

WHAT THE FUTURE HOLDS **FIVE-YEAR WORK PLAN**

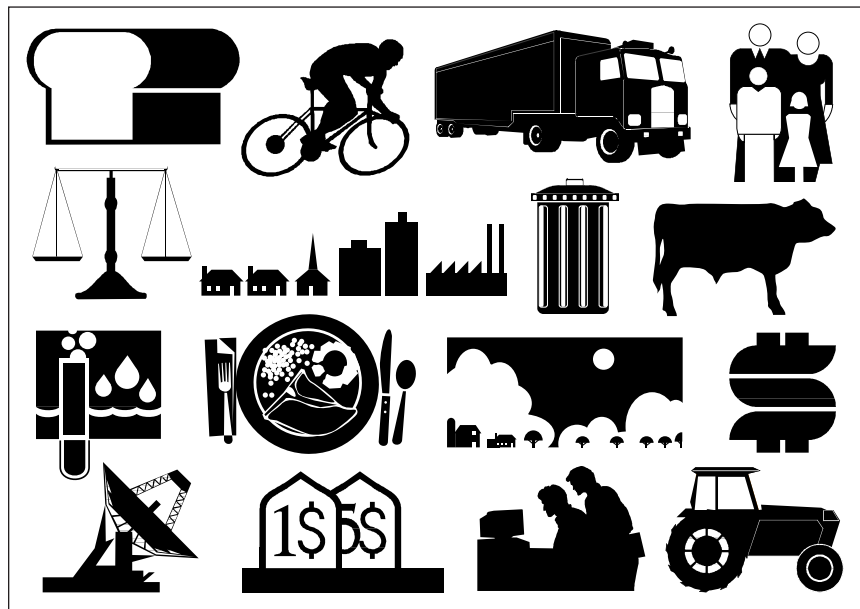
on

**YOUTH, FAMILY, AND
COMMUNITY DEVELOPMENT**

**FOOD, NUTRITION,
HEALTH, AND SAFETY**

**NATURAL RESOURCES AND
ENVIRONMENTAL MANAGEMENT**

**AGRICULTURAL INDUSTRY
COMPETITIVENESS**



AN INFORMAL REPORT TO THE KANSAS LEGISLATURE *by the* KANSAS STATE UNIVERSITY
Agricultural Experiment Station *and* Cooperative Extension Service

January 1998

K-State Research and Extension's FIVE-YEAR PLAN



The 1995 Legislature suggested we study the Kansas State University Agricultural Experiment Station and the KSU Cooperative Extension Service. We were told to make sure the two organizations were still relevant in today's world. After all, K-State, the oldest, coeducational land-

grant university in the nation, has been conducting research and extension activities since the 1860s.

The U.S. government passed the Hatch Act in 1887, which allowed federal funding of research at land-grant universities. Kansas created its Agricultural Experiment Station in 1888. In 1914, with the passage of the Smith-Lever Act, Kansas created its Cooperative Extension Service. This joint effort of research and extension is funded by state, county, and federal dollars.

After 31 focus groups, five public policy forums, a random telephone survey, and a state leaders' meeting, we learned a lot about the two organizations and how the public views their work. We discovered that people value information that is backed by research. Citizens made it clear that research results should be shared with taxpayers. Extension information was viewed as research-based, unbiased, and reliable.

Many people realized that the Ag Experiment Station and Extension Service are part of K-State, but significant numbers of people were not sure where to find those services. We discovered some communication difficulties between the two organizations as well as some turf protection issues. Also, citizens did not distinguish how the two groups differed, and they did not care what those differences were.

To simplify life for taxpayers and eliminate turf issues, we decided to merge the two organizations administratively and programmatically. We also decided to clearly tie them to the host university. Our new official name is the Kansas State University Agricultural Experiment Station and Cooperative Extension Service. For short, we call ourselves K-State Research and Extension.

From surveys, we identified those areas of most importance to our clientele. We later grouped these areas to form what we are calling our Four Core Mission Areas. We realized everything we do in K-State Research and Extension falls into one of these four areas. After our merger, we decided to make a unified Five-Year Work Plan around the Four Core Mission Areas, which are

- Youth, Family, and Community Development
- Food, Nutrition, Health, and Safety
- Natural Resources and Environmental Management
- Agricultural Industry Competitiveness

To create the Work Plan, we surveyed and held input meetings with clientele statewide, and asked our employees for their ideas. The end result is a series of Issues, Vision Statements, and Anticipated Outcomes under each of our Four Core Mission Areas. We are now in the process of creating teams to implement projects that will include personnel from both research and extension.

We are building in new methods to measure the impact and success of what we do. We also are undertaking various means to keep our clientele informed about the research-based information available to them.

We created a Mission Statement for our new organization, which states that we are "dedicated to a safe and sustainable food and fiber system and to strong, healthy communities, families and youth through integrated research, analysis, and education."

I am pleased to report to you, the 1998 Kansas Legislature, that we have seriously studied our organizations and made big changes. We are the first in the nation to merge the Ag Experiment Station and Extension Service. We are all working to identify what our customers want, to deliver what they want, and to make sure they understand what was accomplished.

Each member of K-State Research and Extension is working to serve the citizens and to provide what our new motto promises: "KNOWLEDGE FOR LIFE."

Sincerely,

A handwritten signature in blue ink that reads "Marc A. Johnson". The signature is fluid and cursive.

Marc A. Johnson
Dean and Director

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YOUTH, FAMILY, AND COMMUNITY DEVELOPMENT



Build Strong, Healthy Communities

SITUATION:

Building human capacity is a key ingredient in addressing many problems that communities face today. Community in this context may be a geographic area or community of interest, such as an organization, workplace, or other institution. The complexity of issues facing communities requires people from various backgrounds with different perspectives and skills to work together on issues involving their common interests.

Local leaders need the skills to bring people with diverse interests together, develop a shared vision, and set goals that achieve results. Many counties find it challenging to recruit new officers and find committee chairs for a club or organization, leaders for youth groups, or volunteers for boards or community task forces. Those counties may lack a pool of identified leaders—with the skills, abilities, and interests for organization and local government responsibility.

Expanding human capacity is fundamental to economic development, leadership, affordable housing, quality child care, a skilled workforce, and welfare reform.



VISION STATEMENT:

K-State Research and Extension is committed to expanding human capacity by delivering educational programs and technical information that result in improved leadership skills in the areas of communication, group dynamics, conflict resolution, issue analysis, and strategic planning that can enhance the economic viability and quality of life in communities.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. More Kansans will be involved in community and organizational activities.
2. Citizens will have more confidence participate in public affairs and have more opportunity for public dialogue and civic action.
3. Kansans will increase understanding of city and county functions and their local economy.
4. There will be increased communication among all community members.
5. Community groups will work together toward goals established through a strategic planning process. For example, communities will engage in strategic planning to assess housing needs; set

priorities; make use of federal, state, and local resources; and implement plans for meeting housing needs.

- 6. Volunteer leaders will be recruited and trained to work on community issues affecting children, youths, and their families.
- 7. Community groups will develop effective partnerships and coalitions.
- 8. Local officials and development organizations will be more informed and effectively use resources in areas related to economic development; finance; development strategies; community economic analysis; and social, economic, and fiscal impacts.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

- 1. Implement projects designed by the Developing Effective Leadership Team that focus on citizen participation and leadership as ways to achieve mutual goals so Kansans can develop their capacity to address community and public issues.
 - A. Training and educational materials will be provided for:
 - County Leadership Programs (structured and ongoing) to help agents initiate or maintain county community leadership programs;
 - Informal Leadership Programs (less structured and one topic/session) designed to meet the needs and interests public; and

- Learning process skills (e.g., communication, group dynamics, conflict resolution, issue analysis, strategic planning) in formal and informal leadership programs. (See YFCD 3 and YFCD 4)

B. Encourage Extension agents to participate in staff development and professional association activities to enhance their own leadership capacity.

2. Provide information and referral, educational outreach, technical assistance, and applied research to local economic development programs and city and county government public services.

3. Initiate community demonstration programs that will create "Learning Community Clusters" that measure and monitor community change as part of ongoing strategic planning activities.

4. Create an interactive compact disk to help Kansans increase their knowledge of economic development.

5. Increase housing needs assessments by using the Kansas Housing Template.

6. Provide housing resources to community leaders through Kansas Housing Partners.

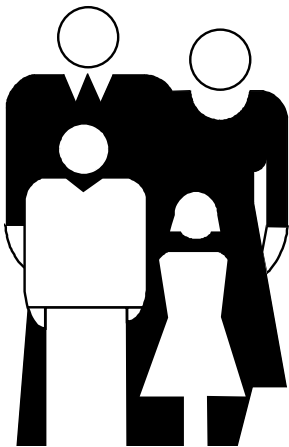
YOUTH, FAMILY, AND COMMUNITY DEVELOPMENT



Improve Parenting Skills and Family Relationships

SITUATION:

Kansas families have not been immune to trends that affect families throughout the nation. The Kansas Annual Summary of Vital Statistics indicates that first-time marriages for both partners have made up fewer than half of the marriages in Kansas since 1985. The state divorce rate has consistently been higher than the national rate. Although the divorce rate showed a slight decrease in the mid-1990s, nearly 11,000 minor children were affected by their parents' marriage dissolution in 1995. Over 85,000 children live in one-parent homes, and over 45,000 children under the age of 18 live in stepfamilies.



The employment rate of both parents working outside the home also follows the national trends. Over 61% of Kansas mothers with children under the age of six are in the labor force and over 70% of mothers with children ages 6-18.

Despite this trend, Kansas families have had no increase in income since the mid-1970s because costs related to housing and maintaining a family have risen.

Kansas families have grown smaller, 3.08 persons per family, following the national trend for declining birth rates. However, teen pregnancy is on the rise in the state. Kansas experienced an increase in live births to unmarried teens in 1995. Among the teens who became pregnant that year, 2% were under the age of 15. Two-thirds of the known fathers were 20 years old or older.

Prior to welfare reform, almost one in five Kansas children received some form of economic assistance. The growth of female headed households with children has contributed to this trend. A woman's level of education, years in the labor market, and overall earning power as compared to a man's have created increasing numbers of children growing up in poverty. The impact of welfare reform has yet to be measured.

Families are mobile, often living away from their extended families and having few supportive community networks. Other family issues confronting community leaders are welfare reform changes, adequate quality child care options, increasing juvenile court loads, and changing state and national government support.

VISION STATEMENT:

K-State Research and Extension is committed to developing and delivering education that contributes to effective parenting and successful family relationships.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Families will identify family assets that characterize successful functioning families throughout the life span.
2. Couples will recognize the importance of effective communication skills in maintaining a lifelong commitment to each other.
3. Individuals in communities will be more supportive and less blaming of parents who are experiencing difficulty with their children.
4. Parents who feel isolated and misunderstood will experience more support in their communities.
5. Communities will assess child care needs, work environments, and other social supports that enhance strong family relationships.
6. Parents will become more capable of evaluating information and making decisions about nurturing and guiding their children.
7. Fathers will recognize their importance for children and will commit to making a significant investment in their children's lives.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:


1. Develop and implement a basic life skills program that strengthens problem solving, family relationships, and managing resources (i.e., time and money), and other basic living skills.
2. Emphasize family assets and evaluate existing family strengthening resources, employing guidelines for parenting programs based on the National Extension Parent Education Model.
3. Develop and implement a conflict resolution/decision-making project.
4. Identify community strengths that enhance family life.
5. Provide a couple-commitment program for use in counties.
6. Establish a divorce education program.
7. Expand the "Creating Communities That Care About Parents" program.
8. Expand the Papatellers Program that is designed to strengthen father-child relationships through storytelling.

YOUTH, FAMILY, AND COMMUNITY DEVELOPMENT

Prepare Youth to Be Responsible Citizens

SITUATION:

Kansas youth are vulnerable to increased pressures and situations because of current and emerging changes in society, including exposure to ever-increasing amounts of information of varying degrees of quality and accuracy; lack of clear-cut boundaries and enforcement of those boundaries; changes in family structure and ways of living; and changes in community and world structures.



The result is the continued need for youths to be supported in learning the skills they need to handle change successfully and to become responsible citizens.

VISION STATEMENT:

K-State Research and Extension’s school-aged youth education program, 4-H, is committed to equipping youth with the life skills (i.e., decision making, communication skills, commitment to community, genuinely earned self esteem, inquiring mind) necessary for them to be capable, contributing members of their community and the world.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Youth will be able to set goals, work toward them, assess their progress, and achieve those goals.
2. Youth will show respect for people and property indicated by decreased juvenile offenses.
3. Youth will be increasingly accepted as assets in their communities and involved as equal partners in planning and problem solving.
4. Employers will report that entry-level youth workers will be better prepared with skills and attitudes that contribute to the workplace.
5. Young people will be better prepared for their future roles as parents as a result of cross-aged mentoring as teens.
6. Youth will practice healthier behaviors that support individual, family, and community well-being.
7. More youth will be supported by their families in positive activities.
8. Youth will take pride in where they live by being involved in community service.

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POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

Through community partnerships, K-State Research and Extension will:

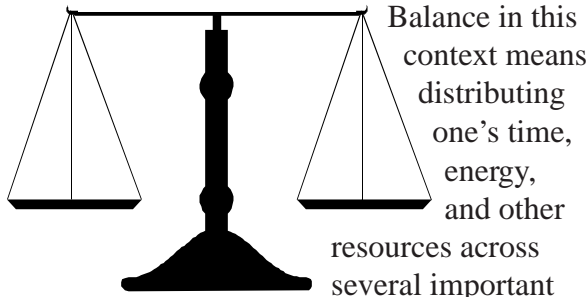
1. Identify, create, and support programs where youth practice ethical decision-making and model responsible behaviors.
2. Support learning opportunities where youth become good community citizens by accepting their personal rights and respecting the rights of others.
(See YFCD 1)
3. Identify/create and support career development and workforce skill preparation for youth.
4. Promote a sense of commitment to community through service-learning opportunities for youth.
5. Identify, create, and support programs that teach adults to include the input of teens in community planning and problem solving.
6. Support adult volunteers in ways to help youth learn responsibility and be accountable for their decisions.
(See YFCD 4)
7. Support adult volunteers who can be mentors between teens and younger youth.
8. Create and support more ongoing, long-term opportunities where young people gather with caring, supportive adults.

