



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# MINNESOTA farm business NOTES



## AGRIBUSINESS IN MINNESOTA

D. F. Fienup and D. C. Dahl

In 1948, farming ranked first among all industries in Minnesota as a source of personal income. Over one-fourth of the wages, rent, interest, dividends, and profits received by people in the state were from farming. By 1954, farming had dropped to fourth place, accounting for only one-tenth of Minnesota's personal income.

The decreasing importance of farming as a source of personal income has resulted from many things. One factor that may have contributed to this change, but which has received little attention, is the "dispersion" of farm functions.

During the past 150 years, "farming" has taken on a fundamentally different meaning. The self-sufficient farm of the early 1800's did not have feed, seed, machinery, and fertilizer businesses to supply it. Nor did it have farm product processors, wholesalers, and retail distributors handling its output. The early American farm performed all of these functions.

But as specialization in farming progressed, more and more "farming functions" were assumed by businesses outside of the production process itself.

These businesses performing functions related to agriculture, combined with farming, have been called "agribusiness." By definition, agribusiness means "the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; the storage, processing, and distribution of farm commodities and items made from them. Thus, agribusiness encompasses today the functions which the term agriculture denoted 150 years ago."<sup>1</sup>

On a national scale, agribusiness composes a large segment of our econ-

omy. About 40 percent of all consumer expenditures in 1954 were made for products having their origin in agriculture. Further than this, employment in agribusiness constituted 37 percent of the total labor force in the United States during that year. These impressive figures, expressing the magnitude of the agribusiness sector in our national economy, have suggested an analysis of Minnesota agribusiness.

### Minnesota Agribusiness<sup>2</sup>

Agribusiness includes four functional groups: (1) the **input** group, including those Minnesota manufacturers, wholesalers, and retailers who are wholly or partially engaged in supplying the farmer with products used in production (such as feed, seed, machinery, etc.); (2) the **farming** group made up all types of farming in Minnesota; (3) the **output** group which includes those Minnesota manufacturers, wholesalers, and retailers who are primarily engaged in processing and distributing farm products; and (4) the **facilitating** group of which transportation, governmentally-employed workers servicing agriculture (county agents, ASC employees, etc.), and agricultural services (custom combining, corn-shelling, etc.) are a part.

### Input Group

Employment in the input group increased 10.7 percent from 1948 to 1954. Of the three sub-groups in this major group (manufacturing, wholesaling, and retailing), the most significant employment change took place in wholesaling where employment more than doubled. Retailing employment increased slightly, but manufacturing employment remained nearly constant. Personal in-

### Agribusiness employment and personal income in Minnesota, 1948 and 1954\*

Group	1948§	1954	Change
<b>Input</b>			
Employment†	20,776	22,994	+10.7
Income‡	69,316	113,421	+63.6
<b>Farming</b>			
Employment†	353,000	302,000	-14.4
Income‡	881,000	605,000	-31.3
<b>Output</b>			
Employment†	116,767	110,317	- 5.5
Income‡	319,099	471,010	+47.6
<b>Facilitating</b>			
Employment†	19,183	20,632	+ 7.6
Income‡	63,339	89,940	+42.0
<b>Total agribusiness</b>			
Employment†	509,726	455,943	-10.6
Income‡	1,332,754	1,279,371	- 4.0
<b>All Minnesota industries</b>			
Employment†	1,139,000	1,157,000	+ 1.6
Income‡	4,028,000	5,169,000	+28.3

\* The income received by individuals in the form of wages, rent, interest, dividends, and profits. The time periods chosen for comparison were determined by the data available.

† Expressed as number of workers.

‡ Expressed in thousands of dollars.

§ Manufacturing data are for 1947.

come received from this component increased by over two times the average increase experienced by all Minnesota industries.

The employment and income gains in the input group are at least partially explained by an 18.9 percent increase in Minnesota farm production expenses during the 1948 to 1954 period.

### Farming Group

In 1948, 31.0 percent of the total labor force in Minnesota was employed in farming.<sup>3</sup> This employment figure dropped to 26.1 percent in 1954. Personal income received from farming during this period decreased 31.3 percent. (The movement away from farming and the decline in farm income is

<sup>2</sup> The data upon which this analysis was based came from several sources; among these were: *Census of Manufacturers, Census of Business, Survey of Current Business*, and records of Minnesota Dept. of Employment Security.

<sup>3</sup> Includes farm proprietors, hired labor, and family labor.

<sup>1</sup> Davis and Goldberg, *A Concept of Agribusiness*, Alpine Press, Boston, 1957, p. 2.

# FARM EMPLOYMENT

G. A. