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MICHIGAN STATE
UNIVERSITY
EXTENSION

Strengthening Michigan's Economy

*Roles for the Michigan Agricultural Experiment Station
and Michigan State University Extension*



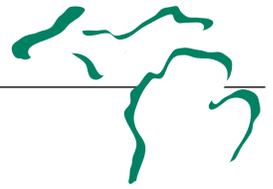


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Strengthening Michigan's Economy

Roles for the Michigan Agricultural Experiment Station and Michigan State University Extension

A joint effort to focus future programming that will benefit all Michigan citizens

Michigan State University has been advancing knowledge and transforming lives through innovative teaching, research and outreach since its founding as the pioneer land-grant university in 1855. From the agricultural innovations of the mid-19th century to the bio-based research of today, MSU has remained true to its mission—conducting practical research and using the results to improve Michigan lives.

Michigan's rapidly changing industrial sector and evolving needs produce new challenges and opportunities for individuals, families and communities. To help meet the challenges and take advantage of the opportunities, MSU Extension (MSUE) and the Michigan Agricultural Experiment Station (MAES) work with people, commu-

nities and industries throughout the state. As the state's priorities change, we must adjust research agendas, educational programs and external relationships. In the university's sesquicentennial year, MSUE and MAES embarked on a process to ensure that the organizations continue to focus on what's important to the citizens of Michigan. Besides helping MSUE and MAES chart the course, the process will assure elected decision makers and funding agencies that our programs align with the priorities of our citizens. It also shows the United States Department of Agriculture, our federal partner, that our federal plan of work is grounded in a public input process. As a condition of receiving federal funds, a new plan of work is developed every five years and reviewed annually.

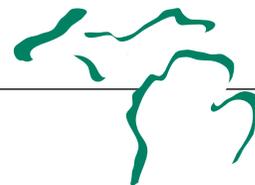
A comprehensive process to gather input

In 2005-2006, MSUE and MAES conducted a comprehensive, statewide process to determine what Michigan citizens saw as the most pressing issues that could be addressed by the organizations' research and educational programs. The process offered several ways for people in various roles and locations to help identify issues and opportunities. We gathered input from citizens in multiple ways:

- Four citizen focus group sessions involving individuals diverse in age, gender, employment, ethnicity and residency
- A Web-based survey of citizens

- A statewide State-of-the-State telephone survey by the MSU Institute for Public Policy and Social Research
- Engaging workshops in each of MSU Extension's 82 county offices, bringing together key community leaders with local MSUE councils and MAES advisory committees to examine issues, trends and emerging needs in the county

In a process designed to gather information from the entire breadth of the university, MSU faculty and staff members played active roles as well:



- Five focus group sessions involving faculty and academic professionals from all MSU colleges and units, including those with MSUE and MAES appointments
- Surveys of the MSU faculty and MSUE and MAES staff members
- Subject-specific input sessions that MSU Extension's 29 area of expertise (AoE) teams conducted with partner organizations and stakeholders

We learned a great deal from the research. In our citizen survey, for example, 85 percent of Michigan residents rated as high priority "Preparing today's youth for tomorrow's jobs." That gives us a strong focus for our research and educational programs aimed at youth. The findings were synthesized into overall outcomes and are summarized in this publication. Those wanting more detail will find links to the data collected on the issues identification Web site at www.msue.msu.edu/issueid.

Results to strengthen Michigan's future

The involvement of nearly 10,000 people in the issues identification process helped MAES and MSUE define research and educational priorities for the future. Results of the findings will shape local programs that use the university's research capability and knowledge base to address the priority needs of people across Michigan.

The strongest message, repeated by multiple audiences throughout the process, was that both organizations should work to strengthen Michigan's economy. Strengthening Michigan's economy encompasses more than creating jobs—it means enhancing quality of life. The theme emerged from detailed analysis in eight important areas:

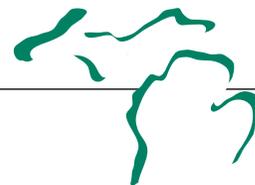
- Encouraging economic diversification and sustainability
- Enhancing agricultural industries
- Sustaining Michigan's natural resources
- Promoting responsible land use
- Strengthening communities
- Promoting healthy lifestyles
- Building strong families
- Preparing youth for the future

To better direct the use of our strengths and capitalize on opportunities, we will direct our efforts to target five strategic priorities developed from the eight themes. These strategic priorities are interdisciplinary, cutting across traditional programming boundaries to benefit the entire spectrum of Michigan residents.

The five strategic priorities are:

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

Indeed, our current research and programming areas are focusing on the five strategic priorities. The new language is aimed at expressing clearly the nature of MSUE outreach efforts and MAES research initiatives to Michigan's diverse population.



Our strategic direction aligns with MSU President Lou Anna K. Simon's Boldness by Design initiative to position the university for the future. Our direction underscores the university's imperative to enrich community, economic and family life, one of five strategic imperatives that will guide Michigan State University in fulfilling its commitment. President Simon has called for "a new land-grant revolution, the next bold experiment—the land-grant university for the world." MSU Extension and the Michigan Agricultural Experiment Station are uniquely positioned to play key roles in President Simon's land-grant revolution.

The strategic priorities for MSUE and MAES also mesh seamlessly with the MSU College of Agriculture and Natural Resources (CANR) strategic plan, which focuses on three areas: food and health, ecosystems health and services, and development of the bioeconomy. MSUE and MAES contribute enormously to the fulfillment of the CANR mission to enhance the quality of life for the people of Michigan and the world by advancing knowledge for the management of communities and agricultural, natural resources and food systems to meet diverse human needs in a sustainable manner.

Though we will direct our efforts toward articulating our mission and strategic vision around five cross-cutting priorities, we are also deeply committed to working at the intersections of community, family and industry needs—what President Simon likes to call the "sweet spots" of our assets. For that reason, we are excited about the possibilities for research and Extension initiatives around these priorities.

The strategic priorities provide the framework around which MSUE and MAES researchers, educators, specialists and other professionals will build their plans. Faculty and staff members will want their research and educational program plans to reflect these strategic directions, which will guide MAES and MSUE as we allocate our resources at all levels. The priorities will be held high as we establish and fill positions, determine the most efficient use of organizational resources, consider AoE proposals and review funding requests for Project GREEN.

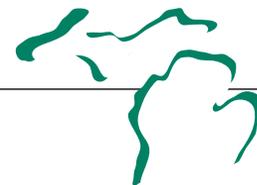
The theme of working to strengthen the state's economy will guide our research and program delivery through 2011. We are committing ourselves and our resources to conducting research and unbiased educational programs that continue to make a positive impact on the lives of individuals, families, communities and businesses across Michigan.

What do these priorities mean for our future?

The 21st century world is changing rapidly, presenting citizens, communities and businesses with challenging issues. Obesity, social justice, the need for mentoring and elder-friendly communities, health issues of special populations, emerging diseases and pests, water rights, the cost of sprawl, the warming trend in our climate, carbon markets, local food production, the preference to grow our fuel, global marketing and micro-development of small businesses are but a few of the issues we must consider in the 21st century. These are among the many new and

emerging trends we kept in mind as we analyzed the eight focus areas and incorporated them into five strategic priorities.

We have always been ahead of the curve in anticipating the need for our help. Having a process for identifying issues and systematically updating the plan ensures MAES and MSUE that research and programming efforts are efficiently and effectively targeted to meeting the changing needs of Michigan's youth, family, individual, agricultural and natural



resources audiences. Both organizations are positioned to direct resources to address current needs and emerging trends.

Our greatest strength will continue to lie in our community-based approach to delivery and our unwavering efforts to serve the needs of individuals, families, industries and communities, regardless of whether they are urban, suburban or rural. We promote healthy lifestyles for all, we build leaders for the present and the future, and we equip decision makers for each setting and in all our programming contexts.

As we continue to apply the model of transformational education, we help people apply knowledge and research so they can make positive changes in their lives. We enable individuals, families and businesses to become what they envision. They use what they've learned to transform communities, open new businesses and manage natural resources wisely. Our strong partnerships with volunteers produce young people who are capable and well positioned to enter the workforce. We prepare decision makers in the pub-

lic and private realms and resource managers from foresters to farmers with the information and tools they need to achieve sustainable goals. We also empower families with the knowledge and tools they need to make healthy choices so they can contribute to their communities, their counties and their country.

It's important to recognize that before anyone had heard the term "knowledge economy," MAES and MSUE were established contributors, bringing knowledge to bear on the local needs of families and businesses. We are both thriving examples of Michigan's best assets in public higher education. We represent unique investments based in the community and focused on the discovery and application of science-based information to the practical needs of a society in pursuit of a stronger economy and richer quality of life. We will continue to use our research capability and knowledge base to benefit Michigianians in the years to come.

We give our sincerest thanks to the team that guided the issues identification process.

Issues Identification Committee

Marie Ruemenapp (co-chair), interim regional director, MSU Extension Southeast Region

Christine Vogt (co-chair), associate professor, Department of Community, Agriculture, Recreation and Resource Studies

Margaret Bethel, specialist, organizational and professional development and former MSU Extension director

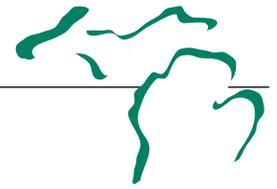
Bruce Haas, reporting coordinator, MSU Extension

Scott Loveridge, state leader, MSU Extension Community Development and Natural Resources and professor of agricultural economics

Elizabeth Moore, MSU Extension specialist, state and local government

Judy Von Bernuth, administrative assistant, MSU Extension

Doreen Woodward, former assistant director, Michigan Agricultural Experiment Station



Developing entrepreneurs

It is estimated that by 2025, the self-employed proportion of the U.S. workforce will have grown dramatically. This anticipated growth will depend on further development of entrepreneurialism as a means to bolster Michigan's failing economy. Over the past decade, the state has lost ground compared with other states in per capita income and job growth. The loss has been primarily in heavy manufacturing jobs. Many former industrial workers and young people entering the workforce will need to be equipped with the skills to be successful entrepreneurs.

The new economy will bring entrepreneurial opportunities in all of Michigan's economic sectors. The future lies in developing the entrepreneurial skills in Michigan's workforce necessary to launch small- and large-scale businesses that will push Michigan beyond product industries to bio-based and technology-based industries. There is a difference in the number of entrepreneurs societies create. Research reveals that many entrepreneurs grew up in entrepreneurial families, but entrepreneurial skills can be taught and need to be fostered by communities. Michigan's economy needs individuals equipped with the skills necessary to be successful entrepreneurs and needs communities that foster and support them. Encouraging entrepreneurs will help create a sustainable economic future for Michigan that is part of the growing knowledge economy.

Many opportunities will be available in service industries, bio-based manufacturing, the agricultural and food system, natural resources sectors, tourism, health and human services fields and the nonprofit sector. MSUE and MAES, through outreach and research efforts, are uniquely situated to assist our workforce in developing the necessary skills and help communities develop the infrastructure, services and amenities needed to attract entrepreneurs.

Residents participating in the MSUE and MAES

issues identification process emphasized the importance of research and education focusing on entrepreneurship, innovation and job creation. As a result, staff members in nearly half of Michigan counties will develop targeted initiatives related to product innovations, business development and enterprise movement into new or underrepresented sectors.

Preparing youth for the changing economy is a high priority of Michigan residents. MSU Extension works with youth in diverse programs from entrepreneurial education to market competitiveness. From the Upper Peninsula to metropolitan Detroit, more than a third of county MSU Extension programs are focusing efforts to help youth and adults increase their employability and gain the skills needed to be tomorrow's successful entrepreneurs.

SURVEY SAYS

- 85%** Percentage of Michigan residents rating as high priority "Preparing today's youth for tomorrow's jobs." ²
- 79%** Percentage of Michigan residents rating as high priority "Helping communities create jobs and be great places to live." ²
- 58%** Percentage of Michigan residents rating as high priority "Assisting farmers in agricultural production and profitability." ¹
- 52%** Percentage of Michigan residents rating as high priority "Creating and enhancing employment in Michigan's natural resource industry." ²

¹ Institute for Public Policy and Social Research. 2005. "State of the State Survey-40 (fall)." East Lansing, Mich.: Michigan State University.

² MSU Extension and Michigan Agricultural Experiment Station. 2006. "Assessment of Michigan's Needs and Priorities: A Citizen Survey." East Lansing, Mich.: Michigan State University.



“Michigan lost 336,000 jobs in the past six years and it will lose another 33,000 in the next two years—the longest stretch of employment loss in the state since the 1929 stock market crash...” Source: *Detroit News*, November 2006.

“Seven out of every 10 manufacturing job losses over the next two years will be in the auto industry.” Source: *Detroit News*, November 2006.

During a series of focus groups conducted with Michigan citizens, MSUE and MAES frequently heard participants voice issues related to jobs and the economy, education (preschool, K-12, college/university/technical), health care and insurance, better

“Michigan lost 336,000 jobs in the past six years and it will lose another 33,000 in the next two years—the longest stretch of employment loss in the state since the 1929 stock market crash...”

opportunities for youth and quality of the environment.

Responses from the statewide Web survey included “strengthening the economy of Michigan,” “job growth in Michigan,” “improving Michigan’s economy,” “helping economically stressed counties recover and develop new job opportunities,” “Michigan needs to be more diversified in the job market,” “creating more jobs for the average man or woman” and “an increase in

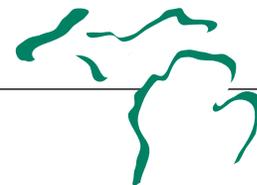
training or retraining of persons affected by layoffs, downsizing or unemployment must be a critical issue in Michigan.”

A few examples of our work in developing entrepreneurs

MSU Extension provides strategic planning assistance in economic development for communities and individual business operators as well as entrepreneurship education to a broad audience. This includes supporting efforts in grant writing and business attraction and retention, and helping individuals and families develop and implement business plans for startups or expansion of production or product enterprises.

- The ANR innovation counselor network, part of the MSU Product Center, provides trained professionals throughout the state who guide clients from idea to market in the agriculture and natural resources sectors. Nearly 30 innovation counselors across the state work with more than 450 clients to pursue commercially successful ventures. They help clients identify, establish and nurture new opportunities to develop markets and products and connect them with local and university-based resources.

- MSUE teams also work in natural resources industries, providing educational assistance to business owners ranging from charter boat captains to professional foresters and from small-scale sawmill owners to tourism industry businesses.
- MSUE educators and MSU Product Center staff members worked with the members of a primarily farmer-driven cooperative to complete the process needed to build and open Michigan’s first biodiesel plant in Bangor. The facility went into production in January 2007 and has the capacity to produce 10 million gallons of soy-based biodiesel per year. It brought 25 new jobs to southwestern Michigan and an economic impact of nearly \$95 million. If consumption of biodiesel remains at a steady increase of 5 percent per year, there is a potential demand for 75 million gallons of biodiesel per year in Michigan.

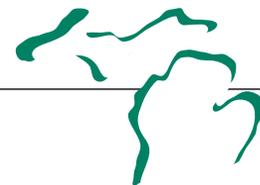


- An MSUE community and economic development educator used funding from the MSU Land Policy Institute to evaluate small towns with the qualities identified in Gov. Granholm's Cool Cities initiative. He also identified practices that small towns can adopt to make them more attractive to a young, diverse population and ripe for a range of economic development opportunities, including those that capitalize on local cultural attributes. Leaders in six Michigan communities have expressed interest in getting help from MSUE to jumpstart cultural economic development initiatives.
- MAES researchers are undertaking studies focused on management systems to improve the economic and environmental sustainability of dairy enterprises; value-added products for improving human, animal and plant health; and consumer and market research of hard ciders, fresh premium cherries, processed chestnuts and new flowering potted plants, all of which could enter the commercial marketplace, creating business and employment opportunities.
- The Michigan Technical Education Center at Gaylord's Kirtland Community College and 4-H partnered to offer a five-week introductory class on skilled trades careers. Students learned basic skills including safety, welding, heating and cooling, plumbing and electrical trades. Twenty-two sixth-through 12th-grade students from Otsego County

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participated in the program and received certificates of completion. 4-H member Roger Kirks said that he loved the classes, and as a result, he has set his sights on a career in welding—something he would not have discovered without the class.

- A “Be Your Own Boss” session at 4-H Exploration Days had participants work in teams to set up businesses and learn about business practices. The 4 H'ers created products and explored targeting markets, pricing, advertising, competition, networking, fiscal management and more. Using a computer simulation, the teams could see their profit and loss for each quarter.
- The USDA Natural Resources Conservation Service offers farmers technical and financial assistance to implement environmental protection practices. In 2002, Michigan farmers received \$6.8 million from Environmental Quality Incentives Program (EQIP) funds to protect the state's waters and soils while limiting their need for purchased inputs. The MSU Integrated Pest Management Program began an effort to build awareness of available EQIP funds, and in 2006, farmers received \$15.1 million for such activities as converting to using pesticides with low pollution risk potential, using flamer/ steamer weed control methods, using organic mulches to suppress weeds and pests, and using disease inoculum reduction strategies.



- MSU Extension offers the Going Solo Entrepreneurship Academy, a teen camp that gives participants insight into developing a prototype, promoting a product, budgeting, keeping records, legal issues, ethics, selling and serving the customer. The new Be the “E” Entrepreneurship Curriculum Guide is available for use with middle- and high-school students.
- The Intrepid Teen 4-H Club of Rapid River saw the need for a local gathering spot where young people and adults could share in fellowship and fun. The club addressed this need by opening the Cuppa Jo Java House in January 2005. This youth-run small business venture is now two years old, and its members have recouped two-thirds of their initial investment. They continue to refine their business plan and objectives and now serve breakfast and lunch and offer a retail shop. One of the club’s former members is now a business major at Michigan Technological University.
- The Urban Collaborators program is an interdis-

plinary effort supported by MSUE, the MSU colleges of Agriculture and Natural Resources and Social Science, the School of Planning, Design, and Construction, the MSU provost and MAES. The Urban Collaborators program brings MSU urban planning faculty members and students together with local MSU Extension educators to conduct research and educational programs aimed at revitalizing Michigan’s urban centers.

