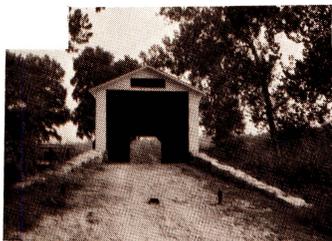
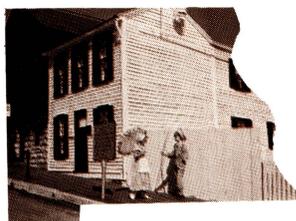
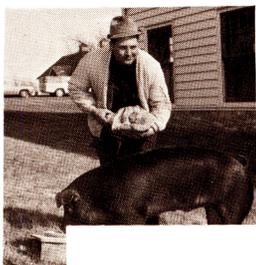
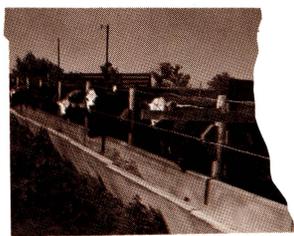


# MARK TWAIN AGRIBUSINESS

*Looks to Future*

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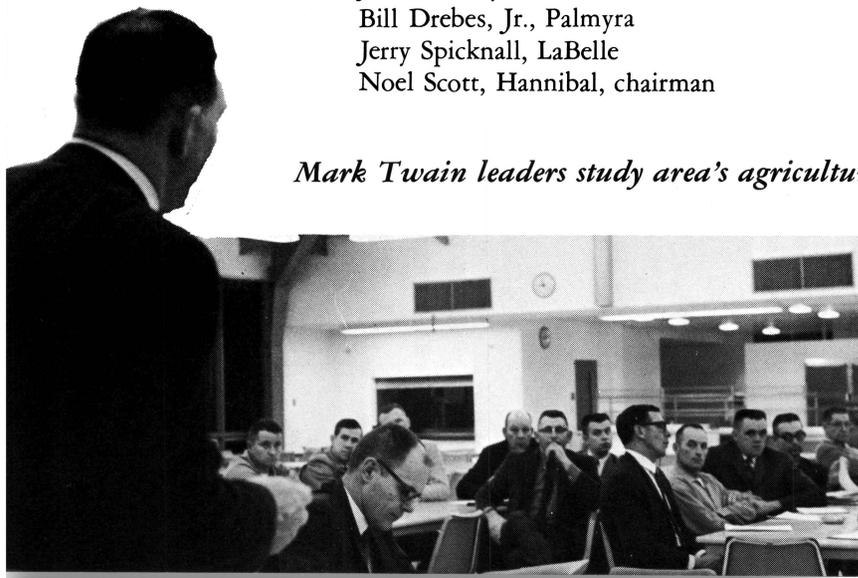
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*Mark Twain leaders study area's agricultural potentials and problems.*



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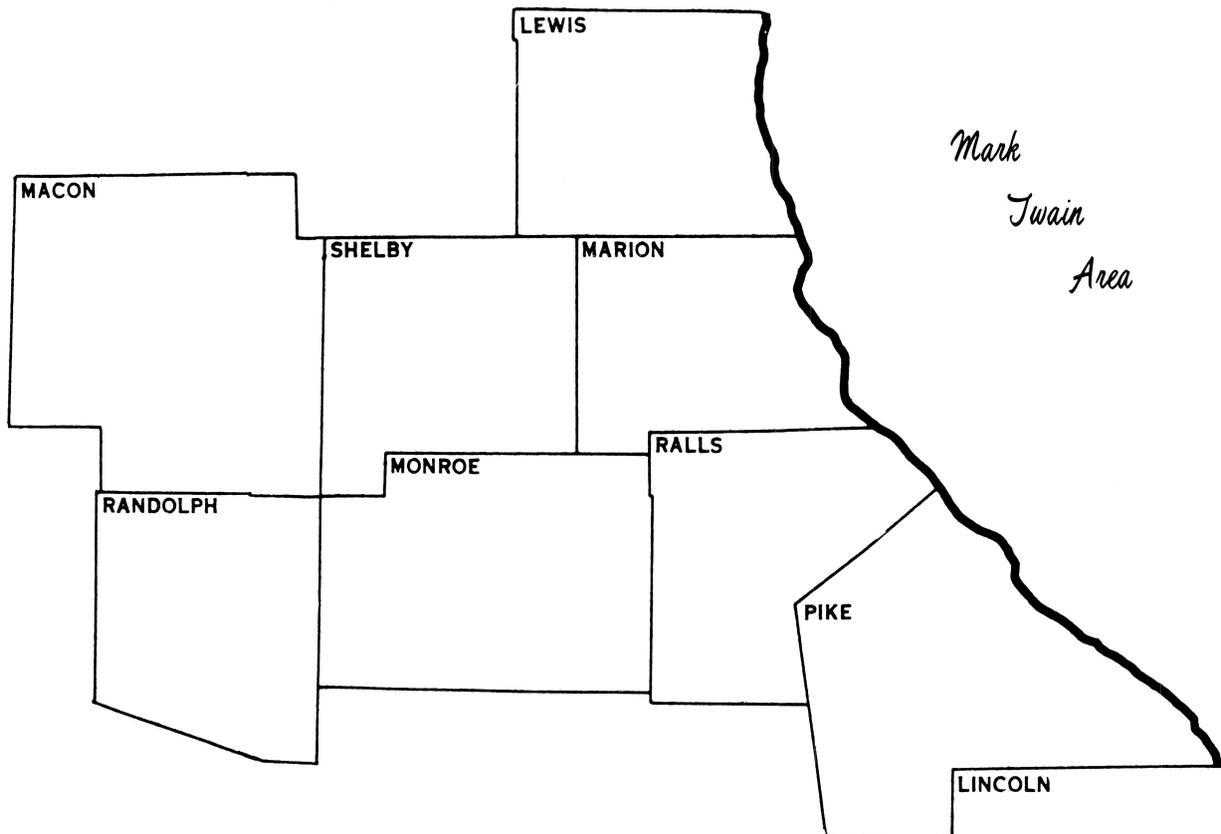
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# Contents

Introduction	5	Crop Production	21
Where to in Farming?	10	Swine Production	27
Financial Management	12	Beef Cow Forage	31
Ag-Related Industry	15	Dairying	34
Recreation Development	16		



# MARK TWAIN AGRIBUSINESS

*Looks  
to  
Future*

TO REACH the potential of a region, its inhabitants must recognize its assets and its problems, then set goals and work toward them. With this premise in mind, agribusiness leaders in the eight-county Mark Twain Area launched a study of their region. The total agricultural team in the Mark Twain Area was represented in the effort—producers, credit people, farm suppliers, marketers, realtors, lawyers, University of Missouri Extension agents and others. University Extension specialists assisted with technical information and recommendations.

Members of the committee strongly felt the Mark Twain Area had tremendous untapped potential for development of the total agricultural industry. They were willing to become involved because of the conviction that individuals determine their own destiny. They knew the area could not wait for things to happen; that progress would come most rapidly if they helped them happen.

Agriculture is very important to the economy of the Mark Twain Area. The last Census in 1964 showed \$106,826,000 in gross receipts in this area from agricultural marketing—a 19 percent increase over 1959. Total income in Mark Twain in 1965 was \$277,421,000, of which almost 18 percent or \$48,222,000 was personal income to farm operators.\*

Farm operators' income was the largest single source of income in Lewis, Monroe, Ralls and Shelby

---

\*Source: Personal Income from Missouri Counties Study, 1950-1965, published by the Research Center and School of Business and Public Administration, University of Missouri-Columbia.

Table 1

Cash Farm Receipts from Livestock, Crops and Other Sources  
(Census of Agriculture, 1959 and 1964, and ASCS Records)

County	1959	1964	% Change
Lewis	10,292,000	13,631,259	+32%
Macon	13,583,000	13,805,187	+02%
Marion	8,797,000	12,004,462	+36%
Monroe	13,676,000	15,876,544	+16%
Pike	16,839,000	18,725,509	+11%
Ralls	8,597,000	10,385,746	+21%
Randolph	7,908,000	8,554,000	+08%
Shelby	12,627,000	13,846,431	+10%
<b>TOTAL</b>	<b>92,319,000</b>	<b>106,829,138</b>	<b>+16%</b>

Counties; second largest in Macon and Pike; and sixth largest in Randolph and Marion.

Total farm product sales do not, of course, represent the total economic impact of Mark Twain agriculture. Each dollar of sales from the farm requires much employment and production in farm supply, credit and services. Similarly, each dollar of product sales brings about additional employment in transportation, processing, storage, wholesaling and retailing. Agriculture is a basic "export" industry. It supports (and brings about) a whole host of directly or distantly ag-related industries. It goes far beyond, to the consumer goods and services demanded by those employed in these ag-related occupations.

An extensive sector-by-sector analysis of Missouri's industrial structure has produced agricultural income multiplier estimates ranging from 2.5 to 2.9\* In other words, each additional dollar of farm product sales in Missouri brings about a \$2.50 to \$2.90 increase in total economic activity. Thus, agriculture's total economic importance far exceeds its direct dollar sales. Much of the economic activity—even that seemingly remote from agriculture—still owes its existence to demand created by the agricultural production.

### Growing Need for Area-Wide Planning

Technology is changing the very structure of agriculture. Larger and more specialized units have developed. This increases the necessity of higher managerial skills.

Of perhaps more importance, the new technology has led to increasing dependence of farmers on the quantity, quality, and cost in their area of spe-

cialized supplies and services needed for their product.

For example, the success of an area's dairymen depends on having veterinarians experienced in dairy health, good milking machine service, economical milk pickup, and superior markets for their product.

The amount, quality, and cost of these services that can congregate in an area, in turn, depend on the volume of milk or whatever commodity produced in the area.

In short, a whole new set of interdependencies has been created within the agribusiness complex. The unavailability, high cost, or low quality of a *single* crucial service may be the obstacle that stunts the growth of an entire industry. Thus, it is to everyone's benefit to locate any such obstacles, to determine area priorities, and to bring about purposive planning of the agricultural growth of the area.

Technological change, by bringing changes in the essential structure of agriculture, has brought an interdependence—a togetherness—that demands cooperative action in solving problems that affect all.

### The General Ag Picture

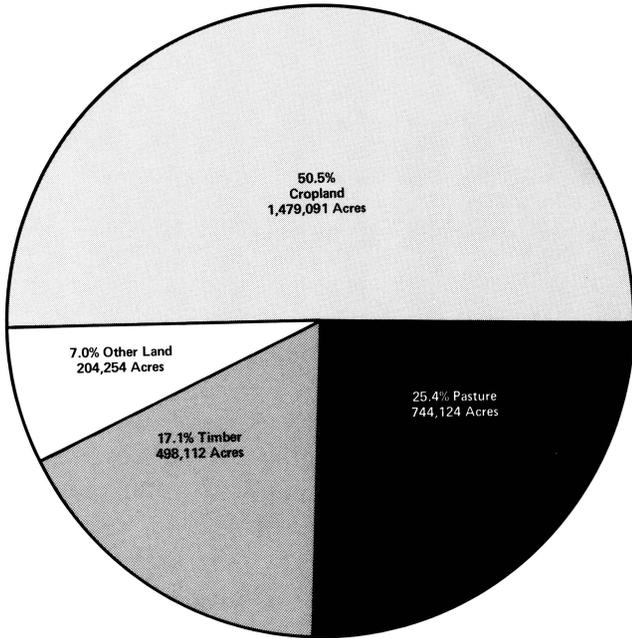
On January 1, 1967, Mark Twain counties (7 percent of state's total counties) had in inventory 13.2 percent of the hogs, 8.3 percent of the beef cows, 1 percent of the dairy cows, 11 percent of the sheep, 5 percent of the chickens, and 3.7 percent of the turkeys in the state. The last Census shows 63 percent (6,159) of the area's farms raised calves, averaging 14 per farm. Twenty-three percent (1,452) of those raising calves fed them out, averaging 27 fed per farm. Forty-eight percent of the farms farrowed litters of pigs, averaging over 20 litters per farm.

Use of the 2,925,581 acres in the area is depicted in Charts I, II, and III. The 7 percent wedge identi-

\*Harmston, Floyd K., *An Inter-sectoral Analysis of the Missouri Economy* 1963. Missouri Economy Study No. 12, B &PA Research Center, 1968, p. 14, Table 3.

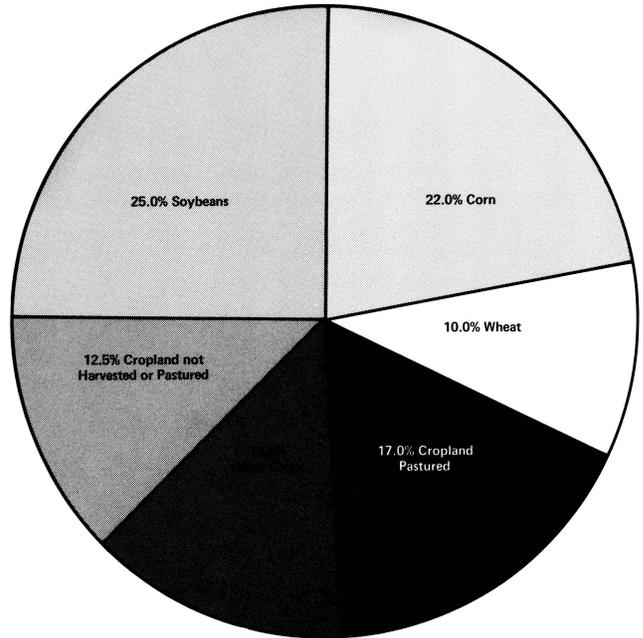
As "other land" in the first chart includes such areas as farmsteads, roads and waste.

