenced by a variety of factors ranging from income and culture to physiological needs, societal standards, and community resources; however, knowledge of how these factors interact to affect food choices is limited. CSREES-supported research will focus on investigating underlying causes of obesity, including physiological, environmental, cultural, social, and biological factors; factors controlling the onset of obesity; determining differences in obesity groups defined by race, age, gender, etc.; and developing and evaluating the weight loss potential of functional foods. CSREES also will continue educational activities that support graduate-level training to help address health and wellness concerns as they relate to increasing obesity in the U.S. population. Utilizing an integrated curriculum, funding will help reach high-risk audiences with the knowledge and skills needed to reduce their risk of obesity.

■ **Genomics is the study of an organism's entire DNA complement and its function. Agriculture lags behind human and medical genomics in areas such as genome sequencing, functional genomics, and databases that allow rapid interpretation and application.** Substantial public investment in the Human Genome Project has led to technologies, practices, and knowledge which enable cost-effective research in animal genomics. The considerable similarities of the genomes of livestock species, fish, and birds to that of the human will reduce the need for whole genome sequencing. It also will simplify mapping of genes on chromosomes, and allow candidate genes for various economically important traits to be quickly tracked and identified. Support of animal genomics will increase fundamental knowledge of the composition, organization, and function of the genome and increase the ability to genetically improve the productivity, efficiency, and quality of agriculturally important animals, including horses and aquaculture species. Research also will contribute to reducing adverse global environmental changes, preserving genetic diversity of wild stock, addressing new and re-emerging disease and pest threats, and providing new and renewable products to meet consumer needs.

■ **CSREES is uniquely positioned to address research, education, and extension needs to meet the challenges to U.S. agriculture from new and emerging pests and diseases.** Partnering with the University System, CSREES programs support a wealth of expertise in all fields of plant and animal sciences along with immense extension and outreach capability that can be mobilized to provide an immediate response to critical issues. Program efforts will focus on early intervention strategies to prevent, manage, or eradicate new and emerging plant and animal diseases. Funding also will facilitate improved diagnostic tests for rapid response to emerging disease agents by expanding the knowledge base of microbial genomics for both animal and plant diseases. Antibiotic and pesticide resistance in target pests and disease agents will be a focus of research conducted under competitive programs.

■ **Institutions are challenged to develop new curricula and to produce graduates ready to take their place in increasingly global food and fiber enterprises that face complex and highly technical problems often requiring multi-disciplinary and cooperative approaches for solutions.** CSREES supports the training of scientists and professionals, ensuring that undergraduate and graduate programs in the food and agricultural sciences recruit students with diverse backgrounds and cultures and provide them with the requisite knowledge, abilities, and skills to address today's needs and future challenges. CSREES exercises national leadership in developing problem-based curricula and degrees to complement disciplinary programs at the graduate level. This prepares graduates to deal with emerging challenges of national and global social change.

■ **Several CSREES programs expand opportunities for minority-serving institutions to reach and encourage participation by Asians, Hispanics, African Americans, and Native Americans.** A higher education program will increase the number of fellowships offered at the M.S. level – essential for recruiting minority graduate students. Another program encourages and assists socially disadvantaged farmers and ranchers in their efforts to become or remain owners and operators by providing technical assistance, outreach, and education to promote fuller participation in all USDA programs.

■ **CSREES will continue support for research and extension base programs.** These programs provide resources necessary to foster regional and national joint planning, encourage multi-State planning and program execution, and minimize duplication of efforts. Base program funding is the foundation from which a competitive grant-funded program can be built by developing institutional capacity and infrastructure, supporting preliminary studies to strengthen competitive proposals, and bridging gaps related to scope and continuity of grant-supported programs. CSREES funds, along with matching funds from the States, assure responsiveness to emerging issues such as foot-and-mouth disease, E. coli, Salmonella, Listeria, sorghum ergot, potato late blight, and Russian wheat aphid.

Cooperative State Research, Education, and Extension Service

Research and Education Activities

Programs	($000) FY 2004 Appropriations Act	FY 2005 President's Budget
Formula Programs:		
Hatch Act	$179,085	$180,148
McIntire-Stennis Cooperative Forestry	21,755	21,884
Evans-Allen Program	35,788	36,000
Animal Health and Disease, Section 1433	4,532	5,098
Subtotal	**241,160**	**243,130**
Special Research Grants:		
Expert IPM Decision Support System	158	177
Global Change, UV-B Monitoring	2,000	2,500
Integrated Pest Management & Biological Control	2,439	2,725
Minor Crop Pest Management, IR-4	9,549	10,485
Minor Use Animal Drugs	526	588
National Biological Impact Assessment Program	225	253
Pest Management Alternatives	1,448	1,619
Other	107,904	0
Subtotal	**124,249**	**18,347**
National Research Initiative Competitive Grants	**164,027**	**180,000**
Other Research:		
Critical Agricultural Materials	1,111	0
Aquaculture Centers	4,000	3,996
Sustainable Agriculture Research and Education Program	12,222	9,230
Supplemental and Alternative Crops	1,063	0
Joe Skeen Institute for Rangeland Restoration	895	0
1994 Research Grants	1,087	998
Federal Administration (Direct Appropriation)	37,482	7,538
Subtotal	**57,860**	**21,762**
Higher Education:		
Graduate Fellowships Grants	2,883	4,500
Institution Challenge Grants	4,859	5,500
1890 Institution Capacity Building Grants	11,411	11,411
Multicultural Scholars	986	998
Hispanic-Serving Institutions Education Grants Program	4,645	4,645
Tribal Colleges Education Equity Grants Program	1,679	2,250
Tribal Colleges Endowment Fund	8,947	12,000
Interest (Estimated) Earned on the Tribal Colleges Endowment Fund	1,930	2,508
Secondary/2-Year Post Secondary	890	1,000
Agrosecurity Education	0	5,000
Alaska Native-Serving and Native Hawaiian-Serving Institutions	3,131	2,997
Subtotal	**41,361**	**52,809**
Total, Research and Education Activities	**628,657**	**516,048**

Outreach and Assistance for Disadvantaged Farmers Activities

Section 2501 Legislative Authority:		
Outreach and Technical Assistance for Socially Disadvantaged Farmers and Ranchers Program	**5,935**	**5,935**

Cooperative State Research, Education, and Extension Service

Integrated Activities

Programs	($000) FY 2004 Appropriations Act	FY 2005 President's Budget
Section 406 Legislative Authority:		
Water Quality	$11,530	$12,971
Food Safety	13,305	14,967
Regional Pest Management Centers	4,028	4,531
Crops at Risk from FQPA Implementation	1,330	1,497
FQPA Risk Mitigation Program for Major Food Crop Systems	4,345	4,889
Methyl Bromide Transition Program	3,131	2,498
Organic Transition Program	1,889	499
Subtotal	**39,558**	**41,852**
Other Legislative Authorities:		
International Science and Education Grants Program	895	1,000
Critical Issues	444	2,500
Regional Rural Development Centers	1,345	1,513
Food and Agriculture Defense Initiative (Homeland Security Program)	7,953	30,000
Subtotal	**10,637**	**35,013**
Total, Integrated Activities	**50,195**	**76,865**

Extension Activities

Formula Programs:		
Smith-Lever Formula 3(b)&(c)	$277,742	$275,940
1890 Institutions	31,720	32,117
Subtotal	**309,462**	**308,057**
Smith-Lever 3(d) Programs:		
Expanded Food and Nutrition Education Program	52,057	57,909
Pest Management	9,563	10,759
Farm Safety	4,911	0
Children, Youth, and Families at Risk	7,538	8,481
Youth Farm Safety Education and Certification	444	499
Sustainable Agriculture	4,333	3,792
Extension Indian Reservations Program	1,774	1,996
Subtotal	**80,620**	**83,436**
Other Extension Programs:		
Extension Services at the 1994 Institutions	2,929	3,273
Renewable Resources Extension Act	4,040	4,093
Rural Health and Safety	2,331	0
1890 Facilities (Sec.1447)	14,912	14,912
Grants for Youth Serving Institutions	2,667	0
Federal Administration:		
Other	21,542	6,653
Ag in the Classroom	622	750
Subtotal	**49,043**	**29,681**
Total, Extension Activities	**439,125**	**421,174**
Total, Cooperative State Research, Education, and Extension Service	**1,123,912**	**1,020,022**