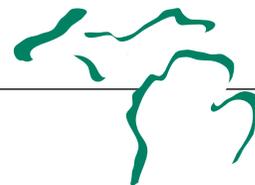
- Washtenaw MSU Extension launched a five-county food system economic partnership in 2005. The partnership will coordinate agricultural economic development in Wayne, Jackson, Lenawee, Monroe and Washtenaw counties. It is intended to promote positive changes in the food system while meeting mutual needs of urban and rural communities.
- MSU Extension helped the east side of Saginaw increase the number of childcare providers from two to 54. The new providers collectively earn an estimated \$1 million annually. The pilot project, called Better Kid Care, is being replicated in all

Priorities for developing entrepreneurs

MSU Extension and the Michigan Agricultural Experiment Station will connect Michigan with the research and education to foster an entrepreneurial atmosphere by developing the commercial skills of its workforce, helping communities learn what services are needed to attract business startups, fostering development of enterprises based on cultural resources, and helping nonprofit or community-based organizations become more entrepreneurial.

MAES researchers and MSUE educators and specialists have already begun turning their attention to the new challenges facing Michigan’s entrepreneurs. The organizations will:

- Develop mentoring programs to help established entrepreneurs share experiences with those entering the business arena.
- Conduct research and education to improve the operations, business and financial management skills of Michigan agricultural and natural resources producers so they can make financially and environmentally sound decisions.
- Develop tools and technology to help Michigan’s natural resources-based tourism industry grow by capturing consumer interest and meeting demands.
- Provide opportunities for youth to gain skills needed for entrepreneurship and progressive careers. Workforce preparation and career development pro-



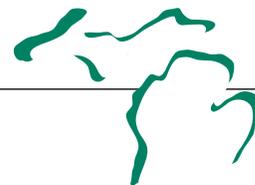
grams will explore issues of science literacy, public policy development, stewardship and food production.

- Find ways to meet the educational needs of the increasing number of minorities owning Michigan food enterprises.
- Research and develop models for business startups in urban core neighborhoods.
- Facilitate development of family service enterprises. This effort will be patterned after the successful childcare enterprise development that began in Saginaw and is being replicated statewide as the Better Kid Care program.
- Research and develop new models for cooperatives that would benefit would-be entrepreneurs in traditional and nontraditional businesses and applicable in rural, suburban and urban areas.
- Train managers in improved marketing efforts, including price-risk management and value-added marketing.
- Develop for crops cultural, management and insect- and disease-control strategies that meet USDA certified organic standards so Michigan growers may exploit the growing market for organic products.

MSU assets for entrepreneurs

Michigan is fortunate to have outstanding resources to support entrepreneurs:

- The MSU Product Center and its marketing arm, the Strategic Marketing Institute, are equipping business owners and would-be entrepreneurs with tools and resources to help launch new products and businesses.
- Project GREEN (Generating Research and Extension to meet Economic and Environmental Needs), Michigan's plant industry initiative based at MSU, connects plant-based commodities and businesses with the research and education resources of MSUE and MAES to meet threats to economic viability and explore opportunities and uses for new crop varieties.
- MSU scientists are working to develop new biomedical products and nutraceuticals and are examining the potential for genetically modified foods.
- The C.S. Mott Group for Sustainable Food Systems at MSU provides research and education in organic production methods for sustainable food systems.
- Food science at MSU is a multidisciplinary program that applies chemistry, microbiology, engineering and nutrition to develop new food products and to improve the safety and quality of foods. MSUE's Food Safety team regularly conducts training for food-based entrepreneurs on meeting food and industry standards.
- MSU's Land Policy Institute provides research and education around farmland preservation issues that allow farmers to stay in business and make rural communities attractive. Their educators work with decision makers to develop solutions that strengthen communities and enable them to plan for sustainable futures.



Promoting healthy lifestyles

Michigan residents are concerned about health, particularly the growing percentage who are overweight or diabetic. Residents desire convenient, healthful food and want to learn the best ways to obtain and maintain good health. They want to understand the interactions between lifestyle choices—eating habits, exercise, mental health, community environment and physical health—across the lifespan.

Twelve percent of Michigan's population lives below the federal poverty line, resulting in financial stress and healthcare affordability challenges. Michigan's median household income for 2003 was \$46,291—above the national median. The unemployment rate was 7.1 percent in September 2006—higher than the national rate of 4.6 percent. Half of U.S. families have accumulated less than \$1,000 in net liquid assets, and more than half of households live from paycheck to paycheck. Financial stress can take its toll on emotional and physical health.

In 2004, about 670,000 children were under age 5, with 431,000 needing daycare. More than 1.2 million people were over age 65—more than 12 percent of the state's population. The number of people over 65 is predicted to grow by a half million by 2020.

More than 60 percent of Michigan residents are overweight. Physical inactivity in adults costs nearly \$8.9 billion annually in health insurance premiums, lost productivity, Medicaid payments and healthcare. The number of overweight adolescents has tripled in 20 years. Overweight kids have a more than 50 percent chance of becoming overweight adults.

An increasing number of youth have excessive unsupervised time, putting them at risk for unhealthy behaviors such as substance abuse and sexual activities and being exposed to online predators.

Michigan's residents enjoy auto-dependent lifestyles. Today's land-use patterns result in increased job

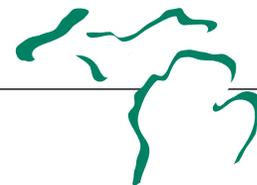
commuting times, leading to reduced family time and decline in personal health. Residents want walkable communities and access to recreation, which contribute to good health. Michigan residents support sustaining natural resources so current and future generations can enjoy environments that support high-quality work, retirement, living and recreation.

SURVEY SAYS

- 80%** Percentage of Michigan residents rating as high priority "Ensuring that the food supply is safe and plentiful." ¹
- 78%** Percentage of Michigan residents rating as high priority "Ensure a safe and plentiful water supply." ²
- 74%** Percentage of Michigan residents rating as high priority "Helping Michigan maintain a healthy and sustainable environment for work, living and play." ²
- 71%** Percentage of Michigan residents rating as high priority "Conducting research and educational programs that lead to a better environment." ²
- 68%** Percentage of Michigan residents rating as high priority "Conducting research and educational programs to combat diseases and pests that threaten the health of plants, animals and people." ¹
- 65%** Percentage of Michigan residents rating as high priority "Strengthen parenting skills." ^{1,2}
- 64%** Percentage of Michigan residents rating as high priority "Conducting research and educational programs to build healthy and strong families." ^{1,2}

¹ Institute for Public Policy and Social Research. 2005. "State of the State Survey-40 (fall)." East Lansing, Mich.: Michigan State University.

² MSU Extension and Michigan Agricultural Experiment Station. 2006. "Assessment of Michigan's Needs and Priorities: A Citizen Survey." East Lansing, Mich.: Michigan State University.



Michigan is 1.6 percent below the national average for infant mortality and .03 percent below the national average for low-birth-weight infants. Source: Annie E. Casey Foundation, 2006 Kids Count data.

Michigan's adult obesity rate of 25.6 percent ranks the state's population as the 11th heaviest in the nation, according to a report by Trust for America's Health. The report finds that government policy efforts have consistently failed to provide viable solutions to the growing obesity crisis.

The 125 million Americans who live with chronic diseases account for 75 percent of healthcare costs. Michigan ranks first in the nation in heart disease, second in obesity and second in diabetes.

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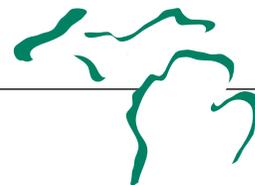
About 20 percent of America's workers have low basic reading skills, and 75 percent of unemployed adults have reading or writing difficulties. Welfare recipients

with low education skills stay on welfare the longest; those with stronger education skills become self-sufficient more quickly. Source: Michigan Literacy Inc.

A few examples of our work promoting healthy lifestyles

MSUE and MAES are actively pursuing improvements in the health of Michigan's citizens, especially at-risk populations and youth. Research on health-related issues and active on-the-street programs combine to fight obesity, decrease chronic disease and improve safety in our homes and businesses.

- All MSU Extension county offices offer educational programming to address the needs of youth, families and seniors to develop and maintain healthy lifestyles. This includes addressing concerns around healthful food choices, management of chronic diseases, obesity, increasing physical activity and other quality-of-life issues. Creating healthy, safe and nurturing environments for young children by enhancing the skills of their families and care providers is a goal of MSUE county programs in about half of Michigan counties. Local MSUE educators in a quarter of Michigan counties are working to address family financial management and housing issues.
- In every Michigan county, MSUE encourages healthy eating through its Family Nutrition Program, through home-based and school-based nutrition-education programs. This program reaches 97,000 people per year. Educational programs help underserved audiences learn about health issues.
- MSU Extension's Tres Ms helps Hispanic women get access to health screenings that may lower their mortality rates due to cervical and breast cancers. The diabetes education program helps this population learn how managing their eating and taking time for exercise can help them manage their disease. MSU Extension's Breastfeeding Initiative works to increase breast-feeding rates to the recommended levels, which would save \$3.6 million in healthcare costs annually in Michigan. MSUE educators offer programs in home buying, credit education, basic budgeting and financial management to low-income families.