YOUTH, FAMILY, AND COMMUNITY DEVELOPMENT

Balance Demands of Work, Family, Community, and Time for Self

SITUATION:

Studies show that in today’s complicated society, the high demands placed on individuals by their jobs and their families are taking a toll. The lack of balance in work and family responsibilities, both real and perceived, has resulted in stress-related conditions becoming the number-one debilitating factor in the workplace.



Balance in this context means distributing one’s time, energy, and other resources across several important

areas of life and in ways that make people feel fulfilled and in touch with their priorities. The ways resources are allocated to achieve balance will differ from person to person, but the importance of achieving balance is universal.

In addition, internal and societal expectations add to increasingly stressful situations. Many people believe that they are too busy both at home and at work. People who work long hours and have family and community responsibilities may not have the time, energy, or desire to add more commitments to an already hectic schedule. They may feel

that employers and families expect more of them than they can give. Relationships can both ease and complicate stress.

Research shows that when employees do not manage the stress created by these imbalances, businesses and organizations can feel the effects. Organizations and individuals that seek to remedy the effects of overwhelming demands, high frustration, and imbalances in personal and professional time of their workers have increased returns in higher morale and productivity and decreased health complaints and turnover. Successful management of work life and family life is of benefit to individuals, families, and society.

VISION STATEMENT:

K-State Research and Extension is committed to promoting a balanced lifestyle that includes time for self, family, work, and community.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Individuals will acquire skills that foster positive interaction among work, family, and community responsibilities.
2. Individuals will identify personal issues that impact on work/family interaction and develop skills to confront situations arising from those issues.
3. Individuals will assess and address potential risks associated with imbalance of personal, family, community, and work roles.
4. Individuals will take action to achieve balance in their personal, family, community, and work roles.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

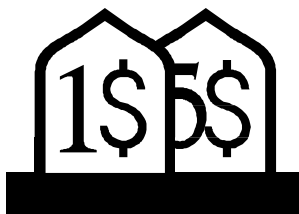
1. Develop, pilot, and implement a comprehensive educational effort that encourages balance between self, family, work, and community using skills in:
 - A. goal setting,
 - B. time management,
 - C. conflict management,
 - D. communication,
 - E. decision-making,
 - F. organization,
 - G. delegation, and
 - H. stress management.
2. Evaluate existing research and identify potential research to ensure implementation of a piloted comprehensive educational effort (see item 1) to benefit targeted audiences in Kansas.

YOUTH, FAMILY, AND COMMUNITY DEVELOPMENT

Develop Consumer and Financial Management Skills

SITUATION:

Changing economic conditions, fluctuating employment patterns, demographic shifts, increased complexity in the marketplace, and advances in technology impact family well-being and alter how individuals and families make decisions. Deregulation of financial institutions and major tax law changes have altered—and in some cases expanded—the estate planning, investment, insurance, home purchase and sale, and retirement planning alternatives available. These changes have increased the importance and difficulty of financial decisions.



Fluctuating economic conditions can create financial and emotional stress for individuals and

families, but those with low incomes often face the greatest challenges.

The use of consumer credit has increased dramatically in the past several years. Potential impacts for families include increased financial pressures, higher interest and credit card fees, greater payment delinquencies, increased bankruptcies, and higher rates of marital discord and disruption.

Retirement income has traditionally been visualized as a three-legged stool—with Social Security representing one leg, pensions another, and private savings and investments the final leg. However, many people are questioning whether Social Security will provide more than minimal assistance to retired workers in the future. With limited pension coverage and a shift toward pension plans primarily funded by voluntary employee contributions and managed by the employee, it becomes even more important for individuals and families to take responsibility for insuring an adequate retirement income. At the same time, expanded investment options, marketing and promotion, and fraud necessitate sound, readable, objective (non-promotional) educational materials.

Because young people exercise control over (and influence the use of) considerable amounts of money, and will continue to do so throughout their lives, it is important that they develop sound consumer and financial skills early in life. Several studies suggest that teens lack basic economic and money management skills. Yet, the ability to manage personal finances remains basic to survival as young people graduate from high school; establish a residence; get married, have children, and establish households; pursue college or vocational training; and start their careers.

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VISION STATEMENT:

K-State Research and Extension is committed to providing accurate and current educational programming to individuals and families to enable them to improve their consumer and financial management skills and improve their current and future financial situation.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Individuals and families will become more knowledgeable about their finances and make informed choices and decisions.
2. Individuals and families will examine their financial situation, identify problem areas, set measurable goals, identify and evaluate alternatives, implement a plan, and evaluate and monitor progress toward achieving their goals (e.g., debt reduction, increased savings and investments, purchase of a home, increased contributions to retirement plan).
3. Teens participating in the High School Financial Planning Program will improve their financial knowledge and skills and develop a personal financial plan.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Develop basic life-skills curriculum materials focusing primarily on basic budgeting, use/abuse of credit, and developing consumer skills.

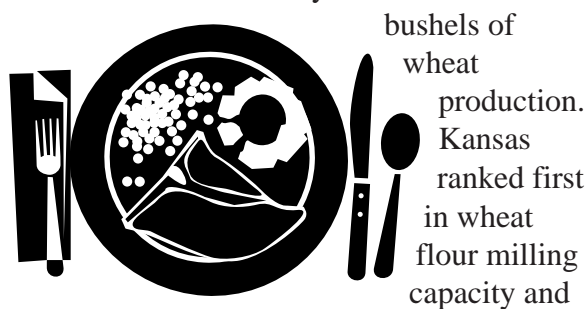
2. Develop consumer and financial management program materials designed primarily for farm families.
3. Develop, revise, and/or reprint consumer and financial management publications and support materials as part of a comprehensive, broad-based educational program. Emphasize experiential and interactive learning and learn at-home opportunities and marketing efforts that focus on achieving goals.
4. Provide training, networking opportunities, and support for high school teachers who use the High School Financial Planning Program.
5. Organize and conduct retreats/camps for youth on consumer and financial management.
6. Pilot a program on Master Money Managers (volunteers that work with families—one-on-one, as well as in groups—on basic budgeting, record keeping, and credit use/abuse) to expand the programming efforts of the county Extension agent.
7. Form partnerships with Social and Rehabilitation Services, Consumer Credit Counseling Services, the American Association of Retired Persons, and other organizations/agencies/groups seeking to improve consumer and financial management skills of individuals and families.

FOOD, NUTRITION, HEALTH, AND SAFETY

Promote a Safe Food Supply from Production to Consumption

SITUATION:

The goal of food-safety programs is to prevent foodborne illnesses. Between 6.5 million and 81 million cases of foodborne illnesses, including 9,000, deaths occur each year in the United States. The level of illness reported in Kansas is low, but the reporting system is not an active one, and it is a well-known fact that foodborne illnesses are greatly under-reported. Experts believe the risk of foodborne illness is increasing due to multiple factors. In Kansas in 1996, 7.1 million head of cattle were slaughtered and processed, and 5.1 million cattle were finished (23% of the U.S. total). Kansas had 1.5 million beef cows for reproduction, and 4.4 million calves and feeder cattle were imported into the state. Kansas, in 1996, ranked second nationally with 255 million



bushels of wheat production. Kansas ranked first in wheat flour milling capacity and flour milled with over 36 million hundred weights milled. Kansas also is a major producer of grain sorghum, corn, and soybeans, with over 750 million bushels of collective production among those grain crops. Fresh vegetable and fruit production through local markets are expanding interests

in Kansas. In addition, Kansas has some 20,000 licensed foodservice operations and about 500 meat and non-meat food-processing facilities.