Impacts of Research, Education, and Extension Activities

Guarding the Cattle Gates

Land-grant veterinarians stand as the first lines of defense against livestock disease outbreaks caused by accident or acts of biological terrorism. **Nebraska** Extension developed a program to help producers adopt biosecurity practices and train food processors in the awareness of potential bioterrorism. **North Dakota** trained veterinarians in the use of laptop computers to rapidly investigate unusual cases and send those findings electronically to experts. **California** is also educating veterinarians and producers about bioterrorism and made fact sheets available in Spanish and Portuguese.

Healthier Kids

The percentage of American children who are obese has increased by 50 percent in the last 30 years. **Kentucky** researchers and extension educators are targeting adolescents and their food choices through web-based programs pitting vegetables and fruits against sweet and salty snacks. In **Indiana**, 2,000 elementary students were taught the benefits of good nutrition not only for themselves but as a means to encourage family members to try new foods with less salt and fat. **Idaho** Extension specialists worked to turn children away from cookies and french fries and toward fruit and salads through research-based food tasting, nutrition games and relays, and sandwich-making exercises.

Berry Good

Blueberries are nutritious and popular, and the industry is working to continually expand its production and markets. **New Jersey** developed True Blue, a blueberry iced tea that may grab a share of the United States $160 billion nonalcoholic drink market. **Mississippi** Extension specialists are encouraging blueberry production as an alternative enterprise and expects blueberry acreage in one county to increase by 125 acres over the next two years, providing a potential annual economic impact of more than $500,000. Last year in **Georgia**, five new growers added 200 acres of blueberries in one county, translating to an estimated $1 million impact on the local economy.

In the Swim of Things

Aquaculture offers numerous new markets. In **Virginia**, researchers are exploring ways to raise rainbow trout in farm ponds for sale to consumers or as bait. **Kentucky** research results helped growers show profits of $2,000 to $5,000 per acre of freshwater prawn farming last year. **Nebraska** scientists are raising prawns in empty livestock buildings, offering new uses and profit potential from unused space.

The Plant Doctor is In

To prepare students for careers in plant protection, **North Dakota** offers an undergraduate program that focuses on weed science, entomology, and plant disease. **Florida** offers a graduate program that equips students to diagnose plant health problems and offer control recommendations, regardless of whether the problem is caused by an insect, nematode, fungus, weed, nutrient deficiency, or mineral toxicity. Typically, different specialists–entomologist, nematologist, plant pathologist, or weed scientist–are required to diagnose and offer management recommendations. With multidisciplinary training, graduates can better advise growers.

Biofilm Festival

Listeria is a major culprit in food recalls. The dangerous bacteria often lurk in the nooks and crannies of food processing equipment. **Wisconsin** scientists devised techniques to coat food processing machines, preparation surfaces and packaging with antimicrobial agents or with a film that prevents bacterial attachment. **Illinois**, **Maryland,** and **Massachusetts** also are studying biofilm composition and adherence.

Boosting Diversity

Florida is working to increase the number of minorities in the horticulture and landscape industry. Its ornamental horticulture and landscape design and management programs provide internships, cooperative education, and financial support for students. **South Carolina** is addressing similar disparity in natural resource careers through a career camp. Attendees showed increased interest in forestry and natural resource careers.

Litter Birds

Louisiana researchers found that applying poultry litter on pastures can reduce fertilizer costs by 39 percent. In a single county, **West Virginia** Extension specialists helped 80 farmers recycle 9,000 tons of poultry litter to pastures, saving up to $175,000 annually in fertilizer costs. **Arkansas** scientists are developing ways to use litter to heat poultry buildings, saving fuel costs and the cost of hauling waste to fields or landfills.