**Acres and Use of Agricultural Land in Mark Twain Area**  
 2,925,581 Acres  
 (Source: 1964 Census of Agriculture)



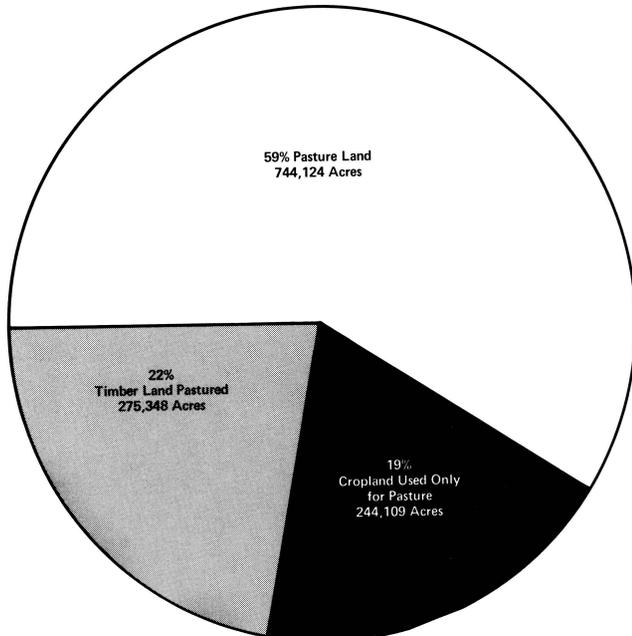
(Chart I.)

**Percentage of Cropland in Various Crops**  
 1,479,091 Acres  
 (Source: 1964 Census of Agriculture)



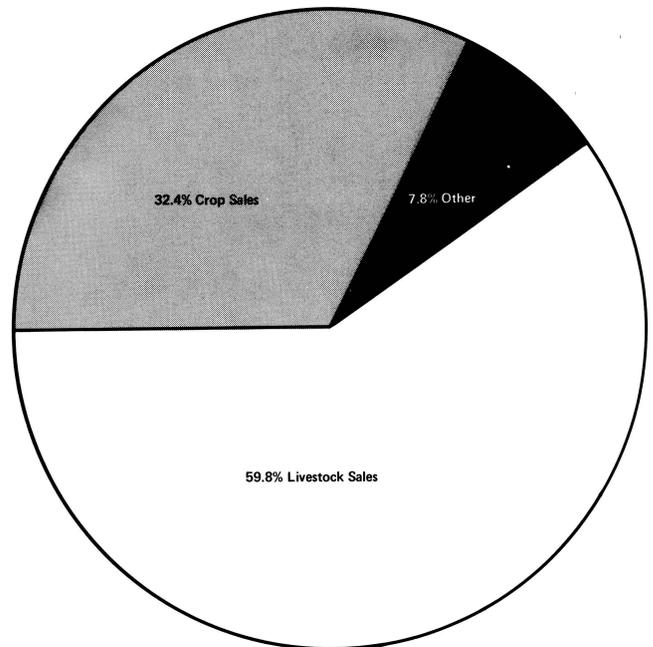
(Chart II.)

**Types of Pasture Land**  
 1,263,581 Acres  
 (Source: 1964 Census of Agriculture)



(Chart III.)

**Farm Gross Receipts in Mark Twain Area**  
 (Source: 1964 Census of Agriculture)



(Chart IV.)

*Livestock are the biggest source of receipts but a significant part of this is the result of using them to market home-grown crops.*

## Population Trends

Population in the eight-county area is declining. From 1950 to 1960 the Mark Twain Area population declined by 3.7 percent while Missouri in total increased 9.2 percent.

Table 2  
U. S. Census of Population -- 1950-1960

County	1950	1960
Lewis	10,733	10,984
Macon	18,332	16,473
Marion	29,765	29,522
Monroe	11,314	10,688
Pike	16,844	16,706
Ralls	8,686	8,078
Randolph	22,918	22,014
Shelby	9,730	9,063
<b>TOTAL</b>	<b>128,322</b>	<b>123,528</b>

Table 3  
Age Distribution of Farmers, 1959 and 1964  
(Source: Census of Agriculture)

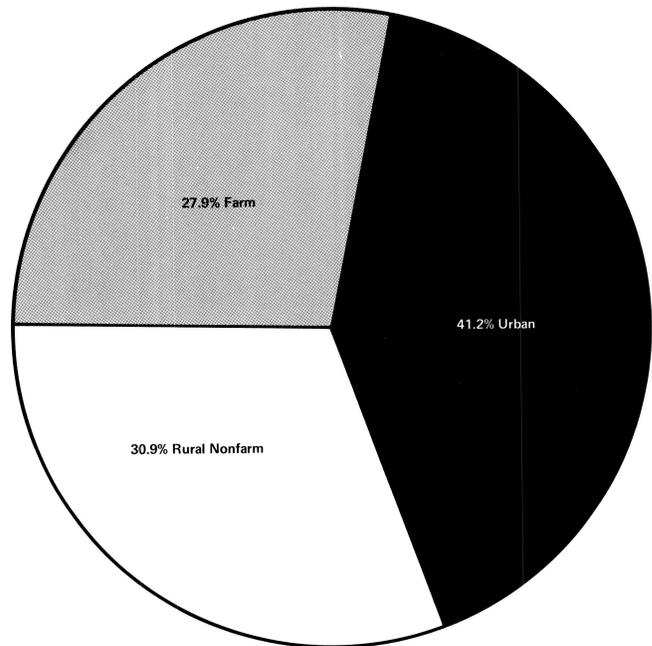
Age Bracket	1959	1964	Percent Change
Over 65	2,623	2,065	-21.3
45-64	5,181	4,713	-9.1
35-44	2,042	1,714	-16.1
25-34	1,084	924	-14.8
Under 25	222	217	-2.3
<b>TOTAL</b>	<b>11,152</b>	<b>9,633</b>	<b>-13.6</b>

Average age in 1959 -- 52.2  
Average age in 1964 -- 52.5

Table 4  
Number of Commercial Farms with Less Than and More Than \$10,000 Farm Product Sales  
(U. S. Census of Agriculture - 1959-64)

County	More Than \$10,000 Farm Product Sales		Less Than \$10,000 Farm Product Sales	
	1959	1964	1959	1964
Lewis	282	335	620	466
Macon	357	328	900	805
Marion	244	329	500	456
Monroe	400	389	816	710
Pike	423	416	698	596
Ralls	250	273	470	430
Randolph	195	188	570	498
Shelby	351	389	621	445
<b>TOTAL</b>	<b>2,502</b>	<b>2,647</b>	<b>5,195</b>	<b>4,406</b>

Mark Twain Population - 1960-123,528  
(Source: 1960 Federal Census)



(Chart V.)

If this historical trend continued through the 1960s, there would be another comparable decline in Mark Twain population. There are indications that this trend may be reversing. But whatever the current trend, the area has been losing young people. Our best hopes for halting this out-migration of youth appear to lie in development of the area's ag-related industry and recreational potential around the Clarence Cannon Reservoir to increase non-farm employment opportunities.

Agriculture in the Mark Twain Area has not been static. Farms are getting larger, fewer, more spe-

cialized, and more highly capitalized. The area contained the only non-river and non-delta county among the top 10 soybean counties in the state (Shelby). Counties in the area ranked from 10th to 44th in soybean production in 1964. All but Randolph County are in the top half in corn production in the state.

In terms of livestock and livestock products, the greatest strides have been made in hog production. Whereas none of the counties ranked in the top 10 in the 1940's, three counties were among the top 10 hog producing counties in 1962-64. The drive to the top has continued in hog production.

In 1968, Mark Twain producers had 12.9 percent more hogs than in 1963-67. During this same period, Missouri increased 9 percent, and the U. S. only 2 percent. Dairying, poultry and sheep production have continued to decline. Beef cattle increased slightly.

Opportunities for increasing employment and total agricultural income fall into two categories. The first is one of widening the base of the production pyramid through increased yields and carrying capacities. This category includes adoption of higher

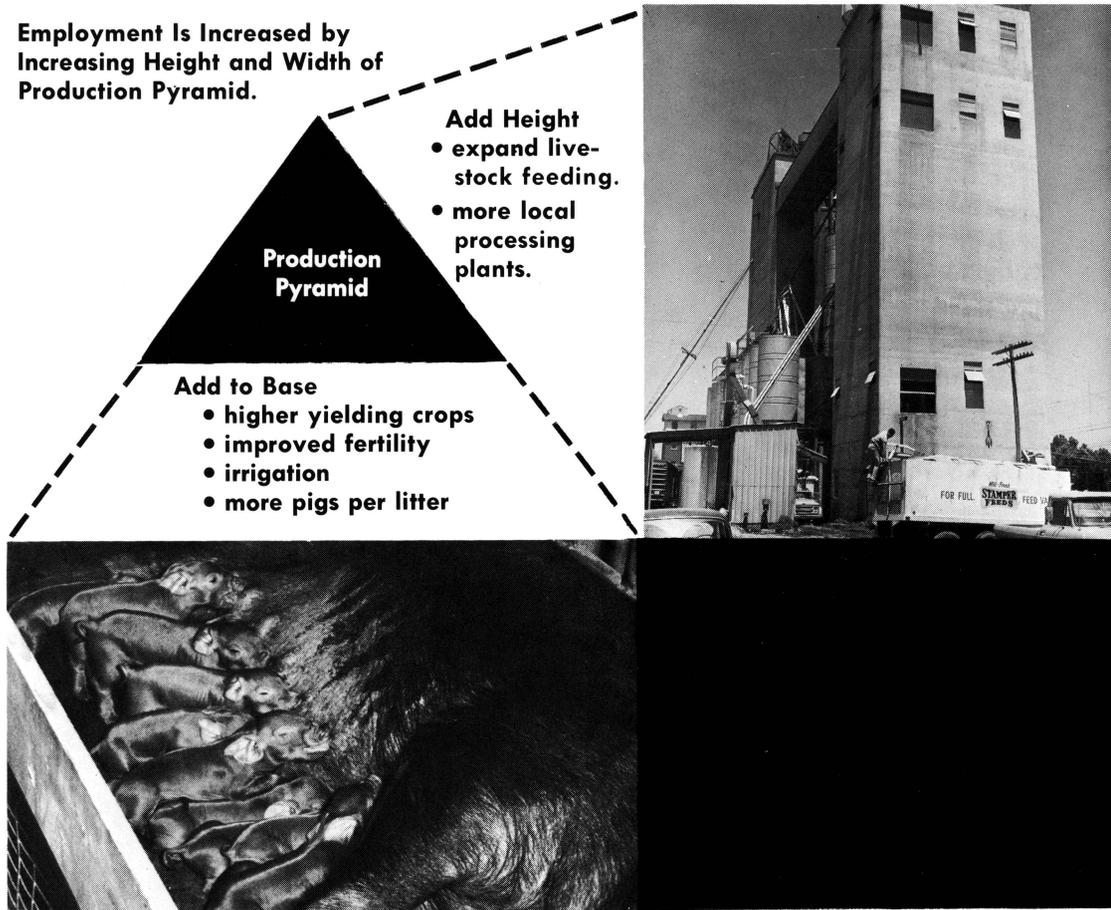
yielding crops and species, improving soil fertility, improving pasture and irrigation.

The second category includes things that increase the height of the production pyramid, such as expanding the amount of livestock feeding and increasing the amount of processing of Mark Twain products in local plants.

The total number of commercial farms in the Mark Twain Area decreased about 9 percent (7,697 to 7,053) from 1959 to 1964. During the same period, the number of farms with more than \$10,000 farm product sales increased from 2,502 to 2,647, or 5.8 percent. The number of farms with less than \$10,000 farm product sales decreased from 5,195 to 4,406, or about 15 percent.

### An Analysis of the Ag Industry

Major enterprises and concerns of the Mark Twain Area's agricultural industry are analyzed in the following pages. Nine subcommittees have outlined some goals and made recommendations for achieving them.



# Where to in Farming?



**F**amily farms, corporations, contract farming, partnerships, supply control, collective bargaining, cooperative buying and selling—how will these fit in the future of farming? They are all in the picture now in varying degrees. Which will be emphasized and what will be the mix 10 and 25 years from now?

While the Mark Twain Agricultural Development Committee had no illusions it could answer these questions, it felt people connected with agriculture should be studying them. We have the most at stake. We should try to be the ones to determine the direction of agriculture's future.

To have any influence on farming's future, we need to analyze the present structure in the Mark Twain Area, decide what we would like the future structure to be, and combine actions with farmers in other regions to achieve our goals. This is a problem farmers cannot influence individually. Together we can do much.

