

Texas Cooperative Extension
and
Texas Agricultural Experiment Station

Joint Annual Report of
Accomplishments and Results: FY 2002

Texas A&M University System
Agriculture Program

For Federal Reporting Year
2002

Texas Cooperative Extension (TCE)

¹ Completed and signed 28 February 2003

and
Texas Agricultural Experiment Station (TAES)

FY 2002 Joint Annual Report of Accomplishments and Results

A. PLANNED PROGRAMS

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

Overview

Texas Cooperative Extension (formerly the Texas Agricultural Extension Service) and Texas Agricultural Experiment Station programs under Goal 1 focus on increasing the competitiveness and profitability of the agricultural industry in the state, nation, and world. Three programs representing a broad range sector of the agricultural community are represented by this goal. These programs include risk management, field and forage crop production, and, livestock quality and production.

Risk Management. Risk is inherent at all levels of the food and fiber system. For the Texas food and fiber system to become more competitive, profitable, and sustainable (in light of recent droughts, flooding, and highly volatile commodity and input prices), farmers, ranchers, and organizations--plus the communities that are dependent on agriculture--must be better able to weigh the risks and projected impacts of alternative decisions by agricultural producers. In response to this need, TCE-TAES have developed multifaceted programs for risk assessment and in-depth management/marketing education. In surveys of participants conducted 2.5 years after they completed the 1997-99 Master Marketer workshops, 261 producers estimated, on average, that their *annual* incomes had improved by \$23,837 as a result of adopted marketing and risk management practices. If the 295 producers that have participated in the eight in-depth workshops since mid-1999 received similar results, then the aggregate *annual* impact of this part of the risk management programs in Texas would approach \$13.3 million in added income to these participants alone! The total impact would be significantly increased if we considered all the marketing club participants that were taught through voluntary efforts of the Master Marketer program. Analyses of the expanding FARM Assistance decision support system for risk assessment indicate that participants would benefit by an average of \$28,995 per year if they chose the option indicating the highest projected real net worth. Again, the impact of this program significantly exceeds the direct impact to the participating producers. The data collected from this program allows a significant increase in Extension programming and research which benefits thousands of other stakeholders.

Field and Forage Production. Environmental stresses, crop pests and global market forces make profitable and sustainable production of crops and forages a continuing challenge. It is through understanding and adoption of TCE-TAES technologies that improve productivity, profitability and global competitiveness of crop and forage production systems that Texas farmers and ranchers will enhance their competitive position to other producers around the world. The target audience includes farmers and ranchers who produce field crops and forage in Texas. With the adoption of a sophisticated forage production and management system as recommended by Texas Extension, income per cow increased \$245.49 per animal, giving the operation a profit of \$40.10 per head in 2002. An educational program conducted in five extension districts in north, central and east Texas is emphasizing management techniques to

reduce winter feeding costs of livestock. The potential cash savings of this program averages about \$100 per cow. As this region of the state has approximately 3.2 million beef cows, it is estimated that this program could substantially reduce the risk of ranch operation and save Texas producers hundreds of millions of dollars annually. IPM programs which encourage field scouting and pest management based upon scientifically established thresholds of insect, weed and disease pests are widely adopted in Texas. Comments from four case studies representing 9 counties are included in the TCE section on Field and Forage Production. While the primary focus is on farmers and ranchers, the impacts are far greater than the direct enhancement discussed. The indirect impacts contribute to all sections of the food and fiber system, and the communities impacted.

Sources of TCE-TAES Funding and FTEs

TCE Funding: Smith Lever and State Matching

		\$ X 1000
		Actual
		<u>FY 2002</u>
Program 1 – Risk Management		1,500
	FTEs	23.54
Program 2 – Field Crops & Forage Production		2,377
	FTEs	115.18
Program 3 – Livestock Quality & Profitability		3,028
	FTEs	148.46
Total Allocated Resources Goal 1		7,044
	FTEs	343.04

TAES: Hatch, and state, federal and private contracts and grants

Source of Funding and FTEs

Federal Funds (\$ x 1000):	3,728
State Funds (\$ x 1000):	20,001
FTEs:	115.34
Number of Projects:	297
Number of Publications:	1,130

State TCE-TAES Plan of Work Program 1: Risk Management

Key Theme: Risk Management, Agricultural Competitiveness, and Agricultural Profitability

A. Description of Activity

Risk is inherent at all levels of the food and fiber system. For the Texas food and fiber system to become more competitive, profitable, and sustainable (in light of recent droughts, floods, and highly volatile commodity and input prices), farmers, ranchers, and organizations—plus the communities that are dependent upon agriculture—must be better able to weigh the risks and projected impacts of alternative decisions by agricultural producers. Managing the increased price and income risk will be key to the future economic success of production agriculture and agribusiness firms in Texas. As economic stress intensifies, risk management—knowing what to do and what not to do—becomes even more important to the long term goal of a profitable and sustainable agriculture.

In response to the described need, TCE developed multifaceted programs in risk assessment and in-depth management/marketing education. In the past, management and marketing changes were evaluated based on average results. But, in Texas, averages do not tell the story—the upside and downside swings also must be evaluated for long-term survivability. Educational programs were focused on (1) intensive education in group settings; (2) use of master volunteers to expand efforts; and (3) one-to-one assistance in financial and risk management. For example, along with numerous one-day events on various risk management topics, two producer groups attended 64-hour classes as part of the *Master Marketer* workshop program in FY02. These 81 individuals greatly enhanced their risk management knowledge and skills. These Master Marketer graduates then become marketing club leaders in their respective counties thereby teaching others about risk management tools. More than 76 marketing clubs statewide have been organized or revitalized through Master Marketer volunteers and county Extension agents over the past few years with combined membership over 1,000. One-to-one producer assistance using district-based risk management specialists was facilitated through the *FARM Assistance* decision support system. Individual agricultural operations statewide, using information specific to their business, can now effectively assess the riskiness of proposed changes and the projected impact of those changes on their net worth 10 years down the road. Producers completing a FARM Assistance analysis agree to have their information put into a confidential database for the development of educational programs to serve additional producers, some from underserved populations.

The program emphasis in risk management is targeted toward owners and operators of commercial size farms and ranches in Texas. Some of these commercial operations are geographically disadvantaged in that they are located in isolated areas of the state. Marketing clubs and the delivery of education based on the FARM Assistance database will reach underserved populations in later years of the program, such as along the border with Mexico. Through additional funding support from the Southern Region Risk Management Education Center, risk management programs are being adapted for small scale agriculture audiences through the network of 1890 institutions in the South.

TCE is collaborating with other CSREES partners, including Kansas State University, Oklahoma State University, Mississippi State University, Montana State University, University of Minnesota, Iowa State, Virginia Tech, and the Prairie View A&M Cooperative Extension Program. External collaborators include the Texas Farm Bureau, the Texas Corn Producers Board, the Texas Wheat Producers Board, and the Texas Cotton State Support Committee.

B. Impact of Programs

Texas Cooperative Extension

Master Marketer Educational System (MMES): MMES consists of a number of coordinated educational efforts including: Master Marketer training, Advanced Topics Series, Master Marketer for Agricultural Lenders, Tomorrow's Top Agricultural Producers Program (for young producers), leveling workshops, and marketing club activities. These group training efforts are supported by the *Risk Management Curriculum Guide*; *Marketing Club Leaders Guide*; a website for education and market updates; newsletters; and market outlook & agricultural policy update teleconferences.

One result of the in-depth Master Marketer Workshops is a few producers highly trained on the subject of risk management. In surveys of participants conducted 2.5 years after they completed the 1997-99 Master Marketer workshops, 261 producers estimated, on average, that their *annual* incomes had improved by \$23,837 as a result of adopted marketing and risk management practices. If the 295 producers that have participated in the eight in-depth workshops since mid-1999 received similar results, then the aggregate *annual* impact of this part of the program would approach \$13.3 million in added income!

The training appeared to have a major impact on the participants' risk management practices. For example, prior to the in-depth training, 39 percent of 205 producer-graduates from the 1997-99 workshops said they had marketing plans. Two and a half years later, 89 percent said they had developed marketing plans. Prior to the workshops, 57 percent said they used breakeven costs in marketing decisions. Two and a half years later, 87 percent indicated they incorporated breakeven price information into their enterprise plans. Similar improvements were reported for other knowledge and skill variables.

Master Marketer graduates agree to share what they have learned with others in their respective counties through small marketing club study groups. This volunteer aspect greatly multiplies the educational impact of the program. More than seventy marketing clubs have been started or revitalized by Master Marketer volunteers—helping to extend risk management education to producers across the state. Seventy-six clubs were surveyed in 2002 with a total membership of 1,054 (an average membership of about 14 producers each).

A Risk Management Curriculum Guide has been expanded to provide information to those who cannot attend the in-depth sessions or marketing clubs. These publications are available through the National Ag Risk Library, the Texas Cooperative Extension risk management web site or can be obtained in printed form from local county Extension offices. Underserved audiences can access these excellent materials either way. Of the top 20 requested publications from the National Ag Risk Library, five were developed as part of the Texas Risk Management Curriculum Guide. A new publication series on risk management is now being developed for small scale agriculture which can be used with part-time or limited resource producers. This effort is in collaboration with faculty from Prairie View A&M University Cooperative Extension Program.

Two outcomes from the Master Marketer program have been requests from other target audiences for specialized in-depth programs related to risk management. A program designed specifically for agricultural lenders has been conducted twice in order to be sure that lenders are as knowledgeable as producers in the use of risk management alternatives. With the risk in agriculture, a new program is being started to assist young producers with handling risk.

FARM Assistance: Financial and Risk Management (FARM) Assistance is a unique

combination of Extension risk management specialists working one-to-one with producers—backed up by a sophisticated computerized decision support system that allows risk assessment of differing strategic alternatives for the farm or ranch. As farming operations are becoming more diverse and complex, individual analyses of risk and financial factors, using research-based tools, are needed. More than 800 alternative risk management scenarios have been analyzed for individual producers since 1999—representing over 1.5 million acres of crop and pasture land.

One measure of the FARM Assistance program's impact is the projected net worth consequences of each risk assessment subscriber's starting situation versus the best-case or worst-case scenario. This measure indicates the potential gain or loss in net worth a producer could potentially see, at the end of the 10-year planning horizon, from a decision to continue current practices versus another alternative under consideration. From all the producers in the database, on average, a \$29,000 per year difference in net worth was calculated for this difference. For the 10-year planning horizon, that's an average swing in real net worth of almost \$300,000 per participant for the alternatives being considered. Thus, risk assessment using the FARM Assistance decision support system can pay big dividends. In fact, seventy-three percent of the FARM Assistance subscribers responding to a survey indicated that their participation in the program allowed them to make a change that likely will have a positive financial impact on their operation. Eighteen percent said the analysis helped them avoid making a decision that likely would have had a negative risk impact.

Real life examples of program impact can be demonstrated from selected case examples: 1) An irrigated corn producer in the Texas Panhandle was struggling financially and his lender was reducing the operating loan line of credit. Working with the FARM Assistance program, two alternatives were evaluated—an equipment use arrangement with a neighbor and an off-farm income opportunity. After implementing these changes in the operation, the farmer reduced his risk of a cash flow deficit by approximately 65% and increased his projected real net worth by \$392,000 over a ten year planning period. 2) A Coastal Bend producer was struggling with the feasibility of bringing his son into the farming operation. The FARM Assistance analysis evaluated three alternatives, with one showing to be quite superior to the other two. 3) A Texas Panhandle producer could not resolve a lease arrangement with a landlord. However, his FARM Assistance analysis showed that losing this rented land would be detrimental to the farming operation overall. This led to a compromise lease solution with mutual benefit to both.

In addition to the advantages that individual producers receive for participating in this significant effort, many other producers and associated agribusiness firms also will benefit from the database that is being developed from accumulating the individual analyses. Producers want to compare the critical success factors in their operation to those of similar operations nearby. This secondary impact of the program also will be used to further target educational programs. Underserved audiences will be able to glean risk management ideas from database summaries. Publications are planned on best risk management practices, success rates under alternative debt scenarios, and policy and tax impacts on types of operations. For example, state legislators have implied they would like to see the impacts of certain state tax scenarios on case farms and ranches in the database. Analyses such as this could be invaluable for policy makers and farm organizations in the future.

Output Indicators:

No. of people completing non-formal risk management education programs–13,584

Outcome Indicators:

The total number of people completing non-formal risk management education programs who plan to adopt one or more risk management tools or strategies after completing these programs–2,125

The total number of people completing non-formal risk management education programs who actually adopt one or more risk management tools or strategies after completing these programs–1,670

Texas Agricultural Experiment Station

Economic models of representative farms and individual commodity sectors have been developed and used to conduct comparative statistic analyses of policy changes. Results will focus on the change in the profitability of farms and ranches in Texas and the U.S. due to changing various policies. The economic impacts of alternative options for the 2001/02 farm bill on representative crop farms has been a major research concern in recent years. An article outlining the impacts on farmers in the South was prepared and published on this topic. Impacts of the 1996 farm bill on the pattern of crop acreage across the US was the focus of a report prepared under this project. Equity of farm programs across commodities was investigated by examining the fraction of variable costs of production covered by AMTA payment rates and marketing loan rates. Basic research for this project involved development and documentation of a simulation language that runs in Excel. The policy facilitated our development and application of Monte Carlo simulation models for policy analysis, and this system has been adopted by researchers in USDA-AMS, Purdue, and U. of Arkansas as well as FAPRI, Columbia, Mo.

Research has developed and distributed information summarizing new farm bill testimony given to Congress by various agricultural industry trade organizations focusing on the implications for U.S. World Trade Organization commitments. This information includes research results on exchange rate impacts on U.S. agriculture and the potential role of dollarization. This work includes analysis of (1) NAFTA, WTO, FTAA, and other trade policy impacts on U.S., Texas, and southern agriculture, (2) Mexican livestock, meat, and feed industries and fresh fruit and vegetable trade impacts via the North American Free Trade Agreement (NAFTA) on structure of industries resulting from trade liberalization, and (3) the economic impacts of renewed agricultural exports to Cuba. This work was presented to 29 separate groups, with a total audience of more than 1,000 persons and indirect contacts of more than 12,000. From 1996-98, the U.S. dollar appreciated 20 percent relative to the Japanese yen causing the price of U.S. soybeans landed in Japan is fell from \$9.09/bu to \$8.16/bu, but in yen the landed price actually increased 8 percent from 989 yen/bu to 1,068 yen/bu. This caused higher priced U.S. soybeans in Japan compared to soybeans from Brazil, and U.S. exports fell 5 percent, while exports from Brazil increased 38 percent. A one percent increase in the value of the U.S. dollar decreased U.S. broiler exports to Japan, Hong Kong and Mexico by 0.56 percent to 0.96 percent, while the 25 percent 1994 depreciation of the Mexican peso increased their

exports of melons to the United States by 4 to 36 percent. Under a high export growth scenario, agricultural and requisite exports to Cuba could exceed \$1.2 billion, creating \$2.8 billion in additional economic output, \$818 in new household income, \$1.6 billion in new GDP, and over 32,000 new jobs.

Alternative options being considered by Congress for the 2002 farm bill were analyzed to help the Committees understand their economic consequences on representative dairy and livestock farms. This program developed and analyzed three baseline projections for representative dairy farms in the U.S. The baseline reports showed the likely economic viability of 26 representative U.S. dairy farms in key production regions. The most recent baseline showed mixed economic viability due to lower milk prices for 2002 and beyond. Thirteen of the 26 representative dairy farms were updated in 2001/2002. Additionally, the FLIPSIM model was used to analyze the 2002 farm bill options for representative dairy, cattle, and hog farms, and results were used in conference committee debates. This program also analyzed and commented on the 2002 EPA proposal for regulating CAFOs, and based on comments, changes were made in EPAs proposed regulations.

An Excel spreadsheet for standardized performance analysis (SPA) was developed and updated to analyze beef cattle financial and performance. The Southwest Cow-Calf SPA database has 363 herds, 241,844 cows, and analytical results from this database are widely used in educational programming. Refinement of the financial statement and managerial accounting methodology continues with a coordinated effort with the Farm Financial Standards Council (FFSC) new management accounting project. This effort is helping to develop a consistent methodology in stocker/feeder cattle cost accounting for more informed, economic-based decision making by agricultural producers and thus resources are used more efficiently.

C. Sources of Federal Funds

TCE: Smith-Lever and State Matching

TAES: Hatch, and state, federal and private contracts and grants

D. Scope of Impact

Multi-State Extension – KS, OK, MS, MT, MN, IA, VA

Multi-State Research – MO, VA, CA, GA, OK, HW, AR

Integrated Research and Extension: The development and implementation of the comprehensive *FARM Assistance* computerized decision support system and the resulting accumulated database of economic and financial information is an integrated Research/Extension effort. Faculty of TAES were instrumental in developing the software platform on which the decision support system was programmed and have been advisors to its enhancements by Extension faculty over the past four years. The structure of the database and initial uses for analytical purposes have been jointly determined by research and Extension faculty to facilitate a viable product with high visibility. Recently, Extension and research faculty utilized the *FARM Assistance* database to project the financial impacts on Texas farms and ranches from alternative state tax scenarios.

State TCE-TAES Plan of Work Program 2: Field and Forage Crop Production

Key Theme: Agricultural Competitiveness, Agricultural Profitability

A. Description of Activity

Environmental stresses, crop pests and global market forces make profitable and sustainable production of crops and forages a continuing challenge. It is through understanding and adoption of technologies that improve productivity, profitability and global competitiveness of crop and forage production systems that Texas farmers and ranchers will enhance their competitive position to other producers around the world. The target audience includes farmers and ranchers who produce field crops and forage in Texas.

B. Impact of Programs

Texas Cooperative Extension

The investigations and educational programs associated with Sorghum PROFIT have had many fold impacts. In south Texas, reduced tillage systems netted \$18- to \$30 per acre more profit than conventionally used systems. Systemic insecticidal seed treatments improved crop returns from \$2 to \$24 per acre. Reducing row intervals from wide (30- to 40 inches) to narrow (15- to 20 inches) increased yields an average of 6.7%. Proper use of foliar micronutrients netted yield increases of 11.2%. Selection of hybrids with resistance to iron chlorosis increase profits \$7 to \$21 per acre. In the High Plains a region faced with declining water supplies, corn silage was found to use 25% more water than sorghum silage, which is currently not in use in High Plains feedlots, but produces equivalent yields of equal quality forage. Feeding trials are underway to demonstrate the value of sorghum silage. Incorporation of the above practices into Texas production systems is underway and is driven by Extension educational programs.

Texas is the largest beef cattle state in the U.S., with a 5.5 million head inventory of cows. Efficient forage production systems are required in cow-calf operations to be profitable. Records from the Texas Beef PEP program indicate that one herd had an average loss of (\$285.59) per cow in 1999, with the greatest input cost in maintaining the herd being purchased feed. With the adoption of a sophisticated forage production and management system as recommended by Texas Extension, income per cow increased \$285.59 per animal, giving the operation a profit of \$40.10 per head in 2002. An educational program conducted in five extension districts in north, central and east Texas is emphasizing management techniques to reduce winter feeding costs of livestock. The potential cash savings of this program averages about \$100 per cow. As this region of the state has approximately 3.2 million beef cows, it is estimated that this program could substantially reduce the risk of ranch operation and save Texas producers hundreds of millions of dollars annually.

IPM programs which encourage field scouting and pest management based upon scientifically established thresholds of insect, weed and disease pests are widely adopted in Texas. In four survey areas in Texas (Ellis-Navarro, Hockley-Cochran, Hill-McLennan and Wharton-Matagorda-Jackson counties), IPM programs are heavily relied upon by large agricultural producers to reduce cost of production, reduce pesticide applications and increase profits in the production of field crops. Comments from four case studies representing nine counties are included below.

Ellis-Navarro counties: In a study of IPM participants in these North Texas counties, 94 per cent of participants reduced pesticide use. The average reduction of pesticide use by these cotton farmers was 29 per cent, with an average per acre savings of \$13.88 per acre. These two counties produced slightly more than 52,000 acres of cotton in 2000, indicating that if IPM practices were used universally in these counties, savings in the cost of pest management would have amounted to \$722,000 and would have resulted in the use of several thousand pounds fewer pesticides in the environment.

Hockley-Cochran counties: Farmers in the western High Plains of Texas are in a very high production risk region due to drought and insect pests. When surveyed, 100 percent of these producers in the IPM program, and 95 percent of the farmers receiving the *West Plains IPM Newsletter* said that IPM programs improved their ability to make pest control decisions.

Wharton-Matagorda-Jackson counties: Participants in the IPM program in this upper Gulf

Coast region widely accepted IMP recommendations. Of those surveyed, 80 percent adopted at least 11 of 13 IPM recommended practices. Seventy-one percent used fewer pesticides, 79 percent reported harvesting higher yields, and 90 percent reported higher profits using IPM recommended practices.

Hill-McLennan: County farmers produce wheat, cotton corn and sorghum. IPM participants reported that cotton scouted in the program was treated fewer times than cotton that was not scouted, and that yields of cotton in scouted fields averaged 434 pounds of lint per acre, while unscouted cotton averaged 24 percent less at 349 lbs/acre despite higher pest control costs.