VISION STATEMENT:

K-State Research and Extension is committed to developing integrated programs and practices that provide a safe food supply from production to consumption.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION

1. Crop and livestock producers will increase awareness and assess potential food-safety hazards at the farm and field level.
2. Meat, grain, and other processors will use improved technologies and practices in support of state and federal initiatives in food safety.
3. Wholesalers, marketers, and distributors will adopt procedures to minimize food-safety hazards associated with the handling, transportation, and storage of foods.
4. Retail markets will adopt food sanitation and safety procedures to minimize food-safety hazards in their operations and risks to consumers.

5. Commercial and noncommercial (institutional) food-safety operations will adopt food sanitation and safety procedures to minimize food-safety hazards in their operations and risks to consumers.
6. Consumers will practice safe food handling and sanitation to control organisms and prevent foodborne illnesses.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Crop and Livestock Production:

- A. Continue Livestock Quality Assurance Programs, including biosecurity. (See AIC 2)
- B. Continue Crop Quality Assurance Programs for on-farm, at-home, and commercial market gardeners. (See NREM 2)
- C. Conduct on-farm research (e.g., pathogen ecology, risks, and management program effects). Target reduction practices at specific “hotspots.”
- D. Continue pesticide applicator training programs. (See AIC 1)
- E. Assist on-farm feed manufacturers to comply with current good manufacturing practices.
- F. Study transmission of disease agents from food animals to food products during production of food products.
- G. Study water and manure management to reduce environmental spread of pathogens (e.g., *E. coli* 0157:H7; *Cryptosporidium*). (See AIC 2, NREM 1)

H. Promote safe food handling practices from planning/production through consumption to commercial market gardeners and home gardeners.

2. Meat and Food Processing:

- A. Conduct research to develop rapid and reliable techniques to identify and quantitate foodborne hazards for meat processors and non-meat processors. (See FNHS 3)
- B. Develop antimicrobial processes for meat processing.
- C. Assist meat and non-meat food processors in development of HACCP programs for their facilities.

3. Consumer Access to Food:

- A. Develop and conduct sanitation and handling programs for retail markets.
- B. Continue to conduct HACCP workshops for commercial and noncommercial food service operations.
- C. Continue providing ServeSafe safety sanitation and handling certification course for commercial and noncommercial food service operations.
- D. Provide educational programs:
 - Occasional Quantity Cooks for churches, service clubs, and others.
 - Food Safety at Home Plate.
 - Develop and conduct Food Pantry or breadbasket food safety, sanitation, and storage programs. (See FNHS 2)

FOOD, NUTRITION, HEALTH, AND SAFETY

Promote Healthier and Safer Lives

SITUATION:

Kansans are concerned about their personal health and safety as well as that of their families and communities. Statewide surveys, forums, and other data have revealed that citizens have a keen interest in programs delivered by local and state organizations.

Public health planning documents, such as Healthy Kansans 2000, call for reductions in the incidence and prevalence of certain types of morbidity and mortality. The



Kansas Department of Health and Environment has the following seven priority areas: Alcohol and Other Drugs; Cancer; Coronary Artery Disease; HIV and Other Sexually Transmitted Diseases; Maternal and Infant Health; Unintentional Injury and Violence; and Vaccine-Preventable and Other Infectious Diseases. Of these, cardiovascular-pulmonary diseases, cancer, and cerebrovascular disease leading to strokes account for 63% of Kansas' deaths—primarily preventable by adopting healthy and safe lifestyles.

Eating disorders and other weight issues are increasing problems. Arthritis affects 40 million Americans and osteoporosis is present in 9 of 10 women and 1 in 3 men by age 75.

Tobacco use increases risk for many diseases, including lung cancer and emphysema. Currently, 22% of Kansans smoke and more youths are using tobacco products. Alcohol and drug abuse is common, especially inappropriate use of medications and over-the-counter drugs by the elderly and binge drinking by youths and young adults. Fourteen percent of adult Kansans engage in binge and heavy drinking.

Exposure to environmental hazards (e.g., lead, radon) in their homes can also be a cause of illness and death for Kansans. Other environmental hazards can result in health problems for people with asthma and allergies or in death from carbon monoxide.

Mental health, stress management, and related issues are areas of concern for several groups. A broad range of health and safety challenges face agriculture related worksites, farm families, and rural communities. Agriculture related lifestyles and occupations rank high in terms of risks for stress, injury, disability, and death.

Access to care and health care costs are major concerns. Limited resource and near poverty individuals and families, those without health insurance, the very young, and the aged are most at risk for poor health and early death.

VISION STATEMENT:

K-State Research and Extension is committed to promoting healthy lifestyles and well-being and preventing disease and injuries for Kansans of all ages, life stages, and income levels.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION

1. Young Kansans (from prenatal to young adulthood) will achieve optimal health and development. This can include but is not limited to:
 - A. Decreasing risks for low birth weight, infections, hunger/food insecurity, and undernutrition;
 - B. Preventing eating disorders and/or overweight;
 - C. Preventing or postponing the early development of chronic diseases; and
 - D. Preventing unintentional injuries such as falls and poisonings.
2. Young and middle-aged Kansans will experience improved nutrition, physical and mental health, and lower incidence of injuries and early death. This can include but is not limited to:
 - A. Healthy eating and exercise patterns to improve health and delay or prevent chronic diseases.
 - B. Identifying: optimal needs; effective conventional and alternative interventions; motivators of behavior change, and effective educational programs.
 - C. Decreasing use of alcohol, tobacco and addictive drugs.
 - D. Preventing violence, abuse, and sexually transmitted diseases.
 - E. Improving personal stress management and mental health.
 - F. Preventing intentional and unintentional injuries at home and at work.
3. Older Kansans will experience improved well-being and a higher quality of life. This can include but is not limited to:
 - A. Postponing or treating chronic diseases.
 - B. Improving mental health to prevent or cope with depression, dementia, and life changes and stresses.
 - C. Making appropriate and effective uses of conventional and alternative health treatments.
 - D. Practicing safety at home and away from home.
 - E. Improving ability to access affordable, quality health care.
 - F. Decreasing use of alcohol, tobacco, and other harmful drugs.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Achieve optimal health and development for young Kansans (from the prenatal stage to young adulthood).
2. Improve nutrition, physical and mental health, and prevent injuries and early death for young to middle-aged Kansans.
3. Promote well-being and a higher quality of life for older Kansans.

FOOD, NUTRITION, HEALTH, AND SAFETY

Develop New, Appealing Food Products

SITUATION:

Economic well-being of Kansans can be improved by facilitating the use of resources to develop and market healthful food products from locally produced commodities.



Rudimentary mechanisms have been established to facilitate development of novel, nutritious, and appealing food products.

The need exists to strengthen links and form effective networks among entrepreneurs, established businesses, researchers, marketing experts, extension personnel, and regulatory agents for the development of new food products other than gift market items.

Research is needed to understand functionality and interactions of ingredients for safe, nutritional, consumer-appealing foods. Understanding consumer needs and their interpretation is necessary to assure appealing food products.