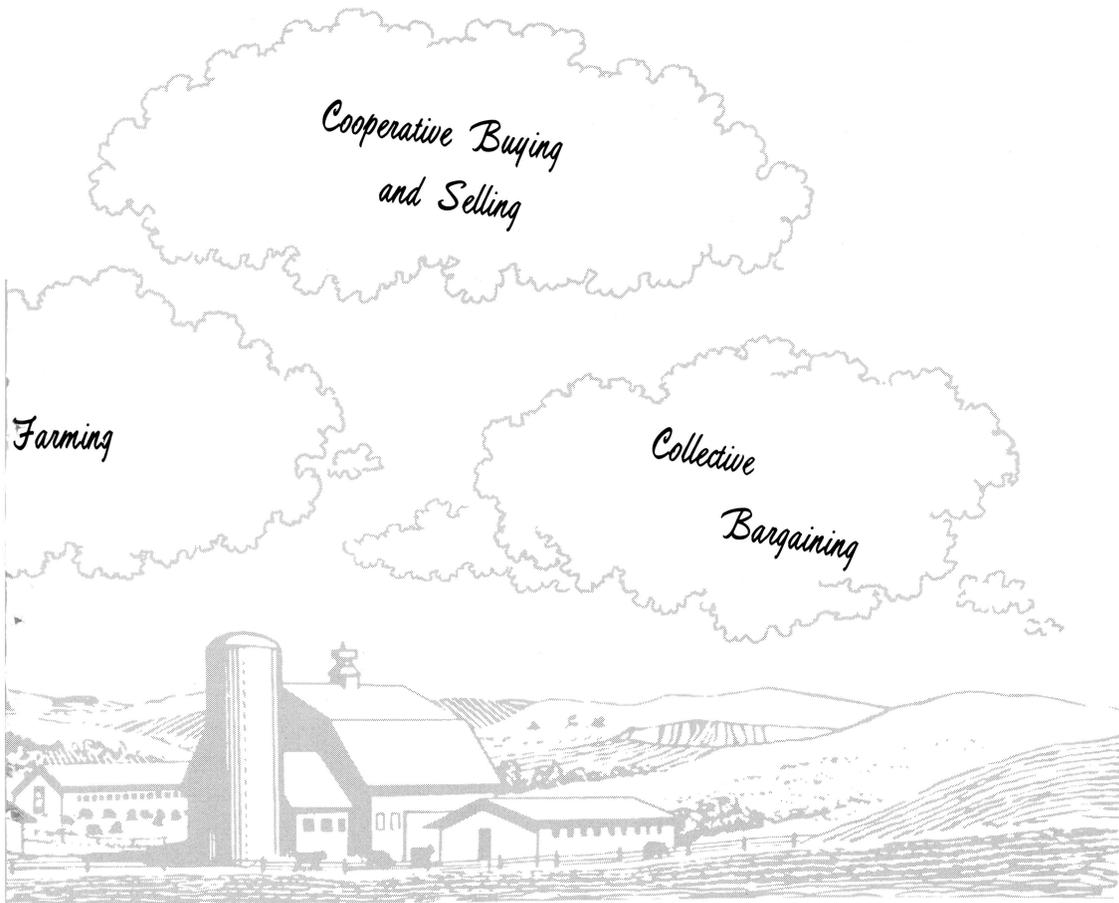
Limited by time and information the committee reached only the following conclusions: (1) There are

many, many unsettled issues; (2) control of agriculture is still up for grabs; (3) the issues are public and those affected should have a say in what happens; (4) there is considerable lack of awareness of alternatives or knowledge of what the results of any type of action might be; and (5) the problems not under control of the individual will require group study and action.

The small amount of land currently under control of nonfamily corporations in the Mark Twain Area does not seem a threat. However, if this trend is to be controlled, it should be done before the number of corporate farms becomes large.

The difficulty in controlling the corporate farm owned by outside investors is that most controls would also affect families and small groups of farmers who would like to use this type of organization.

Pros and cons of contract farming came in for much discussion but no conclusions were reached. This method of marketing has almost taken over in the poultry field in the past decade and is appearing



in hog and cattle feeding. Collective bargaining was discussed as a possible future means of influencing price.

Based on its brief discussions, the committee offered the following suggestions.

### **Recommendations**

1. Much more study and discussion by farm groups should be devoted to these problems, locally and nationally.

2. Farmers should oppose large industrial type corporate farming and should use their political influence to get legislation to prevent land acquisition for this purpose.

3. The University of Missouri should increase its efforts to inform farmers of all facts available on policy issues affecting farmers.

4. Farmers should, through their various organizations and individually, oppose all efforts to transfer control of farm prices and farm policies from the farmers to other groups.

5. Farmers should, both individually and through organizations, attempt to educate the urban population as to the importance and desirability of having a prosperous rural economy.

6. Farmers should, whenever possible, attempt to influence or control the marketing of their products as well as the production of them. Caution should be exercised, however, to avoid the control of the markets by any one group or organization which would exclude others from having a market for their products.

7. Although every farmer should carefully analyze his own operation to secure the maximum possible production at least possible cost, the committee feels that at present and in the foreseeable future, **outside factors will probably affect the income and the future of the farmers of this area more than will their own individual actions.** These factors will include government policies, farm organization activities, public opinion, public tastes and preferences, and world trade.

# Financial Management



*Ed Porter, banker, and Marion Strother, Bowling Green, farmer, plan credit needs.*

Average size of farms in the Mark Twain Area increased from 234 acres in 1959 to 261 acres in 1964, date of the last Agricultural Census. This was an 11 percent increase. During this same period, value of land and buildings increased 39 percent, from an average of \$28,047 to \$39,112.

In 1964, expenditures for feed, purchased livestock, seed, fertilizer, fuel, custom hire and hired

labor averaged \$3,836 per farm or 46.5 percent of the total value of farm products sold (\$8,445).

Currently, more than 70 percent of the inputs for agricultural production are estimated to be purchased inputs.

The increase in value of land and buildings and the high percentage of purchased inputs have placed many farm operators in a financial squeeze. This

Table 5  
Five Years of Change in the Financial Structure of  
U. S. Agriculture (1963-68)  
(In Billions of Dollars)

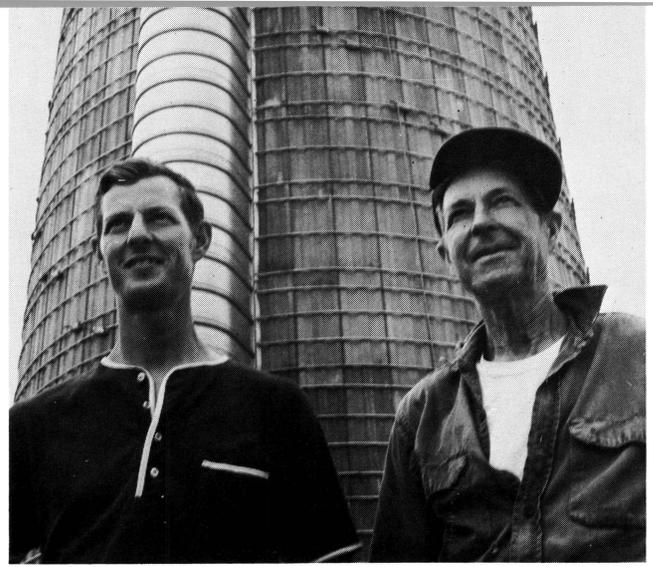
Year	Total Farm Assets	Farm Debt	Equities	Percent Equity
1963	\$221.0	\$31.7	\$189.3	85.7%
1968	<u>283.5</u>	<u>50.4</u>	<u>233.1</u>	82.3%
Percent Change	+28.3%	+59.0%	+23.1%	

Table 6  
Value of Land and Buildings Per Farm  
(Source: Census of Agriculture - 1959 and 1964)

County	Value*		Avg. No. Acres	
	1964	1959	1964	1959
Lewis	\$35,961	\$31,429	279	249
Macon	29,105	20,964	252	231
Marion	44,089	31,738	246	216
Monroe	42,190	26,668	270	237
Pike	44,271	31,064	266	258
Ralls	44,253	28,020	270	242
Randolph	31,055	23,025	212	196
Shelby	42,017	31,471	292	241
AVERAGE			261	234



*Herdsmen Dallas Reeves, Porter, Strother, and Extension Agent Don Broerman coordinate plans.*



*Steve and Biggs Glascock, Ralls County, have pooled resources and happily look to the future in their father and son partnership.*

situation also makes it difficult for young farmers to obtain capital to begin farming.

Farm debt in the United States increased at a rate more than two and a half times as fast as equities or net worth between 1963 and 1968.

The financial structure of Mark Twain agriculture is believed to be generally sound. Equity ratios remain high on an average, but equity capital is a problem for many young farmers. Financing a start in farming is a challenge to young farmers and credit institutions.

Demand also is increasing for more specialized farm enterprise financing. This presents a challenge to generalized lenders. Credit evaluation of a specialized swine or feeder cattle business will require a lender who is highly informed on these enterprises. In the absence of such specialized credit sources,

careful use of business evaluation and planning instruments may be required. Without such specialized financing, growth of the enterprise in the area could be stunted.

A possibility is that specialized financing will be provided by service oriented industry, such as occurred with poultry.

If lenders are to extend credit on the real repayment capacity of the business and the operator, farm operators will need to keep and use financial and production records, budgets and forward planning devices, financial statements, cash flow instruments and other financial planning tools.

Increased dependence on credit has made such analytical tools necessary as communicative devices between borrower and lender.

Help is available with this record keeping chore. The University of Missouri Extension Service has a good mail-in record service designed to assist the farmer in analyzing his business. An increasing number of financial institutions, accounting firms, and others are offering similar services.

Having too many sources of credit at once is another risky position for farmers. It is easy to get committed to more payments than the business can meet. The committee recommends no more than two lenders be used. One would be for short-term loans and the other for the long-term type.

Despite specific problems, the Financial Management Committee felt that adequate credit was generally available for most farmers with sound, well-managed operations.

Table 7

Value of Farm Products Sold and Farm Expenditures by Counties  
(Source: 1964 Census of Agriculture)

County	Value of Farm Products Sold	Expenditures*
Lewis	\$10,897,873	\$ 4,914,487
Macon	11,019,698	5,255,615
Marion	9,690,036	3,768,277
Monroe	11,989,067	3,957,533
Pike	14,529,088	7,590,439
Ralls	7,911,059	3,616,922
Randolph	6,675,825	3,258,047
Shelby	11,143,715	5,588,425
<b>TOTAL</b>	<b>\$83,846,361</b>	<b>\$37,949,745</b>

\*Livestock purchased, feed, seed, fertilizer, petroleum products, machine hire and labor.

*E. H. Brauer, Production Credit Assn., and Donald Beckley, Shelby County, work on plans to maximize returns from an investment.*



Local credit sources have provided loans to young farmers who show progress. They have expressed confidence that these young men will be the ones buying the land in the future. These young men do not have excess collateral but their repayment records have been good.

### **Problems**

Too many farmers do not have good enough records to show an accurate picture to a lender of their potential for a loan. Along with this, many lending institutions do not see the need to change their credit policy. For a productive agriculture, loans should be based on soundness of the operation, past records, and ability and potential of the individual, rather than amount of equity. If this attitude was adopted by lending institutions, farmers would have to devote more time to record keeping. Both they and the lenders would learn where they were. Under such conditions, more lenders would likely help provide this analysis.

Some farmers obtain credit from too many sources. It is easy to get over-extended without realizing it in this way.

### **Recommendations**

The committee suggests:

1. That farmers obtain all operating and short-term credit from one, or, at most, two sources.

2. That all farmers maintain records. Records that will help in obtaining loans include:

a. An operating statement showing income, expenses and cash flow for the present and previous years.

b. Records of crop yields, percentage calf crop, pigs weaned and sold per litter, rate of gain, milk production, and other performance records.

c. Measures that show changes in financial position, progress, and profit potential of the business for the coming year.

The ideal position for the operator to be in when asking for a loan would be to have a complete record of all income and expenses and an analysis of each farm enterprise. This would reveal which one is most profitable and which ones are best suited to the farm and the operator's management ability. To approach this, the committee recommends use of the Extension mail-in record service or a similar one offered by a lending institution or accounting firm.

3. Borrowers should discuss their credit needs with regular lenders before making installment plan purchases.

4. Grain and livestock futures, feed grain programs, and selling under contract are methods that can be used to reduce risk. Possibly use of one of these selling methods will reduce the amount of equity a lender will require.



*Low cost water transportation on the Mississippi gives an advantage to Mark Twain grain farmers. (Terminal at Louisiana.)*

*Area Has Attraction for*

# Ag-Related Industry

## **Situation and Trends**

The Mark Twain Area has a lot to attract industry. With the Mississippi running the length of it, small tributaries crossing it, Thomas Hill Lake, and the huge lake at Cannon Dam coming in the near future, our water supplies will be hard to surpass. Power supplies should be more than adequate, with present and planned developments.

Our water transportation offers cost advantages in shipping in and shipping out bulky materials. The area is close to population centers, without being unduly influenced by some of their undesirable traits. Major highways service the area and improvements are expected.

The area seems well adapted to industries that would process and distribute farm products and supplies. The average value of farm products sold per farm in the area is \$1,797 more than the average for the state, indicating it is a better than average farming area. The area should be able to expand its farm

output at a faster rate than the nation as a whole due to its land, climate and location.

In 1968, the Mark Twain Area had 331,400 acres of corn and 412,000 acres of soybeans. In 1964, our farmers marketed over 803,000 hogs and 193,000 beef cattle.

Farm related industries now in the area include fertilizer, feed and chemical manufacturing and distribution, livestock auctions, hog buying stations, and grain buying stations.

## **Problems**

Some ag related industries in the area have quit. This may indicate that there was insufficient volume to support them. Diversity of production in the area may reduce risk to farmers but this same diversity may result in insufficient volume. It also limits the quantity of a product available to justify a processor locating in the area.

A similar problem is brought about when area specialization changes; for example, dairying to cash grain farming. Processors want assurance that the production in the area will be stable before moving in a plant.

Waste disposal from industries will become more critical in the future as the public is becoming more and more conscious of pollution.

Room for expansion of plants has not always been included in plans in the past.

As pointed out in the introduction, population of the area has been decreasing, and the age of the remaining population gradually increasing. New opportunities for employment are needed to retain youth.

More than 23 percent of the farms had off-farm income equal to value of farm products sold. Twenty-nine percent had off-farm income in excess of \$3,000. This may indicate a number of farmers are under-employed and would welcome more off-farm opportunities.

### Recommendations

The committee felt that agriculture's attention should be concentrated on industries processing the crops and of livestock produced in the area. Included

would be products and services most needed by farmers of the area. We do not exclude other types of industries but feel that other business groups would be better qualified to discuss them.

The committee recommends:

1. That groups and individuals assist the ag-related industries in feasibility studies. This may be equally as effective as sending expensive safaris off to recruit plant builders.

2. That we encourage local businesses and industries to become larger.

3. That the feasibility of the following industries be studied: (a) cattle slaughtering plant, (b) hog slaughtering plant, and (c) soybean processing plant.

A recent study by the University of Missouri indicated that this area was the most promising one in the state for a cattle slaughtering plant. Some further study is needed, however. Slaughter capacity in the area now is 800,000 head which is in excess of the supply in the area. Presumably, cattle could be attracted here from outside by a modern, aggressive plant and the area's own production is increasing.

4. That county zoning be considered by the entire eight-county area to avoid haphazard development and pollution difficulties.

