

# Agriculture

## GLOSSARY

### **Sustainable agriculture**

*An integrated system of plant and animal production practices that over the long term will satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which agriculture depends; make the most use of nonrenewable resources and on-farm resources, and integrate, where appropriate, natural biological cycles and controls; economically sustain farm operations; and enhance the quality of life for farmers and ranchers and society as a whole.*

### **Nonpoint source pollution**

*A diffuse source (does not have a single point of discharge) of contamination—e.g., rain or runoff from agricultural land that carries chemicals, animal waste, or eroded soil into a water body; point-source pollution comes from a single, identifiable source of pollutants (e.g., pipe or smoke-stack).*

### **Purchase of development rights (PDR)**

*A program under which a government agency buys from a landowner the development rights or a conservation easement to a particular property; does not give the government agency the right to develop the land but permits it to prohibit certain practices, uses, and development with regard to the land. Landowners retain full ownership and control of their land.*

## BACKGROUND

Michigan agriculture—a \$37 billion industry—is one of the state's most important economic sectors.

- As well as farm crop and livestock production, the agriculture industry includes food processing, agricultural suppliers, forestry, and fishing. Agriculture's economic importance is increasing as new uses for agricultural products are developed, such as alternative fuels.
- Agriculture is Michigan's second largest employer; one of every 15 state residents is employed in the agriculture and food industry. Michigan farm payroll exceeds \$318 million a year.
- Michigan ranks first in the nation in production of red tart cherries, blueberries, pickling cucumbers, dry beans, potted geraniums, hanging flowers, and Easter lilies.
- Michigan ranks sixth in the nation for agricultural exports—nearly \$2 billion worth of goods annually.

Farming requires large capital investment. In 1992 (latest complete data available) the average value of a farm, including machinery, land, seed, and chemicals was more than \$300,000, and average annual production expenses were more than \$55,000. Only 43 percent of all Michigan farms reported a profit. Only 21 percent of all farms reported a net income above \$10,000, and 64 percent of Michigan farmers had off-farm employment.

### **Land Use**

According to the Michigan Department of Agriculture (MDA), there were an estimated 52,000 farms in Michigan as of June 1, 1997, down by 1,000 from 1996. Although there was little change in the number of small or large farms, the number of medium-sized farms fell by 6 percent. The average Michigan farm in 1997 was 202 acres. Large farms, which occupy 6.2 million acres in total, average 775 acres, a 2 percent increase over the previous year. Eighty-seven percent of Michigan farms are individually owned. By 2012, if current trends hold, 10,000 farmers will produce 90 percent of all Michigan farm sales.

Michigan is losing farmland at a greater rate than any other state in the Great Lakes region. From 1982 to 1992 Michigan lost 854,000 acres of farmland to development. At current rates, all farmland in Wayne and Oakland county will be converted to other uses by 2012, and total farmland will be 8.3 million acres, a decrease of 1.8 million acres. The value of farmland is increasing, especially in

areas of rapid population growth. Competing land uses in these areas often boost the price of agricultural land so that it is not affordable for agriculture. Once farmland has been converted to another use, such as residential or commercial, it usually cannot be converted back to agricultural land due to the difficulty of aggregating small parcels.

### **Environmental Protection**

The MDA recognizes that it is important to involve the agricultural community in environmental protection. Environmental concerns arising from agricultural practices include soil erosion, groundwater contamination from leached fertilizers and animal waste, and pesticide use. In 1997 the MDA created an Environmental Stewardship Division to coordinate programs that can reduce farming's detrimental environmental effects.

Since 1995 the MDA has issued \$6.6 million in Groundwater Stewardship Program grants. Funds for the program come from fertilizer and pesticide registration fees. In 1996 more than 3,000 Michigan farms received assistance to help protect Michigan groundwater.

The U.S. Environmental Protection Agency (EPA) has announced that it will regulate large livestock farms as it does other waste-producing industries; the goal is to keep animal waste out of rivers and streams and prevent the algal blooms and disease that it can cause. Under the federal Clean Water Act, states have authority to regulate large livestock operations, yet few do. In applying the full authority of the act, the EPA will require large livestock farm operators to obtain permits to produce waste, develop waste disposal plans, and agree to inspection. The plan is expected to be implemented in spring 1998, following the public comment period. Although Michigan already has programs in place that address nonpoint-source pollution in agriculture, the EPA regulation will go further. The Michigan Farm Bureau maintains that the EPA approach may create economic stress for the already declining dairy industry and also greatly affect Michigan's pork producers.

### **Marketing Michigan Products**

One MDA role is to encourage consumers to direct more of their spending toward Michigan products. The department's Grown in Michigan program provides grants to agricultural commodity organizations to help them develop innovative and creative approaches to promoting Michigan products. Current programs are being designed to increase the demand and use of such Michigan products as nursery plants, Christmas trees, corn, and milk.

In cooperation with the MDA, Travel Michigan (the state tourism agency) promotes Michigan wineries and rural fresh-produce vendors as tourist attractions. Experts predict that agriculture will be linked increasingly with tourism in Michigan. General interest in sources of our food supply has increased, and agricultural tourism is an important strategy for attracting visitors.