While somewhat dependent upon crop species and location; herbicides are the most widely used class of pesticides. The judicious use of herbicides reduces the expense of crop production by reducing tillage and labor demands; enhances crop yields by minimizing competition with weed species, improves crop quality by reducing foreign matter and moisture in the crop at harvest and reduces spoilage in post harvest storage. The adoption of transgenic crops by Texas farmers has met with a very wide acceptance. Texas Extension faculty are to a large part responsible for disseminating information related to this change. In 1996, the first transgenic crops were commercially planted in the state. This amounted to less than 25,000 acres of soybeans, with no transgenic traits in cotton and corn. In 2002, it was estimated that 75% the state's 250,000 acre soybean acreage was transgenic, the 6 million acre cotton crop was 54% transgenic and 25% of the state's 2 million acre corn crop was transgenic. In soybeans, the only commercial genetically enhanced traits are for herbicide resistance. In cotton, some varieties are sold with herbicide resistance, others with the Bt gene for resistance for worms, and yet still other varieties have a "stacked gene" configuration where a variety has resistance to both herbicide and insects. The first transgenic corn hybrids were released with resistance to insects (the European corn borer), while in 2000, some hybrids incorporated herbicide resistance. To accomplish this large scale transition from traditional to genetically enhanced varieties and hybrids, Extension faculty initiated approximately 300 weed control trials in 2000, as well as large scale plots in the Texas High Plains to compare the value and production expense of transgenic technologies in cotton. Hundreds of educational events were conducted which discussed the new technologies, utility of the transgenic traits in aiding insect and weed control, and potential drawbacks regarding technology fees, marketing and impact on yield and quality.

The herbicide and insect resistance in these major field crops has significantly reduced crop production risk, allowing farmers to produce food, feed and fiber with less production expense, improved environmental quality by allowing farmers to use more environmentally benign herbicides as well as using thousands of tons less herbicides and insecticides, allowed the development of no-till and high residue conservation tillage crop production systems which reduce erosion, decrease consumption of fossil fuels, decrease production cost and improve wildlife habitats. Long term trials using conservation tillage in central, south and west Texas indicate that farmers are able to produce similar yields to crops produced with conventional tillage, have approximately a 10 fold decrease in soil erosion losses (varies with soil type, slope and location), and save approximately \$35 per acre in production costs.

Educational programming and collaboration between and among several agencies have been used to increase soil testing and reduce the movement of nutrients off site in Texas between 1997 and 2001. These include:

- Soil test phosphorus (P) calibration testing to improve P recommendations in field crops and

forages by Texas Extension and TAES. Similar calibration problems exist in other Southwestern states, and TCE-TAES has initiated a joint effort in arriving at better correlation between soil test P and crop response with Oklahoma State, Louisiana State and the Noble Foundation.

- County and regional meetings and workshops educated 5,500 producers in 70 counties between 1997 and 2001 on soil testing issues.
- Soil Testing/ Nutrient Management Campaigns in Gulf Coast counties by Texas Extension, LCRA, Sea Grant, NRCS, TNRCC and other agencies. Soil testing campaigns and questionnaires completed by 3,000 producers representing 150,000 acres during the 1997-2000 years indicated the potential to reduce application of nitrogen and phosphorus by 1,400,000 and 2,700,000 pounds, respectively, reducing fertilizer costs by \$840,000 and reducing offsite runoff on farms participating. Surveys from 1090 soil samples in a 2001 soil testing campaign represented 34,000 acres of cotton, corn and forage grasses. It was estimated from these samples that farmers saved 846,000 pounds of N and 1,083,000 pounds of applied phosphate fertilizer, with a net value of \$459,222 and had significant environmental savings as well. Ninety two percent of Rio Grande Valley samples taken had a fertilizer savings of \$10 or more per acre.
- Development of nutrient management planning certification programs by Texas Extension and NRCS. A Nutrient planner certification program including curriculum and testing was planned and developed in 1999 and 2000. This course and exam will certify individuals affiliated with the government and private consultants to plan nutrient applications to farms to reduce off site runoff of nutrients to keep streams, rivers and lakes cleaner.
- A new method for evaluating soil N content is being tested in the major cropping regions of the state. This technique, when tested in field demonstrations has found large quantities of previously undetected, plant available N that will potentially cause a dramatic decrease in the cost of applied N to field crops and forages. Projects that are being addressed by Extension faculty in the area of cropping systems include: weed management, row spacing, plant population, benefits of seed treatments, benefits of crop rotation, irrigation management, evaluation of brown midrib forage sorghums for silage and in grazing systems, hybrid evaluations including the tan plant type, response to fertilizers and micronutrients and response to reduced tillage. Trials and educational programs are being conducted in the major production areas of the Rio Grande Valley, Coastal Bend, Central Texas, the South Plains and the North Plains. Almost 300 field days, tours and educational meetings have featured information generated by Sorghum PROFIT, a statewide cropping systems initiative in the last three years. More than 140 publications and progress reports are available to the public from this initiative on the website <http://sorghum.tamu.edu>, giving producers a large body of research and new knowledge or profitable sorghum management.

Texas Agricultural Experiment Station

The Texas ryegrass-breeding program has had a significant impact on the livestock industry in Texas and in Oregon. Several million lbs of TAM 90 are produced in Oregon and planted annually in Texas. The release of the variety Axcella, is having a positive impact on the turf-grass industry in Texas.

Texas breeding and development of bluegrasses using hybrids has been instrumental in development of breeding programs of at least two private plant breeding companies, one USDA ARS Center, and one major university. The release of the Texas Reveille hybrid bluegrass has contributed to the planting of 400 ac. of seed production with an estimated income of \$1000 per ac. with additional acres planned.

Research has focused on ecological, evolutionary and population genomics of conifers and other gymnosperm plants. The most important impact is on how forest genetics and breeding diverges greatly from its agricultural counterpart. This has implications for federal, state and corporate policy and public investment in research. Results from this research is being used to assist with climate change forecasts in the southern U.S. pine forests, and in developing an understanding of why the ancient conifer genome changes so little in comparison to flowering plants. This latter will be important in elucidating higher plant genome evolution. The tree growth rate research has immediate relevance to genetic gain per year in breeding programs for U.S. timber companies and researchers are working closely with commercial companies, Department of Energy and the USDA-Forest Service to transfer and implement this new technology.

A new peanut variety was released as NemaTAM. This variety has greatly improved yield potential over resistant cultivars in nematode-infested and noninfested fields. The release of NemaTAM provides peanut growers with nematode resistance in a peanut cultivar with higher yield potential, and discovery of a second gene for resistance to root-knot nematodes in peanuts suggests that it will be possible to have durable resistance to these economically important pests. The development of nematode resistance in peanuts is causing greater yield stability and reduced reliance on pesticides.

The Texas cowpea research program continues to develop pinkeye, blackeye, and cream varieties possessing improved plant architecture, high yield, and disease and drought resistance. The related program on mungbean continues developing improved varieties with synchronous flowering and improved yield and sprouting characteristics. The Texas mungbean release, 'TexSprout', is grown nationally and internationally. The program continues screening investigations for chlorosis in cowpea grown on high pH soils. About 200,000 pounds of seed of 'Texas Pinkeye Purple Hull', a variety developed by the Texas program, was sold in 2001, indicating that about 10,000 acres of this variety were grown.

Competition among cotton producers in a global market and a decreasing genetic base make it imperative that cotton be improved for Texas' producers. About 15 varieties are commercially available that contain germplasm from the Texas program, and significant improvement in fiber quality of cotton produced on the Texas High Plains has placed Texas cotton in demand by the textile industry. The quality of our cotton ranks second only to California. The high quality germplasm released from the Texas program for use in varietal development has improved the selling price from 2 to 5 cents per pound of lint.

The Texas potato improvement program has developed and released improved early maturing russet, yellow flesh, and red varieties adapted to Texas growing conditions, to enhance the competitiveness of the Texas potato industry. The program cooperates with the North Dakota, USDA/ARS Aberdeen, ID, USDA/ARS Madison, WI, USDA/ARS Beltsville, MD, Oregon, Colorado, and Minnesota breeding programs through exchange of first-year seedling tubers and/or advanced selections. Several Russet Norkotah Strains released in 1999 continue to

gain favor across the U.S. This program is continuing investigations to identify varieties and species materials which are high in antioxidant compounds is ongoing. Virtually the entire russet potato acreage in Texas is now grown to improved Texas Russet Norkotah strains developed by the Texas Potato Variety Development Program. Due to the release of these strains and other varieties of the Texas program, average yields of the Texas summer crop lead the nation at 380 cwt compared with 200 cwt. for this crop in the 1970's.

The peanut industry is demanding high O/L peanuts for improved flavor and shelf-life of peanut products in the U.S. marketplace. The release of two new peanut cultivars is having a huge impact on the peanut industry, especially where the Texas peanut producers are concerned. A conservative estimate of value for these lines (increase over present varieties) to Texas Peanut Growers is as much as \$20 million per year after the seed increase generations have been completed.

Research on sweet potatoes, hybrid watermelons, triploid (seedless) watermelons has enabled both sweet potato and watermelon producers to stay abreast of new genetic material that is adaptable to East Texas growing conditions. Due to the ongoing watermelon studies, the East Texas area has become one of the major production areas in the nation, especially in seedless production. The use of plastic mulch and drip irrigation with these studies has shown how the use of chemicals for weed control can be greatly reduced while conserving water and increasing yield.

Sorghum germplasm was evaluated in ten locations throughout Texas with the result that breeding programs now emphasize selection of medium maturing tan plant germplasm with high yield potential and lodging resistance. Both red and white grain sorghums are being selected. Research on grain quality, grain yield and disease resistance support the breeding efforts. The lab work and field work to map of grain yield QTL is complete, and analysis is underway in two different populations for grain mold resistance and anthracnose resistance genes. This project is enhancing the productivity and value of grain sorghum, and will eventually make significant improvements in grain quality, yield and disease resistance. Releases from this program are being used directly by the sorghum industry to produce grain sorghum hybrids for commercial farmers.

Researchers breeding for leaf rust resistance in wheat are getting their resistance genes from wild wheat relatives. Resistance found is effective over a wide range of environments throughout the United States, and progress was made in combining different genes for leaf rust resistance into single genotypes of wheat. Wheat lines were identified that contain genes for resistance to Karnal bunt. A new barley variety, TAMBAR 501, was released for production in Texas, Oklahoma, and Kansas, and produces high forage and grain yields. TAMBAR501 should be a good alternative to wheat forage in the southern Great Plains. Oat breeding lines were developed which contain adult-plant, slow-rusting genes for resistance to crown rust. Some emphasis was placed on the breeding and development of hullless oat and barley varieties. These breeding lines and varieties are permitting producers in the southern plains of the United States to grow high-yielding, disease resistant small grains, and are estimated to save producers \$2-to-3 million per year.

Data on the 18,000-year ecological histories and unique generic descriptions of U.S. forests are being updated to include new information. Additionally, practical and effective silvicultural and management alternatives are being analyzed for restoring and sustaining pre-European

settlement forests in the U.S. When complete, these descriptions and techniques can guide the management of protected forests, public working forests, and industrial forests. This research has led to the introduction of The National Historic Forests Act of 2001 (H.R. 2119) in the U.S. House of Representatives.

Research on grain sorghum and cotton in the Texas Coastal Bend area that yield of grain sorghum may be sustained better using lower plant populations (30,000 to 40,000 plants/ac in 38 in.-rows) under severe dryland conditions. Cost of production is also lowered using lower plant populations (60,000 plants/ac) under irrigated conditions. Grain sorghum yields are dramatically increased (20-25%) using narrow rows (double rows 12" apart in 38 inch beds) under irrigated conditions. Double rows also increase yields under mild dryland conditions. Lower planting populations (30,000 plants/ac in 38"-beds) also sustain yields better in cotton compared to higher populations normally used by farmers in South Texas.

A crop weather program has been developed for South Texas, and is the gateway for: (1) accessing up-to-the-hour weather data measured hourly by a network of 23 automated weather stations spread throughout South Texas and (2) performing field-specific crop-environment calculations to estimate time- and weather-sensitive variables such as crop growth and development, potential evapotranspiration, crop water use, and soil water balance thus helping farmers and consultants to make day-to-day crop management decisions.

C. Source of Federal Funds

TCE: Smith-Lever and state matching

TAES: Hatch, and state, federal and private contracts and grants

D. Scope of Impact

Multi-State Extension – OK, KS, GA, MS, AR, TN, KT, NM

Multi-State Research – AL, AR, CA, LA, MO, MS, SC, CO, ID, ME, MI, MN, ND, OR, WA, NE, NM

Integrated Research and Extension

Breeders work closely with their extension counterparts in the field trials and evaluation of new cultivars, varietal plantings and demonstrations of advanced lines for county agents, farmers, and specialists.

State TCE-TAES Plan of Work Program 3: Livestock Quality and Profitability

Key Theme: Agricultural Competitiveness, Agricultural Profitability

A. Description of Activity

Texas ranks first in the nation in total livestock value and also has the broadest spectrum producers and variation in production environments. High production costs and variable sale receipts for all livestock species necessitates adoption of best management practices to efficiently produce livestock and their resulting end-products that are cost-competitive with consumer alternatives while meeting the food quality and safety standards expected by our society. Educational programs are needed to increase producer awareness of consumer concerns, advancements in production practices and developments in technologies to meet those needs while increasing net returns from livestock operations.

B. Impact of Programs

Texas Cooperative Extension

Education programs will focus on livestock genetics, best management practices and how producers can increase production efficiency while still producing high quality end products. Management practices such as selection, nutrition, reproductive physiology, livestock health, and meat science will be emphasized. Other factors that influence product acceptability in the market such as marketing methods and food safety will be stressed. The target audience is composed of beef cattle, dairy, sheep, goat and swine producers, commodity group leadership, Extension educators and youth enrolled in 4-H and F.F.A. livestock projects. Partnerships have been established with CSREES, Texas Agricultural Experiment Station, Texas A&M College of Veterinary Medicine, TAMU College of Agriculture and Life Sciences Departments (Ag Economics, Ag Engineering, Entomology, Rangeland Ecology and Management, and Soil and Crop Sciences), Texas Tech University, West Texas A&M University, Oklahoma State University, Texas Beef Council, Texas Cattle Feeders Assn., Independent Cattlemen's Assn., Texas Association of Dairymen, Texas Pork Producers Assn., Texas Sheep and Goat Raisers Assn., and Texas Farm Bureau.

One thousand eight-hundred fifty (1,850) producers from 10 states have participated in the Texas A&M Ranch to Rail program to learn more about how their calf crop fits the needs of the beef industry and the traits that create value in beef marketing. They learned that they could increase their net return per head by \$82 through retained ownership. They also learned that an effective health vaccination and weaning program at the ranch of origin reduced bovine respiratory disease at the feedyard to reduce production costs by more than \$90 per head.

The database on the 18,500 entries in Ranch to Rail revealed that administration of specific viral vaccines, and the timing of their administration and the days weaned prior to marketing greatly impact production efficiency and carcass quality. The outcome of this result led to development of the Value Added Calf Vaccination Management program (VAC). The four largest cattle marketing organizations in the state have adopted the VAC guidelines and have special feeder calf sales that have resulted in increased values for ranches in excess of \$70 per head due to industry demands for healthier cattle.

Two thousand two hundred and fifty-nine (2,259) beef industry leaders have participated in

Beef 706 to learn more about what creates value in beef carcasses and ways they can change management practices and genetics to enhance carcass value and increase the wholesomeness and safety of their beef product. Seventy-four percent (74%) indicated they would make different business and safety decisions in their ranching operation as a result of participating in this educational program and 100% said they would recommend attending 706 to other beef industry members.

The Annual TAMU Beef Cattle Short Course has hosted 19,200 beef cattle producers since 1990, averaging approximately 1,500 participants annually. The attending beef producers mirror the Texas beef producers' demographics related to herd size, number of ranches, acreage, producer characteristics, etc. Each annual survey indicates the attendees rank the 2.5 day conference as 86% excellent, 14% average, and no poor evaluations. The majority of participants (90%) indicated learned management practices would be adopted, amounting to \$80 net value increase per head in the operation or approximately and increase of over \$5,000 annually for the average sized beef operator. Ninety-eight per cent of the participants stated they would continue to use the TAMU Beef Cattle Short Course for future information on beef cattle production.

The Texas Pork Quality Assurance Youth Program was created and a curriculum was developed to educate the 26,000 youth swine project exhibitors annually at livestock shows on food and pork quality wholesomeness. More than 500 County Extension Agents and Vo-Ag instructors have been trained to deliver the curriculum. The National Pork Board has adopted the curriculum and created a handbook distributed nationally.

Output Indicators:

The total number of people **completing** non-formal educational programs to improve the production efficiency and end product quality of livestock products was 3,840.

Total number of people completing these non-formal educational programs to improve the production efficiency and end-product quality of livestock products who plan to adopt one or more production practices or management strategies after completing strategies after completing these products was 3,400.

<u>3,840</u>	Number of Participants Served by Group Methods
<u>1,400</u>	Number of Participants Served by Individuals Methods
<u>20,000</u>	Number of Participants Served through Mass Media
<u>201,000</u>	Number of Participants Served through web site Access

Outcome Indicators:

The total number of people completing these non-formal educational programs who actually adopt one or more new practices or strategies taught at these programs within six months.

Data not collected at this time.

Texas Agricultural Experiment Station

Genetic susceptibility to disease is a problem for animal production. Texas researchers have addressed this need using high resolution, ordered comparative maps of bovine chromosomes relative to the chromosomal maps of humans and mice and to provide biological reagents for bovine genome mapping to the research community. Already, they have placed 2000 conserved markers on an ordered radiation hybrid map of the bovine genome. All have known map positions in the human genome. This map has been completely integrated with the bovine linkage map.

Research validation and verification program of beef carcass decontamination has involved Extension specialists, scientists, and classroom educators to implement a stepwise process to determine industry decontamination procedures and parameters currently in use. Cattle at the same facilities are sampled for the presence of *Escherichia coli* O157:H7 and an indicator bacteria. Laboratory testing of decontamination procedures is conducted according to industry parameters, and verification of pathogen reduction is tested in the laboratory followed by implementation in the industry. Educational materials, including an interactive CD, are being used by personnel in this work, and are included in formal university courses and industry-appropriate workshops. This work is providing a logical outline of microbiological data collection from the beef industry, combined with extensive laboratory studies to investigate the possibility of using non-pathogenic bacteria for validation and verification of decontamination critical control points in slaughter processing. Ultimately, the resulting educational materials and programs will be used by both industry and in formal university courses.

C. Sources of Federal Funds

TCE: Smith Lever and State Matching

TAES: Hatch, and state, federal and private contracts and grants

D. Scope of Impact

Multi-State Extension – OK, AR, LA, TN, FL, and NM

Multi-State Research – Multi-State Project NRSP-8 (IL)

Integrated Research and Extension: Extension faculty worked with research scientists to identify technologies that could enhance production efficiencies, improve data collection and optimize meat quality. Research on electronics and its adaptation to livestock production was implemented. Electronic individual ear tags were used in Ranch to Rail to facilitate computer-assisted data collection. Also, ultrasound technology developed by researchers was used to determine body composition as it relates to carcass quality. Research faculty updated producers in Beef 706 on how electrical stimulation of carcasses and controlled aging can be used to improve tenderness of retail cuts.

Goal 2: A safe and secure food and fiber system

Overview

The Centers for Disease Control and Prevention estimate that food borne diseases cause 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths each year. More vulnerable populations for food borne diseases include the very young, the elderly, and immunocompromised individuals. Medical costs and productivity losses associated with food borne diseases are estimated in the billions of dollars each year, and in Texas, the costs are in the millions of dollars annually.

Statistics indicate that approximately 50% of all food borne illnesses are attributed to improper food handling in restaurants. Because 43-50% of all food dollars are on food prepared outside the home, food safety is a top concern among consumers. Previous research has indicated that approximately \$750 can be saved for every food borne illness prevented.

Educational training programs on safe food handling and food borne illnesses are conducted by county Extension agents using materials recently developed by Texas Cooperative Extension, called Food Safety: It's Our Business. Training and update instructor training is provided or facilitated for those county Extension agents who choose to participate in the program.

Recently, legislation was adopted requiring one food service manager in each establishment under Texas Department of Health jurisdiction to gain certification.

As a result of taking the TCE Food Protection Management course, food managers were expected to train their employees in safe food handling practices. Results indicate numerous increases in the knowledge and adoption of proper food handling practices.

Programs in the areas under Goal 2 continue to provide research-based information to commercial food handlers, as well as lay citizens in the state. Educational programs are designed in order for participants to make sound decision on the implementation of best management practices and adoption of recommended food safety practices. Educational programming has been and will continue to be driven by the needs of our clientele. Results from the Texas Community Futures Forum, and guidance from Executive Program Councils and program committees serve as the basis for this strategy.

The TCE data presented in this summary and the following section represents the efforts of Year 03 of this Plan of Work. Educational programming efforts have been ongoing for many of the areas represented and continue to provide Texas food service managers and food service handlers with opportunities for increased food safety knowledge and skills. Future plans will build on past experiences and emerging issues that may affect our state and clientele.

Sources of TCE-TAES Funding and FTEs

TCE: Smith Lever and State Matching

		\$ X 1000
		Actual
		<u>FY 2002</u>
Program 4 – Food Protection Management		680
	FTEs	32.50
Allocated Resources Goal 2		1,189
	FTEs	57.91

TAES: Hatch, and state, federal and private contracts and grants

Source of Funding and FTEs

Federal Funds (\$ x 1000):	169
State Funds (\$ x 1000):	668
FTEs:	6.30
Number of Projects:	33
Number of Publications:	86

State TCE-TAES Plan of Work Program 4: Food Protection Management

Key Theme: Food Handling, Food Safety, and Food borne Illness

A. Description of Activity

Background. The Centers for Disease Control and Prevention estimate that food borne diseases cause 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths each year. More vulnerable populations for food borne diseases include the very young, the elderly, and immunocompromised individuals. Medical costs and productivity losses associated with food borne diseases are estimated in the billions of dollars each year, and in Texas, the costs are in the millions of dollars annually.