VISION STATEMENT:

K-State Research and Extension is committed to helping Kansans use their products in healthful, profitable ways.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION

1. Kansas producers will increase numbers of successful new Kansas products.
2. Developers and producers will assess the technological and economic feasibility of product formulations that maximize microbiological, sensory, and nutritional quality.
3. Producers of new food products will demonstrate increased knowledge of emerging issues and of state and federal regulations.
4. Develop marketing plans concurrent with release of new products.
5. Increased consumer sensory input will assist product developers to achieve longer lasting marketability of developed products.
6. Product developers will increase understanding and use appropriate experimental design for efficient development of quality food products.

7. New sensory and consumer testing methods will be established and additional research on current methods will be conducted.
8. Food scientists and food product developers will increase knowledge of functionality of food ingredients for improvement of food products.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Link entrepreneurs with people who have business/marketing expertise. (See AIC 3)
2. Revive product development roundtable to stimulate ideas and provide assessments for Kansans who wish to develop and market new products by linking:
 - A. economists
 - B. marketing specialists
 - C. food engineers
 - D. nutritionists
 - E. food scientists and product developers
 - F. product evaluators
(See FNHS 1 and AIC 3)

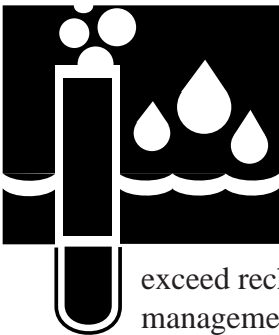
3. Schedule regular conferences for food processors, researchers, and state agencies related to the development of new, applied food products to determine needed research efforts to assess product feasibility.
4. Provide affordable consumer and nutritional evaluations to supplement labeling and shelf-life evaluations currently available. (See FNHS 2)
5. Update Reference Guide for Food Processors and other publications.
6. Study ingredient interactions for optimization of quality of various foods (See FNHS 2)
7. Study sensory and consumer testing methods.
8. Measure consumer attitudes and needs for new products and processes.
9. Evaluate processing and storage technologies for quality food products. (See FNHS 1)

NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT

Ensure Quality and Conservation of Surface Water and Groundwater

SITUATION:

Water is an important economic and natural resource for Kansas. The state's water resources exist in surface water systems (lakes, streams, and rivers), groundwater systems (aquifers), and alternative water sources (agricultural, municipal, and industrial wastewaters). Surface water systems exist throughout the state and are recharged by rainfall, thus they are the predominant water supply within the eastern half of the state. Groundwater resources exist primarily within south central and western Kansas and are the predominant water resource within those areas of the state.



While aquifers also are recharged by rainfall, deep aquifers like the Ogallala in western Kansas typically recharge very slowly, and withdrawals often exceed recharge. Therefore, management will help to extend the life of those aquifers. Some shallow aquifers such as in central Kansas are recharged by rivers and streams and can be sustainable systems through proper management. Wastewaters are a viable resource for irrigation but require careful management for irrigation system operations and to maintain favorable soil and surface water quality.

Kansas surface waters have multiple uses that include drinking, recreation, and irrigation. The 12 major river basins in Kansas have contaminants that create water quality concerns, according to a Kansas Department of Health and Environment (KDHE) report (January 12, 1995). The report identifies frequent contaminants as pesticides, fecal coliform, atrazine, nitrogen, suspended solids, chloride, and sulfate. In addition, surveys of private water wells show that a high percentage, perhaps 80%, of farmstead wells have deficiencies in location and construction that contribute to poor water quality and potential health risks. Roughly one-third of the private wells in Kansas contain E. coli and/or high nitrate and pose a significant health risk. About 60% of private wells do not meet safe drinking water standards for public water.

The Clean Water Act of 1972 and Safe Drinking Water Act of 1974 are the major Federal statutes that establish the water quality programs for the United States. The Clean Water Act establishes water quality and water pollution goals for the nation. Two of its major provisions require that states adopt water quality standards and implement nonpoint source pollution control programs. The principal objective of the Safe Drinking Water Act is to assure that water distributed by public water supplies is safe. Beyond the regulatory component is the fact that it is in the best interest of production

agriculture—as a major user of water—to conserve and ensure the quality of Kansas water resources.

VISION STATEMENT:

K-State Research and Extension is committed to developing and promoting technology and management systems that will ensure water quality and efficient use of Kansas water resources.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Surface water and groundwater resources will approach sustainable levels.
2. Crop producers will adopt dryland and irrigated crop production schemes (crops, hybrids, tillage, irrigation systems, and cultural practices) that will use available water resources more effectively (e.g., reduce risk of surface runoff and leaching of nutrients, pesticides, and sediments from cropland).
3. Rangeland and livestock managers will use appropriate range and grazing management practices, improved feed formulations, facilities design, and waste management systems to reduce the impacts on water quality.
4. Current irrigation system technology and management practices will be understood and adopted in order to use and allocate water more efficiently.
5. Reuse of waste water resources will increase without long-term soil quality, surface water quality, or irrigation system degradation problems.

6. Community leaders and private landowners will assess urban public and private lands for potential risks of current practices for causing water quality degradation and develop action plans to minimize such risks.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Develop a mechanism to assist crop and livestock producers, community leaders, and public policy developers with environmental planning.
2. Develop integrated cropping and grazing systems for environmental and resource management. (See NREM 2, NREM 3, AIC 1, and AIC 2)
3. Design and implement livestock systems for efficient production management, efficient waste management, and protection of natural resources. (See NREM 3, FNHS 1, and AIC 2)
4. Develop irrigation designs, system technology, and water management practices for efficient water application and use. (See AIC 1)
5. Design and implement strategies for application and management of wastewater resources.
6. Assist communities in assessing potential for environmental impacts from public and private land use.

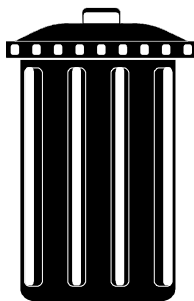
NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT

Promote Community and Residential Environmental Management

SITUATION:

Because of concerns for clean water and other urban and community environmental legislation, communities recognize the importance of dealing with solid-waste issues and in developing solid-waste-management plans. Various issues face landfills on solid-waste accumulation, including costs, composition of products delivered to landfills, siting landfill locations (Not In My Backyard), volume of materials communities generate for efficient disposal, and complying with various state and federal legislation and guidelines. About 20% of materials delivered to landfills are yard wastes and food wastes that may be reduced by altered horticultural management practices. A significant amount (estimated to be 27%) of the waste stream is paper and wood, which is not likely to be recycled.

With changes in food-consumption practices, food-waste disposal and/or re-use will become more critical. Nearly one-half of the waste stream is organic materials that could be composted or converted to other agricultural or horticultural uses.



There is a growing recognition that we must find better ways to deal with the garbage produced as a result of our lifestyles. Small, rural communities face different challenges

than larger urban areas concerning these environmental issues and in establishing recycling and re-using programs that may require cooperation and linkages.

Challenges exist to develop home and community horticultural systems that minimize waste management problems. Proper plant material selection, management and resource utilization of plantings to reduce solid waste generation, integrated pest management practices to minimize planting losses, and safe uses of pest management practices should be promoted. Materials generated by natural disasters such as ice or windstorms must be removed.

In addition, effective disposal of household hazardous waste products must be established in all communities of all sizes in Kansas—rural and urban.

