

**Michigan State University Extension
2005-06 Annual Report of
Accomplishments and Results**

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Director**

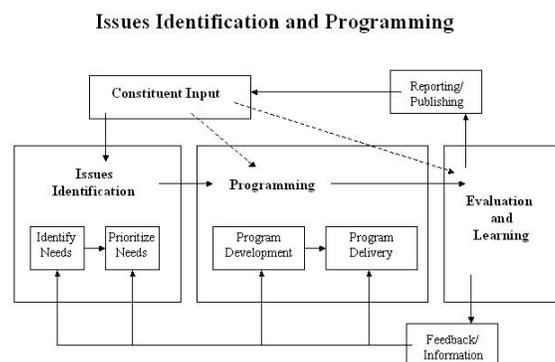
Overview

Since its beginning, Michigan State University Extension (MSUE) has focused on bringing knowledge-based educational programs to the people of the state to improve their lives and communities. Today's problems are very complex. Solutions require the expertise of numerous disciplines and the collaboration of many partners. Operating synergistically with the Michigan Agricultural Experiment Station (MAES) and other Michigan State University units, MSU Extension extends the University's knowledge resources to all Michigan citizens and assists them in meeting their learning needs through a variety of educational strategies, technologies and collaborative arrangements. Today, county-based staff members, in concert with on-campus faculty members, serve every county with programming focused on agriculture, natural resources, children, families, and community economic development. During 2005-06, MSUE worked directly with 180,923 adults and 241,170 youth in educational programs for a total of 422,093 people and reached over 2 million people indirectly with publications, websites, fact sheets, etc.

Stakeholder Input and Planning Process

Michigan State University Extension (MSUE) uses an integrated model in approaching community needs by providing educational programs and information at multiple levels, which results in blended stakeholder input, funding sources, programs crossing over goal areas, integration of research and educational instruction, and multiple delivery approaches (direct and indirect). For example land use in Michigan plays a critical role in agriculture, environment, and community and economic development, which is addressed by multiple resources (federal, state, county, and other) and through multiple Area of Expertise (AoE) teams. Stakeholder input on land use came from a variety of sources and processes that include local, county, regional, and state levels. Figure 1. shows MSUE's process of using constituent input to identify issues which then gets prioritized by field and campus staff as they build individual, county, and statewide plans. These plans outline MSUE's programs that are implemented, evaluated, and changed over time through the feedback and lessons learned through the process. This report reflects the accomplishments and impacts from this process during the 2005-06 federal fiscal year.

Figure 1.
MSUE Planning and Implementation Process



The primary planning process for the 2005-06 programming came in 2002 when MSUE used the results of a statewide initiative of community input called “Sharpening Our Program Focus” that identified five priority areas: Building strong communities; Helping youth succeed; Enhancing profitability in agriculture; Encouraging responsible land and natural resources use; and Building healthy families. This process included stakeholders from local communities, participants, partners, collaborators, Area of Expertise (AoE) Teams, and more. In addition, the results of a scientific phone survey done in 2004 by the Institute for Public Policy and Social Research (IPPSR) called the State of the State Survey (SOSS) was used to assess a variety of public topics with one set of questions asking for reactions to the identified program priorities for MSU Extension identified in the “Sharpening Our Program Focus”. The survey had 992 random phone surveys conducted in all six regions of the state. The findings supported the five priority areas with 78% of the respondents rated as a high priority to help youth succeed as well as building healthy families, followed by 70% indicating high priority for encouraging responsible land and natural resource use, 62% for building strong communities, and 51% for enhancing profitability for agriculture.

During 2005-06 MSUE and MAES (Michigan Agricultural Experiment Station) started a new statewide initiative of community input called “Strengthening Michigan’s Economy: Issue Identification” to identify key needs in the local communities, regions and state. In addition, the process used stakeholder input from the SOSS, local stakeholder input, and input from constituents in their area of expertise to identify and prioritize needs for the teams. Findings from these processes were used in developing the 2007-11 Plan of Work. Five statewide priorities were identified during this process that included:

- Developing entrepreneurs
- Promoting healthy lifestyles
- Preparing for the expanding the bioeconomy
- Educating and supporting decision makers
- Building leaders for today and tomorrow

Inputs and Resources

Table 1. shows the overall expenditures for MSUE for the 2005-06 federal programming year to be \$81.6 million, with approximately \$8 million being Federal B and C formula dollars. These dollars have been critical in contributing to base programming in the counties as well as enhancing programs by matching state and county dollars. The match from the state is well over 100%, demonstrating strong support for MSU Extension’s partnership with USDA. Because Federal 3B and 3C dollars, like the state and county dollars, are integrated into virtually every MSUE program, the following report reflects the whole rather than a part. One major resource that is missing from the following report is in-kind contributions, which include volunteer time (more than 28,500

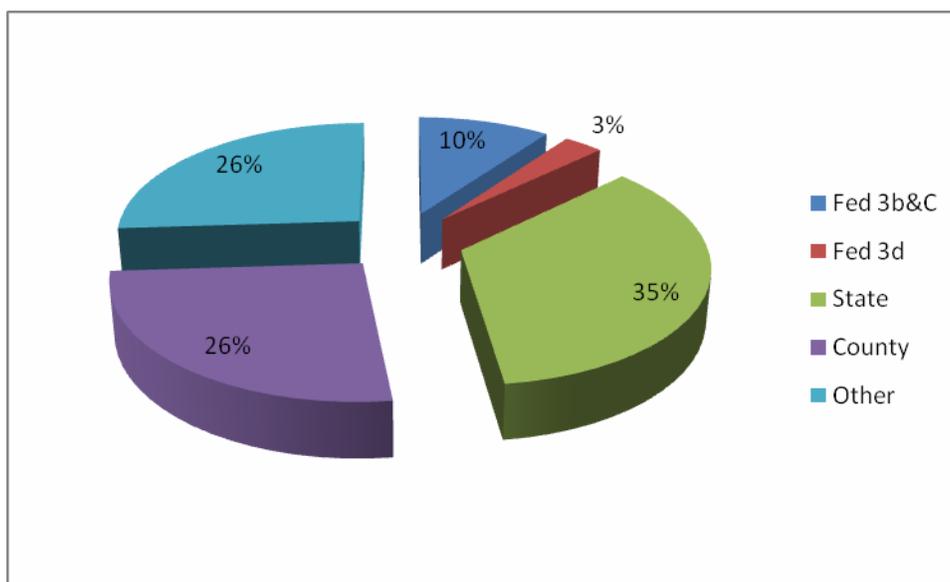
volunteers assisted programming in 2005-06 and tangible resources, such as building space, materials, and travel that would be valued in the millions of dollars.

Table 1.
Overall MSU Extension 2005-2006 Expenditures by Source of Funding and Federal Goal

Goal	Fed 3b&c	Fed3d	State	County	Other	Total
1) Agriculture	1,775,257	45,532	7,552,041	4,335,465	2,129,386	15,837,681
2) Food Safety	849,484	630,881	3,909,544	3,334,946	4,268,548	12,993,403
3) Food, Nutrition, and Health	814,168	1,272,880	3,221,553	4,648,426	8,270,990	18,228,017
4) Environmental	1,729,334	67,986	6,275,669	4,591,709	4,252,154	16,916,852
5) Community, Human, and Youth Development	2,724,469	11,851	7,084,480	5,000,125	2,808,089	17,629,014
Total	7,892,934	2,029,130	28,043,287	21,910,670	21,729,168	81,605,190

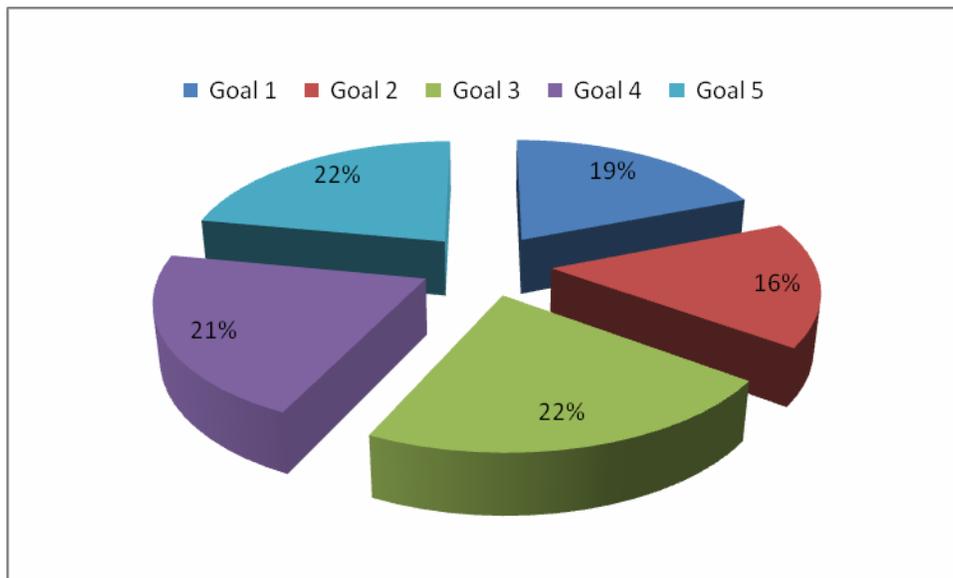
Graph 1. shows 10% of MSUE funds were **Federal 3b&c**, 3% **Federal 3d** (mainly EFNEP), 35% **State**, 26% **County**, and 26% **Other** (competitive grants – multiple sources with FNP being the largest).

Graph 1.
Overall 2005-06 MSU Extension Expenditures by Source of Funding



Graph 2. shows overall funding for MSUE by Federal Goals: 19% of funding involved programs that addressed **Goal 1)** An agricultural system that is highly competitive in the global economy; 16% for **Goal 2)** A safe and secure food and fiber system; 22% for **Goal 3)** A healthy, well-nourished population; 21% for **Goal 4)** Greater harmony between agriculture and the environment; and 22% for **Goal 5)** Enhanced economic opportunity and quality of life for Americans.

Graph 2.
Overall 2005-06 MSU Extension Funding by Federal Goal



Graph 3. shows Federal 3b&c funding by Federal Goals: 22% of funding involved programs that addressed **Goal 1)** An agricultural system that is highly competitive in the global economy; 11% for **Goal 2)** A safe and secure food and fiber system; 10% for **Goal 3)** A healthy, well-nourished population; 22% for **Goal 4)** Greater harmony between agriculture and the environment; and 35% for **Goal 5)** Enhanced economic opportunity and quality of life for Americans.