- Residents who participated in the issues identification process and voiced interest in protecting natural resources emphasized the importance of research and education focusing on a safe and plentiful water supply. Their concerns ranged from protecting groundwater, lakes, rivers and streams to the lead content in drinking water and mercury contamination of fish in their diet. County planning related to water quality resulted in more than 35 related local goals. Other quality-of-life issues that citizens strongly supported include environmental quality and sustainability and natural resource stewardship and education. These priority areas yielded an additional 33 goals from our Extension educators.
- Land use was on the minds of many participating in our input process and surfaced in county plans as a priority for research and education. Farmland preservation will be a pursued initiative in 15 counties, and some form of land-use education or planning for wise land use is a goal in more than half of Michigan counties. Land-use decisions affect not only access to healthful and plentiful food supplies but also community designs that can either hinder or foster active lifestyles.
- MSU Extension educators help Michigan individuals and families improve their financial health through such programs as Money Smart, Jump\$tart, On the Path and the Earned Income Tax Credit assistance program. These and other educational initiatives target people of all ages and encourage them to develop and maintain healthy saving and spending habits.
- MSU Extension is a partner in Washtenaw County's Stone School Townhome project. Through this

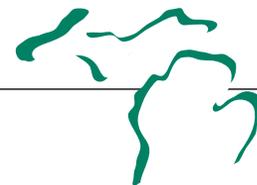
The Michigan 4-H Mentoring Program uses 20 AmeriCorps members and MSUE staff members and volunteers in 15 counties to mentor low-income, at-risk or underserved youths. In the program's first year, 144 mentors were trained and matched with 192 youths.

effort, 40 affordable homes are being developed especially for households at 60 to 100 percent of area median income—people who otherwise could not afford to live in the community where they work. The units are inside Ann Arbor city limits, on a bus line and close to shopping. Home-buyer education is required for some and available to all.

- The Michigan Vital Aging Think Tank was established to provide

a forum for networking, learning, teaching, planning, collaborating on and implementing programs that will help seniors achieve vital aging. MSU Extension staff members Linda Cronk and Paul McConaughy co-chair the think tank and work with participants who include representatives from the Michigan Department of Community Health and Office of Services to the Aging, several MSU departments, the American Association for Retired Persons, the American Red Cross, Elder Law, the Wayne State University Institute of Gerontology, AGEWISE magazine and the Tri-County Office on Aging.

- Community sustainability, urban redevelopment including brownfield redevelopment, and neighborhood building or revitalization are priorities of residents who participated in our process. Their concerns are reflected in the plans developed by Extension educators in 10 urban counties.
- The Michigan 4-H Mentoring Program uses 20 AmeriCorps members and MSUE staff members and volunteers in 15 counties to mentor low-income, at-risk or underserved youths. In the program's first year, 144 mentors were trained and matched with 192 youths.
- As the state transitions to a new economy, access to education, continuing education and job retraining become increasingly important to quality of life



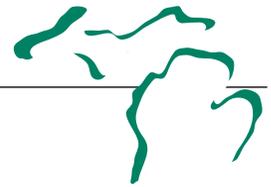
in Michigan. Northern Michigan participants in our issues identification process expressed the need for access to community-based learning and continuing education opportunities. Several counties will collaborate with community colleges or develop other partnerships to address residents' needs for continued learning.

- Breastfeeding is recognized as the best source of nutrition for infants, and research has shown it can contribute to lower healthcare costs for infants and children. The lowest rates of breastfeeding in Michigan are found among the WIC-eligible population. To encourage breastfeeding among this group, the Michigan Department of Community Health Women, Infants and Children division (WIC) and the MSUE Family Nutrition Program developed the Breastfeeding Initiative, a peer counseling program. More than 2,500 pregnant or breastfeeding women enrolled in the mother-to-mother program during the 2003-04 program year, and 97 percent of them chose to initiate breastfeeding.

- Project FRESH and Senior Project FRESH, the Farm Market Nutrition Education Program, give low-income families and seniors access to fresh, locally grown vegetables while helping them learn the importance of healthy eating. Participants receive coupons that they can redeem at farmers' markets to purchase produce. While they improve their diets and their health, farm market vendors gain new customers and added income from coupon redemption. In 2006, the value of coupons redeemed across Michigan was \$562,184.
- The C.S. Mott Group for Sustainable Food Systems at MSU works with communities on community-based food systems. They work to bring fresh food to limited-resource families and work with farmers considering pasture-based systems. They support those who want to enter farming, help build and strengthen farmers' markets, and work to incorporate local food into school lunch programs.

Current MAES research projects focus on:

- Identifying the psychological and academic outcomes of high school gender-based bullying and anti-harassment policies.
- Preventing obesity in young children.
- Evaluating group intervention programs for women and children experiencing domestic violence.
- Evaluating structured out-of-school experiences to foster positive youth development.
- Identifying internal and external assets important in the healthy development of children, adolescents, families and communities.
- Understanding how community transportation systems and other environmental conditions can influence health. Developing new land use models for communities, investigating the impact of urban sprawl on obesity and the encouragement of non-motorized transportation systems with community trail systems.
- Seeking better knowledge and techniques for controlling and reducing food-borne illnesses.
- Conducting studies that may contribute to lower rates of obesity and chronic disease.
- Increasing understanding of the relationship between family lifestyles and obesity.



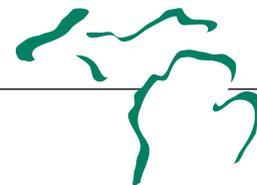
Priorities for promoting healthy lifestyles

MSU Extension and MAES will direct major resources toward the growing awareness of obesity as a statewide issue that is broader than healthcare, involving diet, exercise and community design.

Organizations such as schools, service agencies, healthcare systems and others are looking for partners to develop and implement initiatives to address these challenges among children, senior citizens and low-income individuals.

MAES researchers and MSUE educators and specialists have already begun turning their attention to the growing challenges facing Michigan's families, community partners and policy-makers. The organizations will:

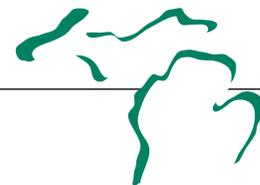
- Work diligently to stay ahead of emerging diseases and pests that threaten the health of ecosystems, plant industries or environmental health and quality. Asian soybean rust, for example, threatens the plant industry, and Asian carp and hydrilla (an aquatic plant) threaten the Great Lakes ecosystem.
- Conduct focused research and develop targeted educational strategies for health issues in special populations to address the needs of growing minority and senior citizen populations.
- Pursue research and extend education about genetically modified foods and their known benefits and risks to a safe, wholesome food supply.
- Offer unbiased, science-based answers to questions from farmers, processors and consumers about the health consequences of traditional vs. organically produced foods.
- Conduct research and education to ensure that current information is available and disseminated on new animal and human diseases such as West Nile virus and the Asian strain of H5N1 avian influenza (bird flu).
- Investigate the role of metabolism and function of nutrients in the human diet; the relationship between nutrition and obesity; the links between lifestyle, genetics and health risks; and the interaction of diet and chronic disease.
- Enhance the economic and nutritive value of Michigan-produced foods, including conventional and functional foods or nutraceuticals, through research. MSUE educators will use this information to support Michigan entrepreneurs.
- Identify internal and external assets important in the healthy development of children, adolescents, families and communities, and investigate ways to increase the success rate of young people moving from foster care to independent living.
- Engage in a collaborative process for creating "certified elder-friendly communities" to address the needs of the growing senior citizen population across the state and the nation.
- Support farmers and community leaders interested in making locally grown food more accessible to people, including those with limited incomes and senior citizens, and schools.
- Work with the tourism industry and natural resources managers to sustain and promote our natural resources as places for healthy outdoor activities for current and future generations.
- Develop opportunities for experiential education such as outdoor challenge activities that focus on enhancing the physical, social, emotional and cognitive health and well-being of youth.



MSU assets for promoting healthy lifestyles

Healthy lifestyles are advanced through many MSU assets:

- Excellent collaborative partnerships exist between MSU Extension and many state agencies, including WIC, the Michigan Department of Community Health, the Michigan Department of Education, the Department of Human Services, the MDA, the Governor's Council on Physical Fitness and the Michigan Nutrition Network.
- Families and Communities Together (FACT), a multidisciplinary coalition, has invested \$2.5 million since 1999 in research, Extension and outreach programs supporting the well-being of children, families and communities throughout Michigan.
- The Family and Consumer Sciences division of MSU Extension offers numerous health-related programs in all 83 Michigan counties, a reach well beyond that of most other statewide health programs.
- About 25 percent of CANR faculty members reported they work in areas related to health.
- The MSU vice president for research and graduate studies has identified biomedical research and family research as key priorities for enhancing the university's research capacity.
- MSU has four health science colleges, all pursuing research initiatives that will contribute to better understanding health options and community-based delivery of health information and health-care. The four colleges are key partners for MAES and MSUE in broadening the health research agenda and connecting research findings to the needs of families and communities.
- Major MAES investments have been made in food science and human nutrition research. Michigan benefits from strong research and teaching related to infectious diseases, environmental quality, organic foods and health, food safety and protection, biomedical products, nutraceuticals, genetically modified foods, identifying children at risk of diabetes, increasing the year-round supply of fresh produce, technical assistance with environmental compliance, increasing physical activity, integrating environmental science with human-health impacts, increasing physical activity of youth, tourism planning and development, community planning and livable communities with nonmotorized transportation.
- The National Food Safety and Toxicology Center, located at MSU, meets the challenges of protecting consumers from toxins and pathogens in the food supply. Its staff is committed to reducing food-related disease on a global level through research, education and service.
- MSU Extension 4-H Youth Development reaches nearly 241,000 youth, offering numerous healthy lifestyle education options, especially in nutrition and physical activity.