Statistics indicate that approximately 50% of all food borne illnesses are attributed to improper food handling in restaurants. Because 43-50% of all food dollars are on food prepared outside the home, food safety is a top concern among consumers. Previous research has indicated that approximately \$750 can be saved for every food borne illness prevented.

Food Protection Management Educational Program. Educational training programs on safe food handling and food borne illness are conducted by county Extension agents using materials recently developed by Texas Cooperative Extension, called Food Safety: It's Our Business. The programs include food service manager certification programs. Training and update instructor training is provided or facilitated for those county Extension agents who choose to participate in the program. Educational lessons and activities in the Food Protection Management program focused on the following areas:

- Enhanced use of temperature control measures in food service, such as thermometer use, time and temperature control, safe internal cooking and holding temperatures, thawing procedures and general storage temperatures.
- Increased adoption of proper hygiene and hand washing practices of food service employees and managers.
- Increased adoption of practices to avoid cross-contamination such as proper storage, washing and sanitizing of utensils and equipment between use, and employee hygiene practices.
- Increased adoption of receipt and labeling of foods to prevent food waste and spoilage.

Target Audience for Food Protection Management Program. The target audiences for this educational program were managers and front-line employees in food service institutions, companies, and small "mom and pop" businesses who needed or desired training. These contacts included those in both urban and in the under-served rural areas of the state where public health oversight is limited. Care was given to meet the geographically disadvantaged.

Linkages. Internal linkages partnerships and cooperative relationships for the Food Protection Management program included research faculty members of TAES. External linkages included the following: private sector partnerships such as the National Restaurant Association Educational Foundation, corporate industries such as fast food chains and bed and breakfasts, and food distributors. Interagency cooperators included the Texas Department of Health, local public health jurisdictions and trade organizations such as restaurant and convenience store associations.

B. Impact of Program

Texas Cooperative Extension

Output Indicators:

In 2002, a total of 37 Food Protection Management (FPM) two-day certification training programs and 5 FPM one-day certification training programs were conducted throughout the state. In addition, 5 FPM programs with participants taking a certification test only were provided. A total of 658 food service managers and food service employees completed either a one or two-day certification training and 58 food service managers took the certification test. Of these food service managers and employees, 592 or 90% were from underserved rural areas of the state where public health oversight is limited.

Specific targeted data was not available for the number of front-line and occasional quantity cook education programs conducted.

Outcome Indicators:

As a result of taking the TCE Food Protection Management course, food managers were expected to train their employees in safe food handling practices. A statewide telephone survey of a sample of individuals who participated in the FPM certification course was conducted to determine the practices of food service employees both before and after the food service managers and employees had taken the course. This survey found that 94% of the participants had shared the information gained from the course with their employees. Other results reported by outcome indicators were as follows:

Food safety practices of employees:	Before Taking the Course:	After Taking the Course:
<p>Outcome Indicator: Using thermometers and other control measures to adequately monitor temperatures of foods.</p>		
<p>Employees use a thermometer to determine if foods have reached a safe internal temperature.</p>	40%	61%
<p>Employees always reheat leftover or cooked food to 165° F or until boiling.</p>	40%	53%
<p>Employees use a thermometer to check foods for proper holding temperatures.</p>	43%	65%
<p>Employees never thaw foods at room temperature or on the counter.</p>	42%	60%
<p>Outcome Indicator: Training and encouraging employees to use proper hand washing procedures.</p>		
<p>Employees wash their hands with soap and water for 20 seconds.</p>	49%	74%
<p>Employees always wash their hands with soap and water for 20 seconds after handling raw meat or poultry.</p>	45%	70%
<p>Outcome Indicator: Adopting practices to prevent cross-contamination.</p>		
<p>Employees never use the same cutting board for preparing all types of food.</p>	49%	68%

Food safety practices of employees:	Before Taking the Course:	After Taking the Course:
<p>Employees wash and sanitize cutting boards after using them for raw meat and poultry.</p> <div data-bbox="196 464 997 611" style="border: 1px solid black; padding: 5px;"> <p>Outcome Indicator: Using proper cleaning and sanitizing procedures for equipment, utensils and food preparation surfaces.</p> </div>	67%	80%
<p>Employees always follow recommended practices when washing and sanitizing food preparation equipment and surfaces.</p> <div data-bbox="196 831 997 936" style="border: 1px solid black; padding: 5px;"> <p>Outcome Indicator: Adequately labeling foods upon receipt and during storage.</p> </div>	66%	87%
<p>Employees follow recommended practices related to labeling foods upon receipt and during leftover storage.</p>	50%	74%

In addition, 91% of food service managers indicated that they put into practice what they learned from the TCE FPM course on an every day or almost everyday basis.

Impact of Program:

Because of the rising incidence of food borne illnesses in the United States and Texas, Food Protection Management programs are of vital importance. However, these trainings are unavailable to many food service managers and employees in rural areas. TCE has successfully provided these programs to 592 managers in underserved rural areas of the state where public health oversight is limited.

The results of the Food Protection Management survey indicated that for 55% of the respondents, this program was the first food safety course they had taken. Almost all (94%) of the managers who participated in the training indicated that they shared the information with their employees to increase safe food handling techniques in their establishments. Self-reports from food managers indicate they perceive that their employees now practice safe food handling 98% of the time compared with only 60% before the course.

Research on pecan Integrated Pest Management emphasized alternatives to FQPA at-risk chemicals. Working within the Southern Region Project S-293, researchers showed that Texas producers are receptive to new decision making tools under development and new chemistries being tested. These are anticipated to be rapidly adopted when effective protocols are determined and presented, and adoption is reducing costs of production, reduce pollution and delay development of resistance to chemicals by pests.

Pest and pesticide use assessments were completed and published during the past year. The work showed that pesticides are essential for U.S. crop production. This work has sustained herbicides for sugar crops and worked thru IR-4 for new clearances.

Research in cooperation with Federal and State regulatory officials is addressing needs created by implementation strategies of the Food Quality Protection Act (FQPA). Cooperating with other Land Grant Universities in the southern region, data on crop pest management was assembled and published on a common world wide web site. This information, collectively known as 'crop profiles,' is used by pesticide regulatory personnel as a part of their science based FQPA risk analysis. This work enhances the availability of pest management tools for multiple Texas crops. Environmental Protection Agency officials responsible for developing FQPA risk assessment documents and transition strategies are using the Texas developed crop pest management information to identify crops at risk and avoid canceling pesticide registrations that would harm Texas farming enterprises.

C. Source of Federal Funds

TCE: Smith-Lever and State Matching

TAES: Hatch, and state, federal and private contracts and grants

D. Scope of Impact

Multi-State Extension - Multi-State projects include working with Colorado, Ohio and Washington to develop program indicators.

Multi-State Research – Multi-State Project W-195

Integrated Research and Extension: Integrated Research and Extension include working closely with professors in the department of food science and technology, animal science on projects such as the food safety of fresh fruit and vegetables and HACCP.

Goal 3: A Healthy, well-nourished population
Overview

The TCE-TAES Programs under Federal Goal Three cover the areas of General Health Education, Diabetes Education, and Better Living For Texans.

General Health Education - General health education programs are represented by the Walk Across Texas, the Rural Passenger Safety Project, and the Cancer Risk Reduction for Rural Texans program. These programs, with the exception of the Rural Passenger Safety Project, are designed as to promote the prevention chronic diseases or to reduce the impact of chronic diseases such as heart disease, stroke, cancer, and diabetes. Prevention and reducing impact of these very costly diseases is extremely significant since people find them so difficult. The Rural Passenger Safety Project is designed to provide a safe environment for children and adults using our roadways.

Results from these projects indicate success. In the Walk Across Texas Program, 19,221 participants established a habit of walking during this eight-week program. Their mileage increased from 10.1 miles in week one to 11.4 miles in week eight, a statistically significant increase. Eighty-two counties implemented this program during 2002. This year marked the first time major cities participated in Walk Across Texas. To enable county agents in urban areas to manage the Walk Across Texas process, a web site, <http://walkacrosstexas.tamu.edu> was created. This web site allows data entry anywhere in a community and immediate analysis of results. At any time, participants are able to view on a Texas map how their personal or team mileage compares to other participants and teams. Participants are able to see how far their team has walked and how far they still have to go.

The Rural Passenger Safety Education Project checked 538 children at safety seat check-up events in FY 02, helping families correctly install their child safety seats. The project destroyed 244 unsafe safety seats during this period. In addition, the project staff trained 38 Texans as certified safety seat technicians, thereby increasing the number of adequately trained people capable of correctly checking even more safety seats for families. 5,614 Texans attended events where they viewed the Rollover Convincer to enhance their awareness of the necessity for wearing seatbelts. During FY02, the project secured \$7,000 worth of Evenflo Right Fit booster seats at no cost to the project. State Farm also donated \$3,000 for a check-up event.

The Cancer Risk Reduction Education through Texas Cooperative Extension project reached 79,803 people in 2002. Programs were presented to 931 different groups/entities. Health Technology camp worked with 29 youth and 11 adult leaders to increase their knowledge of cancer prevention by attending a workshop at M.D. Anderson Cancer Center in Houston. Participants applied their knowledge to create another cancer prevention educational web site for youth, this one focused on lowering the risk for smoking tobacco among youth (<http://nobutts.tamu.edu>). Previous campers created two other similar web sites (<http://coolshade.tamu.edu> and <http://nodips.tamu.edu>). These educational web sites had 22,453 visitors with 16,026 identifying themselves as 18 years or younger, 2,879 others identifying themselves as parents, and 3,548 identifying themselves as someone other than a parent or person under 18 years of age. Extension agents also provided educational programs including camps to increase awareness of strategies to lower cancer risk by using sun protection and not using tobacco. Other programming included helping participants learn early signs of skin cancer and the importance of seeking early diagnosis. To extend the reach of Extension agents regarding skin cancer education, volunteers were trained to use three flip charts to provide this information to community audiences. Volunteers were also trained to use flip charts to educate parents and

other care givers of young children regarding the hazards of second hand smoke. The Students Working Against Tobacco (S.W.A.T.) project is directed at developing a replicable approach to reducing youth tobacco use in rural communities. This program has involved 550 contacts in pilot county schools and a total of 1,053 total contacts in the target county.

Diabetes Education. Diabetes is a significant problem affecting 920,000 Texans who know they have the disease and another 680,000 Texans unaware that they have the disease. Failure to control blood glucose levels to prevent long term complications results in increased health care costs, increased loss of time from work due to illness, amputations, poor health status leading to decreased quality of life. Extension diabetes programming efforts educated clientele in some 1,015 programs reaching 71,020 people, with approximately 60 percent representative of undeserved populations. In the previous two years, the county programs attracted more than half of consumers with diabetes and health professionals in an average of 50 Texas counties. With more collaborations, coalitions, and partnerships within the medical communities in local counties, Extension has gained respect as a reliable resource for nutrition and self care.

Better Living for Texans: The core of the Better Living for Texans (BLT) program was a series of 5 to 6 lesson, which focused on basic nutrition, food preparation, food resource management, and food safety. The curricula used in the program were research-based, targeted toward limited resource audiences, and available for county Extension agents. For the first half of the program year, the targeted audience for BLT was limited to food stamp recipients and applicants. In March 2002, BLT was granted three waivers which allowed the inclusion of other limited resource audiences. During 2001-2002, BLT operated in 228 lead counties across Texas. A total of 105,473 direct educational contacts were made. Of those contacts, 36% were made to Caucasians, 15% to African Americans, and 48% to Hispanics. Less than 1% of those contacts were made to individuals who identified themselves as Native American or Asian-American.

Outcome data described in the section of this report on the BLT program indicate significant changes in dietary behaviors. Other results in the section provide additional evidence as to the effectiveness of the BLT program in Texas.

Programs in the areas under Goal 3 continue to provide citizens of Texas with research-based information in order for them to make sound decision on the implementation of best management practices, adoption of technologies, and behavior changes to improve the quality of life. Educational programming has been and will continue to be driven by the needs of our clientele. Results from the Texas Community Futures Forum, and guidance from Executive Program Councils and program committees serve as the basis for this strategy.

The data presented in this summary and the following section represents the efforts of Year 02 of this Plan of Work. Educational programming efforts have been ongoing for many of the areas represented and continue to provide Texans with opportunities for increased health and well-being. Future plans will build on past experiences and emerging issues that may affect our state and clientele.

Sources of TCE-TAES Funding and FTEs

TCE Funding: Smith Lever and State Matching

		\$ X 1000
		Actual
		<u>FY 2002</u>
Program 5 – General Health Education		986
	FTEs	30.50
Program 6 – Extension Diabetes Education		519
	FTEs	25.00
Program 7 – Better Living for Texans		485
	FTEs	23.20
Total TCE Allocated Resources Goal 3		2,095
	FTEs	102.03

TAES Funding: Hatch, and state, federal and private contracts and grants

Source of Funding and FTEs

Federal Funds (\$ x 1000):	146
State Funds (\$ x 1000):	824
FTEs:	10.47
Number of Projects:	25
Number of Publications:	55

State TCE-TAES Plan of Work Program 5: General Health Education

Key Theme: Human Health

A. Description of Activity

Walk Across Texas

According to the 1996 Surgeon General's Report, 60% of adults are not physically active, and 25% do no physical activity. In addition, nearly half of American youth are not physically active on a regular basis. Adequate physical activity lowers risk and improves management and outcomes for leading causes of death including heart disease, hypertension, stroke, and diabetes. This program is aimed at helping participants establish the habit of physical activity with support from their peers.

County Extension agents in 82 counties across Texas organized teams of eight people to keep a record of miles they walked during eight weeks. Teams competed with one another to walk across the state first and/or accumulate the most mileage during the eight weeks. Team members could also attend classes and receive information on nutrition, exercise, weight loss, and other health topics like arthritis and diabetes.

Participants can now track their progress on-line at <http://walkacrosstexas.tamu.edu>, a data collection web site developed during 2002. They are able to immediately receive feedback on their progress towards increasing their physical activity. Participants may see how their individual or team progress compares to others in their groups. Participants compete within groups such as their own work sites or schools, thereby enhancing peer support for accomplishing their goal of increased activity. The website has enabled the implementation of this program in two major metropolitan areas this year, Dallas and Ft. Worth.

Internal linkages have been formed with Agricultural Communications, Foods and Nutrition, and Extension Information Technology. External linkages include families, schools, work sites, families, neighborhoods, churches, and civic clubs participated. Almost one-half of the teams came from work sites. County agents reported collaborating with local health departments and a number of civic groups like parks and recreation. Selected counties in four regions were supported by the Texas A&M Health Science Center, Health Education and Rural Outreach program specialists. Other states including Kansas, Arkansas, Louisiana, Kentucky, Alabama, and Illinois have requested the manual to adapt this program for their state.

Rural Passenger Safety Education

Based on a study conducted by the National Highway Traffic Safety Administration, at least 80% of all child safety seats are used incorrectly. The long-term goal is to reduce child passenger fatalities 25% by the year 2005. Motor vehicle accidents are the leading cause of death for children.

Certified child safety seat technicians provided child safety seat checkup events where parents learned how to correctly select and install safety restraint systems for their children. Technicians demonstrated the correct installation in parents' vehicles in rural counties across Texas.

External collaborations included the Texas Department of Public Safety troopers and Texas Department of Transportation.

Cancer Risk Reduction for Rural Texans

Cancer is the second leading cause of death in adults over 40 years of age. Survival is improved when early detection is sought. The risk for cancer can be reduced with lifestyle improvements such as not using tobacco and reducing unprotected sun exposure. Rural

populations in Texas are more at risk for death from cancer because 30% are over 65 years old and accessing both knowledge regarding early detection and medical care are difficult. This project particularly targets people working in agriculture --a group with a high incidence of skin cancer because of high levels of sun exposure as they go about their daily work.

Extension agents were provided training and educational resources focused on early detection and risk reduction for cancer. Agents used these materials at a variety of events including fairs, livestock shows, Texas Extension Educators Association meetings, civic club meetings, 4-H meetings and events, camps, and many other events in their counties. Volunteers were trained to use flip charts containing narratives and pictures to inform community groups how to prevent skin cancer.

According to the Centers for Disease Control, there is an absence of programs to reduce youth tobacco use in rural communities. To address this issue, funding was obtained to develop a process to reduce tobacco use in rural communities. The program, Students Working Against Tobacco (S.W.A.T.), is being implemented in Van Zandt county. An advisory board was formed consisting of school nurses, local media, law enforcement, teachers, parents, 4-H leaders, and students. The group did baseline measurements including assessing smoking policies in local restaurants and counting the number of youth smoking in known gathering places. Further, students in schools were asked to indicate whether they smoke or not using an anonymous ballot. The team has presented prevention programs in local schools, stock shows, fairs, Headstart and other similar sites. The team is also working towards changing local ordinances regarding smoking in public places. Final evaluation will include repeating measurements done during baseline data collection.

Internal Collaborations include the 4-H program. External linkages have been formed with the Texas Cancer Council, and a variety of others including local hospitals and clinics, civic clubs, fair and livestock show boards, other Texas Cancer Council funded projects like the Stop Spit Tobacco Network, work sites, churches, and many others.

B. Impact of Programs

Texas Cooperative Extension

In the Walk Across Texas Program, 19,221 participants established a habit of walking during this eight-week program. Their mileage increased from 10.1 miles in week one to 11.4 miles in week eight, a statistically significant increase. Almost 50 percent reported feeling less stressed. A number of participants reported that their doctors reduced their diabetes, cholesterol and blood pressure medicine because of their increased physical activity. One participant from Hamilton county reported: "I dropped my cholesterol 30 points during Walk Across Texas. He attributed his success to Walk Across Texas helping him increase his activity long enough to make it a habit.

Every dollar spent on a child safety seat saves this country \$32 in health care costs. It is estimated that nearly 300 children, ages four and under, were saved as a result of child restraint use in 1998. If all child passengers, ages four and under, were restrained, it is estimated that an additional 173 lives could be saved, and 20,000 injuries could be prevented annually.

Data from the Rural Passenger Safety Education program indicates that over 538 child safety

seats were inspected and parents were instructed how to correctly install their child safety seats. 244 unsafe seats were destroyed. 5,614 Texans attended events where they viewed the Rollover Convincer to increase their awareness of the importance of using seatbelts consistently.

Finally, the Cancer Risk Reduction for Rural Texans also had an impact on its participants. Participants attending awareness activities have said they were going to have suspicious lesions checked and others have said they will begin using sunscreen and protective clothing as well as avoiding tanning beds. More than 150 people have e-mailed specific questions about tobacco use, cessation and skin cancer reduction and procedures for diagnosis. All youth attending Health Tech camp go back to their communities and serve as peer educators, conducting tobacco and skin cancer prevention activities. A number of the youth attending Health Tech have expressed an interest in pursuing a health career so they can return to their rural communities as health professionals.

Output Indicators:

Walk Across Texas

Number of people completing non-formal education programs on health promotion.
19,221 participants

Total number of people completing non-formal education programs on health promotion who plan to adopt one or more recommended practices after completing one or more of these programs.

No data available to determine this.

Rural Passenger Safety Education

Number of people completing non-formal education programs on health promotion.
538 participants

Total number of people completing non-formal education programs on health promotion who plan to adopt one or more recommended practices after completing one or more of these programs.

No data available to determine this.

Cancer Risk Reduction for Rural Texans

Number of people completing non-formal education programs on health promotion.
79,803

Total number of people completing non-formal education programs on health promotion who plan to adopt one or more recommended practices after completing one or more of these programs.

No data available to determine this

Outcome Indicators:

Walk Across Texas

The total number of people completing non-formal education programs on health promotion who actually adopt one or more recommended practices within six months after completing one or more of these programs. 19,221 participants reported completing 8 weeks of walking. Their mileage increased from 10.1 miles in week one to 11.4 miles in week eight. This was a statistically significant increase.

Rural Passenger Safety Education

The total number of people completing non-formal education programs on health promotion who actually adopt one or more recommended practices within six months after completing one or more of these programs.

No outcome data was collected.

Cancer Risk Reduction for Rural Texans

The total number of people completing non-formal education programs on health promotion who actually adopt one or more recommended practices within six months after completing one or more of these programs.

No outcome data was collected.

Texas Agricultural Experiment Station

Research has focused on genetical improvement of carrots for normal quality characteristics and those contributing to health when consumed. All carrot lines were selected for resistance to *Alternaria* foliage disease, high carotene, sugar and low terpenoids. 'BetaKing', a high carotene, high anthocyanin, crisp texture, sweet flavor maroon colored, nantes type carrot was awarded Plant Variety Protection and is being marketed under the trademark 'BetaSweet'. The 'BetaKing' maroon carrot, sold as 'BetaSweet' has become known throughout the US, Canada and Australia. Its market appeal to consumers in major urban areas has increased to health conscious consumers, and is marketed as a good source of carotene and anthocyanins.