Graph 3.
Federal 3 b&c 2005-06 Funding by Federal Goal

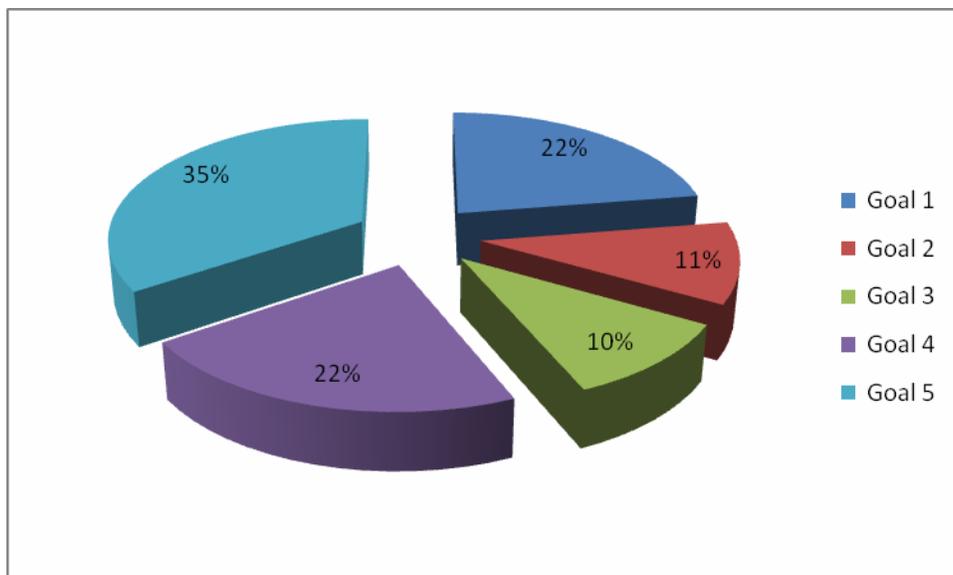


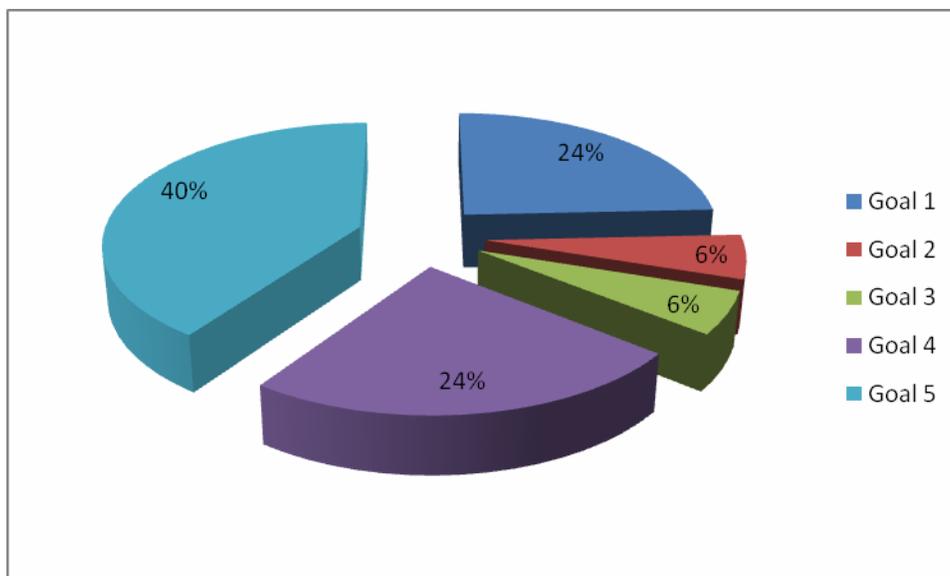
Table 2. shows that in 2005-2006, MSUE staff consisted of 975 full time equivalents (FTE) with 50% Professional (485 FTE's), 25% Para-Professional (243FTE's), and 25% (247 FTE's) Office and Clerical staff members. The major change during this fiscal year was the loss of approximately 77 FTE's or 7% of the FTE's from the previous year. Nine percent of the total FTE's (90 FTE's) were funded by Federal 3b&c with 83 FTE's being Professional. Twenty-five percent of the total FTE's (239 FTE'S) were county paid employees.

Table 2.
Overall FTE by Role and Federal Goals

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Total
Professional	109	43	65	118	151	485
Para-Professional	12	61	134	12	24	242
Office/Clerical	59	25	41	55	68	248
	180	129	240	185	243	975

Graph 4. shows Federal 3b&c Professional FTE's by Federal Goals: 24% of funding involved programs that addressed **Goal 1)** An agricultural system that is highly competitive in the global economy; 6% for **Goal 2)** A safe and secure food and fiber system; 6% for **Goal 3)** A healthy, well-nourished population; 24% for **Goal 4)** Greater harmony between agriculture and the environment; and 40% for **Goal 5)** Enhanced economic opportunity and quality of life for Americans. It is worthy to note that the majority of FTE's for Goals 3 and 4 are supported by other funds that mainly include FNP and EFNEP.

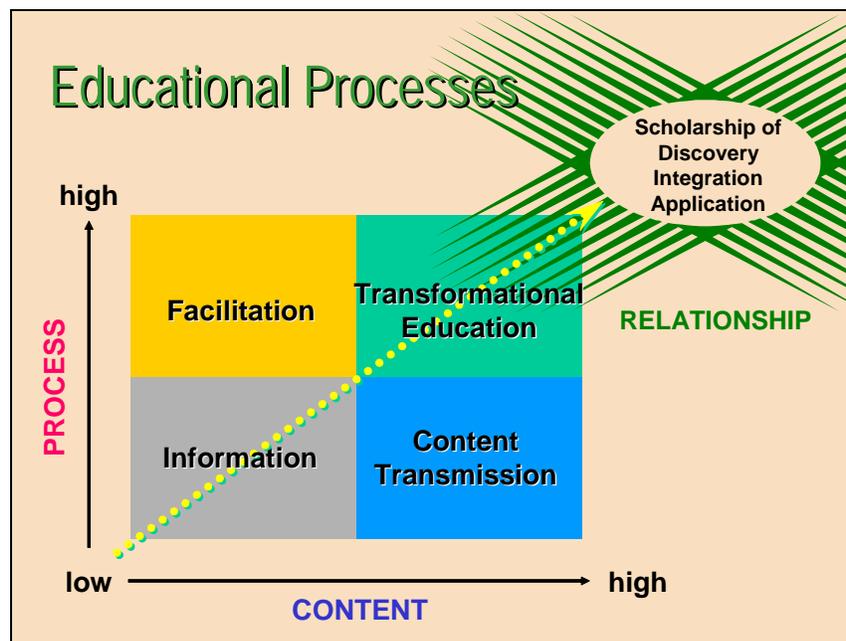
Graph 4.
Federal 3 b&c 2005-06 Professional FTE's by Federal Goal



Outputs

MSUE is dedicated to educating tomorrow's leaders and scholars. Innovative and hardworking MSUE faculty and staff members create knowledge and extend learning to serve Michigan, the nation and the international community. At MSU, faculty and staff members are expected to be active, learner-focused scholars, exemplifying scholarship across the land-grant mission. The essence of this scholarship is the thoughtful discovery, transmission and application of knowledge based in the ideas and methods of recognized disciplines, professions and interdisciplinary fields. What qualifies an activity as scholarship is that it be deeply informed by the most recent knowledge in the field, that the knowledge is skillfully interpreted and deployed, and that the activity is carried out with intelligent openness to new information, debate and criticism. The primary mechanism for educational program planning, implementation and evaluation for Michigan State University Extension is the Area of Expertise (AoE) team concept, which brings stakeholders, collaborators, faculty members, field staff members, and communities together for community need assessments, prioritization of MSUE programming goals, program development and implementation, and assessment of impact. Documented impacts focused on information that reflect changes in knowledge, attitudes, skills, aspirations, and communities that ultimately lead to transformational education and scholarship of discovery, integration, and application (see Figure 2.)

Figure 2.
Transformational Education at MSUE



In 2005-06, through the efforts of the AoE teams, staff and volunteers, MSUE reached 421,681 people directly through educational programs. This was similar to the previous year with 432,544. Table 3. shows the number of participants reached directly for each of the AoE Teams by the five Federal Goals.

Table 3.
Total Participants Reached Directly by AOE by Federal Goals

Goal 1 - Agriculture	Adult	Youth	Total
Beef	1,008	9,027	10,035
Consumer Horticulture	14,090	7,537	21,627
Dairy	6,649	5,232	11,881
Equine	213	18,780	18,993
Field Crops	17,605	5,799	23,404
Floriculture	1,854	0	1,854
Forage/Pastering/Grazing	302	15	317
Fruit	4,061	2,945	7,006
Nursery/Landscape	3,239	50	3,289
Pork	864	14,619	15,483
Turfgrass	206	0	206
Vegetables	1,137	2,945	4,082
	51,228	66,949	118,177
Goal 2 - Food Safety			
Food Safety*	11,440	11,253	22,693
Goal 3 - Food, Nutrition, and Health			
Food, Nutrition & Health*	45,762	45,011	90,773
Goal 4 - Environmental			
Fisheries and Wildlife	412	497	909
Forestry	4,385	6,741	11,126
Land Use	5,536	7,070	12,606
Manure	2,031	462	2,493
Renewable Resources (RREA)	508	1,654	2,162
Sea Grant	2,211	1,914	4,125
Water Quality	4,580	15,795	20,375
Christmas Trees	208	0	208
	19,871	34,133	54,004
Goal 5 - Community, Human, and Youth Development			
Community Development	8,255	8,257	16,512
Economic Development	6,494	3,930	10,424
Family Resource Management*	3,819	658	4,477
FIRM	3,694	14	3,708
Human Development	13,520	2,505	16,025
LeadNet	551	12,621	13,172
State & Local Government	793	2,867	3,660
Tourism	1,755	11	1,766
Volunteer Development	4,303	18,030	22,333
Youth Development**	9,438	35,428	44,866
	52,622	84,321	136,943

* To avoid duplication, participants who received both food safety and food nutrition were counted only once.

** To avoid duplication, youth who crossed goals were not counted again in youth development.

Table 4. shows that Goal 5 (Community, Human, and Youth Development) had the largest number of participants, followed by Goal 1 (Agriculture) and Goal 3 (Food, Nutrition, and Health). The numbers below do not include the millions of people that are educated through newsletters, TV, internet, radio and conferences on topics that include: [Emerald Ash Borer](#), [Helping Children and Their Families Cope with Disasters](#), and [MSUE Emergency Management](#).

Table 4.
Total Participants Reached Directly by Federal Goal

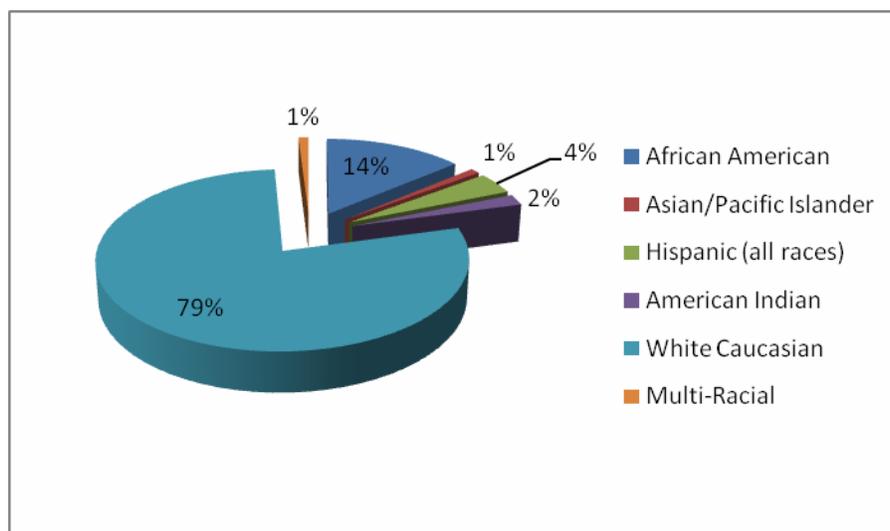
Goal Area	Adult	Youth	Total	%
Agriculture	51,228	66,949	118,177	28.03%
Food Safety*	11,440	11,253	22,693	5.38%
Food Nutrition and Health*	45,762	45,011	90,773	21.53%
Environmental	19,459	33,636	53,095	12.59%
Community, Human and Youth Development**	52,622	84,321	136,943	32.48%
	180,511	241,170	421,681	

* To avoid duplication, participants who received both food safety and food nutrition were counted only once (20% Food Safety and 80% Food, Nutrition, and Health).

** To avoid duplication, youth who crossed goals were not counted again in youth development.

Graph 5. shows the ethnic distribution of the 421,681 participants educated directly. Seventy-nine percent (79%) of the participants were Caucasian, 14% African American, 4% Hispanic, 1.5% Native American, 1% Asian, and .4% Multi-Cultural. This distribution is representative of Michigan's population: 80.9% Caucasian, 14.3% African American, 2.8% Hispanic, .6% Native American, and 1.7% Asian (Multi-Cultural was not used). Civil Rights information is imbedded in each of the plans with a description of the potential and targeted audiences and then linked to the actual audiences reached through our Extension Information System (EIS).

Graph 5.
Percentage of Participants by Ethnic Groups



Overview of Goal 1: An agricultural system that is highly competitive in the global economy

Over 100,000 participants (118,177) were directly involved in MSUE educational programs that focused on the agricultural system. Table 5. shows the number of participants and the Federal Key Themes for each of the twelve AoE teams that worked in Goal 1. Key themes highlighted in this report demonstrating impact were: adding value to new and old agricultural products, agricultural profitability, animal health, animal production efficiency, emerging infectious diseases, home lawn and gardening, new uses for agricultural products, ornamentals/green agriculture, plant health, and plant production efficiency.

Table 5.
Number of Participants and Key Themes by AoE for Federal Goal 1.