Preparing for the expanding bioeconomy

Michigan's economy is blessed with an abundance of natural resources and a skilled workforce. Nevertheless, nearly 172,000 jobs were lost between 2001 and 2005. Historically, Michigan relied on heavy manufacturing as the source of high-paying jobs, and the losses in manufacturing mean Michigan needs to find new jobs.

Michigan residents support sustaining our natural resources so current and future generations can enjoy environments that support high-quality work, retirement, living and recreation. Residents recognize the need to develop energy-efficient technologies.

"Bioeconomy" describes a future reliant on renewable resources to meet society's needs for energy and raw materials. Instead of an economy dependent on the planet's limited supply of nonrenewable resources, we can convert harvested plants or municipal and livestock wastes into electricity, fuels, the building blocks for chemical processes, biodegradable plastics and other materials. In a bio-based economy for Michigan, biotechnology uses the tools of modern science—molecular biology, chemistry, engineering, genomics, genetics—to create bio-based replacements for petroleum products, including fossil fuels. This new economy will yield new businesses, jobs and intellectual property.

The prerequisites are in place for a vibrant bioeconomy. Michigan has an abundance of raw materials that provide biomass, the seminal ingredient in plant-based energy, chemicals and materials. The state has natural resources to support the growth of dedicated biomass crops. MSU has strengths in plant breeding and raw-material processing. Michigan has the industrial infrastructure, intellectual capabilities and leadership commitment critical to a thriving

bioeconomy. The state's automotive and furniture industries want to incorporate more bio-based materials into their products. Michigan has a skilled labor force. The state is strategically located near tens of millions of consumers. Not many places can claim all those assets. Just as Michigan led the automotive revolution, so, too, can it lead the bioeconomic transformation that is reshaping the world.

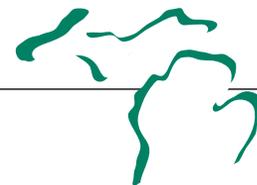
Preparing for the expanding bioeconomy draws on our traditional expertise in food and fiber production as we move toward a more sustainable, post-petroleum economy. It spans the development of new technologies and processes for producing bio-based products, the impact of economic transformation on

SURVEY SAYS

- 85%** Percentage of Michigan residents rating as high priority "Preparing today's youth for tomorrow's jobs." ²
- 79%** Percentage of Michigan residents rating as high priority "Helping communities create jobs and be great places to live." ²
- 71%** Percentage of Michigan residents rating as high priority "Conducting research and educational programs that lead to a better environment." ²
- 58%** Percentage of Michigan residents rating as high priority "Assisting farmers in agricultural production and profitability." ¹

¹ Institute for Public Policy and Social Research. 2005. "State of the State Survey-40 (fall)." East Lansing, Mich.: Michigan State University.

² MSU Extension and Michigan Agricultural Experiment Station. 2006. "Assessment of Michigan's Needs and Priorities: A Citizen Survey." East Lansing, Mich.: Michigan State University.



families and communities, and the marketing and distribution of new bio-based products.

Boosting Michigan's bioeconomy is expected to create thousands of jobs in research, agriculture, forestry, equipment and product manufacturing, education and training, business management, marketing, sales and distribution. The diversification created by alternative uses for commodities will ensure future viability for agriculture and natural resources in Michigan.

Michigan has the potential to be a leading producer of cost-efficient, petroleum-independent, environmentally friendly and renewable materials, chemicals and energy through its agriculture and natural resources base. More than half of our county Extension offices developed initiatives related to economic competitiveness in the bioeconomy through agriculture and natural resources industries.

The United States currently uses more than 140 billion gallons of gasoline and almost 40 billion gallons of diesel fuel annually. More than 60 percent of the petroleum we use is imported and that percentage is

Based on existing dedicated biodiesel processing capacity and long-term production agreements, more than 200 million gallons of biodiesel capacity currently exists. More facilities are capable of doubling their production capacity within 18 months.

rising. Source: Michigan Agricultural Experiment Station, Futures magazine.

Based on existing dedicated biodiesel processing capacity and long-term production agreements, more than 200 million gallons of biodiesel capacity currently exists. More facilities are capable of doubling their production capacity within 18 months. Source: National Biodiesel Board.

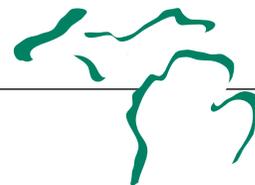
Ethanol is a significant market for U.S. corn, consuming more than 1.43 billion bushels in 2005. But ethanol's value goes far beyond its role as a major use of corn. Ethanol plants have helped rejuvenate rural communities across the country by creating high-paying jobs, boosting local tax revenues and creating partnership opportunities for local businesses. Additionally, ethanol helps the environment by reducing greenhouse gas emissions and displacing the harmful additive MTBE from reformulated gasoline. Source: National Corn Growers Association.

In 2006, 5 billion gallons of ethanol were produced in the United States, a figure that is expected to double in two years. Source: *Farmer's Exchange*.

A few examples of our work in the bioeconomy

MSUE and MAES are working to make Michigan a leader in the bioeconomy by conducting the basic plant science research necessary to develop the best bioeconomy crops for Michigan, as well as developing and improving bioproduct technology and educating people about bioproducts and the policies and services they require.

- More than a third of county MSU Extension offices present educational programs focused on creating economic diversification and sustainability. Educators offer programming in counties across the state geared toward helping youth develop skills to prepare for the careers of tomorrow.
- MSU Extension educators and specialists contributed to helping a primarily farmer cooperative lay



the groundwork for Michigan's first biodiesel production facility in Bangor. The plant opened in January 2007, bringing about 25 new jobs to the area. It will begin producing 10 million gallons of biodiesel per year and has the capacity to produce upwards of 40 million gallons per year.

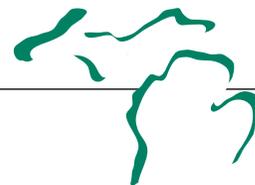
- Extension educators connect Michigan industries with the research, education and entrepreneurial activity needed in the basic sciences, engineering, plant science and agriculture to provide the state with a foundation for vigorous development of a new bio-based economic sector. MSU Extension teams work to provide strategic planning and economic development assistance for communities and individual business operators. MSU Extension helped establish an ethanol plant in southeastern Michigan, with an economic impact of \$75 million per year. MSU Extension provides farmers and other rural landowners with information about the potential for generating wind energy on their properties.

MAES and MSUE are partnering with private and public organizations to explore new processes and renewable products for use in consumer products, manufacturing and biofuels. For example, in a partnership with Daimler Chrysler and NextEnergy (a nonprofit), research is exploring whether industrial brownfields and other marginal lands might be capable of growing crops like corn, canola and sunflowers for use in biofuel production.

- MAES conducts research to determine the crop varieties best suited for use in bio-based industries such as ethanol and biodiesel production. Researchers are developing a continuous production process for biodiesel. The continuous process will be more efficient and cost-effective than the current "batch" process and will have environmental benefits, fewer waste byproducts and higher purity byproducts that can be used to make other chemicals.
- MAES researchers have also developed a patented pretreatment process that increases the efficiency

of cellulose breakdown by 75 percent. Breaking down cellulose into fermentable sugars is the first step in creating bioproducts.

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- MAES researchers are looking beyond the state's borders to further efforts in developing new products and processes. They are collaborating with researchers at the Lulea University of Technology in Sweden on products and processes that may play a crucial role in further expanding Michigan's bioeconomy.
- An MSU Extension specialist is conducting research to determine which corn hybrids are best suited for ethanol production. The results of his study will be disseminated to farmers, who can use the information to make seed purchase and crop marketing decisions that will maximize farmgate profits.
- MAES researchers are researching the potential for growing crops in Michigan's Upper Peninsula for use in biofuel production. They are also looking at the possibility of cultivating warm-season grasses on U.P. farms for use in bioenergy products.



Priorities for preparing for the expanding bioeconomy

MAES and MSUE will connect Michigan industries with the research, education and entrepreneurial activities needed in the basic sciences, engineering, plant science and agriculture to give the state a foundation for vigorous development of the bio-based economic sector.

MAES researchers and MSUE educators and specialists have developed initiatives that will focus attention on the bioeconomy in the following ways:

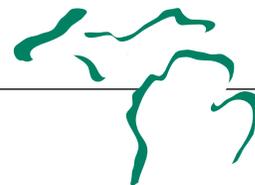
- Global marketing continues to be a major factor affecting businesses in all sectors, from small local shops to major corporations. MAES researchers and MSUE educational efforts will focus on helping Michigan firms remain competitive.
- More research and education are needed to help agricultural and forestry product developers gain knowledge and adopt practices for creating new products in the bioeconomy.
- Scientists will develop improved methods to grow higher quality, higher yielding plants, as well as cultivate new varieties that will produce better raw materials to make bio-based products.