*Lots of Room for*

# Recreation Development

*E. E. Harlans  
have boat dock and  
camping enterprise  
on their farm along  
Thomas Hill Reservoir.*



### Situation

Most tourists in Missouri are sight-seeing tourists, a recent study shows. Many of them combine the sight-seeing with outdoor sports and recreation, however. Boating, camping, swimming, fishing, and hunting are a part of the "scenery" many people have in mind as they pick their traveling places.

The Mark Twain Area is well equipped to appeal to all of these interests. There are numerous historical sites (see accompanying map), including the lure of the boyhood haunts of our famous author, Samuel Clemens, and his characters, Tom,

Huck, and Becky. Many miles of stream fishing are available and the old "Father of Waters" along our eastern border offers almost year around fishing.

Several state parks, conservation areas, and wild, uncultivated sections are scattered throughout our region. The Mark Twain Area has forests, rugged land and hills, caves, bluff land, rich bottom land, and many lakes, ponds and lowland areas used by migrating geese and ducks. Deer and turkeys grow well in the region. Thousands of farm ponds offer some of the best fishing in Missouri.

A new, large lake, the Mark Twain Lake, scheduled for the area with the completion of the Cannon Dam, will add greatly to the water sport and scenery lure. Federal and state agencies are planning to create facilities in public use areas adjoining the lake to care for about four million visitors annually.

A commercial recreation enterprise is being developed in the central part of the region by a private concern.

A movement to land speculation has begun in the area. Interested local people should begin to prepare now for tourist-catering businesses. The coming influx of tourists can be expected to cause persons with capital and skills in handling the public to move into the area.

At present, many facilities are lacking in the Mark Twain Area for recreation and for the comfort and entertainment of tourists. Restaurants and grocery stores in small towns will need to adjust their hours to cater to late arriving tourists. More swimming pools will be needed. None of the motels in the Hannibal area have kitchens or cooking facilities. Demand is heard for campgrounds and housekeeping cottages near Hannibal, Mark Twain State Park, and lakes.

Some counties do not have a historical society and all counties need to make their historical sites better known.

State and local agencies and the U. S. Engineers have published some good reports and surveys on the area. Much planning has been done by local groups, Chambers of Commerce, agricultural agencies, regional agencies, state departments and the U. S. Department of Agriculture, and by committees connecting several groups and agencies.

These agencies and groups have assembled a lot of worthy information on resources and have furnished valuable plans for industry and recreation. However, little of this knowledge is put in forms receivable by most people living in the region.

People know that new industries, businesses, and public services will improve economic conditions in their home areas, but they do not have the knowledge that will enable them to start new businesses in the tourism and recreation industry.

The people of the area are used to rich environment for hunting and fishing and are largely unaware of both the dangers to their way of life and the opportunities that will come with the completion of the Cannon Dam.

## **Opportunities**

The opportunities for tourist trade in the area are tremendous. As mentioned, federal and state governments are planning on an influx of four million visitors annually on completion of the Cannon Dam. The governmental and public service agencies will provide camping and picnicking areas, beaches, boat launching ramps, shelters, children's playgrounds, bathhouses, and sewer and water systems. But there will be many needs private enterprise can satisfy.

Opportunities include restaurants, motels, housekeeping cottages, camp sites, marinas, fishing docks, entertainment attractions, hunting preserves, bait supply stores, guide services, sporting good stores, 24-hour car repair service, farm vacation places, and many others which are found in recreational areas. Additional income in some cases can come from local handicraft items. Friends of Florida, Inc., have shown that such things are in continual demand and can be successfully sold on consignment. Some people might make a business of guided tours.

Farmers can obtain some extra income directly from hunting and fishing by leasing or charging fees, but most of the income from tourism and recreation is probably made indirectly. An afternoon of rabbit hunting may provide additional income to the service station for gas; the sporting goods store for a box of shells, gun and hunting tags; and the grocery store for food items for the hunter and his dog. Area farmers might find ways to capitalize on this business, as well as their direct income from hunting or fishing.

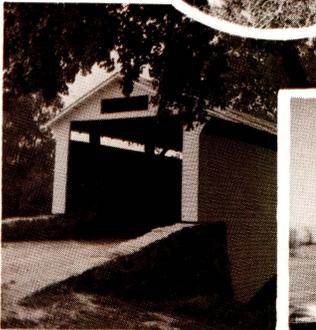
## **Recommendations**

Since increased use of the Mark Twain Area for recreation is coming, we should plan to take advantage of it in ways that will benefit the economy of the region, particularly the people who have long lived here.

The experience of most people in the area lies in farming and farm-related businesses and services. They lack experience in handling and entertaining the public. Those who want to go into a recreation or tourist-related business on their present farm or in their town will need much information and guidance in making decisions on the matter.

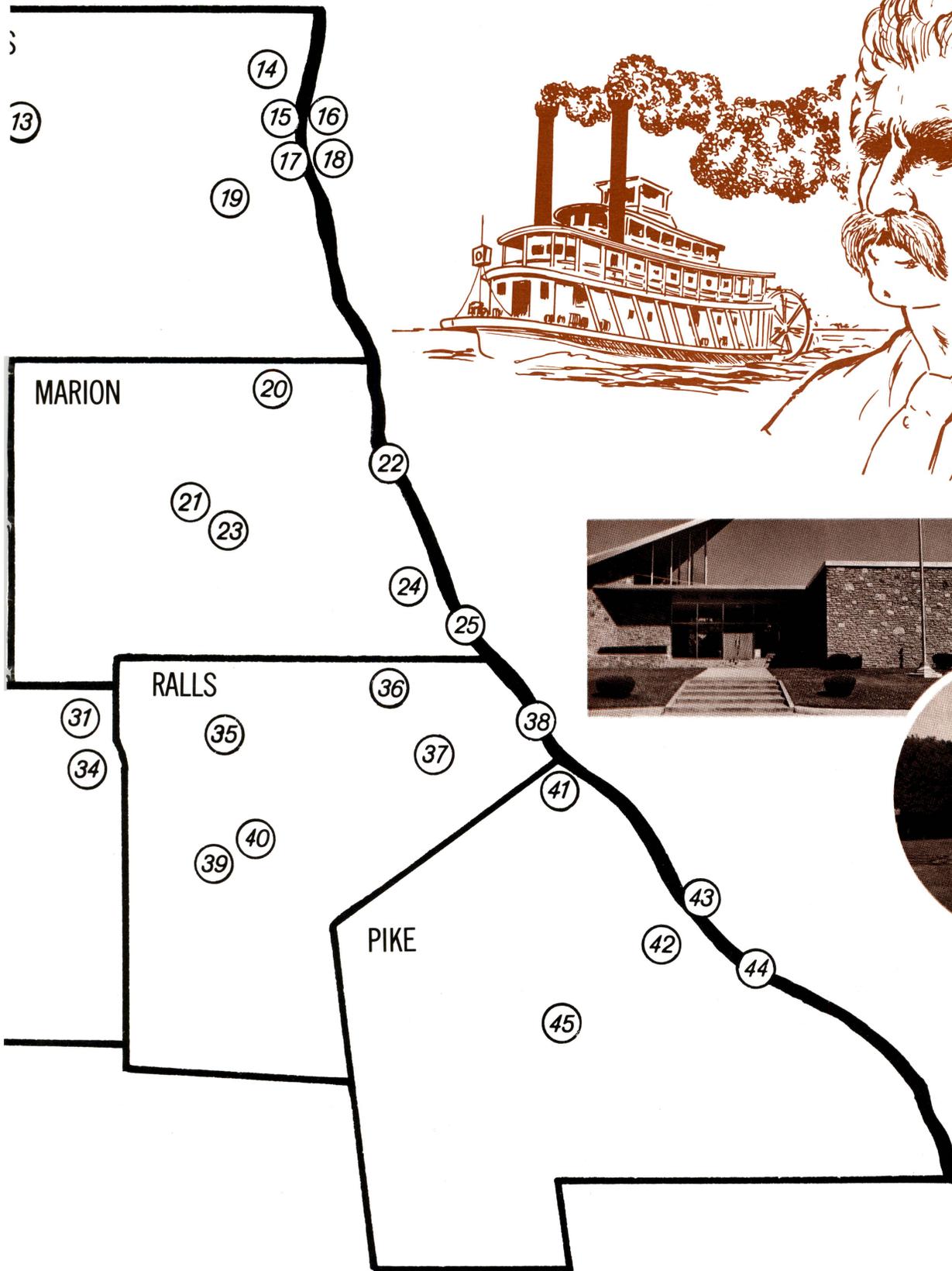
People needing information on recreational potentials can get it from the State Tourism Commission, Conservation Commission, Soil Conservation Services, ASCS, Farmers Home Administration, U. S. Corps of Engineers, and County Extension Centers,

# MARK TWAIN *Area*



## DIRECTORY

1. West Memorial Museum, extensive collection of Missouriana and historical objects.
2. Boyhood home Dr. A. T. Still, founder of osteopathy.
3. Site first Missouri coal mine, 1858, Bevier.
4. Bevier monument to early railroads, Bevier Park.
5. Atlanta Wildlife Area—hunting
6. Thomas Hill Lake—fishing, boating.
7. Bethel, historic German community.
8. Kiehl House "Elim," 1½ miles E. Bethel.
9. Court House, Shelbyville, 1858.
10. Clarence Lake—fishing, picnicing.
11. Shelbina Lake—fishing, picnicing.
12. Shelbyville Lake—fishing, picnicing.
13. Deer Ridge Lake.
14. Fenway Public Access Area.
15. Lock #20, park.
16. Canton Riverfront Park
17. Martin Park, historical marker.
18. Mississippi River Ferry.
19. Wakonda State Park.
20. Indian Museum, Taylor.
21. Grave of W. H. Russell, founder of Pony Express.
22. Bay de Charles Recreation Area.
23. Civil War Monument, Palmyra Massacre.
24. Mark Twain Home, Museum, Hannibal.
25. Mark Twain Cave, Hannibal.
26. Peabody Strip Mine Area—Lakes.
27. "Little Dixie," Miller-Rutherford home, Huntsville.



- 28. Rothwell Park, Moberly—Fishing, picnicing.
- 29. Amish settlement.
- 30. Omar Bradley Home, Clark.
- 31. Mark Twain Birthplace and State Park.
- 32. Covered bridge - State Park.
- 33. Glenn House, Civil War Skirmish and hospital, Paris.
- 34. Log House—early inn and stage coach stop.
- 35. Becky Thatcher grave.
- 36. Garth homestead, fine old home visited by Mark Twain.

- 37. Ralls Co. Court House, 1858.
- 38. Lock and dam #22; early settlement.
- 39. Cannon Dam site.
- 40. Cincinnati landing; Indian petroglyphs.
- 41. DuPont Reservation—fishing, hiking, camping.
- 42. Stark pioneer cabin, Louisiana.
- 43. Louisiana Bluff Park, river view, docks.
- 44. Silo Park, wildlife sanctuary, camping, boating, picnicing.
- 45. Historical homes, Bowling Green.

to name a few. Information on the exact location of the Cannon Dam basin and its influences on surrounding land above and below the dam is available from the U. S. Corps of Engineers.

All of this information needs to be collected by some agency or group and made available to interested people at some point in every county. Printed information should be provided and informational meetings held on opportunities in tourist and recreation enterprises. Those who are thinking of recreation as a business should explore all the possibilities before making any final decisions.

Residents of the area who decide to undertake these new enterprises will need training. Short courses should be arranged for them on developing and operating recreation-related businesses. The Extension Division of the University of Missouri and other agencies can assist with this.

Opportunities will always be present for the right prospector at the right time and at the right place with the right product, if he has the necessary resources and know-how. We want local people to be able to start out with all the advantages possible in competition with the outside investors.

The different local, state, and federal agencies now planning for the region or part of it should coordinate their programs of public information. This information should be gathered, summarized, and published in readable form. Perhaps personnel of local newspapers would help interpret the material and put it in clear language.

There should be continued study on recreation and tourism trends by a committee of the Regional Planning Commission. Representatives of county historical societies should be included on such a committee. The effects of lakes and dams on local economies in other regions should be a part of the study.

Planning and zoning laws are not in effect in some parts of the region and there is the need to protect some areas from exploitation and hodgepodge development. Some historical sites stand in danger of being destroyed. Marion, Monroe and Ralls Counties are now developing a three-county planning and zoning program in order to meet impending changes, and to give local people some control over the development of their counties. The other counties in the region should give consideration to using these tools for orderly development.

Historical sites are among the main points of interest for sight-seers. Agricultural groups and others can cooperate with local Historical Societies

to see that historical sites are well marked for tourists. If sites are not marked, a marking plan should be developed. These interested groups should see that all such sites are attractive and well kept. Counties that do not have Historical Societies might find it advantageous to organize one. Maps locating the historical sites should be made available.

The idea of a limited access highway through Northeast Missouri linking Chicago and Kansas City has been set forth. This project should be pushed.

Information on the location of different churches and the times of services should be made available to tourists, who are most often in the region on weekends.

Farmers and other landowners interested in increasing their incomes through recreation enterprises should explore the possibilities of fishing—fee fishing, leasing of lakes and ponds to individuals or groups, and fees for parking to fish.

The successful rearing of channel catfish or minnows as a commercial enterprise requires knowledge and skill. The rearing of fish has many pitfalls—aquatic weed control, disease, oxygen loss, summer and winter kill, harvest of the crop, transportation to sale points, new equipment, sales promotion and advertising of the product, to mention a few. Fish raising is a possibility, but should not be undertaken without thorough study.