Goal 1	Adults	Youth	Total	Federal Key Themes
Beef	1,008	9,027	10,035	Animal Production Efficiency, Agricultural Profitability, Emerging Infectious Diseases
Consumer Horticulture	14,090	7,537	21,627	Home Lawn and Gardening, Ornamentals/Green Ag
Dairy	6,649	5,232	11,881	Animal Production Efficiency, Agricultural Profitability, Emerging Infectious Diseases
Equine	213	18,780	18,993	Animal Production Efficiency, Adding Value
Field Crops	17,605	5,799	23,404	Adding Value, Precision Ag, Agricultural Profitability, IPM
Floriculture	1,854	0	1,854	Adding Value, Agricultural Profitability, Biotechnology, IPM, Ornamentals/Green Ag
Forage/Pasturing/ Grazing	302	15	317	Adding Value, Grazing, Emerging Infectious Diseases
Fruit	4,096	2,954	7,009	Adding Value, Ag Profitability, Niche Market, IPM

Goal 1 (continued)	Adults	Youth	Total	Federal Key Themes
Nursery/Landscape	3,239	50	3,289	Home Lawn and Gardening, Ornamentals/Green Ag
Pork	864	14,619	15,483	Adding Value, Animal Production Efficiency, Manure Management
Turfgrass	206	0	206	Agricultural Profitability, Ornamental/Green Ag
Vegetables	1,137	2,945	4,082	Adding Value, Precision Ag, Agricultural Profitability, IPM
	51,228	66,946	118,177	

Highlights in this area included:

- Nearly 700 individuals sought assistance from the MSU Product Center for Agriculture and Natural Resources in 2005-06. About 40 new businesses or products were launched last year, and 26 of those projected annual sales totaling more than \$6 million, with capital investments of more than \$3.3 million and 176 new jobs.
- MSUE increased awareness of the importance of pollination for achieving higher yields, and it's estimated that the stocking density of honeybees on 20 percent of the state's blueberry acreage has increased by half a hive per acre. The value of these additional hives is \$1.4 million in increased blueberry yields.
- MSUE educators helped the board of the farmer cooperative for Michigan Bio-Diesel, L.L.C., ensure that the bio-diesel plant will be based in Bangor, Mich., rather than Fremont, Ind. The plant, scheduled to open in June, will start producing 10 million gallons of soybean-based diesel fuel annually. It has the potential to produce upwards of 40 million gallons per year.
- MSUE educators worked closely with the MSU Product Center for Agriculture and Natural Resources to create the business plan for Michigan Bio-Diesel, L.L.C. The plan calls for 22 employees – half will be degreed professionals; the other half will be experienced plant operators. The resumes the farmer-owned board has received to date indicate that people from the local area will fill all of these new jobs. In addition, numerous other affiliated jobs will spring up, bringing the total economic impact of this plant to nearly \$95 million.

- MSUE helped establish an ethanol plant in southeastern Michigan. The plant employs 35 high-wage workers, indirectly employs an additional 135 people and produces 45 million gallons of ethanol per year. The overall economic impact is \$75 million per year.
- MSUE helped sponsor Biodiesel Day in September 2005. Farmers were able to obtain the B99.9 fuel that they use to create B20 diesel for non-road vehicles. The B20 soy diesel, which is 20 percent biofuel and 80 percent petroleum, allows farmers to comply with the 2006 Environmental Protection Agency (EPA) mandate that established low sulfur requirements in diesel fuel for off-road use. The 2002 Farm Bill and the 2005 Energy Bill provided government incentives to produce renewable, biobased fuels to reduce dependence on foreign oil. These incentives allow biodiesel to compete economically with petroleum diesel. Capital Area Productions, a central Michigan farmer-owned cooperative, received a \$24,500 grant from the U.S. Department of Energy and the Michigan Department of Labor and Economic Growth to purchase tanks and equipment to handle biodiesel.

Examples of Impact in Goal 1.

Key Theme: Business Management, Finance, and Taxation

Educational Initiative Title: FIRM (Farm Information Resources Management) AoE

Team Dairy Farm Business Succession

Firm AoE and Dairy AoE: State

Description of Program

The dairy industry is involved in a continual shift. The trend has been toward larger, more capital intensive farms. For smaller and mid-sized farms to compete, they must be deliberate and strategic in their planning as their farms are transferred to a new generation to ensure a successful transfer. FIRM AoE Team members presented a proposal to the Michigan Milk Producers Association (MMPA) Advisory Board July 2005. From that meeting, six MMPA members committed to serving on an advisory board. The Advisory Board met with the FIRM Team September 2005. Their input helped shape the direction of the program, and also let the FIRM Team know what subjects were most important to dairy farmers. The goal was to target useful information to Michigan Dairy Farms facing a transition in ownership and management in the next five years. A second goal was to meet with families on an individual basis to chart out a specific strategy to successfully transfer the farm. The Dairy AoE Team was instrumental in carrying out this program by assisting in designing the program, presenting at the meetings, and conducting follow-up visits. MMPA sponsored the program, and provided a 75% cost share for their members to attend the meeting.

Impact

Introductory articles were published in the Michigan Milk Messenger (four articles over four months) with a circulation to 2,400 MMPA members. Four public meetings were held around the state with 122 participants. An evaluation of the program found: participant understanding of Methods of Farm Transfer increased by 67%; participant understanding of Tax Considerations increased by 61%; participant understanding of Ownership Structures increased by 50%; participant understanding of Communication of Goals increased by 44%; participant understanding of Management Transfer increased by 43%; participant understanding of Decision Making increased by 33%; and 59% of the participants had fewer concerns about the transfer of their dairy after the workshop. Sixty-seven percent of participants indicated willingness to move forward on some aspects of a farm transfer or business succession plan.

The FIRM AoE in 2005-06 educated 3,694 farmers and Dairy AoE educated 6,649 farmers.

Source of Funds

Smith-Lever 3b&c, state, county, MMPA

Scope of Impact

State

Key Theme: Animal Management System

Educational Initiative Title: 2006 Nursery Pig Management Program

Pork AoE Team: State

Description of Program

The management of weaned pigs has changed dramatically in recent years, as indicated in one instance by the six fold increase from 1987 to 2001 (Michigan Ag Statistics) in the number of pigs reared in Michigan which were “shipped” prior to placement in grow-finish facilities. During the nursery period, pigs are adjusting to many different aspects within their environment including nutritional and social elements. Therefore, proper care and management of pigs throughout the nursery phase of production is critical in maintaining optimal pig performance throughout the lifespan of the pig. Many of the individuals caring for nursery pigs, either as employees, contract growers or owner/operators, are relatively new entrants into the pork industry. The need for current and relevant information pertaining to swine nursery facility management is imperative for producers and growers to maintain a competitive edge and properly care for the animals. Upon the completion of the 2005 MSUE Swine Grower-Finisher

Management Program, several swine farm employees and owner/operators indicated their interest in an educational program regarding nursery pig management. Based on this indicated interest from producers, County Extension Educators contacted pork producers and growers to assess the needs, issues and topics that were of interest to them in regard to nursery pig management. The 2006 Nursery Management Program was designed to offer an informative and educational program for contract swine producers, owner/operators and their employees to improve their knowledge about nursery pig management practices. Program content was developed from information garnered from producers and included recent results from relevant research reports. In addition registrants were provided the National Pork Board's CD based Nursery Pig Management Training Module which supplied pertinent background information on fundamental nursery pig management knowledge. The Michigan Pork Producers Association (MPPA) assisted with the promotion of this program by attaching a flyer of the program inside their Michigan Pork magazine.

Impact

Workshops were offered in January 2006 in four different locations across the state and participants could attend one of these four workshops. Workshops were strategically placed across the state to encourage maximum participation by producers. Pork AoE team members worked closely with pork producers in determining what topics and issues they wished to learn more about in regard to nursery pig management. Topics included: Transportation Management of Young Pigs; Environment for the Nursery Pig; Disease of Weaned Pigs; Straw Management of Fall-Back Pigs; and Environmental Compliance. There were 65 participants who attended workshops that were offered state-wide. The range in years of experience range from 1 to 40 years mean of 15.4 years. The mean number of pigs managed annually, by operation was 17,935 with a range of 600 to 150,000. Of respondents completing the evaluation, 15.2% were contract growers, 20.0% were owners, 60% were employees and 4.8% were allied industry. The summary of the Nursery Management CD evaluation indicated that 80% of participants preferred video tapes/CD ROMS for continuing education, 55.0% indicated that they prefer live workshops and 35% preferred hard copy media and 80.0% of participants indicated that on the job training was the primary method of work place education. Participants gave a 92.8% overall rating of relevance and 44.8% indicated that they planned to make management changes. A follow-up mail survey, approved by the University Committee on Research Involving Human Subjects, was mailed to participants to assess changes and/or improvements in management practices. The results indicated 69% made repairs or improved equipment, 27% changed feeding strategies, 39% improved pig observation and treatment procedures, 54% improved pig care, 32% improved work day efficiency, 32% improved feed efficiency, 46% reduced mortality rates, and 23% improved manure recordkeeping procedures.

The Pork AoE in 2005-06 educated 864 farmers.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Soil, Plant, Water, Nutrient Relationships

Educational Initiative Title: Cost Effective Soil Fertility Management

Michael Staton: Isabella, Huron, Monroe, Saginaw, and Van Buren Counties

Description of Program

Fertilizer prices have increased significantly since 2004 reducing farm profitability. Fertilizer recommendations from private agronomists and salespersons are often not consistent with those provided by Michigan State University Extension and usually less profitable. Field crop producers and commodity group representatives serving on the Field Crop AoE Team advisory committee identified these issues and ranked nutrient management as one of their highest priorities when they met in March 2005. In response to this need, the Field Crop AoE delivered five regional programs in early 2006 to help field crop producers reduce the adverse impact of increasing fertilizer prices on their businesses.

Impact

The program reached 265 producers and agribusiness agronomists. An evaluation of the program found 90 percent of the participants learned new information by participating in the programs. 89% indicated that they planned to use the information they learned to make nutrient management decisions in 2006. 71% said that they expected these decisions to make their businesses more profitable in 2006. The total amount of money that the participants expected to earn/save by utilizing the information they learned was over \$410,000. In addition the survey asked the participants to list new topics related to soil management that should be addressed at future educational meetings, in articles or publications. The results of the survey will be used by the Field Crops AoE Team and the MSU Crop and Soil Science Department to design future educational activities.

The Field Crops AoE Team in 2005-06 educated 17,605 farmers.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Plant Management Systems

Educational Initiative Title: Increased Production and Yield of Asparagus

Norman Myers and Thomas Kalchik: Mason and Oceana Counties

Description of Program

Production of asparagus in West Central Michigan has declined in the last three years due to a combination of foreign competition in the processed asparagus market and very poor growing conditions result from two years of drought. More recently processed asparagus markets have recovered dramatically and a recent feasibility study has pointed out the opportunities available to asparagus growers in the fresh market. Unfortunately, after recent droughts and over-picking resulting from low prices, most asparagus fields in our area have decline in health and productivity. Michigan Asparagus Research Committee (MARC) and the Michigan Asparagus Research Farm Advisory Committee have both identified improved fern health as number one priorities for the asparagus industry. The most recent Michigan Agricultural Statistics Service (MASS) rotational vegetable survey identifies 160 asparagus farms in Oceana and Mason Counties. Collaborators on this project included Department of Plant Pathology, Department of Horticulture, Department of Entomology, and Department of Crop and Soil Sciences from Michigan State University and Department of Horticulture from Utah State University. The program was designed to teach asparagus growers about implementing the use of new technology to avoid over-harvesting producing asparagus fields and thereby reducing future yield and the life expectancy of fields. Growers were taught how to implement best management practices when planting fields to reduce planting failures from Fusarium Root and Crown Rot and drought. Growers were also taught how to implement the appropriate IPM practices that include scouting and the use of predictive models to improve growth while minimizing impact on the environment. Growers were taught how to improve soil testing practices to improve production and reduce over-fertilization. Using the Aspire Carbohydrate Root Measurement System developed in New Zealand and validated by Utah State University, the program assisted growers in matching their picking schedule to available root carbohydrates thereby preventing depletion of the crown and improving fern growth rates, which is a serious problem when converting to fresh market production.

Impact

One hundred two asparagus growers attended the Oceana Asparagus Day. Evaluation of the training found: 91% believed information on Fusarium and Phytophthora would allow them to increase yields or keep fields longer; 82% believed they would change how they would prepare soil for or plant asparagus as a result of the presentations on reducing Fusarium infections with alternate planting systems; 20% of the growers were

willing to try irrigation on asparagus; 60% believed their marketing would change as a result of the update on asparagus marketing from Washington State; 55% of those evaluated felt that they got usable ideas on growing and marketing asparagus; and 64% felt that the education provided made it more likely that they would stay in the asparagus business. In addition, 37% felt that they would expand their business as a result of the workshop.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

Multi-State

Key Theme: Plant Management

Educational Initiative Title: Educational programming at Great Lakes Fruit, Vegetable and Farm Market Exposition in Grand Rapids

Fruit AoE Team: State

Description of Program

The Great Lakes Expo in December 2005 was the major educational program offered fruit growers in Michigan. By developing educational sessions for this program the Fruit AoE delivered programs focused on the programming goals of the AoE to a large audience. Educational sessions were focused on specific crops such as apples or blueberries or across the board commodity topics such as farm marketing, irrigation or labor. Individual topics in each session often focus on cultural practices and pest control. The goals of the AoE was to enhance profitability and sustainability of the Michigan fruit industry and promote integrated pest management practices for fruit production. The umbrella advisory group for this program was the Michigan State Horticulture Society. AoE members solicited input on programming needs at each of the MSHS board meetings, and the MSHS Executive Secretary met regularly with the AoE to provide input. MSHS had requested that the District Fruit Educators or Campus Specialists who work with individual crops develop educational sessions for these crops or topics. Other input came from Michigan Apple Committee, Michigan Blueberry Growers, Cherry Marketing Association.