C. *Source of Federal Funds*

TCE: Smith-Lever and State Matching

TAES: Hatch, and state, federal and private contracts and grants

D. *Scope of Impact*

Multi-State Extension – KA, AL, ID, IL, KY, LA, TN

Multi-State Research – FL

Integrated Research and Extension

State TCE-TAES Plan of Work Program 6: Diabetes Education

Key Theme: Human Health, Human Nutrition

A. Description of Activity

Diabetes is a significant problem affecting ~920,000 Texans who know they have the disease and another 680,000 Texans undiagnosed. Failure to control blood glucose levels to prevent long term complications results in increased health care costs, increased loss of time from work due to illness, amputations, poor health status leading to decreased quality of life. Education is the single most important thing people with diabetes can do to improve their health status and prevent the onset of complications. Additional benefits possible might be that health care insurance costs could decrease by controlled blood glucose levels through proper nutritional management and increased exercise resulting in fewer chronic complications, less time lost from work due to better nutrition practices and self-care health management, and reduction in long term illness and health care costs.

Twelve diabetes educational lessons, along with handouts, visuals/transparencies/PowerPoint presentations, CD roms with powerpoint presentations, videos (purchased and in film library), and activities will be included with each lesson. Diabetes curricula *Do Well, Be Well with Diabetes*TM on the following components: **Overview Lesson** is Living with Diabetes Mellitus, **6 Nutrition Lessons** include the following: Nutrition—First Step to Diabetes Management; Dietary Treatment of Diabetes; “One Diabetes Diet” - No Longer the Sole Option!; Nutritional Labels; For Good Measure, and Eating Out. **Self Care Lessons** include: Managing Your Blood Sugar; Avoiding Acute Complications; Exercise; Doctor’s Visits; Avoiding Long Term Complications; Insulin and Medications; Protecting Your Skin, Feet, Teeth, and Eyes; Coping with Diabetes; and Diabetes at Special Times. To test the curricula and insure its credibility in 2001-2002, a pilot test was conducted in 12 Texas Counties. Organizational process included county faculty selected by their supervisors, the administration and the nutrition and health specialists. They were trained in a 2 day training in a central location. Then in 2002, the pilot testing results were used to fine tune the curricula. A diabetes team of specialists, editors, artists, graphics designers, marketing specialists, and administration finalized the curricula. For the selection of agents to conduct the program in 2003, their managers along with the administration, nutrition and health specialists selected from all applicants the final selection of participants. This process resulted in ~68 agents selected according to their performance and ability to plan, implement and evaluate their programs. They were invited to select one of 3 trainings set for early in 2003. In addition to the *Do Well, Be Well with Diabetes*TM that will be conducted in 2003 (phase 1), a coalition of county faculty, nutrition and health specialists, administration and other experts will plan a follow-up program of a *Do Well, Be Well with Diabetes*TM cooking school.

The target audiences for these programs include persons with Type 2 diabetes, family members, limited income adults, ethnic groups with a high incidence of diabetes (Hispanics, African-Americans) and Youth with Type 2 diabetes mellitus; and secondary, health professionals working in counties throughout the State.

71, 020 Number of Participants Reached
~60 % of Participants Underserved

Partnerships and cooperative relationships will be established or maintained with:

External: Texas Commission for the Blind, Texas Diabetes Council - Texas Department of Health administration, Advocacy Committee members and regional offices, American Diabetes Association, American Association of Diabetes Educators, American and Texas Dietetic Associations, National Center for Farm Health, Denton, Dallas and Tarrant Counties Diabetes and Cardiovascular Coalitions, Diabetes Institute and University of Texas Health Science Center of San Antonio, certified diabetes educators, county hospital associations, local hospitals, local health professionals, health organizations, phamacists, pharmaceutical and diabetes suppliers.

Internal: Extension Food/Nutrition Specialist - Special Food/Nutrition Needs, Family Development/Resource Management–Health, Evaluation and Program Development Specialists, School of Rural Public Health, TAMU Medical School faculty, and TAMUS Health Sciences Center faculties health professionals, County Extension Agents in Family and Consumer Sciences, other Extension programs such as those targeting limited incomes or specific ethnic groups.

B. Impact of Programs

Texas Cooperative Extension

Summary of Outcome Measures

Extension diabetes programming efforts educated clientele in some 1,015 programs reaching 71,020, with ~60 percent representative of the undeserved populations. In the previous two years, the county programs attracted more than half of consumers with diabetes and health professionals in an average of 126 Texas counties. With more collaborations, coalitions, and partnerships within the medical communities in local counties, Extension has gained respect as a reliable resource for nutrition and self care. Today, more than ever, nutrition education and self-care education using strategies for effecting behavior changes are recognized as essential in the management of diabetes and in reducing the risk of developing long-term complications. Following the initial education by the diabetes team members (physician, dietitian, nurse, diabetes educator, psychologist, etc.) County Extension agents, trained in diabetes education and in additional professional diabetes education meetings, are well-equipped with knowledge and skills needed to can help persons with diabetes achieve the ultimate goal of glucose control. Extension educators are trusted for providing sound advice and their ability to extend the education of the primary health teams. This ongoing diabetes education program may be individual events in some years in more than 75% of Texas counties. However, the outcome program in diabetes will focus in approximately 78+ county programs continuing for the five-year life of this plan, provided funding still available.

Outcome Measures (Indicators) Examples

Preliminary data supports that Extension diabetes education has enabled persons with diabetes to make positive changes in behavior and practice self-care as shown from the Extension Diabetes Proxy Study (*Diabetes Educator Journal*, Sept./Oct., 1995). The study was conducted to show the impact of diabetes programming, significant behavioral changes ($p < 0.05$) made by clientele, and additional information from focus groups for insight into the barriers preventing diabetic compliance. Evaluation of baseline knowledge and current behavior provided invaluable information about what personal characteristics and knowledge of practices lead clients with diabetes to change certain habits thus improving diabetes control, and leading ultimately to better health and well-being. In 2002, some 36 outcome programs included the following Texas counties: Bastrop, Baylor, Brazos, Briscoe, Cameron, Carson, Cass, Chambers, Cochran, Comal, Concho, Coryell, Crosby, Dallam, Dallas, Dawson, Dickens, Gregg, Hamilton, Hansford, Hays, Hemphill, Hood, Hunt, Jones, Karnes, Medina, Menard, Nolan, Pecos, Runnels, Tarrant, Tom Green, and Wichita.

Awareness of Managing Food Choices Through Healthful Eating To Control Blood Glucose

71,020 persons in either individual and group methods became aware of importance of controlling blood glucose through healthful eating (decreasing fat, sugar, increasing complex carbohydrates) and self-care (self-glucose monitoring, exercise, visiting with health care provider, and taking medications and/or insulin diabetes) through the Extension diabetes programming in Texas counties.

Awareness of importance Self-Blood Glucose Monitoring

71,020 persons awareness of importance of adequately monitoring blood glucose levels 4 times a day

Awareness of Exercising to Control Blood Glucose

71,020 persons awareness of importance of engaging in daily exercise

Visiting with Health Care Provider

Number of individuals visiting with physician, dietitian, nurse, diabetes educators - Data not available

Taking Prescribed Medication and/or Insulin

Number of individuals taking prescribed medication and/or insulin - Data not available

Summary of Output Measures

(via 12 individual districts summaries for diabetes, diabetic individuals)

4,553 Number of group methods

71,020 Number of people completing programs (Group Methods) (645 percent increase since 2001)

94,546 Number of Participants Served by (Individual Methods) (Trend is that clientele with diabetes seeking information via individual assistance)

73,689 Number of written diabetes educational materials distributed via newsletters, self-study guides. Diabetes resources will be included in a new diabetes curriculum *Do Well, Be Well with Diabetes*[™], 12-week Nutrition and Self-Care TCE Curricula with accompanying PowerPoint visuals with each lesson, handouts, and some web-based educational resources

Many health professionals, clientele with diabetes, internet users, seek diabetes information via the web via Extension. To accommodate this continual access to knowledge, web based Extension diabetes nutrition/self-care information can be found at: Food/Nutrition http://fcs.tamu.edu/food_and_nutrition.htm and FCS <http://fcs.tamu.edu/> and Health websites http://fcs.tamu.edu/food_and_nutrition.htm , food/nutrition electronic newsletters <http://calcium.tamu.edu/mickey/newsletters/> , HERO newsletters on diabetes <http://fcs.tamu.edu/health/> , diabetes nutrition and health related bookmarks organized <http://calcium.tamu.edu/mickey.html> .

C. *Sources of Federal Funds*

TCE: Smith-Lever and State Matching

TAES: None

D. *Scope of Impact*

Multi-State Extension: State Specific

Multi-State Research: None.

Integrated Research and Extension: Collaboration among Extension nutrition (registered/licensed, dietitian) specialist, Department of Animal Science, and Extension health specialist (registered/licensed nurse); diabetes response team made up of County Extension Agents in Family and Consumer Sciences in several Texas counties trained in diabetes education via special Statewide training and participation in American Association of Diabetes Educators Annual Meetings; and various outside partnerships/support (see Target Audience).

Texas Agricultural Experiment Station

The Texas Agricultural Experiment Station did not have research programs that complimented or supported TCE in its State Plan of Work Program 6, i.e, Diabetes Education.

State TCE-TAES Plan of Work Program 7: Better Living for Texans

Key Theme: Human Health, Human Nutrition

A. Description of Activity

An estimated 15.2% of Texans live in poverty. Research suggests that individuals who live in poverty consume diets that are not in agreement with the Dietary Guidelines for Americans and the Food Guide Pyramid. In addition, the diets of individuals in low-income households are often deficient in fruits, vegetables, and dairy products. This is due, in part, to a lack of knowledge and an inability to purchase and prepare healthy foods on limited budgets. Individuals who live in poverty are also at risk for being food insecure. This means that the ability to acquire safe and nutritious foods is limited or uncertain. In 1999, the USDA identified Texas as having the 3rd highest number of households (almost 13%) that were food insecure. A recent survey of 1,000 households participating in the Food Stamp Program throughout Texas found that more than half of those households had experienced food insecurity or hunger within a 12-month period.

The core of the Better Living for Texans (BLT) program was a series of 5 to 6 lessons, which focused on basic nutrition, food preparation, food resource management, and food safety. The curricula used in this program were research-based, targeted toward limited resource audiences, and available for county Extension agents. When possible, materials were available in Spanish as well as English for Spanish-speaking audiences and instructors. Newspaper articles as well as television and radio were other avenues used to market the BLT program and distribute information about food and nutrition to limited resource audiences.

During the first half of the 2001-2002 program year, the targeted audience for BLT was limited to food stamp recipients and applicants. In March 2002, BLT was granted three waivers which allowed the inclusion of three other limited resource audiences: (1) families of students in schools with more than 50% of the student population eligible for free lunches, (2) families of Head Start participants, and (3) families whose children participate in the Summer Food Service Program. During the program year, BLT was conducted in 228 lead counties across Texas. During 2001-2002, 105,473 direct educational contacts were made. Of those 105,473 contacts, 36% were made to Caucasian, 15% to African Americans, and 48% to Hispanics. Less than 1% of those contacts were made to individuals who identified themselves as Native American or Asian American.

Internal linkages were developed with several sources. Nutrition specialists recommended curricula and educational materials, and participated in the training of agents and paraprofessionals. During 2001-2002, Nutrition Specialists began development of the *Eat Better to Live Better* curriculum. This curriculum is a series of lessons that reflect the current objectives of BLT. The curriculum will be completed by Spring of 2003 and will be the core curriculum for the 2003-2004 program year.

Linkages were also developed with external sources. TCE collaborated with other agencies, including the Texas Department of Health (WIC program), the Texas Department of Human Services (Food Stamps), as well as local housing authorities to identify and recruit eligible participants. Agents also marketed and conducted BLT programs in conjunction with other community organizations that serve the targeted audience including food banks, food pantries, churches, community centers, and congregate feeding sites.

B. *Impact of Programs*

Texas Cooperative Extension

Output Indicators:

# of educational activities conducted:	9,753	
# of direct educational contacts:	105,473	
# direct educational contacts via newsletters and self-study guides	108,492	
mass media		
# news releases prepared	857	
# news outlets receiving releases		883
# radio releases prepared	389	
# radio stations receiving releases	193	
# television releases prepared	64	
# television stations receiving releases	61	

Outcome Indicators:

The extent to which outcome indicators were met was based on a statewide telephone survey of a sample of individuals who participated in a six-lesson series as a part of the BLT program during the 2001-2002 year. Trained interviewers administered the survey to the 404 individuals who agreed to participate. Surveys were conducted in both English and Spanish.

Outcome Indicator #1:

Number of limited resource individuals who are able to provide themselves and family members a variety of food for a healthy diet using the Food Guide Pyramid and the Dietary Guidelines as guides.

Results: The consumption of the number of servings of fruits, vegetables, and dairy products was significantly higher after subjects completed the BLT program in comparison to before entering the program.

Food	# servings consumed		p-value
	Before	After	
bread, cereals, rice, and pasta	2.8 ± 2.4	2.8 ± 1.5 ^a	NS ^b
fruits	1.8 ± 1.6	2.8 ± 1.6	.0001
vegetables	2.2 ± 1.4	3.2 ± 1.6	.0001
milk/dairy products	2.1 ± 1.7	2.7 ± 1.6	.0001

^a mean number of servings ± standard deviation, rounded to the nearest tenth

^b NS = not significantly different

Participants also reported improvements in a number of behaviors that are in agreement with the Dietary Guidelines for Americans. The percentage of respondents who reported that they seldom or never use lard, shortening, butter, or margarine when preparing food rose from 26% before the BLT program to 40% after the program. Nearly 46% of the subjects reported that

before the BLT program they ate foods they thought were high in fat either “always” or “most of the time;” afterwards, the percentage fell to 13%. Nearly 50% of respondents reported that before the program, they ate foods they thought were high in sugar “always” or “most of the time;” this fell to 15% after BLT. On the other hand, 52% respondents reported that after participating in BLT, they were eating foods high in fiber “always” or “most of the time.” This was up from 32% prior to participating in BLT.

Outcome Indicator #2

Percentage of limited resource individuals who are able to select, prepare, and handle foods for themselves and family members to reduce nutrition-related health risk factors.

Results

This outcome indicator is related to food safety practices and the extent to which individuals perceive their ability to prepare nutritious meals for their families. In the survey, three food safety habits were investigated: handwashing, washing cutting boards, knives and counter tops with hot, soapy water after working with raw meat or poultry, and the length of time cooked foods are left out before eating or refrigerating. More than 85% of survey participants reported that before BLT, they “always” washed their hands with soap and water before preparing meals. This percentage rose to 96% after BLT. Likewise, the percentage of respondents who indicated always washing their cutting boards, knives and counter tops with hot soapy water after working with raw meat or poultry increased from 81% to 94%. The percentage of respondents who reported leaving cooked foods sit out for two hours or more decreased from 13% before BLT to 3% after completing the program.

Participants were also asked to describe the extent to which they could prepare nutritious meals for their families. The percentage of participants who rated their ability to feed their households nutritious meals as “good” or “very good” rose from 35% before BLT to nearly 88% afterwards. Before entering the program, more than 20% of the participants felt that their ability to prepare nutritious meals was very poor, mainly due to a lack of information on healthy eating. After the program, less than 2% of participants (7 out of 404) felt their ability to prepare nutritious meals was very poor.

Outcome Indicator #3

Percentage of limited resource individuals who are better able to manage food purchasing resources to have food available through the end of the month without seeking emergency assistance such as food banks.

Results

Prior to participating in BLT, respondents noted that they spent an average of \$89 per week on groceries. After BLT, weekly expenditures for food decreased to \$74. Nearly 39% of respondents reported that they were able to reduce the amount of money spent on groceries. Respondents who were able to reduce their weekly grocery bill cited several habits that helped them achieve lower grocery bills: buying cheaper brands (reported by 31%), comparing prices (31%), making a shopping list (31%), buying less “junk” food (9%), and buying only what is needed (5%).

Outcome Indicator #4

Percentage of limited resource participants who improve their food security status. Food security is defined as having sufficient food for an active life. This food should be safe, nutritionally adequate, and obtained in a socially acceptable manner. If food is not sufficient, safe, nutritionally adequate or obtained in a socially acceptable manner, then a household is said to be in a state of food insecurity. The need for emergency food assistance is a good indicator of food insecurity. Prior to the BLT program, nearly 26% of respondents reported that they had used some form of emergency food assistance within a 12-month period. This percentage fell to 17% afterwards. In addition, the percentage of respondents reporting that they “always had enough to eat” rose from 80% prior to BLT to nearly 91% afterwards.

Impact of the Program

Subjects who participated in the BLT program reported significant improvements in their diets, in their ability to manage their food resources, and in their household food security status. This indicates that BLT is effective in teaching limited resource individuals and families food and nutrition skills that improve one’s ability to follow national dietary recommendations while reducing the need for emergency food assistance.

Texas Agricultural Experiment Station

Research on Texas rangeland has developed a multidimensional approach to educating land owners about the role of woody plants in resource management. The scientists have developed a digital library of native plants from South Texas and the Edwards Plateau region near Uvalde, with pictures of common plants and a description of their habitat and uses is available for landowners and managers. A hydraulic lift study under mature mesquite trees is measuring soil water potential under 5 different experimental conditions. Subsurface irrigation tubes were drilled and the site has been watered since July 2000. Supplementing wildlife (primarily white-tailed deer) is widely practiced although the impact on home range size and on seedling predation rates are unknown. Three feeding areas and 3 non-feeding areas were established in mesquite savanna communities. Total home range of supplemented deer did not change, although the kernel (50% use area) did decrease significantly for supplemented female deer. Bioassay of feeding activity using arrays of seedlings around feeders and control sites shows that intensity of browse use is greater near feeders. Concentrated browsing on preferred plant species will lead to range depletion in the vicinity of deer feeders. Interception losses due to juniper canopies can have a major impact on the hydrologic cycle. Ten study sites have been used to determine the fate of rainfall in juniper (*Juniperus asheii*) communities. Light rainfall events (< 0.25 in.) had most of the rainfall intercepted by the juniper canopies and most rainfall events (75%) were < 0.25 inches. The fate of stemflow water and transpirational water loss are also being investigated. Global climate change models predict a decrease in summer and an increase in winter precipitation for southern Texas. The influence of altered precipitation regimes on defoliation tolerance for 3 native shrubs (catclaw, guajillo and mesquite) and 3 native grasses (plains bristlegrass, sideoats grama and Wright's threeawn) under different microsite conditions was studied. Changing the seasonality of precipitation by reducing summer rainfall or increasing winter/spring rainfall did not significantly influence growth or biomass allocation of grass and shrub seedlings in a semiarid savanna. Microsite variations in defoliation intensity and light availability influence seedling

growth and biomass allocation more than changing seasonality of precipitation. In total, this program has determined the native plant community response to global climate change, the use of rainfall in juniper communities, and the response of native vegetation to prescribed fires. The information is being used by drought managers to model water yield for aquifer recharge and for predicting the impact of global climate change on plant community structure and composition.

A Texas research program evaluated the impact of the southern pine beetle (SPB) on sustainable management of pine forests in Texas and the Southern US. Seven criteria were used for evaluation, including (1) conservation of biological diversity, (2) maintenance of productive capacity of forest ecosystems, (3) maintenance of forest ecosystem health and vitality, (4) conservation and maintenance of soil and water resources, (5) maintenance of forest contribution to global carbon cycles, (6) maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies, and (7) establishment of a legal, institutional, and economic framework for forest conservation and sustainable management. Summaries for each criterion are being assembled using Netweaverr, a software product designed for this purpose, and thematic databases provided by the USDA Forest Service are being used to define the indicators. In addition to the spatial databases, the USDA Forest Service, Forest Health Protection, are providing access to historical records on SPB distribution and abundance. These data are located in an ORACLE database, SPBIS (the southern pine beetle information system) as well as spatial databases for National Forests in the South.

The Texas turfgrass breeding program developed and released 15 cultivars of various grass species which have been commercialized over past decade and are being used throughout the U.S. and multiple foreign countries. PRAIRIE buffalograss was the 1st release in 1989, and is used throughout the central and southern United States for home lawns, golf course roughs, and roadside -parkways. It was the first patented grass released by TAES and the first Buffalograss cultivar released for use exclusively for turf. The grass is noted for aggressive growth and persistence under minimal care. Following the release of 'PRAIRIE', three Bentgrass cultivars were released for superior heat tolerance (CATO & CRENSHAW), strong genetic color and disease tolerance (CATO), and salinity tolerance (MARINER). Four Zoysiagrasses (CAVALIER, CROWNE, & PALISADES and DIAMOND) were released in 1996 targeting low water use, shade tolerance and resistance to a host of insects. These grasses have entered the sod production market and are being used in nearly every southern state. Additionally, a strong interest in this grass exists in Australia and other countries. ROYAL Zoysiagrass, targeted for the high end golf course tees and fairways, was released in 2001 and ZORRO will be released in 2002 with improved cold hardiness and drought tolerance. These both are anticipated for wide spread use in the home owner and golf course market throughout the south.

Six focus groups with Hispanic Americans, African Americans, and refugee groups in Fresno (CA), Springdale (AR), and Nashville (TN) gathered information on the recreation behavior and constraints of ethnic and racial minority groups in areas experiencing rapid change in the demographics of their populations. The specific focus was on recreation at Army Corps of Engineers reservoirs. The results are being used by the Army Corps of Engineers to increase outreach to the Hispanic community in Fresno to partner with corporate employers of minority groups in Springdale to promote safe recreation at lakes. Results also are being used as input into the revised Facility Design Guidelines for the Corps of Engineers.