VISION STATEMENT:

K-State Research and Extension is committed to refining environmental and horticultural waste-management practices and delivering the education required that will result in improved community and residential environmental quality.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Community residents will implement horticultural waste-management practices in an environmentally sensitive way.
2. Community leaders will manage organic waste to produce beneficial products or uses for the community.
3. Community leaders will explore ways of developing partnerships and cooperation in integrated waste-management systems.
4. An awareness will be created of individual contributions to and responsibility for waste products generated by individuals, businesses, and communities, including landscape and food wastes.
5. Options will be identified for converting waste products into useful products, evaluating their safety and effectiveness, and encouraging their uses.
6. Research-based information will be developed about community, economic, and health and safety issues related to waste reduction, re-utilization, and conversion to alternative uses.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Determine what part of a community's solid waste materials can be regulated or composted.
2. Use recycled or composted materials in horticultural applications.

3. Implement Don't Bag It programs to reduce grass clipping disposal and Home Composting programs to reduce yard waste. Investigate and evaluate composting techniques that prevent fly production.
4. Provide information and develop systems for dealing with environmental disasters such as ice, snow, or windstorms that generate significant quantities of yard waste.
5. Minimize waste development by appropriate plant selection and minimal pruning practices, integrated pest-management programs, and alternative pesticide uses, and efficient resource inputs for horticultural systems. (See NREM 1 and AIC 1)
6. Explore alternative uses for wood wastes, cardboard, and newsprint. Also, consider effective ways of re-using food waste, creating usable products from food wastes, and improving the handling and safety of food wastes from community and commercial facilities.
7. Consider new ways to collect waste products, including hazardous wastes.
8. Ensure that environmental problems such as increased fly or insect populations, odors, nutrient leaching to groundwater, heavy metal contamination from printing inks, or similar problems do not result from re-used or recycled products.
9. Evaluate existing research and identify research that must be done to ensure that the above projects can be achieved.

NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT

Develop Systems for Improved Soil and Air Quality

SITUATION:

Soil quality and air quality are serious threats to the agricultural industry with potential implications for human health. This statement does not diminish water quality issues or the current economic crisis in some sectors of agriculture. Soil degradation is with us today and will be with us tomorrow, next year, and forever. Soil degradation affects Kansas, the United States, and the world. Degradation takes place through wind erosion, water erosion, acidification, salinization, loss of organic matter, compaction, and urban encroachment for residential, commercial, or public use.

Air quality is an important concern in agricultural operations, including land preparation, harvesting, grain handling, and livestock production. Dust is emitted from various field operations such as land preparation and harvesting and also from grain handling facilities. In livestock production systems, air quality issues include animal and human health concerns associated with dust and gases internal to confined

livestock environments. They also include dust, odor, and possibly human health concerns associated with air quality surrounding livestock operations, including waste handling and storage facilities. All of these issues have major economic and social dimensions, including impacts on our ability to produce food and on our quality of life. Unless we address these issues, we could lose the competitiveness of our agricultural industry in the next few years. The health of the agricultural industry depends on both the quality of our soil and air.

The agribusiness industry, researchers, educators, and regulators must work together to develop cost-effective solutions. Cost implementation will be very important since air quality and soil quality abatement strategies will generally be an added cost and not improve the end value of the product. However, they will improve environmental quality, maintain our current resources, and allow us freedom to continue to raise livestock and crops with less restriction than we might otherwise enjoy.

VISION STATEMENT:

K-State Research and Extension is committed to developing agricultural systems and delivering the information required to preserve and improve soil and air quality.



ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Farmers and ranchers will assess potential risks associated with the degradation of soil and air quality and develop strategies to minimize those risks.
2. Producers will use soil improvement practices that will increase soil organic matter; reduce wind and water erosion; and improve soil tilth and productivity.
3. Livestock producers will use Best Management Practices to minimize indoor and outdoor air quality problems.
4. Grain handlers and processors will utilize Best Management Practices to minimize air polluting emissions.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Develop soils and cropping systems Best Management Practices.
(See NREM 1 and AIC 1)
2. Develop rangeland and crop management strategies to improve productivity and soil quality. (See AIC 1)
3. Develop livestock confinement systems to minimize various air quality impacts.
(See AIC 2)
4. Develop grain handling and processing systems that operate with minimal air quality and safety impacts.

AGRICULTURAL INDUSTRY COMPETITIVENESS



Develop Efficient, Integrated Crop Production Systems

SITUATION:

Kansas crop producers face a variety of issues. Current farm legislation allows greater flexibility in crop selection. Greater use of reduced tillage systems raises questions on weed control, fertilization practices, and efficient rotations. Pathogens, pests, and environmental stresses also reduce crop yields. New technologies, such as precision ag and biotechnology, present new management challenges. Concerns with aquifer depletion, water quality, and soil erosion demand integrated crop management systems which improve the environment.



It is important to provide Kansas crop producers with information and technical assistance on residue management techniques; crop rotation systems; production efficiency; environmentally sound use of nutrients, pesticides, and herbicides; improved cultivars; and Best Management Practices. Producers need the best crop varieties and hybrids that complement their cropping system. They also need whole farm planning information that integrates crop production with livestock production (at the farm, regional, and state level) and with marketing and risk management strategies (including alternative and new crops).

Non-farm audiences (i.e., youth, urban population) need to be educated on sound agricultural production practices.

VISION STATEMENT:

K-State Research and Extension is committed to developing options for efficient, integrated crop production systems that will improve farm profitability through efficient use of inputs that protect natural resources and the environment while improving quality of life.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Producers will meet the needs of existing and emerging markets by adopting new cropping systems and new technologies.
2. The quality of life for Kansans will be improved through the adoption of Best Management Practices that increase productivity and potential profitability and protect natural resources.
3. The depletion rate of aquifers will be reduced through improved irrigation system design and irrigation practices.
4. Livestock wastes and municipal sewage will be used in crop production systems in an efficient, profitable, and environmentally sound manner.

5. Greater farm profitability will result from improved crop rotations/ diversification.
6. An environment without excessive regulations will be created, with the help of producers, through a positive public and political image of agriculture.
7. Increased crop yields and minimized losses to pathogens, pests, and environmental conditions will be achieved through the development and release of new varieties and germplasms.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Develop regional cropping system designs for efficient production and natural resource conservation. (See NREM 1)
2. Design irrigation systems and management plans for efficient water use and conservation. (See NREM 1)
3. Research new technologies (such as precision agriculture, biotechnology, and crop modelling) for efficient, effective tools in diagnosis, production, and solving of cropping system problems. (See AIC 5)
4. Develop agricultural and municipal waste utilization strategies for adoption in crop production agriculture. (See NREM 2)

5. Form plant breeding and genetic teams by crop species to provide varieties and hybrids that complement cropping systems.
6. Participate in Agricultural Industry Competitiveness (AIC) teams to provide public education programs to youth and non-farm audiences.