Impact

Expo attendance was 3,245 people and an evaluation had 376 surveys collected. Participants were asked to rate the effectiveness of the educational sessions and to estimate the economic impact of attending the sessions. 80% of the survey respondents were actively farming and about 50% were Michigan growers and 50% out of state growers. More than half of both the Michigan and out of state growers were fruit

growers. 56% of the respondent rated the fruit education sessions as extremely important and 26% as very important. The major educational needs addressed by the conference and frequently mentioned by the participants were; Pest and Disease Control 34%, Marketing 27% and Information exchange 27%. Results of the surveys found that 98% of the respondents planned to incorporate information from the Expo in their operation; 90% had incorporated previous Expo information on their farm; and Michigan growers estimated increased profit of \$5,000 to \$250,000 with an average increase of \$17,605. Some estimated the increased profit as a percentage of profit. These respondents estimated an increase of 10% to 50% with an average increase of 26%. Additional impact was the strengthening of the linkages between the College of Agriculture, MSU Extension and various Departments (Horticulture, Entomology, Plant Pathology, Ag Economics, etc.) with the Michigan Horticultural Society and the many fruit commodity groups in state and out of state.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

Multi-State

Key Theme: New and Improved Non-Food Products and Processes
Educational Initiative Title: Develop niche Agriculture Market for Canola
Steve Nelsen: UP Region

Description of Program

The goal of this initiative was to increase the production of Canola high efficiency wood pellets for home heating bio mass stoves by blending Canola seed with wood sawdust to produce wood pellets that exceed 10,000 btu per pound. This project helped producers to test production and economic viability of producing Canola in UP region as a new viable product. The targeted audiences were field crop farmers and wood pellet manufacturers in the Michigan Upper Peninsula and Northern Wisconsin.

Impact

Twenty growers from approximately 750 acres grossed \$187,500. In addition 300 households benefited in energy savings of approximately \$360,000. Results of testing showed a minor energy btu output and increased combustability - however, a surprising unexpected outcome was the decrease in energy draw by 20% to run machinery and the increase in machine performance due to increased lubricity. One producer states:

You can tell the difference in machinery noise as soon as you place a handful of canola in the mix. The extruder is much quieter, you can tell difference. Amp gauge drops immediately after the

Canola is mixed with the sawdust. Last year we spent \$50,000 replacing bearings and extruder plates, I think we will have less wear and tear on our equipment - and less down time.

Wood pellet manufacturers throughout the nation could potentially adopt this technology - leading to more efficient energy source from bio-based products as well as increase in local markets for oilseeds.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

Multi-State

The AoE teams in Goal 1 met its 2005-06 Plan of Work goals by reaching its targeted population. The team and members have become more active in recruiting stakeholder input and involving collaborators in setting priorities and designing and implementing programs. Examples of collaborators included Michigan Cattlemen's Association, Department of Natural Resources, Michigan Department of Agriculture, Michigan Farm Bureau, Farm Credit Services, Michigan Bean Commission, Upper Peninsula Potato Growers Association, Soil Conservation District, Citizens Bank, Saginaw Valley State University/SBDC, Michigan Pork Producers, Michigan Department of Career Development, Michigan Grape Society, Cornell University, Ohio State University, Rutgers University, Michigan Apple Commission, and Michigan Migrant Legal Services.

Overview of Goal 2: A safe and secure food and fiber system

Funding and programming for Goal 2. overlaps Goal 3. by approximately 80% through EFNEP (Expanded Food and Nutrition Education Programs) and FNP (Family Nutrition Program) which provide education in both food safety and food nutrition. For this reason, it is difficult to separate the two goals without duplication. On the other hand, it is clear that the majority of effort in each of these programs is focused on food nutrition (approximately 80% of the effort is spent on nutrition). Therefore, the estimate of 22,693 participants is low for food safety and does not include the majority of participants who received both food safety and food nutrition instruction to avoid duplication (estimated at approximately 100,000). Table 6. shows the number of participants and Key Themes addressed by the Food Safety AoE Team.

Table 6.
Number of Participants and Key Themes by AoE for Federal Goal 2. and Goal 3.

Goal 2	Adults	Youth	Total	Key Themes
Food Safety*	11,440	11,253	22,693	Food Handling, Food Safety, HACCP
Goal 3				
Food, Nutrition & Health*	45,762	45,011	90,773	Birth Weight, Human Health, Human Nutrition

* To avoid duplication, participants who received both food safety and food nutrition were counted only once (20% Food Safety and 80% Food, Nutrition, and Health).

Highlights

- The MSU Extension Swine Team and a Michigan Agricultural Experiment Station (MAES) researcher developed a computer-based recertification CD-ROM for pork producers in the National Pork Board's Pork Quality Assurance Program. More than 432 producers have used the self-paced program to attain or maintain their certification in this national food quality and safety initiative. Michigan is home to a \$235 million swine industry.
- The Food Safety AoE developed and pilot tested a Food Safety Toolkit (Safe Food All Year Round) targeting Mexicans/Mexican-Americans. Initial results were presented during the 2006 Food Safety Education Conference at Denver, Colorado which generated much interest from the participants, including USDA FSIS.

Examples of Impact in Goal 2.

Key Theme: Food Safety and Human Nutrition
Educational Initiative: Family Nutrition Program
Karen Martin: State

Description of Program

Michigan State University Extension (MSUE) worked in collaboration with the state of Michigan's Family Independence Agency (FIA) to provide education through the Family Nutrition Program (FNP) for persons eligible for or receiving food stamps in all of Michigan's 83 counties during the 2005-06 program year. The educational efforts of FNP did not duplicate or supplant the efforts of other food and nutrition education programs such as the United States Department of Agriculture's (USDA) Expanded Food and Nutrition Education Program (EFNEP), Supplemental Nutrition Program for Women, Infants and Children (WIC), or the Commodity Supplemental Food Program (CSFP). In counties that have both FNP and EFNEP, FNP provided education to audiences not reached through EFNEP, such as seniors without children. FNP enabled county Extension Educators to reach a more diverse audience. The primary objective of the FNP was to provide education to help individuals and families eligible for or receiving food stamps make safe, nutritious, and economical food choices. Education provided through FNP addressed four of the core elements identified by the Food and Nutrition Service (FNS) of the USDA: dietary quality, food resource management/shopping behaviors, food safety, and food security. The fifth core element, systems and environmental change, was addressed in a variety of ways. Examples include working with the Michigan Department of Community Health, Michigan Department of Education – Commodity Supplemental Food Program, Michigan Office of Services to the Aging, and three Indian Tribal Organizations to pilot the Senior Farmers' Market Nutrition Program. As noted previously, FNP focuses on both food safety and nutrition and, therefore, is listed under both Federal Goals 2 and 3.

Impact

FNP educated 45,762 adult participants directly during 2005-2006. These direct contacts included adults reached through either a series of lessons (5,368 adults) or one-time presentations (44,856 adults). There was a total of 37,347 direct educational contacts with youth. Approximately 2,000 adult participants who received a series of lessons completed both pre and post surveys. Results regarding food safety from this tool indicated: 42% fewer participants reported thawing frozen meat on the counter; 23% fewer participants reported letting food such as milk or meat sit out for more than two hours; and 16% more participants reported washing their hands before preparing or eating food.

Source of Funds

Smith-Lever 3b&c, federal, state, county

Scope of Impact

State

Key Theme: Food Safety and Food Handling

Educational Initiative Title: ServSafe Programming to Local Food Establishments

Food Safety AoE: State

Description of Program

Food service establishments must follow certain criteria when serving the public, according to the FDA Food Code that took effect Nov. 8, 2000. Food service owners/managers need to have their employees and very often themselves trained in serving safe food so that they comply with the Food Code and pass the local food sanitarian's inspections. Local food establishments have the need to train front line food servers the basics of food safety in a food- resale establishment. ServSafe curriculum is used by the Extension Educator to address these local needs. The goal of ServSafe training is to train food managers on food safety issues so they can train their staff on good food safety practices and provide a safe product for their customers.

Impact

In 2005-06, over 500 businesses received ServSafe training. Evaluation results show 92% of the participants received their food safety certification. Estimation of impact to the public is clearly in the thousands.

Source of Funds

Smith-Lever 3b&c, state, local, county

Scope of Impact

State

The Food Safety AoE team in Goal 2 met its 2005-06 Plan of Work goals by reaching its targeted population. The team and members have become more active in recruiting stakeholder input and involving collaborators in setting priorities and designing and implementing programs. Examples of collaborators included U.S. Food and Drug Administration, Health Departments, Substance Abuse Rehabilitation Centers, schools, juvenile centers and courts, Oakland Livingston Human Services Agency, Older Persons Commission, Child and Family Services of Southwest Michigan, University of Michigan, USDA, Kalamazoo Loaves & Fishes, Child Care Network, Great Lakes Indian Fish and Wildlife Commission, food banks, Hunger Action Coalition, Michigan Partnership for Community Caring, Michigan Department of Agriculture, and Salvation Army.

Overview of Goal 3: A healthy, well-nourished population

As previously stated, funding and programming for Goal 2 overlaps Goal 3 by approximately 80%. EFNEP (Expanded Food and Nutrition Education Programs) and FNP (Family Nutrition Programs) provide education in both food safety and food nutrition. For this reason, it is difficult to separate the two goals without duplication. It is estimated that over 100,000 participants received nutrition and health information. Table 7 shows the number of participants and Key Themes addressed by the Food, Nutrition, and Health AoE Team.

Table 7.
Number of Participants and Key Themes by AoE for Federal Goal 2. and Goal 3.

Goal 2	Adults	Youth	Total	Key Themes
Food Safety*	11,440	11,253	22,693	Food Handling, Food Safety, HACCP
Goal 3				
Food, Nutrition & Health*	45,762	45,011	90,773	Birth Weight, Human Health, Human Nutrition

* To avoid duplication, participants who received both food safety and food nutrition were counted only once (20% Food Safety and 80% Food, Nutrition, and Health).

Highlights

- MSUE’s Farm-to-School work with the Michigan Department of Education Commodity Foods (MDECF) program resulted in the purchase of \$1,165,263 worth of Michigan-grown produce, putting fresh produce on the menus of Michigan schools and money in the pockets of Michigan growers. The program also resulted in MDECF’s switch from vegetable oil and liquid shortening to the purchase of \$206,870 worth of healthier soybean oil from a Michigan producer. The 10 truckloads ordered will use 2 million pounds of Michigan soybeans.
- The Breast-feeding Initiative (BFI) reached 3,141 Michigan pregnant and breast-feeding women in the WIC program. The initiation rate was 97 percent and the 6-month rate was 36 percent, nearly double the state WIC levels. BFI saved the Michigan WIC program \$1,460,382, where savings were calculated on the basis of the average cost of formula, the number of weeks spent breast-feeding and the number of women in the program.
- The Project FRESH brought Michigan-grown produce from 761 farmers to low-income families, who redeemed \$538,816 worth of coupons at farm markets. Seniors redeemed \$89,248 worth of coupons in 14 Michigan counties through the pilot Senior Project FRESH project.

Examples of Impact in Goal 3.

Key Theme: Human Nutrition
Educational Initiative: Family Nutrition Program
Karen Martin: State

Description of Program

Michigan State University Extension (MSUE) worked in collaboration with the state of Michigan's Family Independence Agency (FIA) to provide education through the Family Nutrition Program (FNP) for persons eligible for or receiving food stamps in all of Michigan's 83 counties during the 2005-06 program year (see full description in Food Safety).