Texas researchers completed experiments on using a quercetin-amended diet. Diverse melon

and pepper lines were grown in replicated field plots to collect fruit for carotenoids, ascorbic acid and flavonoids analysis, and early results demonstrated wide genetic variations of the target compounds and several lines with extremely high concentrations. Additionally, stone fruits were analyzed for total phenolics, anthocyanin content and antioxidant activity. Early results indicate a wide range in the amounts of these compounds in peaches, nectarines and plums. Phytochemical composition of different varieties of watermelons grown in different locations was tested, and preliminary data suggest that growing area has some effect on the accumulation of phenolics, lycopene, beta carotene and xanthophylls. A children's education program showed significant differences between pre-test and post-test scores regarding nutritional knowledge, with attitude scores high at the beginning and remaining high at the end of the study. Students reported eating healthier snacks at the end of the study.

C. *Source of TCE-TAES Federal Funds*

TCE: Smith-Lever and State Matching

TAES: None

D. *Scope of TCE-TAES Impact*

Multi-State Extension – WS, OH, CO

TAES – None

Integrated Research and Extension - Research methodology is integrated into the BLT program via the state-wide telephone survey conducted each year. Results, which have been featured in this report, have recently been presented at national nutrition meetings for discussion with other nutrition researchers and program directors. Results from the 1999-2000 state-wide survey were published in the December 2001 issue of the *Journal of Extension* (<http://www.joe.org/joe/2001december/rb4.html>) Beginning in 2002, 1000 food stamp households across Texas will be surveyed to assess the interest in selected food and nutrition topics offered through the BLT program. The survey will also assess the prevalence of food insecurity and hunger.

Goal 4: Greater harmony between agriculture and the environment

Overview

The TCE and TAES programs under Goal 4 focus on the relationship of agriculture and the environment, and on stewardship of the environment for all citizens. Based on the Texas Plan of Work, these programs focus on the issue of water quality and quantity. Water remains a major issue to be addressed through educational programs. This issue was raised by stakeholders during the previous Texas Community Futures Forum where a significant number of the 254 counties in Texas identified water as an issue. It is anticipated that the next “grass roots” effort to identify key issues TCE to address with educational programs will have water as a critical issue. Educational programming covers many topic areas when addressing water quality and quantity management.

Educational programming covers many topic areas when addressing water quality and quantity management. Our educational programs reach a broad target audience including agricultural producers and rural, suburban and urban residents. Water is a vital issue reaching across these various groups. Efforts have focused on wise water use with attention on water quality protection and efficient use of the resource.

This program regarding water quantity and quality will have an increasing importance in the State. The greatest impact at this stage of the POW is regarding public policy issues. The State of Texas is using a “Grass-roots” effort to develop our State water plan. At the same time, groundwater management is gaining concern because we will need to fully utilize our groundwater resources to meet our future water demands. The educational programs to increase the public’s awareness concerning their water resources will have an effect on the creation of groundwater districts in many of the counties and increase the people’s participation in the water planning process. As people become more aware of the critical condition of our water resources, they will be more willing to implement water management practices to protect and preserve the resource.

Programs in the areas under Goal 4 continue to provide Texas producers and citizens with research-based information in order for them to make sound decision on the implementation of best management practices and adoption of technologies. Educational programming has been and will continue to be driven by the needs of our clientele. Results from the Texas Community Futures Forum, and guidance from Executive Program Councils and program committees serve as the basis for this strategy.

The Texas Water Resources Institute has developed an External Advisory Committee to identify the key areas for emphasis programs. This group convened in Austin during December of 2002. This group will assist the agriculture program in identifying program areas needing additional attention.

The data presented in this summary and the following section represents the efforts of Year 03 of this Plan of Work. Educational programming efforts have been ongoing for many of the areas represented and continue to provide Texans with opportunities to conserve our most precious natural resource for generations to come. Future plans will build on past experiences and emerging issues that may affect our state and clientele.

Sources of Funding and FTEs

TCE Funding: Smith Lever and State Matching

	\$ X 1000
	Actual
	<u>FY 2002</u>
Program 8 – Water Quality & Quantity Management	4,173
FTEs	203.22
Allocated Resources Goal 4	4,173
FTEs	203.22

TAES Funding: Hatch, and state, federal and private contracts and grants

Source of Funding and FTEs

Hatch Funds (\$ x 1000):	1,617
State Funds (\$ x 1000):	10,020
FTEs:	59.9
Number of Projects:	157
Number of Publications:	536

State TCE-TAES Plan of Work Program 8: Water Quality and Quantity

Key Theme: Water Quality, Natural Resource Management, Drought Prevention and Mitigation

A. Description of Activity

Water resources are an important component of our life, and economic development and sustainability. Texas' water resources are limited and will be fully utilized to meet future water demands. Protection and efficient use of the water resources will ensure an ability to meet the greatest extent of the water demand. Educational programs covering best management practices will increase awareness of water protection and increase efficiency of water use.

Educational programming covers many areas when addressing water quality and quantity management. The programming efforts will address the following areas: Water Quality Protection

- Develop, transfer and implement effective best management practices related to nutrient management, pesticide management and animal waste management for agricultural producers.
- Develop, transfer and implement effective best management practices related to nutrient and pesticide management for urban audiences.
- Develop, transfer and implement of range and wildlife management strategies for protection of our water resources.
- Develop, transfer and implement best management practices for residential wastewater treatment systems.
- Implement educational programming on proper well-head protection and the plugging of abandoned water wells.

Water for Texans- Highlighted Program

Texas' water resources will be fully utilized as our population grows. Our water is critical to meeting our future needs and protecting the water quality will ensure a usable supply. Land management practices will dictate the quality of this resource. The "Water for Texans" program was developed as a method to prepare landowners to address the critical issues necessary to effectively manage the water falling on their property. This program utilizes a fact sheet series to assist landowners determine the health of their land and potentially implement practices to improve their land stewardship. Both the landowners and our water resources benefit from this program because the land is protected and the quality of the water leaving the property is improved. The team members established thirteen result demonstrations to collect information on changes in runoff water quantity and quality based on range management practices. The group also reached 4,790 people through presentations at meetings and another 7,212 clientele through direct contacts. This program will impact the quality of water entering our surface water and groundwater resources

Water Quantity Management

- Develop, transfer and implement water management strategies for enhancing our water resources in agricultural areas.
- Develop, transfer and implement irrigation programs for agricultural production, commercial production, and home landscapes.
- Educate clientele on their water resources and the effective management of those

resources.

- Educate clientele on indoor water conservation methods for extending our existing water resources.
- Develop, transfer and implement effective technologies for utilizing water resources, which currently have limited use as a potable water supply.

Groundwater Management - Highlighted Program

The groundwater management program is being highlighted for a second year. Our groundwater resources supply approximately 70% of the water used in the State of Texas. As this water resource is depleted, the percentage of the states water supply being provided by groundwater will decrease. Therefore, groundwater is a key source of water and the management of the resource is even more critical for meeting our future water needs. Groundwater in Texas is regulated in Texas through the Rule of Capture. Local management of the water resources can be accomplished through Groundwater Conservation Districts. Awareness of the critical role for groundwater resources meeting our futures needs is increasing by residents. These residents are looking for ways to manage their water resources. A targeted program is being implemented to make people aware of the water resources and how to manage their water. A fact sheet describing the frequently asked questions regarding groundwater management was developed to assist people make informed decisions regarding formation of groundwater conservation districts. The educational video series was designed to accompany the questions and answers fact sheet when addressing common concerns. Educational programs were conducted in 40 of the 254 counties during the 2002 calendar year. These educational programs are a cooperative effort with the Texas Natural Resource Conservation Commission, Texas Water Development Board and the Texas Department of Agriculture.

The water program has a broad target audience including agricultural producers, and rural, suburban and urban residents. Water is a vital issue reaching across these various groups. Efforts have focused on wise water use with attention on water quality protection and efficient use of the resource.

Partnerships and cooperative relationships exist between professionals within the Texas A&M University System and the various agencies involve in protection of our water resources. We are establishing and maintaining our partnerships with the Texas Natural Resource Conservation Commission, Texas Water Development Board, Texas Parks and Wildlife, Texas State Soil and Water Conservation Board, USDA-Natural Resources Conservation Service, Texas Department of Agriculture, and other agency and producer groups as well as industry professionals. These linkages will provide a valuable partnership for protecting our natural resources.

B. Impact of Programs

Texas Cooperative Extension

Output Indicators

A.4.1.3: The total number of people completing non-formal education programs on sustaining and protecting ecosystem integrity and biodiversity while improving the productivity of the U.S. agricultural production system.

A variety of educational methods were implemented to deliver information on sustainability and maintaining our production systems. We will be expanding the watershed educational programs as we approach implementation of the Total Maximum Daily Load (TMDL) Program in Texas. The delivery methods included one-on-one educational programs, producer meetings conducted by county agents, specialists and volunteers. The total attendance at these meetings provided across the state was 92,312 contacts.

A.4.2.1: The total number of people completing non-formal education programs on sustaining and/or protecting the quantity and quality of surface water and ground water supplies.

A variety of educational methods were implemented to deliver information on sustainability and maintaining our production systems. The delivery methods included one-on-one educational programs, video distribution, web site with relevant information, fact sheet distribution and producer meetings conducted by county agents, specialists and volunteers. The total attendance at these meetings provided across the state was 385,850 contacts.

B.4.2.1: The total number of people completing non-formal education programs on water quantity and water quality who plan to adopt one or more water management practices after completing or more of these programs.

It is difficult to estimate the number of clientele that will implement a management practice as a result of the training. However, several programs are targeting the practitioners implementing management practices. The On-site Wastewater Treatment training program is consistently reaching approximately 25% of the professionals in the State of Texas. These professionals are actively involved in designing, constructing and inspecting systems and will utilize the information gained through the program. The Landscape Irrigation program targets professionals actively designing, installing and auditing irrigation systems. This program reaches about 5% of professionals in the landscape profession annually. These professionals also use the information gained through the course to conduct their business.

A.4.3.2: The total number of people completing non-formal educational programs on public policy issues affecting agricultural production and ecosystem integrity and biodiversity.

A variety of educational methods were implemented to deliver information on sustainability and maintaining our production systems. The delivery methods included one-on-one educational programs, fact sheets distributed, video tapes distributed and producer meetings conducted by county agents, specialists and volunteers. The total attendance at these meetings provided across the state was 63,077 contacts.

B.4.3.2: The total number of people completing non-formal education programs on public policy issues affecting agricultural production and ecosystem integrity and biodiversity who plan to become actively involved in one or more public policy issues after completing one or more of these programs.

Data not collected at this time.

C.4.1.3: The total number of people completing non-formal education programs on sustaining and/or protecting ecosystem biodiversity while improving the productivity of the U.S. agricultural production system who actually adopt one or more recommended practices within six months after completing one or more of these programs.

Data not collected at this time.

C.4.2.1: The total number of people completing non-formal education programs on water quantity and water quality who actually adopt one or more water management practices within six months after completing one or more of these programs.

Data not collected at this time.

C.4.3.2: The total number of people completing non-formal education programs on public policy issues affecting agricultural production and ecosystem integrity and biodiversity who actually become actively involved in one or more public policy issues within six months after completing one or more of these programs.

Groundwater conservation districts are the preferred method for managing local groundwater resources in Texas. The State authorized 35 groundwater conservation districts during the legislative session during the Spring of 2001. Thirty-two districts conducted elections during 2001 and 2002. Four districts failed to be confirmed and two additional districts had some of the counties choose not to manage their groundwater at this time. Texas Cooperative Extension played a vital role in making these people aware of the issues and helping them make an informed decision on whether they needed a management district in their area.

This program regarding water quantity and quality has an increasing importance in the State. The greatest impact at this stage of the POW is regarding public policy issues. The State of Texas is using a “Grass-roots” effort to develop our State water plan. At the same time, groundwater

management is gaining concern because we will need to fully utilize our groundwater resources to meet our future water demands. The educational programs to increase the public's awareness concerning their water resources will have an effect on the creation of groundwater districts in many of the counties and increase the people's participation in the water planning process. As people become more aware of the critical condition of our water resources, they will be more willing to implement water management practices to protect and preserve the resource.

Texas Agricultural Experiment Station

This program is developing decision support systems to improve resource management. The program has focused on developing forage and animal monitoring systems to feed information into multiscale decision support systems (DSS). A comprehensive automation system allows the rangeland forage production model, PHYGROW, to be linked with the NOAA satellite based weather sources to help support livestock early warning systems for ranchers in the USA. Using point-based biophysical modeling linked with NDVI satellite data, the ability to project forage conditions across large landscapes was demonstrated using advanced geostatistical techniques of kriging and co-kriging. Innovative information delivery was established with use of WorldSpace satellite radios linked to laptop computers. Complex modeling results are delivered via this system to remote regions without internet connections. Building on past research on detecting diet quality of free-ranging livestock and linking to the NUTBAL PRO DSS, we have determined that NIRS can detect threshold conditions for mineral deficiencies (Cu, Co, Se, P) in collaboration with the Montana Cattleman Association and USDA NRCS in Montana. NIRS fecal profiling has also been shown to detect pregnancy in a national collaborative research program with Texas Tech University, USDA-ARS, TAES Overton, TAES Amarillo, TAES Corpus Christi, University of Georgia, and North Dakota State University.

A scaleable spatial decision support system has been developed which can be used to assess water quality impacts, to develop a rural health environmental informatics system. A computer model (SWAT) has been integrated into the EPA's TMDL's BASINS frame work system, and been tested extensively and released through US-EPA. Also 8 workshops were conducted to train public servant on use of the tool for addressing Total maximum Daily Load, and more training sessions are planned for coming year.

A research team of research and extension faculty focused on the North Bosque River where water quality has been impaired by the large number of dairies in the watershed. The primary objective was to improve water quality through the export of composted dairy manure out of this impaired watershed using turfgrass sod. This approach will assist the dairies in complying with the total maximum daily load (TMDL) regulations that require a 50% reduction of phosphorus (P) in the North Bosque River. In addition, research is also being conducted on water quality impacts in urban watersheds where the manure-fertilized turfgrass will be imported. These projects included plot studies, field research, lysimeter experiments, computer model simulations and extension outreach programs. Results showed that after varying levels of manure pretreatment, the only final disposal option available to most producers is land application. Continued land application of manure nutrients invariably leads to high nutrient (primarily nitrogen and phosphorus) levels in the soil. There is always a potential for these excess nutrients in the soil to be transported to surface waters by runoff or leached into the groundwater. When this occurs,

surface and groundwater drinking water standards may be violated and the ecological functions of surface water bodies may be impaired due to elevated nutrient levels. Total maximum daily limits (TMDL's) have been implemented to restore surface water quality, and reductions of nutrient loadings to streams are now mandated in many locations throughout the U.S. The Bosque River in central Texas is a classic example of a surface water body impaired partly due to numerous dairy operations in the watershed. Fifty percent reductions of nutrient loading to the Bosque River have been mandated by the state regulatory agencies. There only ways to meet these mandated reductions is either to move the dairy operations out of the watershed or to move the manure out of the watershed.

Research results are being used to educate the public about the importance of research in water resources matters. Outreach materials have been developed to promote prospects for implementing brush control to boost water yields; the future of rice irrigation in Texas, and efforts of the U.S. Geological Survey to study water quality through its NAWQA program. Technical reports covered monitoring groundwater supplies in the Trinity Aquifer of Central Texas; identifying opportunities for water conservation in the Lower Rio Grande Valley; use of filtration to treat surface waters and reduce dependence on chemicals; institutional strategies to manage waters in the Rio Grande during droughts; the economic impact of coastal tourism; and site-specific data on how to increase water supplies through brush control in eight regions of Texas. Researchers and extensionists continue to emphasize research results on rural [onsite] wastewater systems [septic tanks and drain fields] and water conservation and reuse, and are now working with the Texas Rural Water Assn to help with outreach, communications and training efforts. This program is providing timely information about news relating to water resources, and currently uses an email list server to compile and distribute timely information about Texas water issues. Through these efforts, the reaches more than 20,000 readers, and helps publicize, sponsor, and administer a wide range of research projects.

C. Sources of Federal Funds

TCE: Smith-Lever and State Matching

TAES:

D. Scope of Impact

Multi-State Extension – AR, NC, MN, WS, AR, WS, MI, RI, MS, NM, OK, LA

Multi-State Research – Multi-State Projects NC-208, W-128, NE-162 (LA, NM, AZ, CO, FL, ME, MT, OR, UT, WI)

Integrated Research and Extension: Integration of the Research and Extension program is being accomplished through the Texas Water Resources Institute (TWRI). TWRI established an External Advisory Committee to identify the key areas for emphasis programs. This group convened in Austin during December of 2002. This group will assist the agriculture program consisting of both Texas Cooperative Extension and Texas Agricultural Experiment Station in identifying program areas needing additional attention.

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

Overview

Financial Management. Financial problems continue to be a major problem for many people. Debt repayment consumes a large share of household income. Total consumer debt outstanding at the end of 2002 was \$1.7 trillion nationwide and personal bankruptcies increased by 19% between 2000 and 2001. To address these issues, individuals participated in numerous educational programs ranging from Money 2000+ to financial readiness programs for Ft. Hood and Ft. Bliss, and programs to help incarcerated individuals. Participants in the programs represented in this area reported the use of numerous financial management practices, including increased savings and debt reduction.

Parenting. Information and skills training for parents, parent educators, child care workers, and dependent care educators and workers are key supports to the healthy development of family members across America. According to the national report from 20 federal agencies, *America's Children: Key National Indicators of Well-Being, 2001*, many challenges face agencies whose mission is to support the health of America's families. Individuals of varying ages and ethnicities participated in programs on parenting and childcare. Increased family communications, increased childhood immunizations, and increased skills in general parenting were all reported.

Life Skills Education. Youth issues were identified by Texas residents as a high priority for Extension programming. Areas of focus identified by 209 counties included ethics, morals, character, pregnancy, drug use, education, and job preparation. Texas 4-H offers nine areas of program delivery to meet the needs of a diverse state. A focused effort is directed toward traditionally under-served clientele and accommodations were made to meet the needs of the disadvantaged. Results from these programs demonstrate the effectiveness of the 4H program and are discussed in the section for program 11. Key programs addressed include Texans Building Character and Strengthening Our Capacity to Care (SOCC).

Volunteer Development TCE has the largest volunteer program of any agency in Texas. There are more than 80,000 volunteers in the various programs of TCE. Extension has a well known reputation for involvement of volunteers. The volunteers may function as either direct or indirect volunteers, depending upon the role they are filling at the time. The ability of Extension to efficiently and effectively manage volunteers has become a major concern. Volunteers in the 4-H program have been revitalized through increased involvement in team building and volunteer development training. All new programs in the state are being developed with a "master" component. Four-H Volunteers have been energized by working together for the purpose of hosting the Southern Region 4-H Leader Forum this year. Some significant programs which have an impact on clientele are included in the following.

Partnerships and Collaborations. During the Texas Community Future Forum process, more than 200 counties identified community issues as high priority concerns. These issues ranged from education and youth concerns to parenting and community activities. The citizens of Texas expect groups and individuals to form partnerships and collaborations to solve the problems of youth, families and communities. Emphasis is being given to groups with interest in community, youth and family concerns. Special attention will be devoted to traditionally under served sectors. Numerous examples are cited that demonstrate the effectiveness of programs aimed at this issue.

Community Development. Stakeholder input provided by over 10,000 Texans in all 254 counties of the state through the Texas Community Futures Forum indicate that issues associated with development of their communities are pervasive and a very high priority. Specific issues include concerns about individual, community and regional economic viability and maintenance of a high quality of life. Programs are designed to increase the capacity of targeted Texans to respond to rapidly changing forces that affect their community economy and quality of life through increasing understanding of these forces and potential responses. Specific programs targeted at engendering and fostering home-based and micro-enterprises, support for identification and realization of entrepreneurial opportunities in agriculture, forest and other natural resource industries; development of tourism and recreational opportunities for local economic benefit; and community leadership training.

Programs in the areas under Goal 5 continue to provide Texans with research-based information in order for them to make sound decision on the implementation of best management practices and adoption of technologies. Educational programming has been and will continue to be driven by the needs of our clientele. Results from the Texas Community Futures Forum, and guidance from Executive Program Councils and program committees serve as the basis for this strategy. The data presented in this summary and the following section represents the efforts of Year 02 of this Plan of Work. Educational programming efforts have been ongoing for many of the areas represented and continue to provide Texans with opportunities for increased profitability and competitiveness. Future plans will build on past experiences and emerging issues that may affect our state and clientele.

Source of TCE-TAES Funding and FTEs

TCE Funding: Smith Lever and State Matching

	\$ X 1000
	Actual
	<u>FY 2002</u>
Program 9 – Financial Management Education	627
FTEs	30.00
Program 10 – Parenting	1,474
FTEs	70.50
Program 11 – Life Skills Education	2,006
FTEs	95.95
Program 12 – Volunteer Development	1,079
FTEs	51.60
Program 13 – Partnerships & Collaborations	339
FTEs	16.25
Program 14 – Community Development	1,571

FTEs 15.00

Allocated Resources Goal 5

8,480
FTEs 412.97

TAES Funding: Hatch, and state, federal and private contracts and grants

Source of Funding and FTEs

Federal Funds (\$ x 1000): 245

State Funds (\$ x 1000): 555

FTEs: 6.42

Number of Projects: 27

Number of Publications: 89

State TCE Plan of Work Program 9: Financial Management Education

Key Theme: Family Resource Management

A. Description of Activity.

Debt repayment consumes a large share of household income. Total consumer debt outstanding at the end of 2002 was \$1.7 trillion nationwide and personal bankruptcies increased by 19% between 2000 and 2001.