- Other MSU research will create new processing and production technologies, performance test new bio-based fuels and chemicals, and develop new products made from raw biomass.
- MSUE will collaborate with Michigan's colleges and universities to provide education and training to develop the workforce to propel the bioeconomy.
- MAES will investigate the environmental, sociocultural and ethical implications of the development of new technologies and products.
- New technologies, including precision agriculture tools, the Internet and distance learning will be used to develop computer models to predict disease and pest infestations. Specialists and educators will conceptualize and implement a management information system for production agriculture.

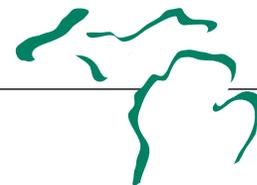
MSU assets for the bioeconomy

MSUE and MAES are fortunate to have outstanding resources to help develop entrepreneurs for the new bioeconomy:

- MSU, long a world leader in studying the fundamental biochemical processes of plants, is now unrivalled in plant systems biology, particularly in research focusing on chloroplasts, the primary energy transducing organelle (factory) of plants.
- MSU has historic strengths in plant science, engineering and chemistry.
- MSU has strengths in the social and behavioral sciences that can be brought to bear on assessing and understanding the socioeconomic and cultural dimensions of a new, transformative economy—dimensions that include the impact of the bioeconomy on community vitality and sustainability, families and K-12 education, the environment and the food system. A key player in this arena, the MSU Land Policy Institute, networked with Wayne State and the University of Michigan, has given us a head start in understanding implications of the post petroleum economy on land use patterns, policy and governance issues.



- The MSU Product Center helps entrepreneurs and established companies develop and commercialize high-value, consumer-responsive products and businesses in the agriculture and natural food sectors. Its marketing arm, the Strategic Marketing Institute, is an asset.
 - The MSU Foundation provides Strategic Partnership Grants to MAES for focusing on the bio-based economy.
 - The MSU Office of Bio-based Technologies was established to foster connections with public and private-sector initiatives designed to expand Michigan's bioeconomic sector. The governor has appointed its director, Steven G. Pueppke (who is also director of MAES), to represent colleges and universities on the Michigan Renewable Fuels Commission.
 - Project GREEN (Generating Research and Extension to meet Economic and Environmental Needs), Michigan's plant industry initiative based at MSU, connects plant-based commodities with the resources of MSUE and MAES. Project GREEN-funded efforts explore expanded uses for plants in the bioeconomy.
-



Educating and supporting decision makers

With MSUE's mission being to "help people improve their lives through an educational process that applies knowledge to critical needs, issues and opportunities" and MAES's being to "generate knowledge through strategic research to enhance . . . families and communities in Michigan," the connection to our role in educating and supporting decision makers is very apparent. Our role is not to tell people what their course of action should be but to supply knowledge resources and research-based information they can use to support decision-making processes. Extension educators and MAES researchers support elected officials and decision makers in public arenas and also help private citizens in their day-to-day decision making as they raise children, produce a family income and manage their resources.

Communities play an important role in delivering basic services needed for a high quality of life: jobs, recreation, security and health. State and federal mandates and a decline in the purchasing power of tax revenues have reduced the ability of communities to deliver the needed mix of services to sustain them as great places to live. Michigan's aging infrastructure and land-intensive development patterns contribute to budgetary challenges for local governments. Michigan is home to a diversity of cultures and attitudes that can clash as communities set future priorities. Further, changing demographic and lifestyle patterns have diminished residents' willingness and ability to participate as leaders and volunteers.

Michigan is characterized as a sprawl-intensive state, with scattered and unplanned urban and suburban growth pushing into the countryside. In this state known for its automobile industry, residents enjoy an auto-dependent lifestyle. Residential and industrial developments opted to move out of the cities when

highways connected them with counties that have lakes, forests and open spaces.

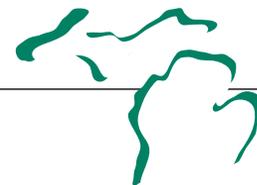
Local, regional and state land-use policies encouraged extensive development of new lands rather than infill development or redevelopment of land, which affords more compact housing distribution. Layers of historical decisions resulted in disappearing ecosystems, more costly local government services, decaying urban settings and increased job commutes.

The future of Michigan's economy is tied to the state's abundance of high-quality natural resources, particularly the Great Lakes and their watersheds. Residents recognize the need to make wise decisions to ensure a safe and plentiful supply of natural resources, prepare for natural disasters, conserve land and develop energy-efficient technologies.

SURVEY SAYS

- 79%** Percentage of Michigan residents rating as high priority "Helping communities create jobs and be great places to live." ¹
- 74%** Percentage of Michigan residents rating as high priority "Helping Michigan maintain a healthy and sustainable environment for work, living and play." ¹
- 67%** Percentage of Michigan residents rating as high priority "Help youth develop leadership, citizenship and other life skills." ¹
- 55%** Percentage of Michigan residents rating as high priority "Involve youth and adults as active partners in decisions that affect the community." ¹

¹ MSU Extension/MAES. 2006. "Assessment of Michigan's Needs and Priorities: A Citizen Survey." East Lansing, Mich.: Michigan State University.



Because multiple governing bodies make decisions about land use, leadership development is needed at local and state levels in public and private arenas. Young people need leadership and citizenship education, too, to fully participate in decision making as adults.

MSU Extension has a strong partnership with local governments and elected officials. From county finance to educating citizens about ballot proposals and developing community leadership for land-use planning, our educational initiatives reflect residents' priorities for educating and supporting decision makers in 25 Michigan counties.

Families also face decision-making challenges, ranging from housing and home ownership to financial management and planning. MSUE has developed a number of education programs for individuals and families to help them evaluate alternatives related to home purchase, finance and repair, and to refine financial planning to ensure they fully develop their assets over their lifetime. These programs reach youth and adults through a variety of methods.

When asked to rate the quality of life in their communities, 21 percent of Michigan residents rated quality as fair or poor, 59 percent rated it as good and 21 percent rated it as excellent.

In a survey of Michigan residents by the MSU Institute for Public Policy and Social Research (IPPSR), when asked, "How informed are you about the activities of your local government?" only 54.4 percent of respondents felt that they were at least somewhat informed about county government.

In one survey of Michigan residents, 92 percent supported using coordinated land-use plans to manage growth and 49 percent strongly supported it.

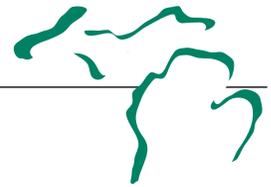
When asked to rate the quality of life in their communities, 21 percent of Michigan residents rated quality as fair or poor, 59 percent rated it as good and 21 percent rated it as excellent. Source: IPPSR.

Responses from the statewide Web survey included one person who said, "Assist forestland owners in wise management of their lands for an array of purposes including timber, wildlife habitat, recreation and aesthetics. Encourage tree planting by providing training on when and how to plant. Provide information on forest economics and tax law so forestland owners can make wise decisions about timber management, tree planting and other forestry activities."

A few examples of our work with decision makers

MSU Extension programs prepare public officials to seek and hold office and educate them about deliberate community planning, service provision, strategic planning, conflict management, communication, engaging the public and intergovernmental cooperation. This enables local public officials to be confident, efficient, effective leaders in their communities. We also encourage Michigan residents to serve in public roles and boost their preparedness to make good decisions.

- Since 2001, MSU Extension's Citizen Planner program has reached nearly 3,000 elected and appointed officials in 80 Michigan counties—many of them volunteers—with education about the tools and techniques available to them as they address local land-use planning challenges. Nearly two-thirds (64 percent) of Citizen Planner participants serve on local planning and zoning boards, and they indicate that they pay closer attention to legal issues since attending the program. In 2006, the program helped



expand capacity among local land-use planners by offering the Master Citizen Planner advanced continuing education program and an online Citizen Planner course that participants may complete at their own pace, when it is most convenient to them. One of the first planning officials to complete the online course said he expects to save \$25,000 a year in consulting fees with the knowledge the training provided to him and his staff.

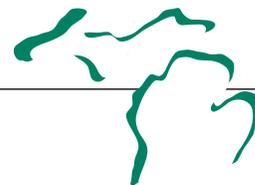
- The Clare County Enterprise Community (CCEC) Program has led local efforts to address an affordable housing shortage. The program's leaders have been active in building capacity to address housing issues, including helping to hire an MSUE educator and sponsoring the costs of writing the proposal that led to USDA funding. On Dec. 31, 2008, Clare County will lose its designation as a USDA Rural Enterprise Community. The 21-member enterprise community board is moving forward and designing a plan of work for the final two years and examining ideas that would make CCEC sustainable beyond December 2008. Since January 2000, the CCEC has leveraged more than \$30 million for local housing initiatives.
- In early 2007, MSUE's State and Local Government Team completed the biennial New County Commissioner Workshop series at six locations across the state. Approximately 75 percent of newly elected commissioners attended. Both new and experienced commissioners praised the program for its excellent presentation of information critical to understanding the role of a county commissioner.