Impact

FNP educated 45,762 participants directly during 2005-2006. These direct contacts included adults reached through either a series of lessons (5,368 adults) or one-time presentations (44,856 adults). There was a total of 37,347 direct educational contacts with youth. Approximately 2,000 adult participants who received a series of lessons completed both pre and post surveys. Results regarding nutrition and food preparation from this tool indicated:

- 50% more participants reported using information on food labels to compare the fat or other nutrients in the food.
- 44% more participants reported thinking about healthy food choices.
- 45% more participants reported eating three or more kinds of vegetables during each day.
- 50% more participants reported eating more than one kind of fruit each day.
- 30% more participants reported preparing foods without adding salt.
- 23% more participants reported that their children ate within two hours of waking up.
- 49% more participants reported planning meals for a few days ahead before going grocery shopping.
- 43% more participants reported using a grocery list when shopping for food.
- 38% more participants reported comparing prices when shopping to find the best buy.
- 31% fewer participants reported running out of food at the end of the month.

Source of Funds

Smith-Lever 3b&c, Smith-Lever 3d, state, county, local

Scope of Impact

State

Key Theme: Human Nutrition
Educational Initiative: BFI Mother-to-Mother (MTM) Program
Pat Benton: State

Program Description

Breastfeeding rates are low among limited income women. Low income mothers have higher infant mortality rates, premature births and low birth weight infants. Breastfeeding has been identified as one of the most important contributors to infant health, yet breastfeeding is not a well established practice in low income communities. There is a significant lack of role models, family/community support and knowledge of the practice of breastfeeding. This need was identified by the state WIC, local health departments, community programs and local hospitals serving indigent and limited income populations. MSUE responded through a breastfeeding initiative with two main program goals: to increase breastfeeding rates among low income mothers; and lengthen the time mothers breastfeed.

Impact

During the 2005-06 program year the MTM program supported over 3,900 women with breastfeeding support, encouragement and education. Initiation of breastfeeding for the women enrolled in the MTM Program was 98% for this year compared to 50% initiation for the general WIC population. At six months, 34% of the mothers enrolled in the MTM Program were still breastfeeding; the 6 month duration for the general WIC population is 14% (CDC's Breastfeeding National Immunization Data, 2005).

Source of Funds

Smith-Lever 3b&c, federal, state, county, local

Scope of Impact

State

Key Theme: Human Nutrition
Educational Initiative: Body and Soul: A 5-A-Day Faith-Based Initiative
Marion Hubbard: Wayne County

Description of Program

Obesity has increased over the past decade as a result of unhealthy eating and sedentary lifestyles--due, in part, to environmental barriers and genetics. Data indicate that 25.2% of all Michigan adults are obese. Of particular notice is the high rate of prevalence among African Americans (34.5%) and those with incomes of less than \$20,000 (MI BRFS, 2002). Only 22.2% of adults in the Detroit area report eating the

minimum recommended servings of fruits and vegetables per day (MI BRFSS, 2002). Michigan 2002 BRFSS data also indicates that only 32.2% of African Americans in Michigan participate in leisure time physical activity. African Americans are at high risk for many serious and often fatal diseases. These include high blood pressure, diabetes, heart disease and certain types of cancer. This program worked with congregations of churches in very low income neighborhoods to improve the diet quality and physical activity levels of people in these areas.

Impact

Over 500 people were trained during the 2005-06 year. An external evaluator was used to assess the impact of the program. 405 self-reported results from the survey indicated: high levels of satisfaction with participation in the project; an increase in fruit and vegetable consumption; an increase in physical activity; an increase in understanding of the importance of fruit and vegetable consumption and the combination of healthy eating and exercise to achieve a healthy lifestyle; an increase in knowledge about preparing fruits and vegetables to eat and the cost (price) of fruits and vegetables; and an increased acceptance of fruits and vegetables served to family members. Some of the testimonials included: "I never thought about eating fruit in a vegetable salad". "You really made me understand, you explained it in terms that were not so technical. Others have come in and talked about the same thing, but I didn't know anything at the end of the session".

Source of Funds

Smith-Lever 3b&c, federal, state, county, local

Scope of Impact

State

Key Theme: Human Nutrition

Educational Initiative: Healthier Works First

Gretchen Hofing: Lenawee County

Description of Program

Lenawee County in 2006 focused its FNP program on unemployed adults to help them make healthier choices and save money. Individuals living on unemployment are often on a limited budget and may face challenges in managing food resources. The program provided training on resource management, food safety and good nutritional choices to this underserved audience.

Impact

The program during the year trained 130 unemployed from the South Central Michigan Works, representing 453 family members. A one month follow-up evaluation survey that assessed changes in behavior found the majority of families reported an increase in meal planning and comparison shopping. Close to half of the participants say they now use a list for grocery shopping which helps keep them from running out of food before the end of the month. The number of people demonstrating acceptable practices in food resource management nearly doubled from the start of the program. More than 90% of the participants were enrolled in one or more food assistance programs with several enrolling as a result of the knowledge they received in their training. Sixty percent of participants said they thought about healthy food choices more often when deciding what to feed their family. More than 40% reported preparing foods more often without adding salt and 40% improved in using the nutritional facts on labels to make better food choices. They reported their children now ate breakfast more often.

Source of Funds

Smith-Lever 3b&c, federal, state, county, local

Scope of Impact

State

The Food, Nutrition, and Health AoE team in Goal 3 met its 2005-06 Plan of Work goals by reaching its targeted population. The team and members have become more active in recruiting stakeholder input and involving collaborators in setting priorities and designing and implementing programs. Examples of collaborators included WIC, Head Start, Work First, Early On, pregnant teen programs, Michigan Family Independence Agency, Michigan Department of Public Health, hospitals, Commodity Foods, shelters, Sault Tribe of Chippewa Indians Youth Services, Alpena Community College, U.S. Food and Drug Administration, Health Departments, Substance Abuse Rehabilitation Centers, schools, juvenile centers and courts, Oakland Livingston Human Services Agency, Older Persons Commission, Child and Family Services of Southwest Michigan, USDA, Kalamazoo Loaves & Fishes, Child Care Network, Great Lakes Indian Fish and Wildlife Commission, food banks, Hunger Action Coalition, Michigan Partnership for Community Caring, Michigan Department of Agriculture, and Salvation Army. In addition, the team is engaged in identifying underserved populations and developing strategies, collaborations, and programs to address these populations.

Overview of Goal 4: Greater harmony between agriculture and the environment

Fifty four thousand four (54,004) participants received direct training on key themes in Goal 4. Table 8. shows the AoE Teams in this area, the number of participants, and the federal key themes for Goal 4.

Table 8.
Number of Participants and Key Themes by AoE for Goal 4.

Goal 4	Adults	Youth	Total	Key Themes
Fisheries and Wildlife	412	497	909	Aquatic and Terrestrial Wildlife
Forestry	4,385	6,741	11,126	Forest Crops, Forest Resource Management
Land Use	5,536	7,070	12,606	Land Use, IPM, Natural Resources
Manure	2,031	462	2,493	Agricultural Waste, Water Quality
Renewable Resources(RREA)	508	1,654	2,162	Recycling, Forest Resource Management
Sea Grant	2,211	1,914	4,125	Water Quality, Natural Resources Management
Water Quality	4,580	15,795	20,375	Water Quality, Riparian Management, Nutrient Management
Christmas Trees	208	0	208	Forest Crops, IPM, Water Quality
	19,871	34,133	54,004	

Highlights

- MSU Extension is working with state and federal agencies to train and certify comprehensive nutrient management plan providers. Completing the plans help farmers comply with Michigan's Right-to-Farm Act and become certified through the Michigan Agriculture Environmental Awareness Program. Farmers are willing to pay \$1,000 to \$10,000 to these trained small business operations or completed nutrient management plans.

- More than 1,000 people representing 800 forestry businesses took part in Sustainable Forestry Education activities offered by the MSU Extension Forestry Team in 2005. Timber industry professionals learned about environmentally sound management practices that allow them to remain profitable and harvest a high-quality crop while protecting Michigan's forests for future generations. Michigan forests provide 400,000 jobs and contribute more than \$13 billion to the state's economy each year.
- MSUE and the Michigan Department of Environmental Quality hosted the "Harvesting Clean Agri-Energy Conference" in Saginaw. This conference linked agricultural communities with energy opportunities. Agenda topics included biogas digesters, saving and generating dollars through renewable energies, and utilization of biofuels and bioproducts. The goal of the conference was to form a cohesive Michigan agri-energy strategy that will lead the agricultural industry to adopt energy efficient technologies and management practices that reduce production costs, minimize negative environmental impacts and improve economic sustainability.
- More than 1,100 people learned about the natural resources and environment of Lake St. Clair and the Detroit River on 43 Summer Discovery Cruises conducted by Michigan Sea Grant and Huron-Clinton Metroparks. The cruises were organized around several themes, including nature, history, science for teachers and the importance of fisheries. All the cruises gave participants a chance to experience the latest scientific research and technology related to the Great Lakes.
- Through KATCH (Kids are True Conservation Heroes), an MSUE 4-H program, 569 young people spent almost 4,500 hours performing conservation activities, including restoring riverbanks, building nest boxes, developing school wildlife habitat sites and wetland observation sites, monitoring stream water quality, providing wildlife food and cover in recreation areas, and improving watersheds. Fourteen youth initiated projects took place in 13 Michigan counties, improving 1,540 acres of land and approximately 6.5 miles of stream and lake habitats. Almost 200 adult mentors contributed 2,310 hours of service (valued at more than \$40,000) in volunteer labor to the projects.
- In the past 2 years, MSU created the Land Policy Program and the Environmental Science and Policy Program, both funded in part by the MAES and MSUE. The Land Policy Program funded more than 75 grants totaling more than \$1 million to researchers and outreach faculty members at MSU, Wayne State University and the University of Michigan for projects that protect land resources, encourage smart growth and revitalize urban centers. The Environmental Science and Policy Program created a searchable database of MSU environmental experts online so that everyone connected to the Internet can have access to MSU expertise.

Examples of Impact in Goal 4.

Key Theme: Management of Range Resources

Educational Initiative Title: Conducting an Alfalfa Technology Conference

Forage/Pastering/Grazing: State

Description of Program

Rapids change are taking place in the forage industry with advances in alfalfa genetics farm managers are faced with some decisions in alfalfa selection and in managing these new varieties. The Extension Forage Advisory Council in Nov. of 2005 identified research and education on the potential of Falcata Alfalfa of Michigan as their #1 priority. The MSU Extension Forage Team expanded this need into the Alfalfa Technology Conference to provide the latest MSU research on Falcata as well as other alfalfa genetic opportunities that farm managers are asking questions on including: Roundup Ready alfalfa (available in Michigan in 2006), Hybrid Alfalfa (available in Michigan in 2004), potato leafhopper resistant alfalfa now in its sixth generation, and issues on alfalfa fertility given large increases in fertilizer cost.

Impact

Seventy-five attended the Alfalfa Technology Conference and 160 attended the three hay days in Barry, Cheboygan, and Osceola Counties. Evaluation of the Alfalfa Technology Conference found: there was a 38% increase of those who said their knowledge level of Roundup Ready Alfalfa Management was high from pre to post meeting surveys; there was a 22% increase of those who said their knowledge level of Falcata alfalfa was high from the pre to post survey and regarding that same question there was a 60% decrease of those knowing very little about Falcata from the beginning of the meeting to the end. 93% of those completing surveys said they would return to a similar conference on alfalfa next year if it were held.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Alternative Uses of Land**Educational Initiative Title: Michigan Conservation Stewards Program****Fisheries and Wildlife AoE Team: State****Description of Program**

Changing land use patterns (such as parcelization, habitat fragmentation) have changed landscape features and ecosystem services available to local communities. In addition, stakeholders for conservation have diversified from the "traditional" audiences, such as hunters and anglers, to include urban and suburban populations, established and emerging conservancy groups, park and nature center visitors, and casual outdoor recreationists. As conservation agencies face diminished budgets, they struggle with the capacities needed to coordinate volunteer citizen engagement locally. MSU Extension was uniquely positioned to assist in meeting these needs. Partners were brought together to form the "Cooperators' Leadership Team" (CLT) to envision and organize this program. The goal of the program was to increase the ecological knowledge, foster positive resource management attitudes, enhance stewardship skills and connect diverse organizations of citizen volunteers and stakeholders to accomplish local fisheries, wildlife, and conservation work. CLT partners included: MSUE (state and local), MDNR (primarily Wildlife Division), MNFI, The Nature Conservancy, and The Stewardship Network. In addition, at multiple points, we brought together approximately 30+ stakeholder organizations to name the program, to design its vision, mission, goals and specific outcomes, and to critique and peer-review the curriculum. The target audience included adults who are interested in conservation in our SE MI pilot counties. In particular, the program was design to attract "non-traditional" suburban and urban audiences interested in ecology, community service, parks and natural areas, casual outdoor recreation. In addition, the program was designed to attract small proportions of more "traditional" wildlife conservation constituencies such as anglers, hunters and boaters. The program used research from environmental and conservation education as our evaluation framework, and was guided by previous research on attitudes of citizens toward wildlife and resource management, on participants' reactions to and motivations for taking part in "Master Naturalist" type programs, and on citizen science programs for the conservation of biodiversity. The evaluation of the program included: open-ended and closed-ended questions included on participant registration forms; a lengthy pre- and post-program survey; weekly "feedback" surveys with open-ended questions; an end-of-program open-ended feedback survey; and a 6-week post-program focus group in each pilot county.