Approximately 65 million U.S. households will probably fail to realize one or more of their major life goals, primarily due to a lack of a comprehensive financial plan. In households with annual incomes of less than \$100,000, those with financial plans have twice as much in savings and investments as those without financial plans.

Thirty percent of the U.S. workforce who are eligible for 401(k) plans at work fail to participate, and only 20 percent of workers employed by companies with less than 100 workers have any kind of retirement plan.

Estimates were that Americans would charge more than \$830 billion on their credit cards in 2000. The average consumer has nine credit cards, and credit card debt was expected to reach 660.9 billion by the end of 2000.

Two-thirds of all employees in the United States report that they have trouble paying their bills on time and worry about money. Seventy-five percent of employees say that they have recently faced at least one significant financial problem. Individuals and families of all income, ethnic and educational groups in Texas are facing many financial challenges.

Internal and External Linkages were established as follows: During 2002, the new national Extension initiative, *Financial Security in Later Life*, was introduced to urban Extension agents through in-service training. A new partnership agreement was signed with the Federal Deposit Insurance Corporation (FDIC) to promote *Money Smart*, a curriculum targeting the unbanked. County Extension agents collaborated with banks, savings and loans, credit unions, employers, consumer credit counseling services, bankruptcy trustees, and directors of programs targeting financially insecure families, including a multi-county prison system. In Travis County (Austin, Texas), Extension leadership led to the creation of the Financial Literacy Coalition, of Central Texas, a group of more than 20 collaborating groups from public, private, and non-profit sectors.

Better Living for Texans programming is funded by the USDA through the Texas Department of Health and Human Services. Agents collaborate with local partners to obtain matching resources, to find sites for classes that are convenient for clients (food stamp recipients of various ages and in diverse county communities and neighborhoods). While the program's primary goal is to promote improved nutrition, another important goal is to teach how to make economic food choices while optimizing nutrition.

To implement the Financial Readiness program, Extension agents at Ft. Hood and Ft. Bliss coordinated with unit commanders, Consumer Credit Counseling and community consumer services organizations.

Teachers from 349 Texas high schools link with county Extension agents and local credit unions to deliver the High School Financial Planning Program curriculum enrichment program provided free by the National Endowment for Financial Education in partnership with the Cooperative Extension System and Credit Union National Association.

Money 2000plus™ began in 1998 and continued through 2002, but some counties will transition to America Saves, a component of Financial Security in Later Life. Better Living For

Texans began in 1998 and will continue through 2003. High School Financial Planning began in 1991 and will continue through 2005. Financial Readiness programming at Ft. Hood and Ft. Bliss began in 1999 and continues through 2003. Financial Security in Later Life began in 2002 for a five-year period.

B. Impact of Programs

Texas Cooperative Extension

Home Buyer Education

Program outcome data were collected in Brazos County (Bryan-College Station, Texas) from past participants in a 5-part home buyer education course. 187 participants were contacted to evaluate the program and 62 responded. The survey results demonstrated that:

- 23% of the respondents had purchased a home since attending the classes
- 7% had applied for down payment assistance
- 7% established good credit
- 15% saved money and developed a budget
- 23% pre-qualified for a loan
- 53% decided not to buy a house at the time
- 92% found the course series very helpful

Building Fiscally Fit Families

The focus of this program in Harris County (Houston, Texas) was to assist families to establish and maintain financial well-being through individual consultation, group methods, short-course, newsletters, seminars, exhibits, information on the web site, involvement and collaboration of task force and community leaders. 13,224 people participated in the program, 815 were contacted to evaluate the program and usable information was received from 543 respondents. The findings showed that:

- 93% had learned new information
- 21% had learned new information for training others
- 84% learned new methods of saving money
- 69% learned new methods to control spending
- 81% stated that their habits towards savings and credit had improved

Plane State Jail Inmate Distance Education Program

Program outcomes were reported by Harris County (Houston, Texas) on the financial management component of the program:

- 28% stated that they learned new information they could use for themselves
- 75% learned new methods of saving
- 24% stated that they did not learn new methods of saving
- 39% stated that they learned new methods of tracking savings
- 73% stated that they learned new methods of planning bill paying
- 42% stated that the learned methods to control spending
- 37% learned “a great amount” about credit
- 69% said the information on buying a new home was “very” or “somewhat” valuable

Basic Life Skills Classes for Single-Parent Heads of Household

A comprehensive educational program for female householders with children was conducted at the Helping Hands Center, a one-stop resource center for families with limited resources in Rockwall County. Sixteen of 28 persons responded to a post-test evaluation with usable information. 88% of the participants indicated that the information and class activities had been very helpful. Changes that respondents reported making included: tracking spending practices, budgeting, planning meals in advance, and using a grocery list to shop.

Money 2020 Workshops

Money 2020 workshops conducted in Tarrant County (Fort Worth, Texas) were evaluated for impact. Based on responses from 12 individuals participating in workshops,

20% plan to track their bills

50% will shop more efficiently

75% will save on a regular basis

45% will set financial goals

25% will talk with their family about money

20% will deal with late payments better

all participants set specific goals for reducing debt by both a dollar amount and target date

High School Financial Planning Program

The High School Financial Planning program is evaluated through a national impact evaluation, conducted most recently in 1998, but scheduled to be conducted again in 2003.

Eighty-six percent of the students surveyed demonstrated an increase in financial knowledge or behavior when dealing with money. A three-month follow-up of the same students showed that 58 percent had improved their spending habits, and 56 percent had improved their savings habits, with 39 percent reported starting a savings account. This is noteworthy because research indicates that those who are taught to save as teens will also save more money during adulthood.

Better Living for Texans

The Better Living for Texans (BLT) program was a series of 5 to 6 lessons that included a component on food resource management. During the 2001-2002 program year, BLT was conducted in 228 lead counties across Texas and reached 105,473 direct educational contacts. Audience composition was 36% Caucasian, 15% African American, and 48% Hispanic. Results from a statewide telephone survey administered to 404 individuals revealed that prior to participating in BLT, respondents spent an average of \$89 per week on groceries. After BLT, weekly food expenditures decreased to \$74. Nearly 39% of respondents reported being able to reduce the money they spend on groceries, citing several habits that helped them achieve lower grocery bills: buying cheaper brands (reported by 31%), comparing prices (31%), making a shopping list (31%), buying less “junk” food (9%), and buying only what is needed (5%). [Note: See complete report in the State TCE-TAES Plan of Work Program 7: Better Living for Texans.]

Output Indicators:

Financial Readiness Program

Army families face many hardships that can create financial burdens. Extension provides

programming in the Financial Readiness Program by training NCOs to teach fiscal responsibility to soldiers in their units. Extension agents trained over 70 Command Financial Specialists at Fort Hood who were able to reach over 80,000 individuals in 2002. Agents provide basic financial education as a part of the 1st Termer program, an educational program to help new soldiers and families get started on the right foot financially. Agents also provide educational programming on budgeting, insurance, and protection against scams.

Money 2001plus™

Limited to moderate income Texas families of diverse ethnic background (56% Hispanic, 24% Anglo, 20% Black) participated in the multi-state program, Money 2000 plus™. Of the 17,180 teaching contacts in three urban and 17 rural communities, 5,472 participants were provided basic financial management classes, 6,975 Money 2001plus™ quarterly newsletters were distributed, agents assisted 4,733 individuals with financial management questions, and 5,245 food stamp and human services clients were taught by 338 volunteers.

Harris County Extension Agents targeted families who were financially insecure. They set out to equip limited resource families with knowledge and skills to: set goals, practice budgeting basics, be informed consumers, manage credit, reduce debt, increase savings, and plan for financial needs through the life span. Most of the people taught often faced an uncomfortable financial status and had feelings of inadequacy. Their approach had been to ignore the situation and hope it would disappear or work itself out. They were challenged by an uncertain future when job loss, emergencies, or other situations arose. To prepare clients to meet these situations, the agents provided accessible, interactive learning experience and tools to aim them in a positive direction. They incorporated diverse methods including: individual consultation, group methods, short-course series, newsletters, seminars, exhibits, information on their web site, and involvement and collaboration of a task force and community leaders.

Bexar County Money 2001plus™ classes were coordinated with Fathering Education classes and public housing resident sessions at Colonial Hills, Radison and Project Quest. Parents saw the cost of not having a bank or savings account and began thinking they would pay themselves rather than check cashing and money order services by having interest earning accounts. While parents were learning skills for guiding and disciplining children they also learned self discipline strategies that would help them save and manage their money.

Tarrant County Money 2001plus™ financial education reached 272 potential first time home buyers, participants in rehabilitation programs, family day home care providers, Grapevine Housing Authority residents, and Neighborhood Housing Services staff. Another 576 Tarrant County families studied these topics through a self-study quarterly newsletter series.

In **Liberty County**, 93 Headstart parents, Dayton Housing Authority residents, and Gulf Coast Careers GED students learned basic financial management skills in Money 2001plus™ lessons.

Over half of the participants, 48, continued to learn on their own through the newsletter.

Money 2001plus™ program training resources were developed in collaboration with the Kentucky Cooperative Extension family economics specialist, who in turn prepared the lesson guides and resources in a format that was web accessible for their Extension agents and clientele. There have been 603 visitors from 201 unique IP addresses, initiating 7505 hits (42.99% .com, 42.55% .edu, 13.91% .net, and less than 1% from Germany and France.

TCE family economics specialists developed a web site, Choices for Saving, that enables families to calculate the multiplier effect of regular small savings. For example finding spending practice changes to increase the amount one saves by a dollar a week, starting with \$1 the first week and working up to \$52 the last week, savings of \$1,374 can be generated by year's end. Since its introduction, the site has drawn 1,204 hits.

In addition to the above programming, 45 Extension agents received training on the Money 2001*plus*TM and are equipped with software to assist families with budget analysis and planning debt power payments. Volunteers (338) using face-to-face instruction and/or computer assisted resources provided financial education in 19 counties to 3,046 individuals and 2,209 group session participants.

In 349 Texas schools, 36, 963 high school juniors and seniors completed the National Endowment for Financial Education sponsored High School Financial Planning curriculum enrichment program. Extension agents and local credit unions recruit and cooperate with high school teachers to involve youth in learning basic consumer and financial management life skills.

Summation of participant data for 2002 indicate that

61,744	participants were served by group methods
92,565	participants were served by individual methods
105,47	participants were served by direct methods through Better Living for Texans
97,787	participants were served by mass media (newsletters)
77,018	participants were served by 5975 volunteer leaders
441,355	total Texas participants served through the multi-state Money 2001 <i>plus</i> TM , Better Living for Texans, Financial Readiness Military, High School Financial Planning Program, Consumer Education Programs, Home Buyer Education, and other specific targeted financial management education programs

Texas Agricultural Experiment Station

The Texas Agricultural Experiment Station did not have research programs that complimented or supported TCE in its State Plan of Work Program 9, i.e, Financial Management Education.

C. Sources of Federal Funds

TCE: Smith-Lever and State Matching

TAES:

D. Scope of Impact

Multi-State Extension – HSFPP Program – All States

BLT - WS, OH, CO

Money 2000+ - AK, AL, AZ, CN DE, FL, HI, IL, IW, MD, MI, ND, NJ, NB, NH, OK, OR, PA, SC, UT

Multi-State Research –

Integrated Research and Extension

State TCE Plan of Work Program 10: Parenting and Child Care

Key Theme: Parenting, Child Care/Dependent Care

A. Description of Activity

As family life continues to undergo dramatic changes in the United States, the need for educational resources and training programs to support families (and professionals who work them) is very critical. Recent trends, such as the rise in single-parent, dual-income, and father-absent families, as well as the increase in grandparents raising grandchildren, have tremendous implications for the well-being of America's children. According to recent statistics, approximately 26% of today's children live in single-parent households, where they are much more likely to experience poverty. Over 4.5 million infants, young children, and teens live in households headed by a grandparent (U.S. Bureau of the Census, 2000). Father absent families are at an all-time high, with roughly 24 million children living apart from their biological fathers. Children who group up with absent fathers are at a greater risk for poverty, school failure, child abuse, suicide, criminal behavior, emotional and behavioral problems, early sexual activity, and drug and alcohol abuse. These risks diminish substantially when children grow up with an active and loving father in the home (Lamb, 1997).

Child maltreatment rates in the U.S. remain extremely high. Recent statistics indicate that three million referrals concerning five million children were made to Child Protective Service (CPS) agencies in 2000 (U.S. Department of Health & Human Services, 2002). Of these reported cases, approximately 879,000 children were found to be victims of child maltreatment, with the majority falling under the category of child neglect (63%). Eighty-four percent of substantiated child maltreatment cases occurred at the hands of a parent or parents. In Texas, Child Protective Services investigated 111,970 cases and confirmed 42,813 cases of child abuse and neglect in 2001 (Texas Department of Protective & Regulatory Services, 2001). Parenting programs that provide education and skills training to parents covering a variety of topics (e.g., child development, communication, nutrition, health and safety, etc.) have been demonstrated to be effective in reducing child maltreatment rates (Bloom, 1996; Reppucci et al., 1997; U.S. Department of Health and Human Services, 2001b; Willis et al., 1992).

As families have changed over the last several decades, so has the demand for quality child care. According to labor statistics, 65% of women with children younger than 6, and 78% of women with children ages 6 to 17 are currently working outside the home. In 2001, 61% of children from birth through age 6 received some form of child care on a regular basis from persons other than their parents (Federal Interagency Forum on Child and Family Statistics, 2002). The Texas Workforce Commission estimates that there will be a need for over 260,000 child care employees in the state of Texas by 2006, an increase of over 50,000 positions since 1996. Having a well-trained child care workforce is essential to providing the high quality child care that children need to develop physically, socially, emotionally, and cognitively.

Texas Cooperative Extension's Family Development and Resource Management Unit is committed to providing educational programs to support and strengthen Texas families. In the areas of parenting, child care, and dependent care, Texas Cooperative Extension offers a wide range of programs and resources to citizens across the state. Programs and resources include train-the-trainer workshops for professionals and volunteers, multi-session parent education workshops, 1-2 hour lectures, satellite and other distance education workshops, self-study child care training guides, internet resources (e.g., fact sheets, research briefs, trend data, links to juried

websites), and newsletters. In addition, over 300 programs related to parenting, child care, and dependent care can be accessed through Extension’s Educational Resource Library at Texas A&M University.

B. Impact of Programs

Texas Cooperative Extension

Performance Goal 5.2.1: To annually increase the incidence of caring communities resulting from non-formal education programs in which CSREES partners and cooperators play an active research, education, or extension role.

Child Care Worker Training Programs: Current and/or prospective child care providers, managers, and early childhood educators can enhance their knowledge and skills related to the care and education of children through regional child care conferences, county workshops, satellite trainings, newsletters, and self-study courses. Providers completing the above programs can acquire the necessary annual training hours and continuing education units determined by the Texas Department of Protective and Regulatory Services.

Dependent Care Programs: Texas has the fifth largest population of older adults in the United States. Texas Cooperative Extension has developed numerous programs and resources to assist professionals, family members, and older adults in making decisions about quality dependent care. Programs include regional eldercare conferences, Project Oasis (a program designed to train older adult volunteers as paraprofessional mental health counselors to work in nursing home settings), workshops on fall prevention, Alzheimer’s disease, health, nutrition and safety for older adults, and inter-generational programs involving 4-H and other youth.

Indicator 5.2.1d: The total number of child care/dependent care providers completing non-formal education programs.

Target audiences for child care programming include adults and teens providing care for children birth through age ten in family, center and school-aged settings. Target dependent care audiences include adults and teens providing care for adults and children who are unable to provide some portion of care for themselves due to illness or age-related disabilities. Programs and resources are accessible to target audiences regardless of gender, marital status, family status, race/ethnicity, income level, educational level, or sexual orientation. It is estimated that 70% of this audience falls under the category of “low-income.”

	Child Care	Dependent care
Providers attending classes	14,120	22,475
Individual contacts	19,686	21,841
Contacts via newsletters & self-study guides	16,039	36,733

Volunteers trained	861	780
Individual contacts by volunteers	5,593	9,109
Individuals attending volunteer led programs	2,343	2,740
Totals	58,642	93,678
Combined Total	152,320	

Indicator 5.2.1e: The total number of dependent care providers completing non-formal education programs who plan to adopt one or more new principles, behaviors, or practices after completing one or more of these programs. (See below)

Indicator 5.2.1f: The total number of dependent care providers completing non-formal education programs who actually adopt one or more new principles, behaviors, or practices within six months after completing one or more of these programs.

Selected Highlights

Dependent Care

Extension, in conjunction with the Texas Organization of Residential Care Homes, local Alzheimer's Associations, Area Agencies on Aging and Prairie View Cooperative Extension Program, held five eldercare conferences for professional care givers focusing on fall prevention, incontinence management, Alzheimer's care and other aspects of care management. Continuing education credits were granted to social work, nursing and allied health professional participants. The number of participants was 572 of whom 92% were female and whose ethnic membership included 7% African Americans, 17% Hispanics and 76% Caucasians. Three additional eldercare conferences were held for family care givers with 293 participants including 285 females.

Child Care

District 5 Child Care Conference. 350 child care providers attended a regional conference based on the theme, "Growing Healthy Children." Participants received information on child development, nutrition, standards for child care managers, and early childhood education. Child care providers in attendance received continuing education units required by Texas Department of Protective and Regulatory Services (TDPRS).

District 8 Child Care Conference. 180 child care providers attended a conference at Tarleton State University in Stephenville, Texas sponsored by Texas Cooperative Extension. Participants attended either a management or caregiver track. Attendees received 5.5 hours of continuing education.

Family Awareness Child Care Conference (Guadalupe County). 240 child care providers and early childhood educators attended an all-day conference on enhancing caregiving skills in the area of safety. Providers earned 6 credit hours of training toward hours needed to maintain licenses, thus having an estimated economic impact of \$2,520,000 on the Texas economy through

their sustained employment. Participants indicated that general and concurrent sessions were very useful.

Performance Goal 5.2.2: To annually increase the incidence of strong families resulting from non-formal education programs in which CSREES partners and cooperators play an active research, education, or extension role.

Parent Education Programs: Texas Cooperative Extension offers a wide range of programs and resources to support parents, and professionals and volunteers who work closely with parents. Extension continues to partner with the Texas Department of Health to provide 24-hour Master Parent Volunteer train-the-trainer workshops, 6-hour train-the-trainer parent education workshops, and parenting curricula accessible through the Extension Resource Library. In addition to the above efforts, resources and materials have been developed to reach fathers, teen parents, and grandparents raising grandchildren. 1-2 hour workshops are available to community agencies and parents on numerous topics impacting parents (e.g., Attention Deficit Hyperactivity Disorder, discipline, parental involvement in children’s education, early brain development, self-esteem, father-involvement, nutrition for infants and toddlers, etc.).

Indicator 5.2.2a: The total number of people completing non-formal education programs on parenting.

Individuals attending parenting classes/programs	32,129
Individual contacts (e.g., phone, e-mail, office)	40,276
Contacts via newsletters & self-study guides	75,343
Volunteers trained in parenting programs	1,824
Individual contacts by volunteers	5,592
Parents attending volunteer led parenting programs	19,098
Total	174,262

Indicator 5.2.2b: The total number of people completing non-formal education programs on parenting who plan to adopt one or more parenting principles, behaviors, or practices after completing one or more of these programs. (See below)

Indicator 5.2.2c: The total number of people completing non-formal education programs on parenting who actually adopt one or more parenting principles, behaviors, or practices within six months after completing one or more of these programs.

Selected Highlights

Fathers Reading Every Day (20 Texas counties)

Over 600 fathers, grandfathers, and male mentors (and over 700 children) from 20 Texas counties participated in the *Fathers Reading Every Day* (FRED) program in 2002. FRED is a family literacy program developed by Texas Cooperative Extension in which fathers, grandfathers, and other positive male role models read to their children every day for four-weeks. Approximately 60% of participants completed the four-week program. Results show that participants spent an average of 9.2 hours reading with their children and averaged 39.6 books over the four-week period.

Paired *t*-tests indicate significant increases from pre to post on all items measured, including the amount of time fathers spent reading to their children, number of books read during a typical week, level of involvement in their children's education, amount and quality of time spent with their children, level of satisfaction with themselves as parents, and level of satisfaction with the father-child relationship. There was also a significant increase from pre to post in the number of fathers obtaining a library card (see Table 1 for mean pre- and post-test scores and significance levels for all items). Other significant findings from FRED participants include:

- 51.5% reported that FRED "Got me reading to my child every day."
- 64.4% reported that FRED "Increased the time I spent with my child."
- 57.7% reported that FRED "Improved the quality of the time I spent with my child."
- 52.8% reported that FRED "Helped me become more involved in my child's education."
- 64.4% reported that FRED "Increased my satisfaction level as a parent."
- 67.5% reported that FRED "Improved my relationship with my child."

Parent Education Workshop: Supporting Families (11 Texas Counties)

Nearly 200 (178) parents in 11 Texas counties participated in Texas Cooperative Extension's *Parent Education Workshop: Supporting Families*. Evaluation data gathered from 88 parents who completed the four-week series indicated significant increases from pre to post in positive parent-child communication, use of positive disciplinary techniques, and the adoption of positive nutrition, health, and safety practices. Findings from post-test only items include the following:

- 93.2% reported that they were a better parent due to the parenting classes.
- 95.5% reported that they were more satisfied with their parenting skills.
- 92.0% reported that the classes helped them to love and know their child better.
- 92.0% reported that the classes improved the quality of times spent with their child.
- 90.9% reported that the classes increased the quality of the relationship with their child.