MAES researchers are developing new land-use models for communities, offering technical assistance to planning departments on how to reduce sprawl, and creating new remediation strategies to clean up polluted soils and water. They are also examining decision support systems that help community decision makers and those who work to protect our environment arrive at positive solutions that promote effective resource allocation.

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• All 14 Manistee County townships passed identical resolutions of support for a county wide point-of-sale well and septic disposal system evaluation program. In response, the Manistee County Board of Commissioners created a committee to develop the program which will include a county-wide ordinance. The Manistee County Community Foundation has awarded a \$2,240 grant to support the process. Manistee County Commissioner Janice McCraner points out proudly that this effort is a result of a county summit of elected officials from all levels of government in the county. The summit, organized by McCraner, was facilitated by an MSUE state and local government educator. Similar summits have subsequently been held in two other counties, and two more are being planned.

- The Michigan Legislature codified the state's existing three zoning enabling acts into one new statute, the Michigan Zoning Enabling Act. This is a major change in process and required notices that affect all of Michigan's local governments with zoning. MSUE specialists and educators and staff members of the MSU Land Policy Institute worked together to develop materials and training programs to be delivered

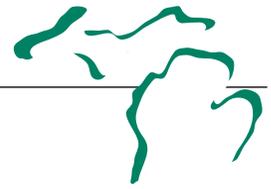


across Michigan in spring 2006. MSUE delivered 23 educational programs on the Michigan Zoning Enabling Act to 2,366 local public officials. This program qualified for continuing education units.

- The new MSU Extension Conservation Stewards program equips individuals with science-based information about Michigan's aquatic and terrestrial ecosystems, information they will use in leadership roles in their communities, counties and regions.
- The Oakland County Board of Commissioners and MSUE partnered to educate inland lake residents about the importance of preserving local lakes. More than 160 residents participated in educational sessions designed to help them develop and maintain environmentally sound waterfronts. As a result, at least 54 plan to make changes to their properties, which are valued at more than \$2.8 million.
- The future of Michigan farms and agribusinesses depends on successful business choices and transitions to the next generation. The Farm Resource Management team helps these businesses address intergenerational transfers and avoid excessive estate taxes. MSUE educators also work with farm operations on income tax management to help ensure long-term profitability. At annual seminars, producers record average savings of \$10,000 per farm.

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- Through the Small Town Design Initiative (STDI) and the Community Design Initiative (CDI), rural and urban communities are provided resources to visualize possibilities and make decisions to improve the physical environment of communities. Since 2001, teams of faculty members and students from the MSU College of Social Science Landscape Architecture Program have worked in collaboration with Extension educators to help 50 communities in more than 30 Michigan counties make informed decisions and plan for more inviting commercial districts and attractive living spaces.
- Family & Consumer Sciences Extension educators are offering programs to improve the financial literacy of some of the state's most financially vulnerable populations. For instance, Building Your Financial Future is a version of the FDIC's Money Smart curriculum that has been adapted specifically for persons with disabilities. The Furthering Families program helps individuals increase their household income by turning hobbies and personal skills into dollars.
- Participation in 4-H lets Michigan's youth develop their decision-making abilities as they choose projects and decide how to complete what they have started. Character Counts! shows participants how decision making affects outcomes and helps them develop strong values. Natural Helpers trains teens who possess a natural ability to be good listeners to use that skill to help their peers make good decisions.

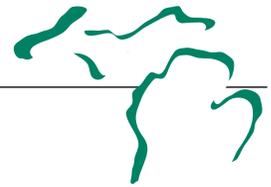


Priorities for working with decision makers

MAES and MSU Extension offer learning opportunities and information to public officials and the citizenry about state and local government organization and process, public budgeting and finance, intergovernmental agreements, taxation, strategic planning for governmental units and running effective public meetings. MAES and MSUE programs also focus on helping individuals make good decisions about their financial options and help build tomorrow's leaders by teaching youth good decision-making skills.

MAES researchers and MSUE educators and specialists have developed initiatives that will focus on working with decision makers in the following ways:

- MSUE educators will assist downtown development authorities, economic development corporations and other units in addressing local priorities and will reinvigorate locally based groups that are working to take broader development actions.
- Researchers will develop techniques to determine the value of community and what puts a community at risk. Extension educators will disseminate information to community leaders to determine whether they need to act to prevent degradation and preserve healthy communities.
- There is growing awareness of the importance of "sense of place," culture and diversity in determining the socioeconomic path of communities. MSUE educators will assist agencies, organizations, local governmental units and individuals in pursuing multicultural economic development strategies.
- The trend of increased conflicts around community environmental issues will probably continue. Decision makers will find their creativity and planning skills put to the test as they design assets such as walkable communities, biking and hiking trails, and development features that allow residents to live and work in closer proximity, limiting commuting times. MSUE will use science-based university resources, including the Michigan Natural Features Inventory and the Planning and Zoning Center at MSU, to help community leaders make decisions that will have lasting effects for human and natural populations.
- MSUE is developing a new curriculum called Money Mentors that will train community volunteers to be financial mentors for local residents with limited incomes and/or financial experience. This neighbor-to-neighbor mentoring program will improve a community's overall financial literacy and ability to make good financial decisions.
- 4-H will help build the next generation of financial "wizards" through programs such as Financial Champions, the NEFE High School Financial Planning Program and the new 4-H Millionaire's Youth Investment Clubs. The investment clubs will allow youth to make actual stock investments and see the outcomes of their financial decisions.



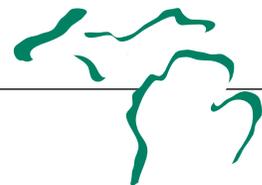
MSU assets for decision makers

MSUE and MAES are fortunate to have outstanding resources to support decision makers.

- The MSU Legislative Leadership Program, jointly sponsored by MSUE and the Institute for Public Policy and Social Research, offers training for newly elected legislators and ongoing discussions and workshops for all lawmakers and staff members. To help first-year lawmakers navigate the challenges of their roles, Michigan State University offers a program to introduce them to current information on pressing issues affecting Michigan.
- Many MSU professors hold Partnership for Ecosystem Research and Management positions jointly with state agencies, bringing research and knowledge to those agencies and, ultimately, to residents and communities.
- MSU's Land Policy Institute provides research and education around land use to help decision makers develop solutions that strengthen and direct development toward existing communities and preserve

farmland. The institute shares expertise about the impact of land-use patterns on economic sustainability, farmland preservation, tourism planning and development, capacity building in land policy, land use and land cover change, ecosystem services, community planning and livable communities with nonmotorized transportation.

- Through career fairs and programs such as Exploration Days and by weaving career exploration into nearly every youth development program, 4-H gives thousands of Michigan youth their first opportunity to experience career options they may have never encountered otherwise. 4-H programs prepare Michigan youth to become responsible decision makers and leaders.
- Family & Consumer Sciences Extension educators in every county connect families with the resources they need to be healthy and financially sound, enabling them to participate fully in decisions affecting their communities.



Building leaders for today and tomorrow

Michigan needs a multitude of leaders—young and old, male and female—from diverse backgrounds to lead the state through these turbulent times. The desperate shortage of good leaders is a well-noted, alarming trend throughout Michigan, the United States and the world. This shortage comes while the state is reeling from resource shortages and a struggling economy, and some sectors of the population are feeling disenfranchised.

The turbulence in Michigan is creating changes and new possibilities. It's crucial that emerging leaders develop skills and knowledge now, when it is important that innovative people take informed risks and provide leadership. Today and tomorrow, leaders need to envision a positive future, be willing to work collaboratively to benefit their communities and facilitate healthy change. Michigan urgently needs leaders across all sectors of government, business, human services and nonprofits. To ensure Michigan's future, we must focus on developing the skills of adults and youth.

Many businesses and public service agencies are experiencing a dramatic demographic shift as large percentages of their workforce prepare to retire in the next five years. For example, many natural resources agencies expect to lose 40 to 60 percent of their workforce in the next five to seven years. Many organizations will need to call individuals into leadership roles earlier in their careers, with less experience than past leaders had to draw on. Individuals and organizations need to be prepared for different models of leadership and collaboration.

Community leadership development programs provide a forum for individuals to build the skills and knowledge they need to move into leadership roles. Bringing

together people from a broad array of backgrounds, experiences and interests helps eliminate barriers. Through participation, new leaders can become more knowledgeable about and involved in their communities. These programs increase opportunities for networking and collaboration among future and current community leaders. The cumulative effect is to provide a synergistic force in the community.

MSUE and MAES, with their research and outreach partnership, are uniquely suited to helping participants understand the value of collaborative leadership. As a community-based organization, MSUE is positioned to facilitate local groups in developing a vision for their communities or organizations, better understanding issues, learning about the systems that affect those issues and developing strategies to take action.

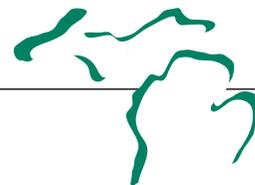
SURVEY SAYS

85% Percentage of Michigan residents who rated preparing today's youth for tomorrow's jobs as a high priority.¹

67% Percentage of Michigan residents rating as high priority "Help youth develop leadership, citizenship and other life skills."¹

55% Percentage of Michigan residents rating as high priority "Expand after-school opportunities for our youth."¹

¹ MSU Extension and Michigan Agricultural Experiment Station. 2006. "Assessment of Michigan's Needs and Priorities: A Citizen Survey." East Lansing, Mich.: Michigan State University.