Export promotion is another market-development avenue. In 1995 Michigan exported almost 12.8 million pounds of apples, 88 million pounds of beans, 1.6 million board feet of timber, as well as corn, other fruits, nursery stock, perennial plants, popcorn, and Christmas trees.

The market for Michigan agricultural products will expand as new food and non-food uses of commodities are discovered and developed. For example, alternative fuels produced from corn and soy are being developed, ink can be made from soy products, and biodegradable plates and utensils can be made from corn starch.

### **Food Safety**

Food safety is always a concern for the agriculture industry, from the field through processing to the table. The MDA is responsible for testing and monitoring the state's fruit/vegetable/dairy-product production, processing plants, restaurants, and grocery stores. Currently, there is concern about bovine tuberculosis (TB) spreading from infected white-tail deer to livestock, and the MDA and Michigan Department of Natural Resources instituted cooperative monitoring efforts that indicate that livestock in Michigan is TB-free. Other recent food safety concerns include E. coli bacteria in apple cider, and a

cider advisory committee has been established and charged with reviewing the processing techniques used by Michigan's 114 cider producers; no evidence of *E. coli* bacteria in Michigan cider has been observed in samples taken from any producer.

### DISCUSSION

#### Land Use

The greatest risk to Michigan agriculture is the loss of agricultural land, which is expected to shrink by about 2 million acres in the next 20 years; this threatens the production base of the second-largest industry in Michigan. A 1997 survey revealed that 65 percent of Michigan residents are concerned about the amount of farmland being converted to commercial and residential development. Although technological advances have improved crop yields, future advances may not be able to increase yields enough to offset the expected huge loss of agricultural land.

In 1996 the Michigan Legislature enacted amendments to the Subdivision Control Act known as the Land Division Act (P.A. 591 of 1996). The act was intended to keep large land tracts together and prevent urban sprawl. The law allows "splits," or divisions of property, but attempts to keep them concentrated in one area of a parcel, leaving most of the original parcel undivided. The Michigan Farm Bureau and Michigan environmental groups argue that this legislation, because it permits more divisions that are exempt from review by public agencies than did the previous law, will be ineffective at preventing urban sprawl and limiting the conversion of farmland to residential property.

Other efforts to address farmland loss include the 1996 changes to the Farmland and Open Space Preservation Act that provide \$14 million to enable the state to purchase the development rights on Michigan farms. Under the program, farmers are paid for the difference between the agricultural and development value of their land. Many farm owners have expressed interest in the program, which is managed by the Farmland and Open Space Preservation Unit of the Department of Natural Resources. Applications for the program became available in March 1998.

The Michigan Farm Bureau cites another economic benefit of protecting Michigan farmland from development: In residential areas, for every dollar raised in property taxes, \$1.17 is spent on services such as roads, utilities, schools, fire, and police. In farm, forest, and open space areas, for every dollar raised in property taxes, only \$0.34 is spent on services—leaving the balance available for other purposes.

#### Environmental Concerns

Although through the years synthetic fertilizers, pesticides, and fungicides have increased agricultural productivity, it has come at some cost to the environment. Increased awareness of the dangers as well as the benefits posed by chemicals is leading the public—including farmers—to push the industry toward "sustainable" agriculture—profitable, productive farming with minimal environmental damage. In 1996, industry representatives began participating in developing a pollution-prevention strategy for Michigan agriculture; such a strategy includes changing farming practices so as to minimize the use of fertilizers, pesticides, herbicides and prevent the loss of fertile topsoil.

Technology also is changing farming practices to the benefit of the environment and public health. Genetic engineering has produced crops that are more resistant to disease and pests, thus reducing the need for artificial additives such as pesticides and fungicides. Advances in farm equipment technology can reduce fertilizer use, enabling it to be applied only when sufficient nutrients are not present naturally in the soil.

Changes in agricultural practices are not without drawbacks, however. While decreased fertilizer and pesticide use may improve environmental quality, in order to maintain current agricultural productivity it may be necessary to devote more land to agriculture and plant crops that have higher yield.

#### Food Safety

New technology is available for detecting and preventing contamination of Michigan agricultural products, and the MDA is developing and altering standards and food-production monitoring programs. For

example, the department's annual Food Monitoring Program assesses potential pesticide exposure throughout the food chain in Michigan; licensing and inspection programs are conducted on all dairy farms and processing plants; the MDA monitors testing of all raw milk for animal drug residue; and the MDA tests samples from slaughter plants to keep the state free of animal diseases that may be passed to humans through the food chain.

Losing the state's TB-free designation for cattle could have a very damaging effect on Michigan agriculture and tourism—\$42.1 million could be lost annually, according to a study commissioned by the departments of Natural Resources, Agriculture, and Community Health. The Michigan Agriculture Commission approved a feeding ban for deer and elk in a five-county northern-Michigan area, where cases of deer and coyote infection have been confirmed. The ban, which is intended to stop deer from congregating and thereby spreading TB, prohibits baiting except from September 1 through the end of deer season and restricts the amount of bait that may be used.

For FY 1998–99, Governor Engler has proposed a 12 percent budget increase for the Michigan Department of Agriculture. Included in the increase is substantial funding for university research on pest control and food safety. The governor and others feel a crisis could arise because food safety and environmental regulations potentially could reduce productivity.

*See also* Genetic Cloning and Testing; Land Use; State Lands and Waters; Traffic Safety; Water Quality.

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