AGRICULTURAL INDUSTRY COMPETITIVENESS



Develop Efficient, Coordinated Livestock and Poultry Production Systems

SITUATION:

Kansas agricultural producers generated over \$7.5 billion in farm and ranch cash receipts in 1995. Two-thirds of this income came from the sale of livestock and livestock products. Of the 66,000 total farms in Kansas, more than 46,000 handle livestock—beef cows, stockers and feedlot cattle, swine, dairy, sheep, horses, and poultry. Overall, about one-fourth of the Kansas economy stems from agricultural production, processing, and related agribusiness. While the contribution of livestock to the state’s economy is huge, continued growth is likely. The beef feedlot industry has expanded by



21% in the last five years, and continued growth is expected in both the stocker and feedlot areas. The swine and dairy

industries also are poised for substantial growth, especially in southwest Kansas. Nonetheless, Kansas livestock and poultry producers still face serious challenges, including production efficiency and economic competitiveness, adoption of technology, specification food production, food safety and quality assurance, animal rights, and environmental concerns. Educational programs must be designed to assist these economically vital industries to better understand and overcome those challenges.

VISION STATEMENT:

K-State Research and Extension is committed to economically viable and sustainable livestock production systems by timely development, evaluation, dissemination, and implementation of proven management practices and technologies that will enhance the efficiency and profitability of livestock and poultry production while protecting the environment.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Livestock and poultry producers will demonstrate increased economic competitiveness and production efficiency through better management practices and greater utilization of current and new technologies.
2. Kansas producers will increase use of baseline enterprise data like SPA and IRM analyses and DHIA records to manage their operations more effectively.

3. Producers will improve livestock productivity (meat, milk, eggs, wool, etc.) through better understanding of the benefits of optimizing forage and grazing land utilization and feed analyses in evaluating supplementation needs, performance projections, and feed quality/nutrition parameters during harvest, storage, and consumption of feeds.

4. Producers will utilize planned land applications of livestock manure and soil fertility analyses for improved nutrient utilization, recycling, and cost savings.

5. Producers will have a greater understanding of their important role in the production of safe, wholesome, nutritious, and consistent food products demanded by consumers.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Develop livestock and poultry management systems that optimize production efficiency and economic competitiveness.

2. Increase forage and grazing land utilization through improved management strategies. (See NREM 1)

3. Develop livestock production and management systems and strategies to minimize waste while offering efficient livestock production and protection of natural resources.
(See AIC 1 and NREM 1)

4. Develop production and management systems that are designed to provide for animal health and ensure safe, wholesome, and nutritious food products for the consumer. (See FNSH 1 and FNHS 3)

5. Develop marketing systems that enhance the profitability of livestock, poultry, and egg producers. (See AIC 4)

AGRICULTURAL INDUSTRY COMPETITIVENESS



Enhance the Value of Kansas Agricultural Goods

SITUATION:

Rural and urban Kansans face many challenges as the agricultural economy transitions from a price support program to one that encourages farmers to manage financial risks without deficiency payments. Every level of agriculture will feel the effects. In view of these changes and a need for Kansas agriculture to remain competitive nationally and internationally, K-State Research and Extension will focus personnel and financial resources toward enhancing new and value-added marketing strategies, product development, and uses of agricultural goods.

The Kansas economy still relies on agriculture as a major source of revenue and employment. Currently, 24% of the Kansas economy results from production agriculture, processing, and agribusiness, and 22% of Kansans work in the food production sector. Many Kansas farmers sell their products as commodities with little understanding of end-user needs. While Kansas maintains a strategic advantage for some agricultural goods, many of the agricultural raw materials produced in Kansas must be transported to major processing centers to capture value-



added processing opportunities. If transportation and logistical

issues are not addressed, many of the new opportunities to produce and market crops containing specialized genetics tailored to meet specific end-uses may bypass Kansans.

A need exists to provide more value for agricultural goods. To address this need, K-State Research and Extension must focus on such areas as alternative marketing opportunities through marketing networks and contracting and incorporating end-users needs in production decisions. Target audiences for this program include youth, farmers and ranchers, agricultural lenders, agribusiness leaders, processors, marketers, government agency personnel, educators, and politicians. Entrepreneurs starting in food processing need information on business and marketing plans and meeting the government regulations that surround the processing industry.

K-State faculty are exploring new uses for products and developing products that enhance the value of agricultural goods. Additional research into logistical issues will be explored, including movement of goods and products to markets where they achieve optimum value; exploration into improving processing efficiency; and providing added value through controlling variability in raw material and processes. Also needed are efforts to facilitate value-based marketing of livestock and plant products, to develop new market

opportunities for specialized agricultural goods, and to explore alternative uses of agricultural lands for recreational purposes that may offer opportunities to increase revenue of rural Kansans.

VISION STATEMENT

K-State Research and Extension is committed to promoting the economic viability of Kansans by adding value to agricultural goods during production, marketing, handling, storage, and processing.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION

1. Kansas will capture a higher value for agricultural goods through value-added marketing strategies that utilize a systems approach to production (including new genetics), rapid assessment of specific quality traits, and by identity/quality preservation of these traits during storage, shipping, and processing.
2. Kansans will enhance their competitive position through improved logistics, handling, and processing of agricultural goods.
3. Producers, processors, and customers will become more knowledgeable about each others needs and will make decisions that improve product quality and profitability in response to K-State's Research and Extension outreach program.

4. New uses for agricultural products and by-products will occur, and markets for these items will be explored and developed.
5. Kansas crop and livestock producers will improve their marketing skills in response to increased knowledge of contracting, closed-cooperative programs, and end-user requirements.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Ag Utilization Forum will stimulate new product development to add value to Kansas commodities. (See FNHS 3)
2. Develop and deliver youth (4-H) and adult educational materials that link production, utilization, and consumption for crop and livestock systems. (See AIC 1 and AIC 2)
3. Implement systems approach to value-added marketing of cereals, oilseeds, and meat animal products and co-products. (See FNHS 3)
4. Enhance entrepreneurial and marketing skills of our students.
5. Develop business incubators and pilot plants to help potential entrepreneurs market useful products that add value to Kansas commodities.

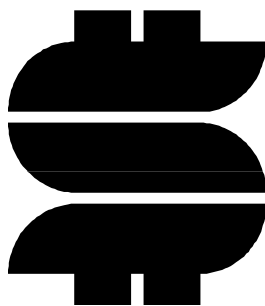
AGRICULTURAL INDUSTRY COMPETITIVENESS



Develop Agricultural Risk Management Strategies

SITUATION:

One of the major changes that agricultural producers face due to the passage of the 1996 Farm Bill is the change in the risk environment. Changing from the use of a target price concept, which to a large extent stabilized farm income to a declining fixed payment with less stabilization features has increased the need for risk-management research and education. Risk is defined as exposure to possible loss or injury. Risk encompasses decisions ranging from the use of life insurance, futures markets, crop insurance, and other types of insurance to the use of debt, production diversification, and human resource management.



At the same time, the agricultural industry is facing many changes, including globalization of economies, fundamental changes in environmental regulation, changes in banking law, and possible changes in tax policy. This further increases the complexity of the risk environment and increasingly makes it difficult for clientele to understand the interrelationships between the decisions they make and the range of resulting outcomes.

VISION STATEMENT:

K-State Research and Extension is committed to developing products and delivering the information required to prepare Kansas producers to effectively use risk-management strategies.

ANTICIPATED OUTCOMES OF EFFORTS BY RESEARCH AND EXTENSION:

1. Agricultural clientele will identify sources of risk and assess their individual risk-bearing ability.
2. Agricultural clientele will identify those risks that are most important to long-term financial stability.
3. Producers will become aware of alternative risk management tools and receive expert advice on the development of risk management strategies.
4. Producers will evaluate the costs and benefits of alternative risk-management products for their operations.
5. Agricultural producers and the agricultural industry will demonstrate increased understanding of how international, macro, agricultural, food, and natural resource policies affect the risk environment.