Impact

The two pilot programs were filled beyond the original desired registration capacity, with 65 individuals registered, and 97% (63 people) completed the program. More than 85% completed at least 9 of the 11 training sessions. The program required participants to take 40 hours of training, complete 40 hours of conservation service, and 8 hours of advanced training per year to maintain their certification as Conservation Stewards.

Nearly all participants indicated they learned or gained something new and that the infield and hands-on learning met their expectations. More than 80% indicated the program provided adequate opportunity to practice what they had learned. Participants experienced a significant increase in ecological and ecosystem knowledge; the program resulted in a significantly positive shift in knowledge of specific topics such as: succession, biological carrying capacity, climax community, forest health in MI, sources of fish and wildlife management funding, and natural resources held in public trust. Change in Attitudes: Participants experienced a positive shift in attitudes toward the Michigan DNR; the CSP also positively affected utilitarian attitudes toward specific resource management techniques such as: clear cutting, herbicide application, and multi-use resource management strategies. Units/lessons that were rated most valuable were: wetlands, grasslands, and "making choices for natural resource management."

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Water Quality

Educational Initiative Title: MSUE Helps Citizen Scientist Monitor Local Streams
Jane Herbert: Southwest Region

Description of Program

With state water quality monitoring budgets declining and the Michigan Governor's Executive Order creating the Michigan Clean Water Corps, the role of volunteer water quality monitoring has been a hot topic. Interest in citizen science increased due to this change and the Kellogg Biological Station Land & Water Program was created the "Introduction to Volunteer Stream Monitoring" to respond to this educational need. The two-day program provided intensive hands-on training that equipped participants with basic monitoring skills and an understanding of their responsibility as citizen scientists. Lectures were given on stream ecology, water quality standards, riparian rights, and the importance of good study design and interspersed with field instruction in the physical, chemical and biological aspects of stream monitoring.

Impact

Since 2003, residents from nine southwest Michigan counties have attended this training. Evaluation of the program found fifty percent increased their skills in water sampling. Participants' ability to design a stream study increased by sixty-one percent. Other skill sets taught in the class had similar increases. Seventy percent of participants responding to a follow-up mail survey question about activities during their

first field season indicated they had conducted water quality monitoring. The majority described the program as very or extremely useful to their efforts.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Conservation of Biological Diversity

Educational Initiative Title: Community College Mounts Emerald Ash Borer Response Program

Jennie Stanger and Lois Wolfson: Monroe County

Description of Program

Monroe County Community College requested MSUE assistance in dealing with the Emerald Ash Borer on their two campuses. The college president perceived the costly problem as an educational opportunity where the college could share what they were learning with the community. College grounds crew, administrators and faculty became involved in researching trees and making recommendations to their landscape architect that included a tour to a Toledo arboretum together with the architect. The Community College with the assistance of MSUE applied for and secured a MDA grant for \$20,000 for replanting.

Impact

MSUE staff aided in diagnosis, consulted to determine appropriate response, provided information for decisions on removal, replacement tree selection and using chips on site. MSUE provided expert speakers for the educational events, ideas, literature, publicity and posters and Master Gardener volunteers for educational displays and demonstrations. Tree replacements were nearly finished before all of the ash trees had died. They minimized costs by moving some established trees, using some smaller caliper replacements and reducing the total number of large trees in favor of more shrub plantings. They have at least doubled the diversity of tree plantings on their two campuses, increased the quality of choices and improving campus appearance. The increased diversity will insulate them from another costly pest outbreak and provide more interesting specimens for science and environment classes. They used chipped ash from removed trees as a resource on site for mulching, and shared their response with the public through news releases, articles and sponsoring of two seminars and a related workshop in 2005 and 2006 that educated their own staff and students as well as the public. The college response created a prominent, successful example in the community of appropriate response to Emerald Ash Borer. Their cooperation to sponsor

educational events around their infested trees increased awareness in the community of the progress and seriousness of the pest, clues to identify and diagnose their own affected trees, and options for management and costs involved.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Water Quality

Educational Initiative Title: Fall Conservation Tour

Dennis Pennington: Barry and Eaton County

Description of Program

Sixty one farmers, ranchers and conservationists took part in the 2006 Fall Conservation Tour on September 15. The highlights of the day were the Clean Sweep program and four on-farm tours that demonstrated environmentally friendly polymer coated fertilizer practices for corn, agriculture chemical containment facility, conservation tillage, pesticide practices on soybeans, and new corn hybrids for ethanol production. The speakers for the tour were representatives of MSU Extension, Michigan Department of Agriculture, Michigan Groundwater Stewardship Program, Michigan Soybean Promotion Committee, Eaton and Barry County Conservation Districts, Ionia County Resource Recovery, Agrium® Fertilizer Incorporated, and US Bio-Energy Corporation.

Impact

This year the participants took advantage of the Clean Sweep program and delivered over 5,000 pounds of unwanted pesticides for safe disposal by authorities. Among the hazardous chemicals were 475 pounds of an unknown dark liquid material, 200 pounds of DDT, and some arsenic and lead based compounds. This activity clearly eliminated a potential risk for groundwater contamination. An evaluation of the program used a questionnaire developed to measure the incremental changes in knowledge and experiences before and after the tour. On a scale of 1 to 10 with 10 being the highest level of understanding and knowledge, participants' average score before the program for understanding and knowledge of corn nitrogen fertilizer practices, bulk fertilizer and pesticide storage, soybean tillage and pesticide practices, farm record keeping and the MAEAP program to be 6.3 and 8.3 after the program. To further assess the outcome of this tour, the question was asked "based on the educational information you received during this tour, are you likely to change your fertilizer and pesticide management and

storage practices to better suit your farm” with 18% reporting-yes, 66% reporting-maybe, and 16% reporting-no. A total of 5,700 acres were impacted by the program. New topics identified for future trainings were: Alternatives to anhydrous ammonia, no-till corn and wheat, seed drilling practices, new technologies in conservation tillage, and soybean rust updates.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Management of Range Resources and Terrestrial Wildlife

Educational Initiative Title: Switchgrass for Wildlife Habitat

Phil Kaatz: Lapeer County

Description of Program

An owner of a Huntsman Hunt Club attended a local restricted use pesticide training session and wanted to gain new knowledge and expertise for pheasant habitat concerning switchgrass, a warm season grass. Warm season grasses are not used frequently in many areas of Michigan due to high seed costs and difficulty in establishment. With the help the local MSUE educator and a MSU Forage Agronomist, he was able to successfully plant 40 acres of switchgrass to be used for wildlife cover at his private shooting preserve. The 900 acre preserve was interested in finding a suitable way to 1) reduce labor costs associated with planting, 2) increase suitable fall and winter habitat for pheasants, quail, and chukar partridge, 3) increase business profitability, 4) reduce problem wet areas in the spring for planting, and 5) provide a way to reduce succession of forest into hunting areas.

Impact

After the first year of planting switchgrass on the preserve, the farm manager was able to meet all of his objectives for the operation. The warm season grasses normally take several years to gain sufficient stands to choke out competitive weeds. The stands were excellent in several of the fields and adequate in all other planted areas from 2005. He reduced the wet acreage that had to plant due to the switchgrass growing vigorously. The labor needed to plant the preserve in 2006 was significantly reduced. In addition, there was an alternative crop planted and an IPM approach was used in an area where there was a significant weed problem. The business was able to reduce their operational costs associated with labor, seed costs, and pesticide costs, saving over \$10,000 in the first year. This allowed for further improvements into the operation that weren't possible in other years.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

Key Theme: Pollution Prevention**Educational Initiative Title: Household Hazardous Waste Education and Programming**

Dixie Ward: Montcalm County

Description of Program

When improperly disposed of household hazardous waste can create potential risk to people and the environment. Some jobs around the home may require the use of products containing hazardous components. Such products include certain paints, cleaners, stains, and varnishes, car batteries, motor oil and pesticides. This collection ensures that the household hazardous waste generated in the county is safely handled and disposed of. Hazardous waste that reaches our landfills can leach into the soil, polluting water and threatening all living things. MSU Extension Resource Recovery Educators educate on the steps people can take to reduce the amount of household hazardous waste they generate and to ensure those waste are safely stored, handled and disposed of. The county household hazardous waste program allows residents to properly dispose of their household hazardous waste.

Impact

On October 22, 2005, 292 vehicles came through the collection and 25,519 pounds of household hazardous waste was collected, making this the largest amount of waste collected and the highest number of participants at a countywide hazardous waste collection. Through educational efforts by MSUE more residents are taking steps to properly dispose of household hazardous waste.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

State

The AoE Teams in Goal 4. met their 2005-06 Plan of Work goals by reaching their targeted population. All teams and members have become more active in recruiting stakeholder input and involving collaborators in setting priorities, and designing and implementing programs. Examples of collaborators have included: Northwest Michigan Council of Governments, planning departments, Western Michigan University, watershed groups, Rotaries, Chambers of Commerce, League of Women Voters, Farm Bureau, schools, DNR, U.S. Forest Service, drain commissioners, and Michigan Department of Agriculture.

Overview of Goal 5: Enhanced economic opportunity and quality of life for Americans

Table 9 shows the AoE Teams, number of program participants, and federal key themes address by the AoE teams for Goal 5. It is important to note that youth were distributed by the content area and were not duplicated in Goal 5., whereby, an additional 156,849 youth from Goals 1 through 4 should be added to make the total number of youth to be 241,170.

Table 9.
Total Participants Reached Directly by AOE for Federal Goal 5.

Goal 5	Adults	Youth	Total	Key Themes
Community Development	8,255	8,257	16,512	Community Development
Economic Development	6,494	3,930	10,424	Promoting Business Opportunities
Family Resource Management*	3,819	658	4,477	Family Resource Management, Children, Youth and Families at Risk
FIRM	3,694	14	3,708	Agricultural Financial Management
Human Development	13,520	2,505	16,025	Parenting, Child Care
LeadNet	551	12,621	13,172	Leadership Training
State & Local Government	793	2,867	3,660	Community Development, Leadership Training
Tourism	1,755	11	1,766	Tourism
Volunteer Development**	4,303	18,030	22,333	Youth Development, Leadership Training
Youth Development***	9,438	35,428	44,866	Youth Development/4-H, Character Education, Children, Youth and Families at Risk
	52,622	84,321	136,943	

*The majority FNP participants receive Family Resource Management, but to avoid duplication were not included here.

** Number of adult volunteers who were trained. A total of 25,762 adults volunteered for 4-H and 3,000 for Master Gardeners.

*** To avoid duplication, youth who crossed goals were not counted again in youth development.

Highlights

- Thanks to MSUE support for the Ionia County Economic Alliance, one sawmill is investing more than \$1.8 million and creating new jobs. The alliance provides technical assistance in the application process with the township and county.

This investment was made possible through a tax abatement incentive the alliance helped the sawmill received in 2004.