Responses from the statewide Web survey included one person who asked that MAES and MSUE “perform education to the communities, local leaders and local schools on natural resource and environmental issues via development of publications and programs, providing training, instituting educational programs. This will help with energy efficiency, land-use decisions, recycling, maintaining a healthy and sustainable environment for people to work and play in.”

Many natural resources agencies expect to lose 40 to 60 percent of their workforce in the next five to seven years as their current employees retire. They'll be pulling younger workers into leadership roles earlier than in the past—perhaps unprepared.

According to the U.S. Bureau of Labor Statistics, more than 25 percent of the working population will reach retirement age by 2010, resulting in a potential worker shortage of nearly 10 million. A study by Forrester Research, Inc. said that many of the business sectors that are having trouble attracting younger workers are ones that young people don't consider glamorous, such as government, agriculture, utilities and transportation.

A few examples of our work in building leaders

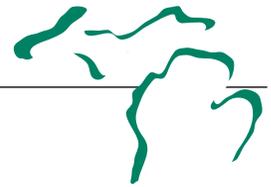
For many years, leadership development initiatives have been an important part of MSU Extension's educational programming and MAES research. Often MSUE is the only organization that offers leadership programming targeted to potential leaders, advertised to the public and priced affordably for individual citizens.

Leadership development is integral to many Extension programs, serving farmers who work to make changes in their communities, youth who discover strategies for accomplishing specific goals, and citizens who learn new ways to work in groups. Many programs, at state and local levels, help people learn specific leadership skills and gain an understanding of public policy issues and processes.

- In the past two years, MSU Extension's Developing Community Leadership project provided mini-grants to support a diverse array of local leadership programs, from training government officials to developing new community leaders and guidance for tourism. One effort has become a multistate initiative. Extension educators in northern Michigan and

the Upper Peninsula have connected with Extension colleagues in Wisconsin to develop leadership in rural communities to work on elder-friendly community issues.

- Clare County MSUE was one of 11 organizations across the United States that received USDA Rural Development Rural Housing Technical and Supervisory Assistant Grants to help low- to moderate-income families buy, repair and/or retain their homes. Clare County's comprehensive Technical and Supervisory Assistance Program will include outreach, screening and referral for safe housing and housing assistance and education. The program also provides low-income families with credit counseling, loan packaging and delinquency counseling services.
- MSUE, along with the MSU departments of Geography and Urban Planning, helped develop a comprehensive plan for Wexford County, the first plan of its kind in Michigan. Educators are continuing to offer technical assistance to the Wexford



County Planning Department for implementation of the plan. Work is now focusing on development of a new county zoning ordinance. MSUE will provide facilitation and technical assistance and present alternatives to issues the county identifies through the facilitation process.

- Other statewide leadership programs focus on educating local leaders about environmental stewardship and making sound decisions for Michigan's natural resources. These include the Forestry Leadership program, the Lake and Stream Leader's Institute and the Conservation Stewards program. Many participants volunteer to teach others about environmental stewardship. MSU Extension in northern Michigan is working with tribal leaders of the Grand Traverse

Band of Ottawa and Chippewa Indians in developing a curriculum for leadership development for the 12 tribes of Michigan. Through the Citizen Planner Program and MAES land use research, MSUE and MAES teach local and state officials skills and provide them with research on land-use policy issues so they can create innovative solutions to community challenges. Extension educators reach out to youth through Junior Citizen Planner, preparing them to step into future leadership roles in land use policy.

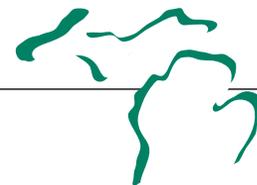
- Community-based 4-H programs provide educational opportunities for 241,000 Michigan children—10 percent of the state's children—using the talents of

26,000 adult volunteers. Through the 4-H Youth Development program, all county Extension offices provide community-based or after-school educational programs to help youth develop life skills, including leadership skills, to prepare them for healthy and productive futures.

Through the Citizen Planner Program and MAES land use research, MSUE and MAES teach local and state officials skills and provide them with research on land use policy issues so they can create innovative solutions to community challenges.

- In 30 percent of Michigan counties, the 4-H staff offers specific programs for youth focused on developing leadership; all counties offer 4-H programming encouraging volunteerism and community service. These programs include a variety of leadership and service academies, the Web-based TRY-IT (Teens Reaching Youth through Innovative Teams) program, and a proliferation of teen leadership and volunteer opportunities.

- Through 4-H, young people in all Michigan counties have the opportunity to participate in citizenship programs that teach them how government functions at the local, state and federal levels. Citizen Washington Focus and Capitol Experience expose youth to federal and state government. The Genesee County 4-H Academy pairs teens with county commissioners for mentoring in local government. Youngsters who participate in these programs learn skills in teamwork, organization and making presentations. They enter adulthood more confident in their ability to engage in civic activities.



Priorities for building leaders

MSU Extension has been building youth and adult leaders for more than a century. Extension programs place community leadership development firmly in the hands of the community's residents, who have the greatest stake in the outcome. MSU Extension educators use an educational process in which communities of learners describe their desired shared future, learn how to actualize their vision, and build their personal leadership skills to successfully effect change in their communities. The goal is to simultaneously master content and build group leadership capacity. Programs that foster community and issue-specific leadership development are a priority for MSU Extension in 25 percent of Michigan counties.

MAES researchers add to the body of knowledge in leadership development, enabling Extension educators to implement research-based programs in building leaders. The organizations will:

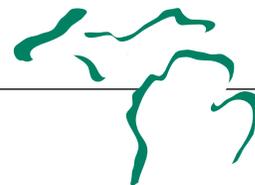
- Continue leadership development as an integral part of Extension's programming. In addition, MSUE will develop new programs to help people acquire specific leadership skills and learn about public policy issues and processes.

- Through community services and service learning, provide opportunities for youth, volunteers and their families to engage in prosocial behavior that promotes positive development. Young people will gain the knowledge and confidence to take on leadership roles as adults.
- Conduct research to understand the orientation, training, support and recognition needs of youth volunteer leaders in community-based organizations.
- Offer programs and volunteer training to involve youth in making community decisions and developing local programs.
- Conduct research into effective ways to prepare individuals for leadership earlier in their careers than was the norm for previous generations.
- Provide land use policy education for a broad audience, including K-12 students, Michigan residents and policy-makers at local and state levels, to improve residents' ability to serve in public roles and make private decisions.

MSU assets in leadership development

Valuable resources are available to help develop leaders for today and tomorrow:

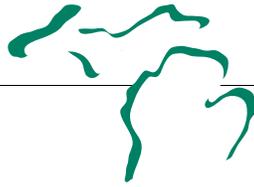
- The programming efforts of most Extension educators currently involve building the leadership capacity of clientele groups.
- MSU Extension has a long history of offering programming specifically to build leadership skills and has the staff expertise to continue offering leadership development programs for decades to come.
- The MSUE Leadership Development team offers workshops to build the capacity of MSUE educators and their community partners to initiate community and issue-specific leadership programs. The team is available to consult with and support leadership development programs to meet identified needs.
- The MSU Extension Community Development team has launched a community development training program to enhance the skills of MSU Extension staff members and their community partners.



- MSU Extension multicultural resources are available for use in community-based workshops and customized programs. Resources address prejudice, discrimination and oppression, including racism, sexism, classism, heterosexism and ableism. The focus is on the importance of recognizing, understanding and appreciating differences and the impact of differences. Specialized rural Latino resources are available, and Native American resources are available from the Native American Institute in the College of Agriculture and Natural Resources.
- In 2006, the College of Agriculture and Natural Resources launched the Great Lakes Leadership Academy. The institute offers two leadership programs—the Leadership Skills Development Program and the Leadership Advancement Program. The

Leadership Skills Development Program encourages the creation and growth of excellent leaders prepared to function in collaborative processes that integrate biological, social and economic factors into sustainable resource-development practices. The Leadership Advancement Program emphasizes bringing together individuals with differing interests—interests in communities, manufacturing, agriculture and natural resources management, for example—to ensure that the program provides instruction in both leadership and collaboration.

- The Innovation Academy, the leadership arm of the MSU Product Center, meets the needs of managers, board members and entrepreneurs of agricultural, food and natural resources systems while building capacity for potential new industry leaders.



MICHIGAN
AGRICULTURAL
EXPERIMENT STATION

The Michigan Agricultural Experiment Station (MAES) is made up of more than 300 scientists working in agriculture, natural resources, engineering, social and natural sciences, human ecology and veterinary medicine. When coupled with the education and outreach efforts of Michigan State University Extension, this research helps to improve the quality of life for Michigan's citizens.

Steven G. Pueppke, director, 517-355-0123, www.maes.msu.edu

MICHIGAN STATE
UNIVERSITY
EXTENSION

MSU Extension disseminates university research-based information to the citizens of Michigan. Extension serves every Michigan county through locally based staff members, who respond to residents' needs for information and link them with the university's resources.

Thomas Coon, director, 517-355-2308, www.msue.msu.edu