2001-02 Building Strong Families: Tools for Success Parenting Conference (Lubbock)

Over 600 parents participated in the Building Strong Families Parenting Conference held in Lubbock, TX. According to an on-site and 3-month post evaluation survey, parents experienced improvements in their knowledge of parenting issues and noted positive changes in parenting practices. Selected highlights from parents' evaluations include the following:

- 100% will recommend the conference to other parents.
- 91% learned new parenting practices regarding the prevention of youth social behaviors that can lead to serious long-term difficulty.

- 87% reported assuming greater responsibility for family and individual well-being.
- 87% reported improved communication within the family.
- 87% reported developing mutual respect for all members of the family.
- 86% indicated that they developed a more nurturing family environment.
- 71% reported that they acquired tools to empower young people to resist negative choices and develop competence to make positive life choices.

Parenting Fair (Dallas County)

110 parents and professionals attended a parenting fair in which they received information on fathering, child maltreatment, domestic violence, and general parenting skills. Evaluations indicate that the fair was very successful in engaging both parents and professionals in discussions concerning critical issues facing parents in the 21st Century.

Parenting for Incarcerated Parents (Angelina County)

70 inmates attended an educational program on building parental and child self-esteem. Participants learned strategies for improving their self-esteem as well as their children's.

Grandparents Raising Grandchildren Conference (Nueces County)

357 grandparents attended a grandparents raising grandchildren conference in Nueces county. Participants attended general and concurrent sessions on a host of topics of interest to grandparents who have taken on the responsibility of raising their grandchildren.

Kendall County Parenting Fair (Kendall County)

Over 500 family members attended the Kendall County Parenting Fair where they learned about parenting/family resources in their communities from 25 exhibitors.

Texas Agricultural Experiment Station

The Texas Agricultural Experiment Station did not have research programs that complimented or supported TCE in its State Plan of Work Program 10, Parenting and Child Care.

C. Source of Federal Funds

TCE: Smith-Lever and State Matching

TAES: None

D. Scope of Impact

TCE: State Specific

TAES: None

Integrated research and Extension - This integrative program combines staff from TCE (Extension) and the Texas Department of Health (TDH), Baylor College of Medicine, Texas Department of Protective and Regulatory Services, and numerous county level collaborations. Extension staff include: five specialists and numerous agents working in Food and Nutrition as well as Family Development and Resource Management. Staff from support agencies include: licensed nurse, county nurses, caseworkers, licensing

agents, and faculty.

State TCE Plan of Work Program 11: Life Skills Education Development

Key Theme: Youth Development

A. Description of Activity

Youth issues were identified by Texas residents as a high priority for Extension programming. Areas of focus identified by 209 counties from the most recent Texas Community Futures Forum

include ethics, morals, character, pregnancy, drug use, education, and job preparation.

Texas 4-H offers nine areas of program delivery to meet the needs of a diverse state. A comprehensive urban plan includes faculty from the 20 most populated Texas counties who work cooperatively toward a consistent program directed to serve the needs of urban youth. Furthermore, focused efforts are directed toward traditionally under-served clientele and accommodations were made to meet the needs of the disadvantaged.

Texans Building Character, 4-H Leadership Development, Strengthening Our Capacity to Care, Workforce Development, Conflict Resolution (Talking with TJ) and 4-H Curriculum Development through Texas 4-H Project Teams were addressed. Curriculum was aligned to meet the Texas Essential Knowledge and Skills (TEKS) as identified by the Texas Education Agency (TEA). During 2002, TEKS components continued to be valued within 4-H curricula as TEA has moved toward requirements for Texas schools to assess the knowledge and skills (TAKS) gained by youth. Internal and external linkages were formed with numerous agencies, including: Civic and Community Organizations, Extension Program Council, Family and Community Education Groups, Juvenile Probation System, Parks and Recreation Departments, Universities, Schools, Corporations, Philanthropy Foundation, and other youth serving agencies as appropriate to this performance goal.

B. Impact of Programs

Texas Cooperative Extension

Texans Building Character was initially brought forward through special initiative funding. Character Education was identified by Texas residents, during the Texas Community Futures Forum, as a high priority of need for Texas children. During 2002, 36,373 youth participated in Character Education project work. An example of program success is indicated by Extension Faculty members in Travis County:

Results from youth participating in the Teens Leading with CHARACTER program, respondents indicated that they had increased: their knowledge of ethical decision making (75%); ability to follow through on responsibilities (62%); understanding of the importance of being honest (48%); ability to cooperate with others (75%); ability to speak comfortably in front of others (75%); appreciation for the differences in others (100%); respect for others (83%); and ability to serve in leadership roles (100%).

Travis County Faculty members used the success of the aforementioned program to launch Celebrate Character! The educational events are related to fostering character development in young people through a variety of methods. Celebrate Character! has provided training for the Travis County Extension Agents, 4-H CAPITAL staff and ENP-Y staff, and child care providers, as well as volunteers representing 4-H and other youth organizations such as Austin Parks and Recreation Department, churches, schools, and City of Austin Summer Youth Employees

Strengthening Our Capacity to Care (SOCC) is a program designed to be a prevention and intervention program for first time juvenile offenders. As a collaborative effort between TCE and

the Juvenile Services Department, this programs goals focus is to reduce the rate of recidivism among first time offenders. In Brazos County over 123 first time offenders, repeat youthful offenders, and youth-at-risk have been involved. Additionally, 419 parents have participated in Parent Enhancement Classes. The resource “Things Teenagers Need to Succeed” from the SEARCH Institute’s work on 40 developmental assets was used to provide the parents the necessary skills to build assets and raise confident, caring young people. Evaluation results of the SOCC project indicates that only 26% of participating youth have reoffended on any level, compared to the state recidivism rate of 52% for youth. Involvement by both parents and youth increased the youth’s participation in positive activities, such as 4-H and workforce preparation. The program also increased the youth’s knowledge of specific 4-H projects by applying skills gained to self and family. By participating in these projects, the youth acquired better nutritional attitudes, academic achievement and life skill development (i.e. leadership, volunteerism, and character education).

In rural Hutchinson County, Cooperative Extension Faculty have partnered with Frank Phillips College to create a distance learning center focused on workforce preparedness and career enhancement. In addition to the highlighted rural example, 9426 youth participated in Workforce Preparedness project work during 2002.

Texas Agricultural Experiment Station

The Texas Agricultural Experiment Station did not have research programs that complimented or supported TCE in its State Plan of Work Program 11, Life Skills Education Development.

C. Source of TCE-TAES Federal Funds

TCE: Smith-Lever and State Matching

TAES: None

D. Scope of Impact

Multi-State Extension – FL, VI, LA, and WS

Multi-State Research – None

Integrated Research and Extension - Texas 4-H has a focused effort of youth research. During 2001, two grants were solicited through the National Science Foundation to enhance research and establish a pattern of funding to enable the creation of a Center for Youth Research. Texas 4-H Faculty are actively involved in University based committees which focus toward building partnerships between Teaching, Research, and Extension. One committee meets monthly to discuss funding opportunities and areas where Extension and Research can partner on projects.

State TCE Plan of Work Program 12: Volunteer Development

Key Theme: Youth Development, Community Development

A. Description of Activity

Texas Cooperative Extension has the largest volunteer program of any agency in Texas. There are more than 80,000 volunteers in the various programs of Texas Cooperative Extension. Extension has a well known reputation for involvement of volunteers.

Volunteers help at all levels in the Extension program, ranging from working one on one with

youth, coordinating membership enrollment in the club or unit, to working with stock shows, educational field trips, workshops and working with shows demonstrating the knowledge gained at the club, county, district, and state level. They also have helped put on Regional and National events. The volunteers may function as either direct or indirect volunteers, depending upon the role they are filling at the time. The ability of Extension to efficiently and effectively manage volunteers has become a major concern.

We focus on youth and adult volunteers. Expanding the outreach and programming components through all volunteer efforts is essential. In the area of volunteerism, master volunteer programs are at the exemplary level of volunteer development and management. The “master” concept continues to be a priority of Texas Cooperative Extension and volunteers like the prestige and accomplishment it provides to them.

Internal and external linkages have been formed with Volunteer 4-H Leader Association of Texas (VLAT); service, faith based, and civic organizations, Extension Program Councils, Family and Community Education Groups, Army volunteers and other youth serving agencies as appropriate to this performance goal.

This is an ongoing program. As training and development of volunteers continue, they will progressively support Extension Programming Outreach to all citizens of Texas.

B. Impact of Programs

Texas Cooperative Extension

Program Outcomes

Volunteers have been revitalized through increased involvement in team building and volunteer development training. Some programs, in the state, are being developed with a “master” component. Some significant programs which have an impact on clientele are included in the following **Master Programs:**

4-H Swine

This program has empowered adult volunteers and increased their impact through a broadening of available human resources. These master volunteers teach swine subject matter, provide support to 4-H members and volunteers, and give leadership to learning opportunities for members, parents and volunteers in the county.

* **District 1 Pilot of 4-H Swine Master Volunteer Training** - implemented by the District 1 Swine Committee 20 hours of training was provided over a 3 week time period. Thirty six of the 45 volunteers were certified (80% completion rate). These master volunteers reached over 700 youth with 4000 hours of payback.

***Master Volunteer Database and Evaluation** - Coordinated effort of tracking the 67 volunteers trained in the first two state wide master volunteer trainings. 23 of the first class of 47 have been certified with 50 or more payback hours. These individuals have provided more than 2,488 hours of service reaching 10,555 people.

Outcomes of the Texas 4-H Swine Project

Master Volunteers

50% change in knowledge of swine industry

48% increase in ability to carry out leadership responsibilities as a volunteer
54% increase in ability to better plan 4-H Swine Project activities
32% increase in ability to lead others
36% increase in ability to adjust to new situations
22% increase in ability to work well with others.
20% increase in ability to work independently.
22% increase in conflict resolution.
44% increase in knowledge level that the 4-H Swine Project provides a safe, wholesome product for consumers.
36% increase in the understanding of how to follow labels carefully for feed additives, and drug or chemicals used in the swine project.

Youth Project Participants

90% increased their understanding of the basic principles of animal science.
91% increased their knowledge of breeding, feeding, and management practices.
68% increased their public speaking skills.
73% increased their decision making skills.
50% increased their understanding scientific research and its contribution to the industry.
95% exhibited traits of honesty, promise keeping, and integrity.
100% showed respect, tolerance and acceptance through 4-H project work.
95% demonstrated responsibility through choices, being accountable and carrying out all duties or obligations.
100% exerted fairness through following rules.
95% considered carefully how decisions and actions will impact an animal.
77% increased their knowledge of recommended production and exhibiting practices and issues.

Clothing

Master Volunteers with sewing expertise learn more and help others learn to sew. Volunteers target individuals with little or no sewing experience and helps the individual develop skills for constructing, evaluating apparel and home interior products. During 2002, 110 Master Clothing Volunteer were involved in training and delivery of sewing knowledge and skills to adults and youth. These volunteers made 472 individual contacts....and had contact with 895 individuals through group events. There were 68 group trainings in the state...with an attendance of over 1388 people and individual contacts at 1,126. The MCV program is operational in over 25 counties.

Naturalist

Texas Master Naturalist volunteer program provides education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities.

EnviroSmart

Volunteers learn about current legislation, solid and hazardous waste management, home and office recycling methods, enviro-shopping, reduction and reuse techniques, composting, lawn waste, household hazardous waste, pesticides, and public policy.

Junior Master Gardener

This program is an innovative 4-H youth gardening project. It is modeled after the highly popular Master Gardener program and offers horticulture and environmental science concepts through fun activities targeted to three levels. The JMG program will mirror its senior counterpart by providing in-depth horticultural and leadership training to youth gardeners, who then return volunteer service to the community .

Marketers

The Master Marketer program combines three successful concepts- intensive education, master volunteers and leadership of marketing clubs. Producers are trained in advanced risk management and marketing techniques during an intensive program and then extends that knowledge to other producers by providing leadership for marketing clubs in their home county.

Gardener

Master Volunteers receive in-depth horticultural training. In return, these individuals provide volunteer service through Extension by delivering horticultural/environmental education and projects to their communities. An individual receives the title of "Texas Master Gardener" only upon completion of training and service requirements.

TexasAgrifood (In development)

Agrifood Master mission is to recruit and train urban and suburban volunteers to provide agricultural, natural biotechnology, and food environmental education for adult and youth consumers to ensure wise decisions are made regarding America's food, fiber and forestry system.

Food Preserver

Master Volunteers are trained in various facets of food preservation and safety to provide credible and responsible information on issues of food preservation to community clientele through various communication strategies. Due to the liability issues related to these topics, close working relationships and monitoring is crucial.

Money Management

This Master Volunteer program equips financial professionals, educators and others to work with citizens interested in financial management education for the family.

Family Alliance

Family Alliance Council members are required to be trained in the following curriculum: Building Self Sufficient Families, Master Parent Volunteers -Building Healthy Families, and the Better Living For Texans -Family Resource Management (Money 2000 included). Optional training: Fathers Communicating with Youth, Discipline that Doesn't Hurt Series, Family Alliance Masters then train their staff or assist someone else in training.

4-H Method Demonstration

Master Volunteers are trained in public speaking skills to develop method demonstration and illustrated talks. 4-H members meet as a project group to research, compose, and present 4-H method demonstrations and illustrated talks to various 4-H community and civic groups. In addition, they train 4-H volunteers to support this project.

4-H Recordbook

Master Volunteers give guidance and to 4-H members as they develop a record keeping system. In addition, they assist and encourage 4-H members to complete a 4-H recordbook and to make families aware of the value of record keeping, promote it as an integral part of the 4-H

program and create awareness of the various opportunities and recognition.

4-H Beef

Master Volunteers are trained to train other volunteers to recruit and educate youth on beef. Or volunteers may directly educate youth on the beef project.

Grow Green

Retail sales personnel are involved in training that gives environmentally-responsible alternatives for homeowner's landscaping problems. This program encourages the least toxic approach to pest management and responsible fertilizer use to protect the waterways.

4-H Sheep

Master Volunteers are trained to train other volunteers to recruit and educate youth on sheep. Or volunteers may directly educate youth on the sheep project.

Parent

Master Volunteers gain skills in 1) working with adults and adolescents; 2) child growth and development 0-5; communication, building self-esteem, guidance and discipline; and 3) preventive safety, health and nutrition.

Family Consumer Sciences

Master Volunteers in an established Extension program increased their skills in general leadership, organizational leadership, and educational leadership. These skills enabled them to make an impact in the community, health and education.

Volunteers involved in youth leadership program that extended beyond the home county area included **4-H Crossroads**. Crossroads is a three day regional youth leadership program to involve 14-19 year olds in science and technology projects that will impact life skills.

Began in 1993 and is now an annual event where 75 - 100 youth participate. Thirty of these youths return in the role of Teen Leader and provide group leadership and mentoring to younger members. Volunteer leaders plan entire event, including the workshops and making the contacts with speakers. A committee of volunteers determine which county groups bring what and how much of each food for lunch. While at the camp, volunteers serve as chaperones and facilitators.

This event is very unlike other District events, as there is minimal professional Extension involvement. In 2002, only three professional staff members participated, while twenty Adult Volunteers sponsored the event. The volunteers take great pride and ownership of this unique activity that allows them to “assist 4-H members in giving leadership skills, exploring options for a future career, and chaperone them in fun activities”, 2002 volunteer participant. The role they have as planners, leaders, facilitators, etc., has served to strengthen their commitment to improve and continue the event.

Program Duration

Volunteer Development is an ongoing program. As training and development of volunteers continue, they will progressively support Extension Programming Outreach to all citizens of Texas.

Texas Agricultural Experiment Station

The Texas Agricultural Experiment Station did not have research programs that complimented or supported TCE in its State Plan of Work Program 12, Volunteer Development

C. Source of TCE-TAES Federal Funds
TCE: Smith-Lever and State Matching
TAES: None

D. Scope of Impact
Multi-State Extension – OK, AK, LA, MS, AL, TN, KY, VI, WV, NC, SC, GA, FL, Guam,
Virgin Islands, Puerto Rico, and Southern Region 4-H Leader Forum
Multi-State Research – None

State TCE Plan of Work Program 13: Partnerships and Collaborations

Key Theme: Community Development

A. Description of Activity

During the Texas Community Future Forum process, more than 200 counties identified community issues as high priority concerns. These issues ranged from education and youth concerns to parenting and community activities. The citizens of Texas expect groups and individuals to form partnerships and collaborations to solve the problems of youth, families and communities.

Emphasis is being given to groups with interest in community, youth and family concerns. Special attention will be devoted to traditionally under served sectors. Care will be given to meet the needs of the disadvantaged.

584,716 Number of Participants Reached

*25 % of Participants Under served

*This is an estimate based upon the lack of a specific date in this particular area.

Extension activities (focused on Youth, Volunteers and Community Leaders) worked to learn how to form successful partnerships. Extension, communities and school developed opportunities for collaborations.

<u>58,957</u>	Number of Participants Served by Group Methods
<u>111,676</u>	Number of Participants Served by Individual Methods
<u>389,882</u>	Number of Participants Served through Mass Media
<u>4,251</u>	Number of Volunteers Trained
<u>19,950</u>	Number of Contacts by Volunteers

Linkages were made with numerous organizations including Volunteer Leader Organization of Texas, African American and Hispanic Service Organizations, African American and Hispanic Business Organizations, African American and Hispanic Faith-based Organizations, Historically Black and Hispanic Colleges and Universities, Workforce Commission, Majority Minority Public Schools, Civic Organizations, Parent-Teacher Organizations, Hospital Districts, Extension Program Councils, Family and Community Education Groups, Arm volunteers and other youth serving agencies as appropriate to this performance goal.

B. Impact of Programs

Texas Cooperative Extension

As funding becomes scarcer it is more and more important to combine efforts in order to meet the needs of the citizens, and make the efficient use of the dollars given to us by stakeholders, the legislature, and grantees or benefactors.

Examples include:

Community Partnership 4-H Clubs

The success of community partnership 4-H clubs is made possible by matching similar goals and objectives of the Texas 4-H and Youth Development Program and a community organization. Other key success factors are effective communication between both organizations and marketing results of the partnership to the community.

Community organizations, such as Lions Club, Kiwanis Clubs, LINKS clubs, etc. have partnered in 16 counties to be the sponsors for local 4-H clubs. The membership of these community organizations are bound together by common beliefs and principles that focus on

service to youth. As a sponsoring organization for the local 4-H community partnership club, the community organization comes together to provide leadership and resources to the 4-H clubs.

The total enrollment of community partnership 4-H clubs is 861 youth and 75 volunteers in nine counties, representing seven districts.

Montgomery County Friendship Center

Linda Mock, Montgomery County, District 9

Developed a partnership with The Friendship Center in Montgomery County to implement educational programs for senior adults. The Friendship Center is a United Way Agency which provides outreach programming to senior adults. As a result, the FCS agent was invited to join the Programs Committee and co-chair the 2nd Annual Senior EXPO. Quarterly programs were conducted in each of the five Friendship Center locations on subjects such as “Schemes, Cons, and Frauds,” “Fall Prevention in the Home,” “Food Safety for Seniors,” and “Nutrition for the Elderly.” Evaluations were conducted at the conclusion of each presentation and results show an increased knowledge in all program areas. The Senior EXPO was held in late October in conjunction with the Senior Games, jointly sponsored by business and government partners. Here Extension was recognized as being a major sponsor of the event and had the logo on all t-shirts and signage. More than 200 senior reaped the benefits by visiting with more than 20 vendors who provided information about their services at the day-long EXPO. Extension was also recognized as a key player in working with this audience.

Initialized the MONEY2020 Plus Program with First National Bank Texas’ five branches in Montgomery County by training 32 employees. In turn, these employees enrolled new and/or existing customers in the MONEY2020 program designed to help consumers increase their savings and reduce their debt. In addition, Extension and the bank sponsored a “Basic Budgeting/MONEY2020” presentation for 22 persons involved in the Family Self-Sufficiency program through the Montgomery County Housing Authority. When surveyed, all 22 said they would like to attend future programs on money management. One committee member who is also a bank employee has promoted MONEY2020 to several hundred business persons and related audiences in 15 different locations to more than 450 persons.

Teen Youth Rally

Pamela Terry, Fort Bend County, District 9

Through a collaborative grant from Wallace Readers Digest Funds and collaborative partnerships including Fort Bend County Libraries, Fort Bend Partnership for Youth, FBISD, LCISD, Fort Bend A.L.E.R.T. and Texas Cooperative Extension, programming on developmental assets reached 120 youth as they worked on leadership building. Youth were involved in ropes activities with asset messages.

Gear Up Waco

Marie Rasmus, McLennan County, District 8

A collaboration with the GEAR UP WACO program was held at the G.L. Wiley Middle School. The program is a partnership with Baylor University, McLennan Community College, Texas State Technical College, McLennan County Youth Collaboration, Waco Foundation, City of Waco and the Waco Independent School District. The program provides a continuous system of mentoring, advising, counseling, and tutoring for students in W.I.S.D. and their parents. It offers students and their parents information about opportunities and advantages of post-secondary education which increases the achievement and performance of GEAR UP WACO students in middle and high school. GEAR UP WACO is the only program nationwide that encompasses a four-year university, a community college, and a technical college. Students can take advantages of in-service opportunities in: Science, Math, Parental Communication and Conflict Management, Language Arts, and Technology (computer, website design, and distance

learning). G. L. Wiley 4-H members who are participants in this program are Roxanne Thompson, Gelisa Whitlow, Brittney Ervin, and Shada Sadler. These 4-H members participated in a Fashion Show where they were able to use their comparison shopping skills to choose clothes for this event. They modeled fashions from Sears. Participated in sports, hip-hop and formal attire. They also prepared the stage using leadership skills that they had learned and it helped to build their self-esteem.