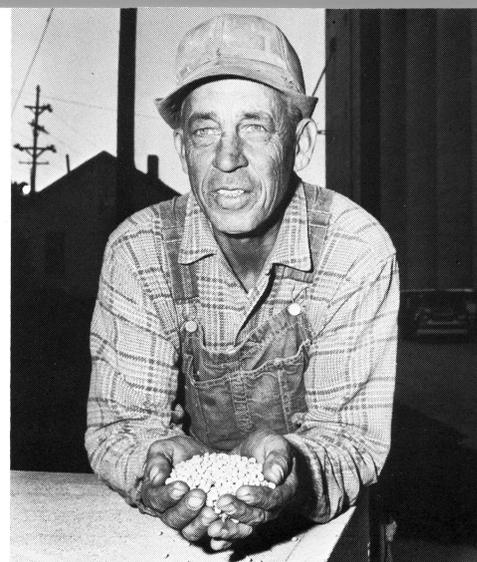
Hunting, like fishing, offers income through leasing hunting rights to individuals or groups with development of controlled shooting areas. Hunting prospects must be good. To increase wildlife populations will require detailed and intensive programs of wildlife management, including new foods, new cover, new nesting sites, and new travel lands.

Controlled shooting areas are scarce in the Mark Twain Area. With proper management, location and planning, development of new shooting areas offers possibilities. They cannot be considered as an extra cash producer for the average farmer. A controlled shooting area is a full-time enterprise.

People owning property adjacent to the forthcoming Mark Twain Lake and the highways leading to it will have opportunities to capitalize on the tourism and recreation potential of this development. The government will own all the shoreline of Mark Twain Lake but opportunities will be available to operate various facilities on project lands as concessionaires. Persons interested in these opportunities should contact the U. S. Corps of Engineers for particulars.



*C. E. Shortridge and Son, Monroe County, are well known for their high quality certified seed.*



*Robert Oberman, Pike County, has a handful of "yellow gold," soybean style. Production of this crop increased 480 percent from 1948 to 1968 in Mark Twain.*

## *Area Well Suited for* **Crop Production**

### **Situation**

The 2,925,581 acres comprising the Mark Twain Area make up 6.6 percent of the total land area in Missouri. More than half of this total, 1,479,091 acres, is crop land. On this area which is 8.2 percent of the state's crop land, Mark Twain farmers produce around 11.7 percent of Missouri's corn, 12.4 percent of the soybeans, and 7.3 percent of the wheat.

According to the 1964 Census, 32.4 percent of the value of farm products sold in Mark Twain came from the sale of crops. Only 7 million out of the 15 million bushels of corn produced were sold for cash; the remainder was marketed through livestock. Much of the \$63,978,000 from the sale of livestock was value added by this feeding. Income to farmers from the sale of all crops in 1964 was \$34,597,000.

Topography of the land in Mark Twain makes it desirable for crop production. However, erosion is a problem when the land is cropped, especially if planted to row crops.

Counties along the Mississippi have erosion difficulty because of the steep slopes and erosive types of soils. Those farther west of the river have claypan. The topsoils don't erode as easily but water does not soak into them readily. More runoff accumulates. Even fairly gentle slopes have problems because they tend to be long and large volumes of water accumulate on them, resulting in erosion of lower slopes.

Because of these conditions, most land that is cropped in the Mark Twain Area needs a water management system.

The large area of prairie soils (Putnam and Mexico Soil Series) adapts well to surface irrigation. Reservoirs or streams are the primary water source.

The alluvial areas also adapt well to irrigation. Either surface or sprinkler systems can be used, depending on soil texture, field topography, crops grown, land shaping needed, cost, and the manager. The Mississippi River bottom has a plentiful ground water supply near the surface for irrigation. The smaller river bottoms have less dependable ground water supply.

A total of 825 acres was irrigated in the Mark Twain Area in 1968, compared with 625 in 1965. Of this 825 acres, 525 acres were irrigated with sprinkler irrigation, and the remainder with surface irrigation. Water sources included wells for 400 acres, streams for 375 acres, and reservoirs (ponds) for the other 50 acres.

Fruits and vegetables, corn, and rice were the major irrigated crops; some pasture and alfalfa hay is being irrigated. County Extension personnel indicated in a recent survey they expected irrigated acreage to be about 19,400 acres by 1980.

Last year, 585 acres were land graded. This was almost half of the total acreage graded to date. This practice is becoming increasingly popular to solve

drainage problems in the alluvial areas, as well as to prepare the fields for irrigation.

Corn and soybeans are the area's biggest cash crops. The application of new technology and know-how has increased the yield of corn per acre from 49.7 bushels in 1948 to 86.8 (the all-time record) in 1968. The area produced 11.7 percent of the corn grown in Missouri in 1968. Approximately 50 per-

cent of the corn crop is fed on the farm where it is grown, thus being marketed as livestock products.

Soybean processing plants are located in Mexico and Quincy, providing year around demand for this grain. The area's location, adjacent to the Mississippi River, gives it advantages in low transportation rates. If soybean growers in the area continue to accept and apply new technology, they should be able

Table 8  
CORN ACREAGE  
(Source: Missouri Crop Reporting Service)

County	1958		1968	
	Acres	Bu./Acre	Acres	Bu./Acre
Lewis	39,600	64.0	31,300	89.5
Macon	37,200	59.2	48,000	81.4
Marion	34,700	61.8	42,000	89.0
Monroe	41,600	54.4	40,900	91.4
Pike	54,500	56.9	46,400	88.6
Ralls	34,700	58.9	54,600	83.2
Randolph	30,100	57.6	28,200	81.5
Shelby	41,600	62.0	40,000	91.5
TOTAL	314,000	59.2	331,400	86.8
STATE	3,262,000	54.0	2,958,000	83.0

Table 9  
BUSHEL OF CORN  
(Source: Missouri Crop Reporting Service)

County	1958	1964	1968
Lewis	2,535,300	2,729,000	2,800,800
Macon	2,201,000	1,638,400	3,909,500
Marion	2,144,000	2,365,900	3,737,500
Monroe	2,261,700	2,092,200	3,740,200
Pike	3,101,600	2,618,900	4,110,800
Ralls	2,045,300	2,522,000	4,542,000
Randolph	1,734,400	1,181,500	2,299,600
Shelby	2,578,000	2,668,000	3,661,800
TOTAL	18,601,300	17,815,900	28,802,200
STATE	176,148,000	156,723,000	245,514,000

1968 corn crop = 56.6% increase over 1964.

1968 corn crop = 11.7% total Missouri crop.

Table 10  
SOYBEAN ACREAGE  
(Source: Missouri Crop Reporting Service)

County	1958		1968	
	Acres	Bu./Acre	Acres	Bu./Acre
Lewis	36,000	25.6	49,000	29.9
Macon	46,000	26.4	69,000	31.0
Marion	37,000	24.6	42,000	29.5
Monroe	51,000	23.6	65,000	30.4
Pike	26,500	26.5	34,000	29.9
Ralls	37,000	23.6	60,000	30.6
Randolph	24,500	23.2	32,000	30.8
Shelby	43,000	30.4	61,000	30.5
TOTAL	301,000		412,000	
STATE	2,132,000	26.0	3,594,000	28.0

to compete advantageously with farmers elsewhere.

Soybean production in the area increased from a total of 2,151,000 bushels in 1948 to 12,509,400 bushels in 1968, an increase of 480 percent (Table 11). Yield per acre increased from 20.6 bushels to 30.4 during the same period. Of the total soybeans grown in Missouri in 1968, the Mark Twain Area produced 12.4 percent. Most of the soybeans grown are marketed as a cash crop.

Wheat production in the state has shown an increase since 1948, but the Mark Twain Region has not kept pace with wheat growers in other areas (Table 12). Since 1958, wheat production has declined from 9.3 percent of the total crop to 7.3 percent in 1963. The trend toward double cropping (wheat followed by soybeans) may have potential for the area.

The spectacular increases in corn yields and to a lesser degree soybeans can be attributed to great increases in the use of limestone and commercial fertilizer (Table 13). Soil testing practices and fertilizer recommendations have borne fruit well be-

yond expectations and the end is not yet in sight. The use of lime increased 32 percent during the last five-year period while commercial fertilizer utilization increased 18 percent. Further increases in the use of lime and fertilizers are anticipated.

State ranks of the Mark Twain Area counties in production of corn, soybeans, and wheat are included in the area maps. The graphs show trends in acreages and bushels produced.

A study<sup>1</sup> of the soil tests that were made in Extension soil test laboratories in 1965 showed that 50 percent of the soils sampled in the Mark Twain Region had a pH below 5.5. Fifty-nine percent were low in phosphate (below 90 lbs. per acre). Fifty-five percent were low in potassium (K) and 28 percent had less than 2.0 percent organic matter. The figures were similar in other areas of the state.

<sup>1</sup>Fertilizer Level of Missouri Soils, Missouri Extension Circular 884, by C. M. Christy and T. R. Fisher; 1966.

Table 11  
BUSHELS OF SOYBEANS  
(Source: Missouri Crop Reporting Service)

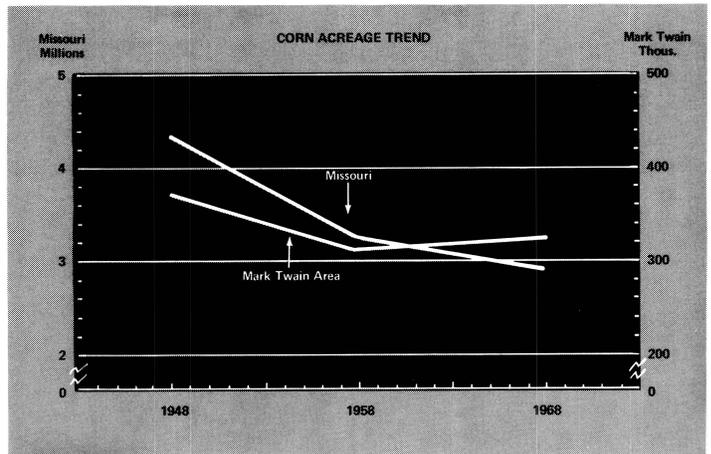
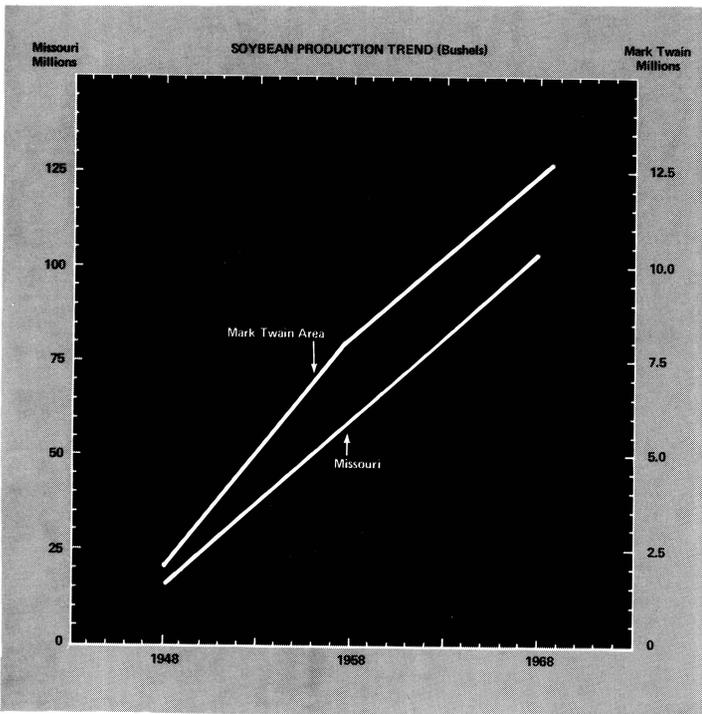
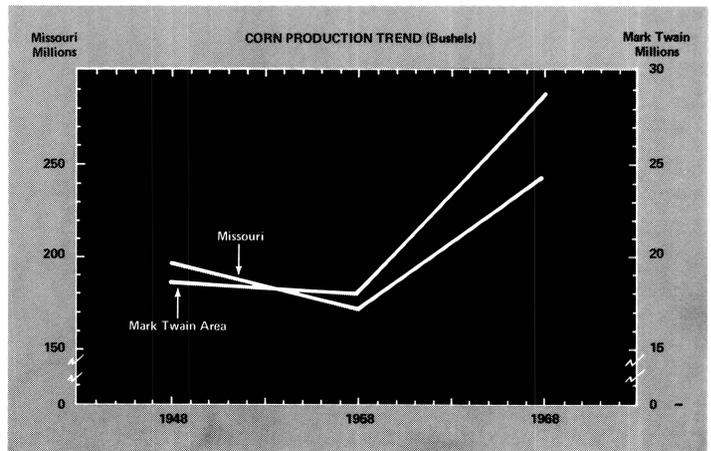
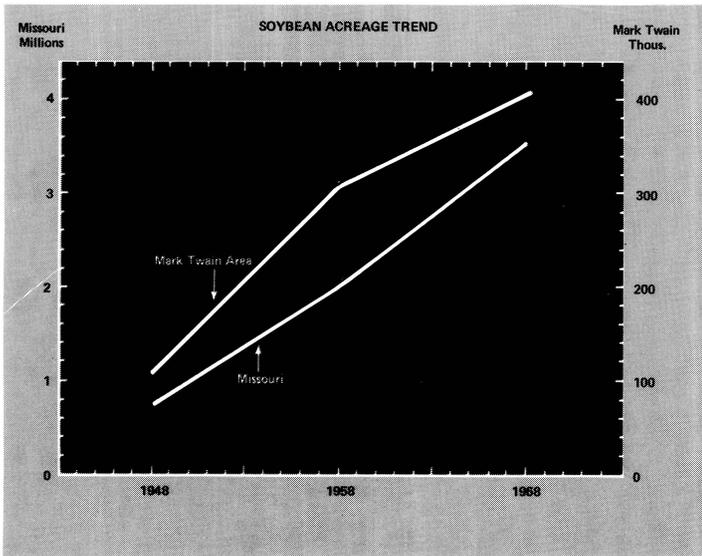
County	1958	1964	1968
Lewis	923,000	756,400	1,463,700
Macon	1,213,000	1,290,400	2,139,700
Marion	911,600	849,700	1,237,800
Monroe	1,205,500	949,900	1,973,900
Pike	783,000	634,900	1,015,600
Ralls	874,600	1,096,100	1,834,000
Randolph	568,300	426,200	986,200
Shelby	1,309,300	1,215,700	1,858,500
TOTAL	7,788,300	7,219,300	12,509,400
STATE	55,432,000	58,695,000	100,632,000

1968 soybean crop = 73.2% increase over 1964.