- With help from MSUE, the Northern Lakes Economic Alliance is contributing to northern lower Michigan business development. The alliance coordinated a financing strategy for infrastructure improvements at Boyne USA Resorts that paved the way for new tourist attractions that created 337 new full-time, year-round jobs. The taxable value of the property was \$12 million in the first year, which equates to more than \$52,000 in annual new tax revenues to local governmental units.
- MSU Extension educators worked with 91 farm operations on income tax management to help ensure sound long-term profitability. This seminar helped producers save, on average, more than \$10,000 per farm.
- In the past 5 years, the MSUE Citizen Planner program has provided more than 2,500 residents and elected officials in 80 Michigan counties with in-depth training in land conservation strategies that allow community growth. Nearly two-thirds (64 percent) of Citizen Planner participants serve on local planning and zoning boards, and they indicate that they pay closer attention to legal issues since attending the program. The Michigan Municipal Risk Management Association spent \$15 million in the past 10 years on legal fees and damages because of flawed planning and zoning decisions.
- MSU Extension offered the Better Kid Care (BKC) program, which provided training for 2,404 childcare providers in 49 Michigan counties. These adults care for 8,000 youngsters. Eighty-two low-income adults became licensed childcare providers as a result of the training, and an additional 10 have licenses pending.
- MSU Extension is helping a Detroit food cooperative provide fresh fruits and vegetables to residents of the Chene-Ferry neighborhood, where there are no food stores larger than convenience stores in a 7-mile radius. In early January, the cooperative's organizers received machines that will allow them to accept food stamps, and they expect to start selling \$3,000 to \$4,000 worth of produce each week in food stamps alone.
- Efforts are underway to inform the residents of 20 Michigan counties about potential home and property damage from wildfires. MSU Extension is working with the Michigan Department of Natural Resources on seven wildfire education projects that will educate home and property owners in these counties.
- The Urban Collaborators program works to revitalize Michigan's core urban centers through research, outreach and scholarship. It is a joint program of MSU Extension, the colleges of Agriculture and Natural Resources and Social Science, the School of Planning, Design, and Construction, the MSU Provost and

the Michigan Agricultural Experiment Station. Since 1998, the program's Urban Planning Partnership has provided more than 150 MSU undergraduate students and 70 graduate students with hands-on experiences in urban planning and design through a semester-long experience working with administrators and officials in Detroit, Pontiac, Lansing, Jackson, Flint, Saginaw and Grand Rapids.

- The Grand Traverse County MSU Extension educators are working with northern Michigan tribal leaders and MSU's Native American Institute to develop a new tribal governance and management curriculum. The curriculum was designed to build capacity within tribal communities to manage departments and govern more effectively and was developed in concert with tribal community members. It was offered in a regional pilot program in 2006.
- The Saginaw County MSU Extension staff helped develop the Saginaw Family Child Care Network , a group of former and current childcare providers working to ensure there are good daycare options in their community. This program in Saginaw County has resulted in 52 new licensed daycares and put an additional \$1 million annually into the communities.
- Since 2004, MSU Extension has provided training to more than 300 emergency responders, local officials and nuclear plant personnel while partnering with the Michigan State Police Emergency Management Division. Another 20 are subscribed to an MSU Extension listserv that provides bi-weekly tips on emergency management.

Examples of Impact in Goal 5.

Key Theme: Parenting

Educational Initiative Title: Building Strong Families

Dawn Contreas: State

Description of Program

Several governmental and human services agencies look to MSU Extension to provide sound research base parenting education. In 1989, the Extension Home Economics Program developed a comprehensive parenting program called "Building Strong Families: Parenting Young Children." "Building Strong Families" is designed to deliver parenting information to limited-resource parents of children aged 0 to 3 in small groups or one-on-one. The educational materials that are part of "Building Strong Families" include multicultural, cartoon-style flipcharts and real-life videotapes. The flipcharts present scenarios that parents often encounter with their children and prompt discussion of behavioral choices parents can make. The curriculum stresses the importance of parenting in the child's early development. It is intended to empower the parents to positively affect their children's future.

Impact

During 2005-06, 924 parents received training. Evaluation of the program found parents significantly interacted differently with their children, where parents were more likely to encourage their child to play pretend (Pre-36%, Post-56%), make up games for their child to play (Pre-43%, Post-72%), encourage child to do things on his/her own (Pre-65%, Post-81%), talk to their child about how things look or happen (Pre-53%, Post-73%), let their child make choices (Pre-48%, Post-67%), and encourage their child to move and explore safely (Pre-74%, Post-88%). In addition, parents were more likely to set limits for their children (Pre-59%, Post-77%), teach their children through example (Pre-63%, Post-78%), act calm when child has temper tantrum (Pre-56%, Post-77%), give child time to calm down (Pre-66%, Post-82%), and discipline child without spanking (Pre-62%, Post-75%). Finally, parents were more likely to read to their child (Pre-65%, Post-83%).

Source of Funds

Smith-Lever 3b&c, state, county, local

Scope of Impact

State

Key Theme: Human Development and Family Well-Being
Educational Initiative Title: Alternatives to Anger/RELAX
Susan Porter: Macomb County

Description of Program

The needs for families are enormous. Many people struggle with anger. Some 2006 Macomb County statistics include: 1,509 children referred to the Department of Human Services as substantiated cases of abuse and/or neglect; approximately 100 men attended the domestic violence program; Turning Point, a shelter for abused women, served 455 women, 112 families and 201 children. There has been an increase of referrals to MSUE for anger management classes from Probation, Juvenile Court, Department of Human Services, local health departments, police departments, and schools. Alternatives to Anger was created in response to citizen and agency request through MSU Extension's needs assessment process for programs to improve family communications and relationships. Originally MSUE used RETHINK, an anger management curriculum for parents, but individuals, teens and adults, who were not parents also needed such a class, as did couples who struggle to work things out. The Human Development AoE put together a curriculum called: Alternatives to Anger/RELAX.

Impact

Over 600 adults and youth have been trained in the program with 257 in 2006. An evaluation of the program using matched pre- and post-tests found 61% reduced screaming and yelling, 54% reduce the number of times they bring up old issues, 27% increased efforts worked hard to not hurt emotionally and physically those close, and 74% increased abilities in staying calm and talking things through. In general participants increased their awareness and skills in constructively rather than destructively handling their anger and stress. Alternatives to Anger was designed to address the anger and communication issues of a broad audience. Because the program can accommodate the age spectrum benefits multiply due to parent/child, child/parent modeling. The series draws a wide-range audience. There have been troubled teens, entire families with children as young as six-years old, men and women referred for domestic abuse, and adults with developmental delays from group homes.

Source of Funds

Smith-Lever 3b&c, state, county, local

Scope of Impact

State

Key Theme: Youth Development

Educational Initiative Title: Your Piece of the Pie

Frank Cox: Muskegon County

Description of Program

There was a need and desire by a local educator to help expose youth in alternative education to college. The Muskegon County 4-H Program collaborated with the alternative education schools to put together a college day program called "Your Piece of the Pie". The college day was held for students enrolled in alternative education. The purpose of the program was to: a) expose students to the college campus, b) educate students on the benefits of pursuing a college education, c) inform students on the resources and assistance provided for them to be successful in college, and d) motivate students to attend college. The Muskegon County 4-H Program was able to put together the format and bring the collaborators together with a Financial Aid and Admissions Counselor at Muskegon Community College. The program was able to bring educators together from Orchard View Alternative Education, M-TEC, Muskegon Heights Adult/Alternative & Community Education and Holton New Horizons Program to express what was needed and desired for the college day program. To fulfill the purpose of the program, students participated in educational sessions conducted by faculty/staff from Muskegon Community College and Michigan State University, such as the College Success Center by Linda Ferry of Muskegon Community College, Career

Services/Cooperative Internships by Muskegon Community College, and Admissions and Skills for Success by Michigan State University. A student of Muskegon Community College gave a special presentation on a students' perspective enrolled in college and the Community Schools Credit Union gave a special presentation on financial literacy.

Impact

There were a total of 45 evaluations completed by the students who attended Your Piece of the Pie College Day Program. To measure the overall impact of the College Day Program, student participants were asked about their plans after high school before and after the college day program with a survey instrument. The results found collectively there was a 37% change (47.7% pre- to 65.2% post-program) in students planning to attend some form of college with: 7.6% increase in students who plan to attend a 2-year or 4-year college while employed with a job; a 4.8% increase in students who plan to attend a 2-year college and transfer to a 4-year college; a 2.6% increase in students who plan to attend a 2-year college; and a 2.5% increase in students who plan to attend a 4-year college. In addition, there was a 15.5% decrease in students who plan to get a job after they completed high school and not go to school. Ninety-one percent of the youth found the session on resources for college valuable, 89% agreed the assistance provided by the college will help them be a successful college student, and 91% agreed the resources provided for them by the college will help guide them to a career they desire.

Source of Funds

Smith-Lever 3b&c, state, county, local

Scope of Impact

State

Key Theme: Community Institutions, Health, and Social Services
Educational Initiative Title: Community Response to Hurricane Katrina
Caton Gauthier: Washtenaw County

Description of Program

On September 4, 2005 the Washtenaw County Department of Public Health was notified that the State of Michigan had agreed to accept up to 10,000 evacuees from Hurricane Katrina. The State Department asked that Washtenaw County house up to 100 families. The Washtenaw County Human Services Collaborative Council (HSCC) was notified and an all county meeting was called to respond to the need. Eleven committees were created to respond to needs such as housing, health issues, cash donations, employment, food, clothing, legal aid, childcare, transportation and

education. A case management committee was created to work directly with evacuees that came to the county. MSU Extension collaborated with the Katrina Case Management Committee to connect faith-based and other community groups to help provide assistance to evacuee families. MSU Extension organized information sessions for these organizations to inform them on how they could help and 46 individuals participated. Representatives from Public Health, Salvation Army and POWER Inc also attended these meetings. Additionally, MSU Extension and the Public Health Department collaborated to provide a training session on Post Traumatic Stress in which 18 Case Managers, Katrina Volunteers and County workers attended.

Impact

MSU Extension and the Public Health Department collaborated to provide a training session on Post Traumatic Stress in which 18 Case Managers, Katrina Volunteers and County workers attended. Nineteen Faith-based groups, 3 Community Organizations and 2 households completed Katrina Volunteer applications. Of those groups, four groups were assigned to Case Management organizations. These groups provided in the area of \$60,000 of assistance to approximately 125 evacuee families.

Source of Funds

Smith-Lever 3b&c, state, county, local

Scope of Impact

State

Key Theme: Human Development and Family Well-Being

Educational Initiative Title: Welcome Newborns Program Supports Young Families

Julie Moberg: Delta County

Description of Program

The mission of Welcome Newborns is to provide support to newborns and their families by identifying community resources, and providing researched based educational material on child development and parenting. Many births are occurring in families who live in poverty and have little resources to put toward meeting the needs of their child. Approximately 33% of children ages 0-5 who live in Delta County, live below the poverty level. Of these children living in poverty, 58.5% are living with a single mother. These mothers need ongoing support as they face many challenges in their lives including economic deprivation, lack of family support, and lack of father support. The Welcome Newborns program is there to help bring this support to these families and children. In addition, the Welcome Newborns program works to bring research based information to all families to address the issue of children abuse and neglect. Research indicates that early childhood is a critical time where children need to be kept safe and nurtured to

protect them against lifelong problems, including the risk of becoming involved in violence. Research shows that violence affects the development of young children's brains. When a child is exposed to violence, the brain becomes wired to focus upon survival verses other social skills. A major part of brain development occurs between birth and school age. The family, community, and society all play a key role in the development of our children. The MSUE Welcome Newborns program works to bring researched based information on child development and parenting directly to families with children birth to five. Major collaborators are United Way, the Community Foundation, local foundations, Kiwanis Clubs, the Great Start Great Parents Initiative, and the Children's Trust Fund.

Impact

A survey was created that reviewed the impact of the Welcome Newborns program with families who had aged out of the program. Families with children age three and older received the survey. Parents were asked if utilizing the information and services of Welcome Newborns helped them improve their parenting skills. The following results were found: 84% indicated they had a better understanding of their baby's needs after utilizing Welcome Newborn materials; 93% indicated they were confident in their parenting skills; 84% indicated they were able to keep their temper better when their child was difficult; 84% indicated they felt they were a more informed and better parent; 98% indicated an understanding of the importance of immunizations; 82% indicated they have read to their child since birth; 96% indicated they understood the nutritional needs of their child; 93% indicated they understood the danger of secondhand smoke with their child; 80% stated they increased their knowledge of Sudden Infant Death Syndrome; 89% indicated they could identify local resources that were helpful to them. Comments by parents included "Loved the parenting newsletters. Wonderful information on developing skills/age - games and activities area was so well suited to appropriate age and abilities. I have used many of them with my children." "Welcome Newborns is a program that cannot be lived without. Thank you for your support!" "I found the information and support very helpful - especially with my first - like when you're unsure, I knew I had resources. Looked forward to reading the newsletters. Great program! I saved newsletters for my sister-in-law in Illinois." Welcome Newborns reached 575 families with its newsletters and ongoing support. 230 of those families are new or first time families.