Supermarket Tours

Dana Tarter, Tarrant County, District 4

Supermarket Tours was completed, indicating that the tours were helping in creating awareness and even promoting changes in eating habits of those attending (surveys were completed at the conclusion of tour and 30 to 60 day phone followup was conducted). A report was compiled by the City Health Department Epidemiologist. The results were as follows: 23 of 32 participants stated they would make a diet change, of these 22 made a change; 7 of 9 participants who had not planned to change, made a change in their diet. In all, 1/4 of the participants made a major change in their dietary habits as a result of the supermarket tours and over 65% made a minor change. As a result of collaboration with the City Health Department and supermarket tours, Extension was recognized in a City of Fort Worth proclamation as a partner in nutrition education.

Start Up and Business Expansion Workshop

David McGregor, Waller County, District 9

Texas Cooperative Extension and Hempstead Economic Development Office partnered in conducting a Start Up and Business Expansion Workshop which was held at Hempstead City Hall. This program was one that was sponsored by the Waller County Extension Program Council Executive Board which discussed issues that were identified in our last Texas Community Futures Forum in regards to economic development as it relates to new businesses and the expansion of existing businesses.

The city of Hempstead contacted us about partnership on the workshop because they allocated \$90,000 for potential new businesses and/or to expand existing businesses. Extension Program Council had a pre-registration for this workshop and those who pre-registered were served a meal. Spaghetti with all the trimmings was served, after which Mr. David McGregor, Sr. did the Greeting and Introductions. A general overview and purpose of the program was given by retired Waller County Extension Agent and Hempstead Small Business Capital Loan Committee Member, Nora Hodges. Dr. Dennis Fisher, Professor and Extension Economist with Texas Cooperative Extension, Texas A&M University, College Station, Texas discussed what to consider in financing your start up or expanding an existing business.

We also had Citizen State Bank President, Cynthia Hayes to speak on "What's Expected From the Business for a Bank Loan." Dr. A.R. Ruiz, Jr., Loan Officer for Cen-Tex, and Shelia Villareal, Director of Economic Development Cooperation of Hempstead, jointly discussed eligibility requirements for a portion of the \$90,000 in Hempstead Small Business Loans.

Rural Passenger Safety

Statewide

The Rural Passenger Safety Project (RPS) Texas Cooperative Extension, in cooperation with the Texas Department of Transportation, provides valuable traffic safety information and education to people throughout Texas. The goal of the project is to reduce motor vehicle fatalities and injuries and their associated costs.

All team members are certified child safety seat technician/instructors. Two team members are also certified TCLEOSE (Law Enforcement) instructors. This level of expertise allows RPS

to conduct child safety seat checkup events and five NHTSA certification trainings, whereby individuals become nationally certified as child passenger safety technicians and instructors.

The primary focus is parents and care givers of young children in rural Texas as well as safety advocates dedicated to child passenger safety issues. Care is taken to meet the needs of traditionally under-served areas of Texas.

Collaborations are with other agencies, both in-state and out-of-state. Included in collaborations are the following agencies: Texas Department of Transportation (TX-DOT); National Highway Traffic Safety Administration (NHTSA Region 6); Texas Department of Health (TDH); Texas Department of Public Safety (DPS); Texas Transportation Institute (TTI); Texas Engineering Extension (TEEX); Texas Municipal Police Association (TMPA); Regional Advisory Councils (RAC); Local and Statewide Law Enforcement; Local and Statewide Fire Departments; Local and Statewide EMS Professionals; Statewide Health Professionals; and Texas Department of Regulatory Services , Child Protective Services.

Links, Incorporated

Sixth-graders at M.C. Williams Middle School are learning about leadership and nature in a program conducted by the Texas Spring-Cypress Chapter of Links Inc., a national organization that is committed to educational, cultural and civic programs.

The establishment of this pilot 4-H club at M.C. Williams Middle School, located in the Acres Homes Community, offers an excellent opportunity for the Texas Spring Cypress Chapter of The Links, Incorporated to partner with Texas Cooperative Extension. This partnership offers further service to the Acres Homes Community, as well as other communities throughout the City of Houston, the State of Texas, the nation, and the world.

Texans Building Character

Statewide

Extension initiated the Texans Building Character (TBC) program based on needs identified in 209 counties in the Texas Community Futures Forum. This program addresses character issues through educational programming based on seven learning models: 4-H, school, youth at risk, livestock, workforce, sports, and community. Since 1999, over 600 county Extension agents have participated in training to implement the TBC programs in their communities.

As Texas communities have recognized the need for character building programs in their communities, over 8,000 volunteers have joined Extension agents to deliver character education programs to over 173,000 individuals in Texas.

Do Well, Be Well With Diabetes

Statewide

There are 858,294 Texans diagnosed with diabetes, 137,197 of whom are uninsured. An additional estimated 440,512 Texans have diabetes, but they have not yet been diagnosed.

Do Well, Be Well with Diabetes is an educational program to help people with type 2 diabetes learn the skills they need to understand and manage their diabetes, to reduce their risk of complications and to attain their highest possible level of wellness.

People with diabetes must learn how to manage their blood glucose because failure to do so results in a higher risk for complications, and is costly for the individuals, their families, employers, the health care system, and the state. Because of poor access to health care, medications, supplies, and self-care education, people without health insurance are more likely to have complications.

Fathers Reading Everyday (FRED)

Statewide

FRED is being implemented in 46 Texas counties in 2002 (see Figure 1). Twelve counties have completed FRED or have programs in progress (Brazos, Collin, Burnet, El Paso, Jefferson, Kerr, Lipscomb, Tarrant, Travis, Ward, Wheeler, & Williamson). Remaining counties plan to implement the program in the fall with the beginning of the school year. Some counties are implementing FRED more than once during 2002.

Over 300 fathers, grandfathers, and male mentors and nearly 400 children from Head Start, Early Head Start, Even Start, elementary schools, and churches have participated in the FRED program through August 2002. Results from counties that have implemented and evaluated FRED using the pre and post instrument show that participants spent an average of 8.9 hours reading with their children and averaged 37.5 books over the four-week period

Texas Agricultural Experiment Station

The Texas Agricultural Experiment Station did not have research programs that complimented or supported TCE in its State Plan of Work Program 13, Partnerships and Collaborations.

C. Source of TCE-TAES Federal Funds

TCE: Smith-Lever and State Matching

TAES: None

D. Scope of Impact

TCE: State Specific

State TCE-TAES Plan of Work Program 14: Community Development

Key Theme: Community Development

A. Description of Activity

Stakeholder input provided by over 10,000 Texans in all 254 counties of the state through the Texas Community Futures Forum indicate that issues associated with development of their communities are pervasive and a very high priority. Specific issues include concerns about individual, community and regional economic viability and maintenance of a high quality of life.

B. Impact of Programs

Texas Cooperative Extension & Texas Agricultural Experiment Station

Programs are basically designed to increase the capacity of targeted Texans to respond to rapidly changing socio-economic forces that affect their community economy and quality of life through increasing understanding of these forces and potential responses. Specific programs targeted at engendering and fostering home-based and micro-enterprises, support for identification and realization of entrepreneurial opportunities in agriculture, forest and other natural resource industries; development of tourism and recreational opportunities for local economic benefit; and community leadership training. Target audiences for the program consist of residents, elected and appointed officials, leaders and potential leaders, existing and potential business owner/managers in and around the over 1200 communities in all 254 counties of the state.

Coordination and cooperation with the following greatly facilitates implementation of educational programs on a state and local basis: Texas Rural Development Council, Office of Rural Community Affairs, Texas Department of Agriculture; Texas Department of Economic Development, Councils of Government, USDA-FS, RD, NRCS; Small Business Administration, Lower Colorado River Authority; Investor-owned utilities; regional universities within and without the Texas A&M University System and many more.

Significant progress has been made in providing education and information to the target audience primarily by enhancing skills, capabilities and capacities of the agency in collaboration and cooperation with others to extend and enhance benefits of the land grant university system to communities throughout the state.

A major emphasis on enhancing internal organizational capacity in this area resulted in development of several major professional development training initiatives. The first, in the form of a video, made community development overview/awareness training available to all Extension agents. Several regional one-day trainings provided community development program development assistance to over 250 agents from 208 counties with high priority community development issues identified in the Texas Community Futures Forum. Finally, 20 agents are receiving 9 days of extensive, in-depth training in general community social and economic principles as well as specific programmatic resources enabling them to conduct focused programs and serve as models and mentors to other agents.

Partnerships and collaboration continue to be a significant effort in meeting needs for programming in this area with 3 staff from a newly established state rural affairs agency participating in the above 9 day in-depth training to enhance their capacity and to develop working relationships with Extension

Additional partnerships are evident in the establishment of a multi-county rural development agent position funded in collaboration with one of the county's commissioners court that will serve as model and pilot for this type of position given a documented demand for this type of assistance in a recent survey of county officials.

Use of technology to facilitate the present major emphasis is evident with 15 agents participating in a compressed video training on implementing a rural leadership development

program which was then captured digitally and made available via the internet to all agents. Based on current statistics this has multiplied the outreach of this training by a factor of 10.

Entrepreneurial agriculture and forestry continues to be a significant area of programming with two multi-county (approx 30 counties total) Rural Entrepreneurial Alliances formed to facilitate local partnerships among groups and organizations that can facilitate the delivery of subject-matter programming supported the Extension-based Texas Center for Rural Entrepreneurship.

Multi-State Extension – CO

B. STAKEHOLDER INPUT

Texas Cooperative Extension

The primary process for gaining stakeholder input within the TCE is the use of the Texas Community Futures Forum. This process was described in detail in the CSREES State Plan of Work submitted in July 1999. As of this date, information obtained in this process is being used to guide Texas Cooperative Extension in the design and delivery of educational services and programs to address issues raised during this process.

During 2002, all counties in Texas participated in an effort to validate the results of the 1999 TCFE process. This validation effort was designed to provide local stakeholders with the progress made on issues identified by the 1999 process. In addition new issues identified since the 1999 process were able to be added to the listed of previously identified issues. We are currently in the process of analyzing these reports to develop a state-wide summary for other key stakeholders. In addition, plans are underway to launch the next state-wide needs assessment in 2004.

In addition, any individual in Texas may access county plans and reports included in the TCE's Planning and Reporting System. These plans and reports represent work being done by Extension faculty across the state. The plans and reports are directly linked to issues raised in the Texas Community Futures Forum process and are part of most action plans developed in the 254 counties across the state. This open system allows citizens to be fully aware on the programs and services being planned by Extension.

Finally, Extension Program Councils continue to serve as a conduit to local citizens and their needs. Currently, over 11,000 individuals serve on Extension Program Councils. These volunteers represent all 254 counties in the state.

Texas Agricultural Experiment Station

The TAES Administration, Department Heads and Resident Directors variously met with industry leaders over the course of FY 2001. Groups met with included the Cactus Feeders Association, Inc., National Cotton Council, Plains Cotton Growers, Rio Grande Valley Sugar Growers, Texas Arabian Breeders' Association, Texas Beekeepers Association, Texas Cattle Feeders Association, Texas Citrus Mutual, Texas Citrus & Vegetable Association, Texas Corn Producers Board, Texas Cotton Breeders Association, Texas Cotton Ginners Association, Texas Cotton Producers Association, Texas Grain Sorghum Board, Texas Nursery & Landscape Association, Texas Paint Horse Breeders' Association, Texas Peanut Producers Board, Texas Quarter Horse Association, Texas Rice Improvement Association, Texas Rice Producers Board, Texas Rice Research Foundation, Texas Seed Trade Association, Texas Sheep & Goat Raisers Association, Texas & Southwestern Cattle Raisers Association, Texas Soybean Board, Texas Thoroughbred Association, and the Texas Wheat Producers Board among others.

TAES has encouraged the public to participate in helping TAES set priorities, assess current program and process effectiveness, and determine future directions. These processes were open, fair, and accessible to encourage individuals, groups, and organizations to have a voice, and treated all with dignity and respect. Stakeholders were initially identified by membership in listed organizations, though all events were public and were announced in the press and other written notice. Input from these events was captured by TAES participants, and in some cases was published for further public use. Stakeholder input has always been critical to TAES processes and programs, and listed events and organizations continue as essential partners in setting the TAES agenda and recognizing and addressing emerging issues.

C. PROGRAM REVIEW PROCESS

Texas Cooperative Extension

TCE Administrative Program Leaders and TAES Administrative Leaders serve as merit

reviewers for the Federal Plan of Work, the Federal Report of Accomplishments and Results, and associated grants and contracts. This leadership team is responsible for the oversight and management of all programs conducted by Extension and research faculty.

This process was described in the CSREES TCE State Plan of Work and the CSREES TAES State Plan of Work, both submitted July 1999. There are no significant changes in the process since that submission, though FY 2001 is the first year TCE and TAES have submitted a Joint Annual Report of Accomplishments and Results.

Texas Agricultural Experiment Station

Significant changes have not been made in the program review process.

D. EVALUATION OF THE SUCCESS OF MULTI AND JOINT ACTIVITIES

Texas Cooperative Extension

Programs in this report were identified and addressed in the Plan of Work submitted in July 1999. Issues of importance were identified in the TCE and TAES strategic plans for 2000-2003. These plans for 2000-2003 are based upon issues identified by stakeholders and citizens during the Texas Community Futures Forum held in 1999. This process is described in the Federal Plan of Work and is again discussed in this document in the stakeholder input section.

An integral part of educational programming efforts to meet the needs of the citizens of Texas includes serving under-served and under-represented populations. Various programs including those under Goal 3 and Goal 5 address these populations as a major emphasis of the programming. Examples include the Better Living For Texans program, Money 2000, partnership and collaboration efforts, and community development efforts.

Outcome and impact accomplishments are described for many of the planned programs reported on in this report. Accomplishments range from clientele gaining knowledge of specific subject matter areas to increased revenues and the saving of income. TCE outcomes for Year 2002 are expected to be built on for many of the ongoing programs in this report. These efforts, in many cases, are part of ongoing efforts to resolve issues identified in the strategic planning strategy which resulted in the issues identified in the Texas Community Futures Forum

Texas Agricultural Experiment Station

The Projects listed under Part A (Planned Programs) are evidence of the TAES participation and productivity in multi-state, multi-institutional, multi-disciplinary, and joint research-extension projects. Each program addressed the critical issues identified as strategically important by stakeholder input. They also addressed the reporting areas addressing food security, safety and nutrition. Program progress varied among programs due to the major adjustments required to conform with the federal plan, and to adjust to levels of appropriated funding available and to grants and contracts secured by faculty. These should improve with time. The planned programs improved focus, and this should improve further as TAES moves to more fully engage all faculty who work in the program areas.

Under goal 1, TAES scientists participated in the following multi-state, multi-institutional, multi-disciplinary, and joint research-education programs:

- NRSP-8, National Animal Genome Research Project
- NC-107, Bovine Respiratory Disease
- NC-119, Management Systems for Improved Decision Making and Profitability of Dairy Herds
- NC-208, Impact Analysis and Decision Strategies for Agricultural Research
- NC-227, Ergot: A New Disease of U.S. Grain Sorghum
- NC-1003, Impact Analysis & Decision Strategies for Agricultural Research
- NE-127, Biophysical Models for Poultry Production Systems

- NE-138, Epidemiology and Control of Emerging Strains of Poultry Respiratory Disease Agents
- S-9, Plant Genetic Resource Conservation & Utilization
- S-183, Phenology, Population, Dynamics and Interference: A Basis for Understanding Weed Biology & Ecology
- S-274, Integrated Management of Arthropod Pests of Livestock and Poultry
- S-277, Breeding to Optimize Material Performance and Reproduction of Beef Cows in the Southern Region
- S-283, Develop & Assess Precision Farming Technology & its Economic & Environmental Impacts
- S-287, Impacts of Trade Agreements and Economic Policies on Southern Agriculture
- S-288, Nutritional Systems for Swine to Increase Reproductive Efficiency
- S-289, Factors Associated with Genetic and Phenotypic Variation in Poultry: Molecular to Populational
- S-290, Technical and Economical Efficiencies of Producing, Marketing and Managing Environmental Plants
- S-291, Systems for Controlling Air Pollutant Emissions and Indoor Environments in Poultry, Swine and Dairy Facilities
- S-292, The Poultry Food System: A Farm to Table Model
- W-112, Reproductive Performance in Domestic Ruminants
- W-173, Stress Factors of Farm Animals and Their Effects on Performance
- W-177, Enhancing the Global Competitiveness of U.S. Red Meat

Under Goal 2, TAES scientists participated in the following multi-state, multi-institutional, multi-disciplinary, and joint research-education programs:

- NC-213, Marketing and Delivery of Quality Cereals and Oilseeds
- NC-136, Improvement of Thermal Process for Foods

Under Goal 3, TAES scientists participated in the following multi-state, multi-institutional, multi-disciplinary, and joint research-education programs:

- NC-167, Role of N-3/N Polyunsaturated fatty Acids in Health Maintenance
- S-278, Food Demand, Nutrition and Consumer Behavior

Under Goal 4, TAES scientists participated in the following multi-state, multi-institutional, multi-disciplinary, and joint research-education programs:

- NRSP-3, The National Atmospheric Deposition Program
- NRSP-4, National Agriculture Program to Clear Pest Control Agents for Minor Use
- NC-202, Characterization Weed Population Variability for Improved Weed Management Decision Systems to Reduce Herbicide Use
- NC-205, Ecology & Management of European Corn Borer & Other Stalk Boring Lepidoptera
- S-271, Solid-Phase Extraction Techniques for Pesticides in Water Samples
- S-273, Development and Application of Comprehensive Agricultural Ecosystem Models
- S-275, Animal Manure & Waste Utilization, Treatment, & Nuisance Avoidance for a Sustainable Agriculture
- S-276, Rural Restructuring: Causes and Consequences of Globalized Agricultural & Natural Resource Systems
- S-280, Mineralogical Controls of Colloid Dispersion & Solid-Phase Speciation of Soil Contaminants
- S-281, Dynamic Soybean Insect Management for Emerging Agriculture Technologies and Variable Environments

- S-286, Herbicide Persistence in Southern Soils: Bioavailable Concentration and Effect of Sensitive Rotation
- S-293, Improved Pecan Insect and Mite Pest Management Systems
- S-297, Soil Microbial Taxonomic & Functional Diversity as Affected by Land Use & Management
- S-300, Mosquito & Agricultural Pest Management in Riceland Ecosystems
- S-301, Development, Evaluation & Safety of Entomopathogens for Control of Arthropod Pests
- W-128, Microirrigation Technologies for Protection of Natural Resources and Optimum Production
- W-170, Chemistry and Bioavailability of Waste Constituents in Soils
- W-184, Biogeochemistry and Management of Trace Elements in Soils, Sediments and Waters
- W-189, Biorational Methods for Integrated Pest Management (IPM): Bioorganic and Molecular Approaches
- W-190, Agricultural Water Management Technologies, Institutions, and Policies Affecting Economic Viability and Environmental Quality

Under Goal 5, TAES scientists participated in the following multi-state, multi-institutional, multi-disciplinary, and joint research-education programs:

- NC-221, Financing Agriculture & Rural America: Issues of Policy, Structure & Technical Change
- NC-1001, Systems Analysis of the Relationships of Agriculture and Food Systems to Community Health
- NE-162, Rural Economics Development: Alternatives in the New Competitive Environment
- NE-165, Private Strategies, Public Policies, and Food System Performance
- NE-177, Impacts of Structural Changes in the Dairy Industry

E. MULTI STATE EXTENSION AND RESEARCH ACTIVITIES

See Attached - CSREES-REPT (2/00) for Multi-State Extension Activities

F. INTEGRATED ACTIVITIES

See Attached - CSREES-REPT (2/00) for Integrated TCE Activities.

See Attached - CSREES-REPT (2/00) for Integrated TAES Activities.

Contact Information:

Texas Cooperative Extension

Dr. Margaret R. Hale
Associate Director - Administration
Texas Cooperative Extension
105A Jack K. Williams Administration Building
7101 TAMU
College Station, TX 77843-7101
(979) 845-7907
(979) 845-9542 (fax)
m-hale@tamu.edu

Dr. Scott R. Cummings
Assistant Department Head; Assistant Professor & Program Leader
Extension education
Texas Cooperative Extension
104B Scoates Hall
2116 TAMU
College Station, TX 77843-2116
(979) 847-9388
(979) 862-7190 (fax)
s-cummings@tamu.edu

Texas Agricultural Experiment Station

Dr. Charles J. Scifres
Deputy Director
Texas Agricultural Experiment Station
113 Jack K Williams Bldg
College Station TX 77843-2147
Phone: 979-845--8486
Fax: 979-458-4765
Office Email: c-scifres@tamu.edu

Dr. Frank E. Gilstrap
Texas Agricultural Experiment Station
113 Jack K Williams Bldg
College Station TX 77843-2147
Phone: 979-845-7984
Fax: 979-458-4765
Office Email: f-gilstrap@tamu.edu

Certification:

Chester P. Fehlis
Associate Vice Chancellor & Director
Texas Cooperative Extension

Date

Charles J. Scifres
Associate Vice Chancellor & Deputy Director
Texas Agricultural Experiment Station

Date