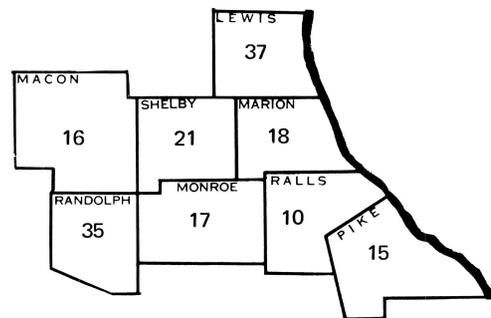
1968 soybean crop = 12.4% total Missouri crop.

Table 12  
Wheat Production (Bu.)

County	1958	1964	1968
Lewis	426,900	666,300	326,000
Macon	326,000	308,500	237,100
Marion	484,300	562,100	526,000
Monroe	631,600	702,100	480,400
Pike	466,500	678,700	581,000
Ralls	406,900	464,600	323,900
Randolph	318,300	470,300	254,000
Shelby	483,400	574,900	383,700
Mark Twain	3,543,900	4,427,500	3,112,100
Missouri	37,950,000	46,442,000	53,824,000

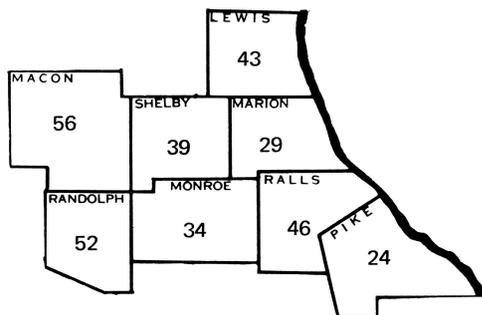


### Rank in Corn Production Census of Agriculture - 1968



Four Counties Rank in the Top 25% of Missouri's 114 Counties in Corn Production.

### Rank in Wheat Production Census of Agriculture - 1968



Four Counties Rank in the Top 25% of Missouri's 114 Counties in Wheat Production.

### Problems

1. Operators have made significant progress in solving the problems of production but have not concerned themselves enough about the problems of marketing.
2. Producers are inclined to get bigger but neglect efforts to produce a higher quality product.
3. Per capita consumption of wheat is going down. Quality of hard wheat produced in the area

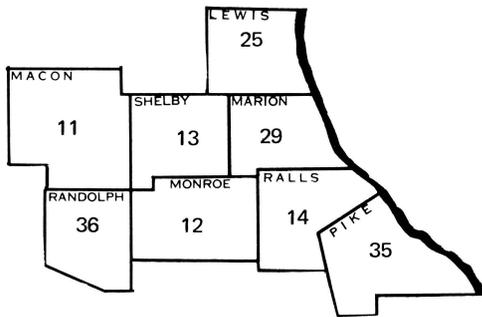
Table 13

Tons of Limestone and Fertilizer Used

County	1964	1968	1980 Estimate*
<u>Tons Limestone</u>			
Lewis	29,600	50,000	82,000
Macon	33,000	60,000	134,000
Marion	35,000	52,500	69,000
Monroe	62,100	51,000	104,000
Pike	42,000	35,000	92,000
Ralls	35,800	75,000	80,000
Randolph	43,600	43,500	75,000
Shelby	80,000	109,000	110,000
AREA TOTAL	361,100	476,000	746,000
STATE TOTAL	2,897,464 (1963)	4,070,216 (40% increase)	
Mark Twain Area = 32% increase during 5-year period.			
<u>Tons Fertilizer</u>			
Lewis	17,252	20,607	26,550
Macon	13,686	18,174	49,750
Marion	12,522	17,052	29,155
Monroe	18,596	15,200	39,730
Pike	16,464	23,749	35,870
Ralls	6,602	7,819	34,350
Randolph	11,217	11,408	25,255
Shelby	18,120	21,206	37,945
AREA TOTAL	114,459	135,215	278,605
STATE TOTAL	1,057,377 (1963)	1,413,598 (34% increase)	
Mark Twain Area = 18% increase during 5-year period.			

\* Estimates based on trends in past years given in County Agricultural Agents' Annual Reports.

Rank in Soybean Production  
Census of Agriculture - 1968



Five Counties Rank in the Top 25% of Missouri's 114 Counties in Soybean Production.

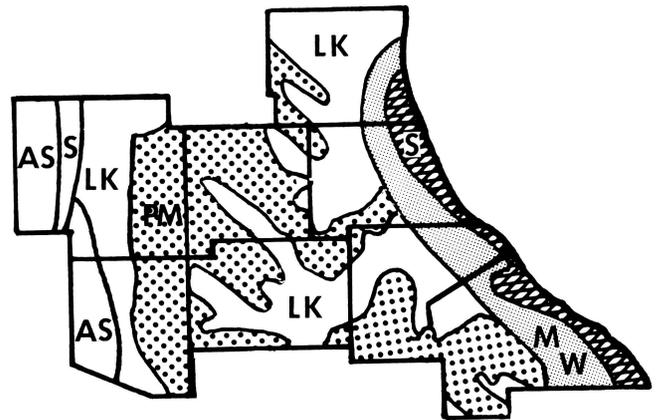
is low. Soft wheat, which Mark Twain could produce in higher quality, lacks a market.

4. Soybean production has been expanded rapidly in relation to domestic and export markets. The market depends heavily on exports and producers do not have enough knowledge of the importance of exports.

5. Most producers do not understand or use futures market.

6. Producers lack information on unit costs of production.

7. Soybeans are facing competition from other oil crops.



Source: Soils of Missouri, UMC Extension Bulletin C823 10/66/4M

MW	Menfro-Winfield-Weldon	LK	Lindley-Keswick-Hatton
AS	Adair-Shelby-Seymour-Edina and Armstrong-Gara-Pershing	S	Sarpy-Haynie-Onawa-Wabash
PM	Putnam-Mexico		

8. Poor drainage is a problem found in the river and creek bottoms. Poor drainage keeps the farm operator from tillage early in the spring, delaying both crop planting and the maturing of crops. The soil becomes saturated, providing a poor environment for plant growth. Poorly drained soil has poor soil structure, inhibiting soil aeration and good tillage conditions.

9. Drouth occurs when the plant's moisture needs are not satisfied by rainfall or moisture stored in the root zone. Studies indicate that nine years out



*Applied technology has increased returns to land, labor, and capital for many operators like Emerson Prange & Sons, Shelby County.*



*Billow & Crist, Shelby County, control cropland erosion with variable grade terraces.*

of 10 at least one inch additional moisture is needed at a crucial time.

### **Recommendations**

With the many advantages of land, river transportation, knowledge and skills of farm operators, grain production should continue to be an important segment of the economy in the Mark Twain Area. The following suggestions can help the area reach its potential.

1. Capitalize on the advantage of river transportation.
2. Stress soybean production. Soybeans probably offer one of the best possibilities for competitive advantage in the area.
3. Terrace sloping land that is to be cropped. (Soybean land is especially subject to erosion.)
4. Improve quality as well as quantity of the area's grain.
5. Producers and marketers cooperate in developing markets and production of soft wheat.
6. Producers study enabling act for write-off on agricultural commodities and either support it or recommend changes.
7. Soybean producers join state and American Soybean Associations.

8. Support programs promoting local, national, and export marketing of grain products.

9. Consider the growing of additional grain sorghum as a hedge against possible drouth.

10. Develop additional educational materials on exports, how price is determined, how futures markets work, production relationships, and unit costs.

11. Develop a Mark Twain corn and soybean "system" of production and marketing to include all phases of technology and management.

12. Correct drainage problems. Improved drainage through open ditches or land grading enables the farm operator to operate his machinery earlier in the spring, more efficiently, at faster speeds and with fewer repairs. Improved soil tilth also is reflected in increased crop yields.

13. Develop irrigation. Irrigation should be considered as a production tool rather than just insurance against low rainfall. Land grading to improve drainage can also prepare the field for surface irrigation. Most prairie soil areas require little or no land shaping for surface irrigation. New developments in sprinkler irrigation enable farmers to sprinkle irrigate their crops with little labor.

# One of Fastest Growing Swine Production Areas

*Forty-four percent of Missouri's growth in hog production since 1949 has been in Mark Twain Area*

## Situation

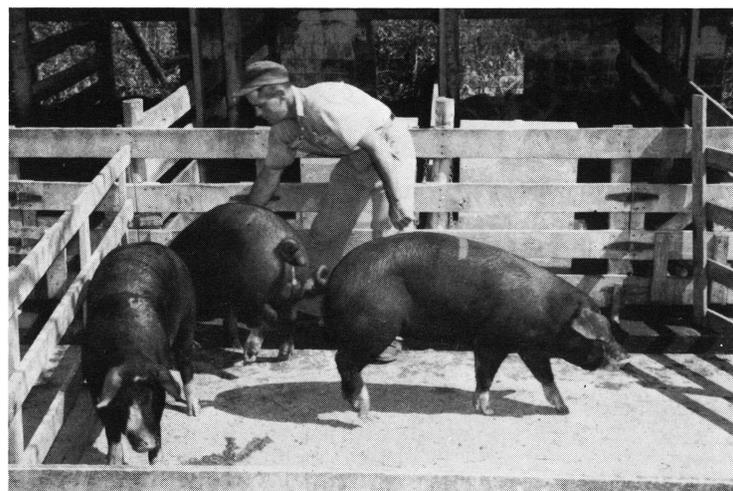
Missouri's share of the U. S. hog production has fluctuated, showing an overall increase of about one percent during the past 25 years. Between 1962 and 1966 it increased 7.5 percent. Using January 1 inventory figures for comparison, Mark Twain increased from 7.7 percent of the Missouri inventory in 1949 to 8.4 percent in 1959 and 13.5 percent in 1969, an impressive showing by our hog producers.

Of the 660,000 head increase in number of swine in Missouri from 1949 to 1969, a total of 287,300, or 43.5 percent, was in the Mark Twain Area. The state as a whole ranks fourth in the nation in swine production.

Missouri hog producers benefit from abundant markets and probably the nation's best seed stock industry. Purebred breeders in the state are characterized by youth, progressiveness, and dedication to improvement programs. These assets, combined with adequate testing and sonoray facilities and equipment, make for genetically superior breeding stock for most purebred and commercial producers.

Contributing to the success of the swine industry in the Mark Twain Area are internationally known hog breeders, outstanding programs in our area's Vocational Agriculture Departments, the Northeast Missouri Swine Evaluation Station at Palmyra, and Extension programs. Not only has this team greatly expanded the industry, it has helped the area take

*The Northeast Missouri Swine Evaluation station became operational in 1958.*





*Livestock Commission Man Frank Patton regularly purchases a large number of boars for his customers in Illinois, Iowa, and Missouri from Vernon Moore & Sons, Ralls Co.*



*Dick Cockran, Randolph County, produces 2000 hogs per year with his 24-sow farrowing and finishing unit.*

the lead in the development of superior breeding stock and more desirable market products.

Swine production is a high-income, quick-return enterprise that has been very important to our area. The committee feels there is much room for expansion of this industry in the future.

The Mark Twain Area obtains 29 percent of its agricultural income from hogs, compared with 20 percent for the state. On January 1, 1969, the hog inventory in the eight Mark Twain Area counties was 572,400 head, an increase of 100 percent since 1949. Average number of hogs per county was 71,550. Table 14 gives a breakdown by counties.

Cash receipts from hogs in the area in the 1964 Census show an average of approximately \$4 million annual income per county with a high of \$6.6 million and low of \$3.7 million.

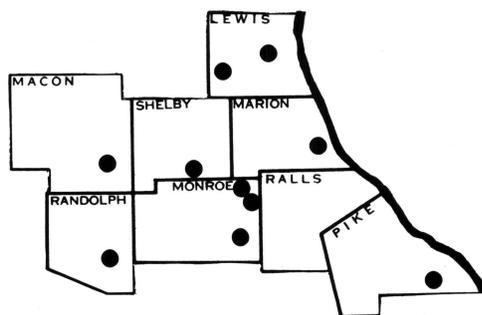
While the area may have average or above average hog market services, the committee feels there is room for improvement. Located within the Mark

Twain Area are eight local hog markets, nine auction markets, one relatively small packing plant, and several locker plants (see maps). The area is also served by several markets and packers in surrounding counties.

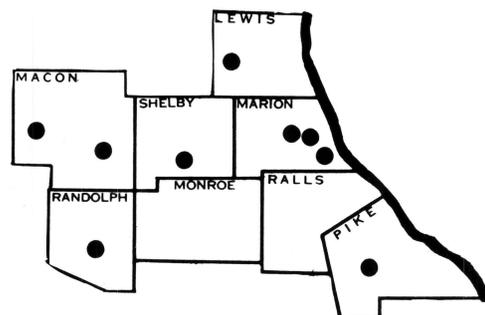
Many more farms in the area have hogs than have beef cows as a *major* farm enterprise. This allows more specialization and affords opportunity for more competent management. During the production phase, management decisions are more critical with swine than with beef cow herds. For example, the producer who becomes competent in herd health management has much economic opportunity and great advantage over his competition, as most herds perform under less than optimum health conditions.

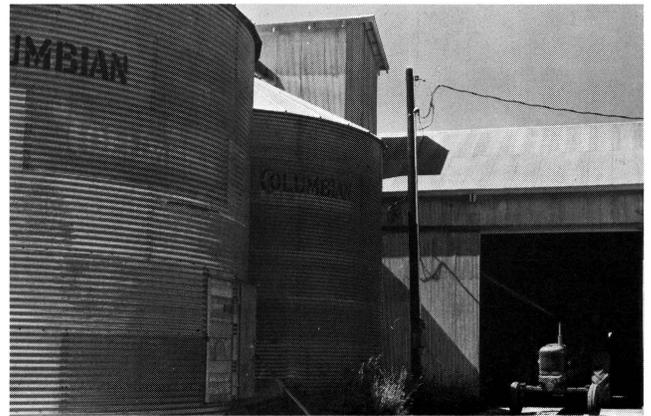
State and national trends are toward producing more hogs in confinement. Because of health problems, confinement rearing of hogs is moving slowly, although there are many swine producers who are becoming competent in confinement swine raising.