Source of Funds

Smith-Lever 3b&c, state, county, local

Scope of Impact

State

The AoE Teams in Goal 5. met their 2005-06 Plan of Work goals by reaching their targeted population. All teams and members have become more active in recruiting stakeholder input and involving collaborators in setting priorities, and designing and implementing programs. In addition, the teams are engaged in identifying underserved populations and developing strategies, collaborations, and programs to address these populations. Examples of collaborators have included: Farm Credit Services, Intermediate School Districts, Chambers of Commerce, Community Foundations, Capital Area United Way, Kellogg Community College, Community Mental Health, Michigan Townships Association, Farm Bureau, Michigan State Police, Spectrum Health, Michigan Nonprofit Association, Michigan Department of Transportation, Small Business Development Center, Michigan State Housing Development Authority, Harvard University, Lutheran Social Services, Michigan Family Independence Agency, Family Counseling Center, Early Headstart, W.K. Kellogg Foundation, University of Wisconsin, American Youth Foundation, 4C, Child Abuse and Neglect Council, Community Action Agency, Michigan Department of Public Health, University of Michigan, NAACP, YMCA, Michigan Council on Crime and Delinquency, and Big Brothers/Big Sisters.

Reaching Underserved Audiences

All agents identify in their educational initiative plans their target audiences for their programs and assess who is being reached and who is underserved. Based on these assessments, agents develop new educational initiatives to address reaching underserved populations. During 2005-06 MSU Extension reported progress and impact on over 55 educational initiatives that reached new underserved audiences in their counties. Progress was made in reaching new audiences for programs, involving new stakeholders from underserved areas and groups, expanding programs in new geographic (underserved) areas, expanding programs to disabled farmers, translating curriculum materials into other languages, and developing new programs for children that are cognitively and physically disabled.

Examples of progress in 2005-06 towards reaching underserved audiences included:

- more programming with Native American communities;
- more services to unemployed adults;
- more services to Hmong communities;
- more diverse audiences in 4-H Youth Development;
- more males in food and nutrition programs;
- more commodity marketing workshops that specifically targeted farm wives/spouses;
- more seniors and underserved youth recruited through a variety of organizations serving these populations;
- more fathers recruited for parenting programs;
- more low-income mothers recruited for parenting programs;
- more pork producers served, where they indicated they have recently become an underserved audience because feed companies and producer organizations no longer provide educational events;
- more low-income African American youth targeted through 4-H;
- more leaders were trained from underserved areas and populations;
- more outreach through Chambers of Commerce and local libraries to provide local community contacts, (especially underserved groups) through which information on classes, programs and volunteer opportunities was distributed;
- more services to Amish farmers;
- more collaboration with county health department clinics that resulted in more educational services to underserved audiences;
- and more housing programs for low-income audiences.
- more youth involved in state and local government issues;

In addition, AoE teams are examining the stakeholder input from “Strengthening Michigan's Economy: Issue Identification” to address new needs and underserved populations.

Program Review Process

Michigan State University Extension (MSUE) and the Michigan Agricultural Experiment Station (MAES) link the issues of concern in local communities with the research and teaching at the state's land grant university. A network for organized citizen input at the local and state levels enhances that linkage. County Extension councils identify and prioritize issues, seek collaborations and resources, and communicate to others the importance of Extension's educational programming. Citizen Advisory Councils help establish research priorities at the state's 14 field stations. The MSU Extension and Experiment Station Council serves as a liaison between county councils, field station advisory groups and state agencies and organizations. Members are able to communicate to others (policymakers, organizations and agencies, university administrators etc.) the importance of the educational programming and the applied research from Michigan's land grant university. The MSU Extension and Experiment Station Council was founded in 1998 to help Michigan State University Extension and the Michigan Agricultural Experiment Station link the issues of concern in local communities with the research and teaching at the state's land grant university.

In addition, MSUE uses the AoE teams and their stakeholders to review the merit of the various plans. As mentioned above, the AoE teams incorporate the information from these processes in their plans as well as provide feedback to the various levels of the organization. In 2005-06 MSUE used over 200 advisory groups to identify local needs and action strategies. These groups ranged from local 4-H Foundations to Technical Advisory Committee Southwestern Michigan Solid Waste Consortium. This information will continue to be used for stakeholder input and Civil Rights compliance. Finally, state leaders and coaches of the AoE's review this process and the merit of these plans.

Evaluation of the Success of Multi-state and Joint Activities

MSU Extension met its goal of 2% or \$164,511 as proposed in the Plan of Work by spending \$193,371 on multi-state activities (see Appendix A). The majority of these activities involved sharing information and educating others from other states. Some of the major collaborations consisted of: Floriculture Programming in Michigan, Ohio, Indiana, Illinois; National Issues Forum leadership with The Ohio State University Extension; "Learning From Land Use Change Models" with The Ohio State University; leadership academy and diversity training with The Ohio State University; developed with The Ohio State University a training on yellow perch aquaculture; trained Ohio and Michigan greenhouse industry personnel in response steep increases in fuel costs (from two to five times year-ago costs) that threatened profitability and even survival of these family-owned firms; collaborated with University of Wisconsin Extension on poverty issues; the Tri-State Dairy Management Conference with Purdue University and The Ohio State University; five state beef alliance with North Central Region states; national Emergency Management & Disaster Response; North Central Region Aquaculture Conference; North Central Show Stock Producers; Michigan-Ohio Grain Marketing Expo; and National Extension Tourism Conference. In all of these collaborations, staff members reported sharing resources and information as well as building stronger relationships between the states.

A detailed example of multi-state activities was:

Key Theme: Pollution Prevention

Educational Initiative Title: Great Lakes Manure Handling Expo, July 2006

Natalie A. Rector: State

Description of Program

The 2006 Great Lakes Manure Handling Expo. 8 provided educational sessions by speakers from 5 states, various demonstrations, and 61 exhibitors with the latest information on Keeping Manure in the rootzone to the audience. The Tri-state Planning Committee included farmers and specialists from Ohio, Indiana, and Michigan. It also involved volunteers made-up of twenty-one local Clinton County farmers, twelve FFA youth and a team of agri-business representatives from across Michigan. In addition to time, seventeen pieces of equipment (tractors, skid loaders, gators and a 4-wheeler) were donated as well as water tanks, bottled water and composting material. The event represented a real dedication by the agriculture community.

Impact

Over 1,300 people from 14 states and Canada attended the 2006 Great Lakes Manure Handling Expo. Specific subjects demonstrated or taught: Manure hauling costs; nutrient and dollar value of manure, soil macropores/tile drains, slurry seeding; sand-laden manure; odor control; GPS technologies; composting. Commercial field demonstrations were a variety of equipment generally related to the above topics. All

sizes and types of farms attended the Expo. There were farmers in attendance with 80 acres to producers that control 20,000 acres, farms with no livestock to managers of large livestock farms from as far away as Texas. Small livestock producers (such as the manager of the livestock at Greenfield Village) and larger producers such as managers from Tyson in Arkansas and a poultry producer from Missouri all attended and participated in the Expo's events. Also attending were crop farmers with no livestock, an audience the planning committee had hoped to reach. Although it was held at a dairy farm, the Expo succeeded in attracting all types of livestock farms (poultry, beef, cow/calf, dairy and swine seemed well represented). The event was also utilized to provide a forum for the Environmental Leaders Program (ELP). A specially invited group comprised of township, county and state leaders in land use, local government and agriculture. One hundred twenty Expo attendees participated in the ELP including farmers from around the state who personally hosted the official/guests for a portion of the day, interacting in a one-on-one basis explaining the nuisances of manure management to the officials. The main message conveyed by the farmer-hosts was that livestock producers are, in general, environmental stewards and events such as the GLMH Expo are facilitated to help improve farmers' stewardship ability. Although a good evaluation piece was developed, only ninety attendees returned them. This is a common problem with outdoor events where participants are coming and going at all times. Although not a statistical evaluation, the respondents did indicate they were going to increase their frequency of: calculating hauling costs, replacing fertilizer with manure, manure testing, keeping better records, improving odor management and even crop producers taking manure from a livestock farm. Ohio State University Extension has modified and reprinted the pocket size record keeping booklet that was developed by MSU Extension and distributed during the Expo. Conversation with another colleague at Iowa State University indicates that they are also reformatting the concept to meet the needs of beef lot operators in their state. The Maschhoffs, Inc., the 7th largest hog producer in the US, emailed and requested 220 of the pocket size record keeping books, enough to pass out to all of their contract growers in Iowa, Illinois and Oklahoma. The international Manure Manager Magazine not only ran a three-page spread prior to the Expo but attended the event and solicited names of area farmers to do stories on while in the area. One story has made the front page of their magazine and we anticipate other stories in their magazine highlighting Michigan farmers in the coming months. Finally, this multi-state effort set the stage for similar regional events, with potentially Ohio, Indiana and Michigan hosting the event in even numbered years in cooperation with the expo held in Iowa, Wisconsin or Minnesota on odd numbered years.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

Multi-State

Evaluation of the Success of Integration Activities

Michigan State University Extension achieved its Integrated Activities goal with \$350,758 spent in this area that exceeds the 4% goal of \$317,007 (see Appendix B). Examples of integrated activities conducted during 2005-06 included: conducted MCP studies to determine methods to increase storage life of apples, that included work with Janice Harte in Food Science to develop the protocol/mechanism for proper scientific evaluation; development of farm Manure Management System Plans (MMSP) with Maynard Hogberg from Animal Science; feeding strategies to lower Nitrogen and Potassium in Manure through Dave Beede from Animal Science; pathogen kill in morts and manure project with Margaret Bensen from Animal Science; dairy nutrition updates from Herb Bucholtz; Mathieu Ngouajio from Agriculture and Natural Resources helped in the late summer evaluation of plots and determining the differences in the nitrate levels in the various plots; Dr. Annemiek Schilder from Plant Pathology worked with farmers on disease control in grapes and the importance of bloom sprays; and Dr. Sharon Hoerr from Food Science worked with extension staff on an obesity project.

A detailed example of integration activities was:

Key Theme: Integrated Pest Management
Educational Initiative Title: Aphid Management
David V. Pratt: State

Description of Program

Aphids were first discovered in late August 2000 in Southwest Michigan. There was literally no information available to help growers make decisions about managing the new pest. The Field Crops AoE team with guidance from MAES established research projects on campus and in the field to evaluate IPM techniques and determine the best management practice that were cost effective and the least intrusive to the environment. After a couple of years collecting and evaluating data from both research projects and growers strip trials MAES was able to develop a IPM program that has been very effective in managing soybean aphids. The Field Crops AOE team put together a very intensive educational effort to educate growers and agribusiness about using IPM techniques to manage soybean aphids.

Impact

According to a survey conducted by the Multi State Soybean Aphid RAMP Project, growers indicated that they sprayed 91% of the soybean acres in 2005 (heavy aphid year) and only 5% in 2004 (low aphid year). The survey indicated that 61% based their management decisions on university recommendations directly and approximately 27% indirectly. Eighty-six percent indicated they used field scouting, to determine plant growth stage and aphid numbers to make management decisions. Prior to 2001 no recommendations could be found. This is a classic example of MAES and MSUE being responsive to an emerging need. Based on soybean production in Michigan for 2004

and 2005 a total of 100 million dollars were either made or saved based on decisions to spray or not spray using IPM tools developed by MAES and disseminated through the MSUE Field Crops Team fact sheets, newsletters, local newspapers, radio programs and workshops.

Source of Funds

Smith-Lever 3b&c, state, county

Scope of Impact

Multi-State

For further information regarding this report or MSU Extension contact Bruce E. Haas, Ph.D. at haasb@msu.edu or (517) 432-3491.

Appendix

Michigan Multistate Extension Form and Documentation And Michigan Integrated Extension Form and Documentation

Appendix

U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)

Institution Michigan State University Extension

State Michigan

Check one: Multi-state Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures					
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
<u>Multi-state Collaboration</u>	<u>0</u>	<u>\$114,754</u>	<u>\$182,083</u>	<u>\$227,379</u>	<u>\$165,778</u>	<u>\$193,371</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total	<u> </u>	<u>\$114,754</u>	<u>\$182,083</u>	<u>\$227,379</u>	<u>\$165,778</u>	<u>\$193,371</u>

Tom Coon
Director

4/30/07
Date

Appendix

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Institution Michigan State University Extension
 State Michigan

Check one: Multistate Extension Activities
 Integrated Activities (Hatch Act Funds)
 Integrated Activities (Smith-Lever Act Funds)

Actual Expenditures

Title of Planned Program/Activity	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
<u>Integrated Research</u>	<u>0</u>	\$177,639	\$335,244	\$329,023	\$341,393	\$350,758
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
Total	<u>0</u>	\$177,639	\$335,244	\$329,023	\$341,393	\$350,758

Tom Coon
 Director

4/30/07
 Date