6. Agricultural producers will understand the life cycle nature of risks.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

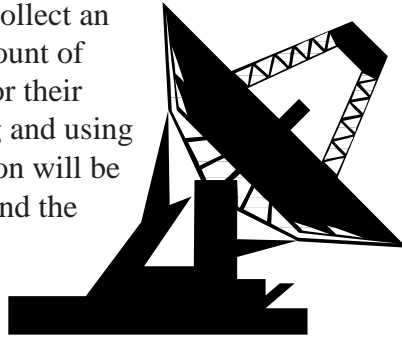
1. Develop tools to evaluate risks of crop and livestock production and management systems.
2. Develop decision support systems to meet the production needs of large- and small-scale farms.
3. Provide risk assessment and risk management education.
4. Develop strategies and options for intergenerational transfer of the farm.
5. Design and evaluate alternative risk management products.

AGRICULTURAL INDUSTRY COMPETITIVENESS

Develop Agricultural Technologies and Information Systems

SITUATION:

Agricultural producers are faced with more technological advances than ever before. Global positioning systems allow producers and crop consultants to pinpoint locations within a few feet. Yield monitors on combines and variable rate controllers for planters and fertilizer spreaders are becoming more prevalent. These sensors allow producers to collect an enormous amount of information for their farms. Storing and using this information will be challenging, and the rewards are unknown at this time.



Technological advances also are being seen in the area of crop and animal genetics. Genetically engineered plant and animal varieties are being planned and developed under laboratory and controlled outdoor environments. Commercialization of transgenic crops, which have extraordinary levels of insect and herbicide resistance, is now occurring. Bt corn, for example, is expected to receive widespread acceptance because it is resistant to European and southwestern corn borer and reduces the need for chemical insecticides. To extend the durability of the benefits provided by transgenic crops, complementary research

must be undertaken to identify use strategies that minimize the chances that resistant pests will develop. Forums for public discussion on the perceptions and misconceptions associated with adopting these new strategies also must be held.

Exponential increases in amounts and diversity of information and changes in the way users want to access information make it imperative that K-State Research and Extension move forward aggressively with electronic information management strategies that are easy to use, convenient, flexible, thorough, impartial, and add value for clients. Digital technologies will permit data sharing, image manipulation, multi-point communication, field-portable libraries, living recommendations, and ‘now you see it’ demonstrations.

VISION STATEMENT:

K-State Research and Extension is committed to delivering unbiased, research-based information that results in technological advances from production to consumption.

ANTICIPATED OUTCOMES OF EFFORTS BY K-STATE RESEARCH AND EXTENSION:

1. Crop producers will adopt new technologies that allow more efficient use of inputs to enhance profitability and reduce environmental risk.
2. Digital technologies will be extensively employed to enhance learning, to meet user demands for increased convenience, and to expand the realm of options and solutions under consideration. Real-time, on-site diagnosis of production problems and immediate delivery of recommendations will become possible.
3. Community leaders and private citizens will effectively use and anticipate impacts of emerging technologies (e.g., transgenic crops and precision agriculture) on agricultural production and society at large.

POTENTIAL TEAM PROJECTS AND ACTION PLANS THAT MAY BE DEVELOPED TO ACCOMPLISH THE ANTICIPATED OUTCOMES:

1. Design and evaluate tools and strategies for appropriate use of new technologies representing precision agriculture.
2. Develop and evaluate new techniques for bringing about genetic traits in crops and animals advantageous to farmers, consumers, and natural resources.
3. Evaluate tools and strategies to assist the agricultural community in gaining the greatest effective management and use of digital information important to agricultural systems.

CENTERS FOCUS ON MAJOR ISSUES

Another way K-State has been focusing on key issues is through the creation of centers, forums, and alliances. They involve researchers and extension specialists from several departments and colleges, including experts from governmental agencies and private industry, who work together on research and communicating and teaching the results.

AGRICULTURAL PRODUCT UTILIZATION FORUM

Adding value to raw agricultural commodities is the task of this Forum. Such higher value products are more competitive in domestic and export markets, and they increase income, create jobs, and encourage rural development. Projects include developing new apple varieties, low-fat meat products, and white wheat as a specialty crop; improving wet milling of sorghum, cold-storage methods, and sausage preblending processes; and making fish food from animal and food wastes and developing biodegradable films from soybean products.

CENTER FOR FOOD ANIMAL HEALTH AND MANAGEMENT

A major industry in Kansas, animal agriculture is rapidly changing and requires continued development of new management techniques and scientific data. This Center supports the animal industry by focusing on all aspects of preventative medicine and management that affect the health and well-being of food animals and the wholesomeness and profitability of foods from animals. The Center focuses on applied, on-farm research to meet the needs of producers, allied health industries, government agencies, and the public.

FOOD SAFETY FORUM

Food safety is of paramount concern. Consumers expect the food they purchase at supermarkets and foodservice establishments to be safe, wholesome, and nutritious. This Forum works on improving food safety, including testing, food storage, processing, manufacturing, and distribution. Two recent accomplishments of the Forum participants have been the development of high-temperature vacuum technology and steam pasteurization, which beef slaughter plants can use to remove contaminants.

GRAIN INDUSTRY ALLIANCE

A public-private partnership, the Alliance builds on Manhattan's preeminence as an International Grain Center to help solve the many issues facing the grain industry around the nation and abroad. Examples of work include developing rapid methods of predicting grain marketing quality, determining better methods of assuring food safety, and designing new and automated baking equipment. The Alliance offers a multidisciplinary approach to research as well as training and consulting related to the growing, processing, and marketing of grains.



GRAIN INDUSTRY ALLIANCE

KANSAS CENTER FOR AGRICULTURAL RESOURCES AND THE ENVIRONMENT (KCARE)

KCARE supports sustainable agriculture and tackles environmental issues such as conservation of soil and water. Through research and education, this Center works to develop mutually beneficial relationships between agriculture, natural resources, the environment, and consumers. For



example, KCARE is involved in a three-year project with the University of Nebraska involving surface water quality in the Blue River Basin.

PLANT BIOTECHNOLOGY CENTER

A profitable agriculture will increasingly depend on the ability of scientists in this Center to utilize biotechnology. The goals are to enhance yield and product quality of wheat for traditional uses and to explore value-added uses for new products and markets. Other thrusts include developing disease-resistant wheat; cloning genes that govern susceptibility to insects; and developing wheat for producing new drugs, including antibiotics.

WHEAT GENETICS RESOURCE CENTER

This Center holds the nation's largest collection of wheat's wild relatives. These species can provide genetic diversity for use against biological pests and environmental stresses that affect the yield and quality of wheat. The Center's primary task is to domesticate and transfer the genes to useful germplasm for use by plant breeders.

WHEAT RESEARCH CENTER

This Center focuses on research and development of improved, high-quality wheat varieties. Teams of scientists also are working to improve wheat-based products, and they are building a comprehensive data base on all aspects of wheat. In addition, the Center is working with all associations interested in wheat to develop and maintain a unified strategic plan for the future of the U.S. wheat industry.



Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan 66506

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