### Local Markets



### Auction Markets



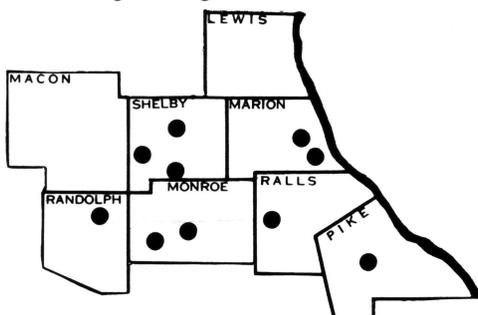


*Automated feed handling reduces Cockran's labor as he finishes out those 2000 hogs.*

Table 14  
Hogs on Farms January 1  
 (Missouri Crop and Livestock Reporting Service)

County	1949	1959	1969
Lewis	29,900	48,400	62,600
Macon	42,700	52,000	46,300
Marion	30,600	42,100	53,800
Monroe	40,100	72,100	109,800
Pike	54,400	83,100	131,900
Ralls	28,200	41,000	50,100
Randolph	23,500	29,600	33,800
Shelby	35,700	55,200	84,100
<b>TOTAL</b>	<b>285,100</b>	<b>423,500</b>	<b>572,400</b>
Percent Change 1949-1969 -- + 100%			
State	3,699,000	3,813,000	4,259,000
Percent Change 1949-1969 -- + 15%			

### Slaughtering Establishments



Source: MU Guide 201.

### Problems

Diseases are the greatest problem for swine producers. Concentration of greater numbers of hogs on fewer farms and under confinement rearing has intensified the problem. No drugs, vaccines, or medications will completely solve disease problems. However, some producers have mastered the art of disease control to a point where they can confine large numbers of hogs without seriously handicapping their performance.

While confined hogs are seldom produced cheaper per head than others, good managers are able to produce many more head from a given amount of labor, which may result in high returns.

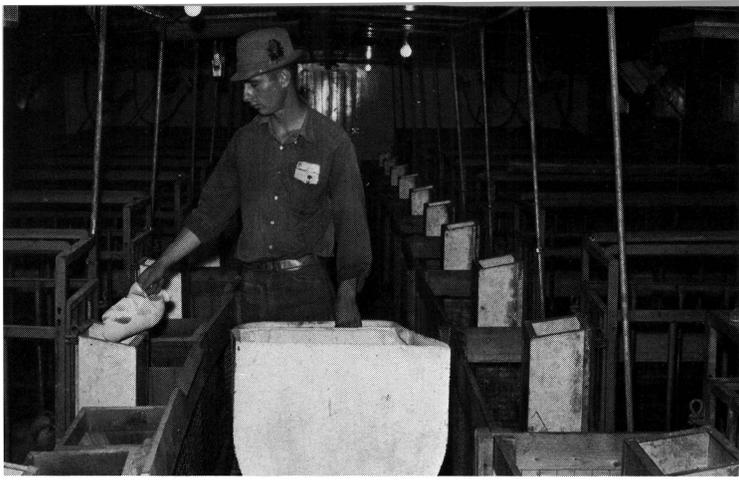
Shortage of skilled producers who can manage confined units is a problem in the area, but with declining availability of labor, more confined rearing is certain to come.

The committee felt financing was a handicap to expansion for some producers. However, those who "grow step-wise" into the business may not find it too serious.

Pollution is a problem to this area as well as other areas. A need exists for guidelines on building sites and waste disposal systems that are effective, legal, and not economically prohibitive.

A need was cited for a strong swine producers' organization. One is under way and should be supported.

Marketing problems include those faced by hog producers in general as they try to meet changing market patterns. Many producers now sell directly



*Convenient equipment enables Strowald Farms, Pike County, to provide individual sow and litter care with minimum labor.*

to packers and most need additional information, skill, and/or bargaining power to have much influence on prices.

Some members of the committee felt a need existed for a slaughtering facility and market that would pay more premium for hogs with superior carcasses.

The area must assume its share of the national blame for consumers' image of "fat" pork. Not enough top-quality, lean-type hogs are being produced.

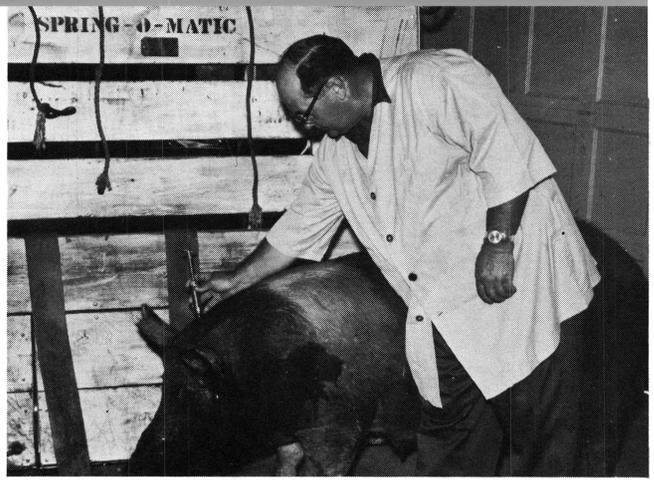
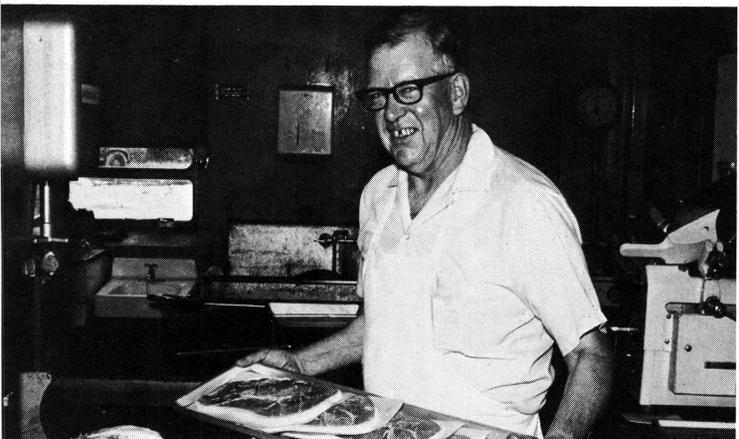
### Recommendations

1. The area's hog industry should organize with a first-rate producer-agribusiness association dedicated to improved production practices and promotion of pork. Such an organization could cooperate with or be a part of the Missouri State Pork Producers Association. Thus, it could support research, promotion, education, and surveys, statewide and nationally as well as locally.

2. Financing problems should be approached in two major ways: (a) educational efforts with lending agencies and (b) education of producers in record keeping. Computer record keeping services for the area should be investigated.

3. Feeder pig production is recommended to use

*Locker plant Owners like G. E. Woods, Bowling Green, assist Mark Twain producers with cutout information and promotion of product.*



*Competent veterinarians, such as Dr. Hulen in Pike County, help stimulate growth of an area's swine industry.*

some of the extra labor on small farms in the area and give additional income to retired and older farmers. There also might be opportunities for an aggressive operator to specialize in feed pig production as a major farm enterprise.

4. Some group needs to be assigned the responsibility for developing guidelines on waste disposal and pollution problems immediately. Legal difficulties and friction within the community can result.

5. Two men could be selected Master Swine Producers of the year in the Mark Twain Area, one from among seed stock producers and one from among commercial producers. A swine producers' association could handle this. Such an association might also maintain a listing of tested boars by counties and publish it as a breeding improvement service. It might be desirable to have some existing group gather this list immediately and maintain it until an area association is organized.

6. Continuing research and education on swine should be encouraged. In connection with these efforts, cooperators in each county could be sought to work with the research and extension divisions of the University of Missouri in developing demonstrations of new methods. Tours and visits to such demonstrations are a valuable assist to the testing and spread of new production methods.

*Attractive displays of quality products promote consumption.*



# Beef Cow Forage

*Could double numbers on  
present forage—expand  
still more with  
improved pastures.*

## Situations

Approximately 131,000 head of beef cows, 70,000 head of calves and yearlings and 14,000 dairy cows graze pastures and winter on forages of the eight-county Mark Twain Area.

These cattle are the primary users of 980,000 acres of hay and pasture land and 405,000 acres of corn and grain sorghum stalks. The 1964 Census shows the area's 7,500 farms selling an estimated 193,000 head of cattle and calves for \$26,900,000. This makes up 27 percent of the farm receipts of Mark Twain Area farmers.

Beef is enjoying an increasing popularity among consumers. Increase in population plus the increased consumption per person is bringing increasing demand for beef each year. Missouri farmers have increased their beef cow numbers 75 percent since 1958. Mark Twain Area farmers increased their cow numbers 55 percent in this period.

Capital requirements of beef herds are high in relation to profits but labor requirements are low.

Because of the demand for beef products and the amount of feed material produced in this area that can be marketed only through cattle, there is definitely a place for beef cow herds.

Present production of feed materials in the Mark Twain Area includes approximately 208,000 acres of improved hay and pasture. At three tons per acre, this would make available 624,000 tons of hay. Another 740,000 acres of regular pasture land at one



*Beef herds make excellent use of rolling Mississippi River hills. (Ed Glenn herd, Louisiana, Mo.)*

and one-half tons per acre would yield around 1,110,000 tons of forage.

To complete the forage picture we need to add stalks from 405,000 acres of corn and grain sorghum at a rate of about two tons per acre, giving an additional 810,000 tons.

With a requirement of six tons per mature beef cow per year, 355,000 beef cows could be carried on the present amount of forage at only 80 percent utilization. This is almost twice the number of cows now in the area. Numbers could increase further if farmers would improve an estimated 300,000 to 400,000 acres of waste land for pasture, convert 200,000 acres of marginal cropland to forage, and improve production of the present 980,000 acres of hay and pasture with fertilizer and improved plant species.

If the Mark Twain Area increased its beef cow numbers at the predicted national level of need\*, it would mean a stimulus to other business activity of the area. For example, an increase in pasture production would be needed which would increase use of fertilizer. Feed, veterinary services, transportation, other inputs, and marketing services would be increased accordingly.

## Problems

Beef cows on most farms in the Mark Twain Area are used to obtain income from untillable land and crop residue. In this role they do not receive the level of management of a primary enterprise. The major enterprises are cash crops, hogs, and cattle

\*See "A Guide for Growth in Missouri's Food and Fiber Industry," University of Missouri Extension Circular 892.



*Quality calves market land and labor*

feeding and these receive a major portion of the operator's time and management skills.

Producers in the area are receptive to new technology and adapt it to most agricultural commodities but because the beef herd is a secondary enterprise, they minimize new techniques in beef herd management. Low weaning weights, low calving percentages, dispersed calf crops, and the small percentage of production tested bulls purchased in the area are ample evidence to this fact. Most beef cow herd owners are capable and have the "know-how" to do much better with their herds than they are presently doing.

Many producers, especially those who are older or semi-retired, favor beef cows because they are more interested in the low labor requirements than they are in maximum profits.

### **Recommendations**

To increase the income from beef cow herds in this area, improvement is needed in the efficiency of both herd management and forage production. The following suggestions are made for helping achieve this improvement.

1. Enlarge educational programs in areas of herd management and forage production. Short courses,



*Albert Kennett, area livestock agent, demonstrates freeze branding at the Paul Issacson Farm, Macon.*

meetings, and conferences on these subjects will help. More use can be made of opportunities to work with demonstration cooperators in each county. Demonstrations of new forage and herd practices should be arranged. Tours and field days can be held on these farms to help spread new technology. Short courses on forage production, beef herd management, and record keeping are needed.

2. Increase forage production per acre.
3. Make more use of the forage produced.
4. Increase production per cow.

Early calves dropped over a relatively short period (60 to 90 days) are usually more profitable because of additional weight, better forage and pasture utilization, and uniformity at time of marketing or going into the feed lot.

A well-managed breeding program will result in a higher percentage calf crop and result in more pounds of beef being sold per cow. Selection programs identify replacement heifers and herd sires that are genetically capable of producing more beef and serve as a tool for eliminating low producing cows.

A common-sense record-keeping program should be kept. This will enable the manager to check beef



*Heading for dry land,  
these steers make use of  
mounds in the feedlots of  
Walker Cockran, Randolph  
County.*



yields and make management changes to increase profitability.

5. Various leasing, rental, and partnership agreements should be examined with the idea of getting better management of forage land and herds. This could be beneficial to both semi-retired farmers and beginning farmers.

6. Individual farmers and community leaders need to set goals for acreages to be renovated and improved in the next 10 years. Similar beef production goals should be set. An interested group should be put in charge of keeping track of progress and informing farm groups.

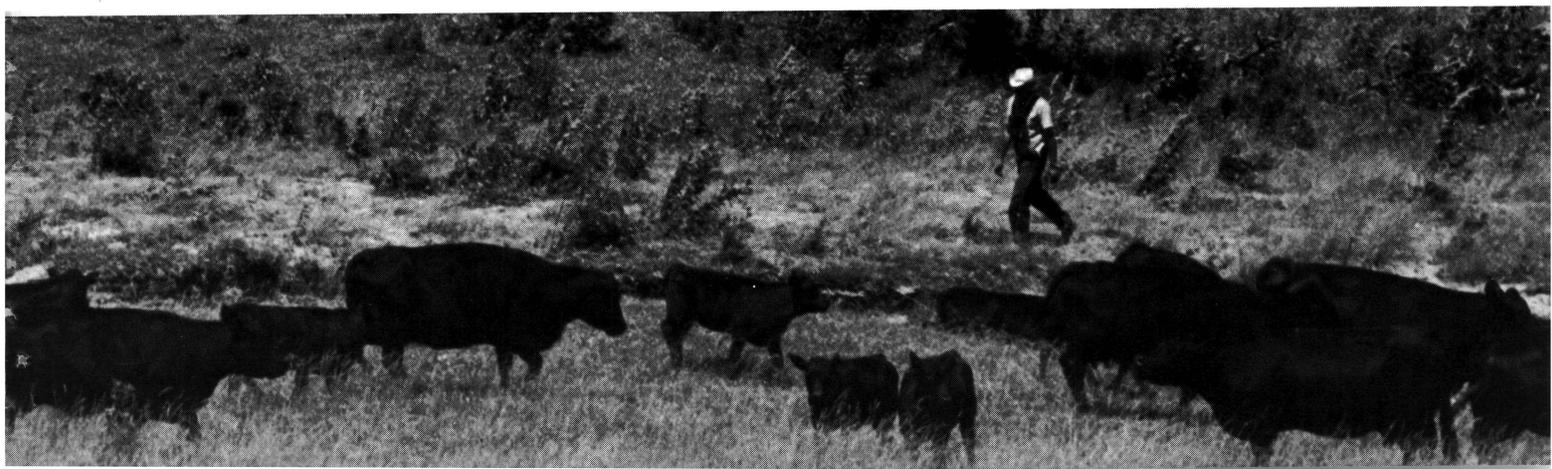
7. Emphasis should be placed on production testing programs. This will enable the producer to make wiser selection of his replacement heifers and herd sires. The sources of these genetically superior cattle should be made more readily available.

8. There is a great opportunity to change the secondary role of the beef cow in the Mark Twain Area. The beef cow can be made a full-time partner in maximizing profits by removing her from the role of a scavenger receiving part-time management.



*Performance Records pay off for Ed Glenn, Louisiana.*

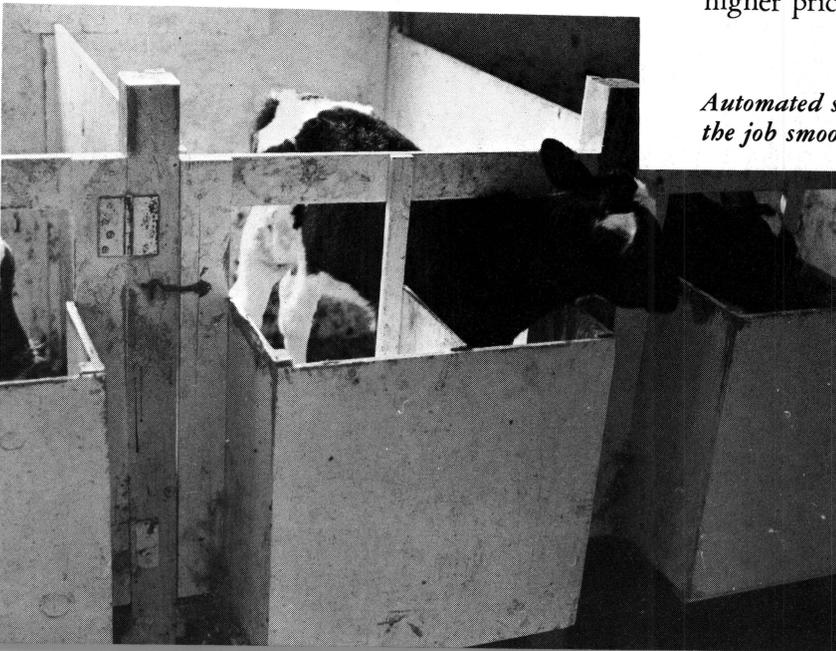
*Beef Cow herds convert crop residues and the grass from rough land into marketable product on many Mark Twain farms. (Fred Blades Farm, Monroe County.)*



# Dairying.

*120 to 130 producers  
now market  
75 percent  
of the Milk  
produced in Mark  
Twain Area*

*Clean quarters produce healthy replacements for Brinkmeier & Hudson, Ralls County.*



## Situation

Slightly more than 6.5 percent of the value of products sold by farmers in the Mark Twain Area is from the sale of dairy products. In early 1969, milk from 721 farms in the Mark Twain Area was delivered to plants and dealers. Cream deliveries have almost completely disappeared.

Dairying provides for more uniform use of labor throughout the year than most other farm enterprises and provides a way to market large amounts of roughages. Farmers who have these resources, enjoy cattle, and have the high degree of skill required for production of a quality dairy product find dairying a rewarding enterprise.

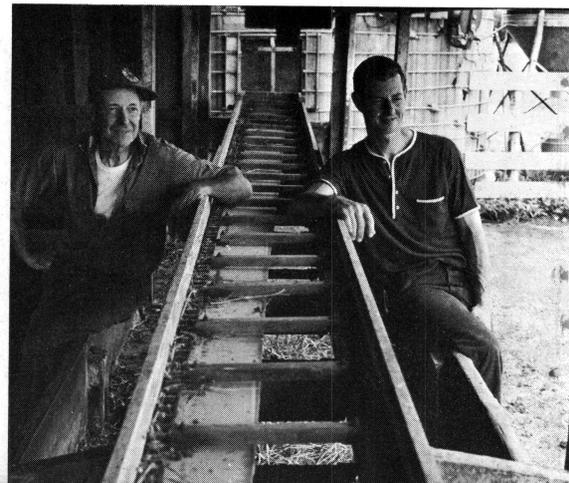
In 1964, 1,091 farms had milk cows in the Mark Twain Area totaling 17,000 head. During the period from 1959 to 1964, according to the Census, the number of farms selling milk declined 47 percent in the eight-county area. The number of cows dropped 37 percent during this same period but milk production declined only 15 percent. It is now estimated that there are about 14,400 cows on farms in the area.

There were 88 producers who qualified on a Grade A Federal Order Market in the eight-county area in November, 1968. Another 40 to 50 producers have bulk cooling tanks and sell to manufacturing plants. These 120 to 130 producers sell more than 75 percent of all milk sold, leaving the other 600 farms with very low income from milk sales.

Increased milk production continues to come from the Grade A dairy farms and some dairy farms equipped with bulk tanks and producing manufacturing milk. These 120 to 130 dairymen represent the base of dairy production in the area. Unless small producers can grow rapidly, they may be left by the wayside. Cost of services will become excessive.

Dairymen recently have been favored with higher prices for their product. However, their costs

*Automated silage feeder designed by Biggs Glasscock does the job smoothly and simply.*

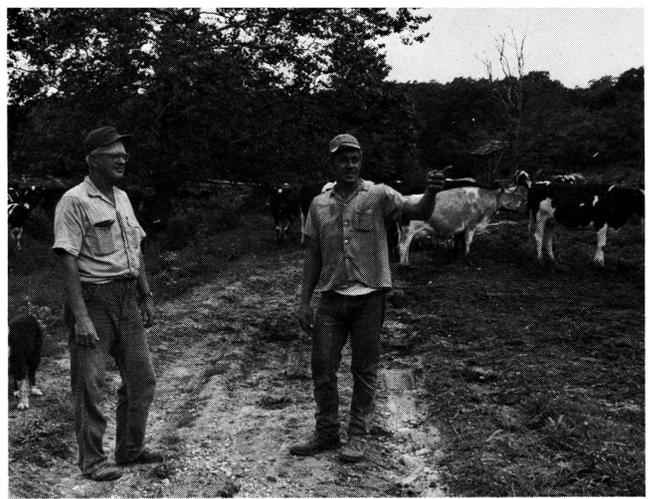


have also increased. The trend to unification or merger of producer cooperatives strengthens dairymen's bargaining position. However, there is a limit to how far they can flex their bargaining muscles in the competitive world.

When the price of milk rises, the pressure from alternative foods increase. Competition multiplies from dairy substitutes, filled milk and other foods that may be chosen to replace milk and its products.

Dairymen are questioning the wisdom of having strict legislation on filled milk products. With the many substitutes available, would more milk be sold if milk could be flavored to suit other tastes? This should be investigated.

The U. S. Department of Agriculture and Department of Health, Education and Welfare have requested a new code for manufacturing milk. If adopted, it will bring requirements for manufacturing milk closer to that of Grade A. This will restrict production to producers who have adequate volume.



*To solve dairy labor problems and start a young dairyman, a successful partnership has been developed between Ernie Brinkmeyer and James Hudson in Ralls County.*

It will require installation of equipment and measures to assure the desired quality.

A market for Grade A milk is provided in the Mark Twain Area through Mid-America Dairymen, Inc. This marketing cooperative is comprised of some

Table 15

Farms with Bulk Tanks, Grade A Farms, Farms Delivering Milk or Cream, Cows on Farms in the Mark Twain Area\*

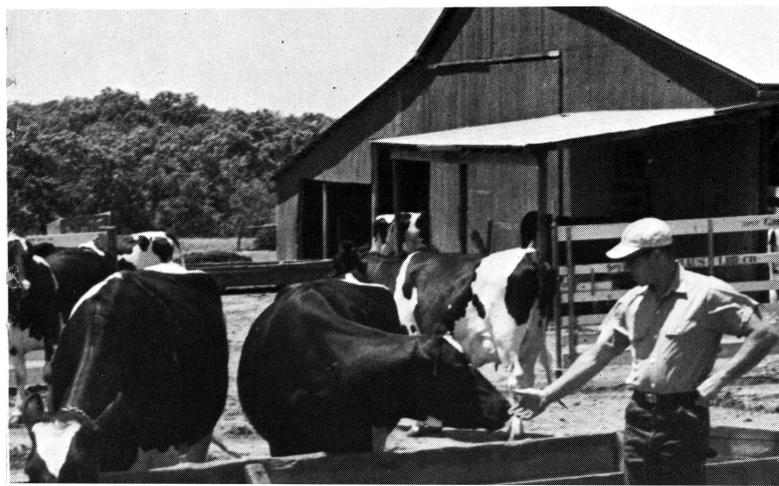
County	No. Farms with Bulk Tanks	Grade A Farms	Farms Delivering Milk or Cream	No. Cows on Farms
Lewis	20	10	70	1,600
Macon	3	3	233	3,700
Marion	51	36	106	2,800
Monroe	8	6	39	1,100
Pike	14	9	89	1,300
Ralls	21	21	26	1,500
Randolph	4	1	102	1,300
Shelby	2	2	56	1,100
<b>TOTAL</b>	<b>123</b>	<b>88</b>	<b>721</b>	<b>14,400</b>

\*Sources: (1) Extension Agents' 1968 Annual Statistical Reports; (2) Federal Order Markets, C & MS, USDA, Nov. 1968; (3) State Brucellosis Ring Test Survey, Nov. 1968-Jan. 1969, State Veterinarian; (4) State Statistician.

Marion County shows the highest number of farms with bulk tanks and Grade A farms. Macon County reports the largest number of cows, but the smallest number of bulk tanks and Grade A farms.

*Good feed plus gentle care contribute to the success of the Ed & Jerome Sander dairy operation in Randolph County.*

*Mr. and Mrs. Martin Venum, Macon, weigh milk as part of Owner Sampling Dairy Testing program.*



14,000 producers in Missouri, Kansas, Iowa, Illinois and limited areas in adjacent states. Fewer than a dozen Grade A producers in the Mark Twain Area distribute their production direct to consumers or to small independent plants.

Two plants within the area purchase manufacturing milk. These are located at Hannibal and Moberly. Some of the manufacturing milk is also purchased by plants outside the area. The principal ones are located at Kahoka, Kirksville and Milan.

## Problems

Dairymen in the Mark Twain Area recognize that their problems range from local ones of getting credit to international ones involving imports that compete with their dairy products.

Prices of input supplies the dairyman uses in production have risen faster than the price of milk he sells. The month-by-month variation of milk price makes income more variable to the dairyman than seems justified by consumer prices, which remain relatively stable.

There is an ever-increasing need for the maintenance of milk quality from production to consumption. The quality of milk on grocers' shelves must remain high or sales of milk and its products will decline.

The competition of substitutes and alternative foods, already very keen, is likely to increase.

The maintenance of herd health is important for a profitable return and even survival for most dairymen. The control of mastitis is urgently needed.

The improvement in quality of breeding is urgently needed to improve the competitive position of most dairymen in the Mark Twain Area.

Breeding difficulties remove 8 to 12 percent of the cows and heifers from most dairy herds annually.

The decline in number of herds in the area creates problems for the remaining dairymen because of the reduction in services which the remaining dairymen vitally need.

With the highly competitive conditions that have existed, too many dairymen have become indifferent or resigned to accept what comes. They fail to realize the need for improvement and expansion in order to keep pace, and likewise fail to take advantage of educational programs offered to them.

## Recommendations

The committee recommends:

1. That only quality dairy products be produced in the area. Rigid, uniformly applied inspection is essential to achieve this goal. Extension of inspection and sanitation requirements to manufacturing milk would also help. The concentration of production on fewer farms will necessitate more attention to quality.

2. Development of new flavors for dairy products. This would require a change in present milk laws.

3. That dairymen increase their managerial skills. A contribution would be more complete production and farm account records. Records will help to avoid mistakes and cut production costs. Records are a better guide to credit needs for the dairyman and his creditor.

To achieve the above we recommend:

a. That production and breeding records be kept on all animals.

b. That a computer record service be established to serve the area.

c. That an active educational dairy program be conducted.

4. That young people be encouraged to enter dairying. This can be done through family or other partnerships and support on providing credit needs. Such partnerships will assist in transfer from one generation to the next. They will also allow some freedom from the confining nature of the dairy enterprise.

5. That dairymen promote their products but avoid attacking others. This merely gives the competition more publicity. Labels of substitutes should be checked, however, to assure they are not posed as dairy products.

6. That dairymen support research. Research is needed on products, merchandising, and consumer acceptance.

7. That a strong, local dairy producers' organization be organized. The American Dairy Association is willing to help. The local organization needs to be associated with a national one in order to influence problems such as dairy imports and changing the milk pricing system to a solids-not-fat basis.

8. That herd health be improved. This can be done through (a) improved management, and (b) closer relationship with veterinarians.

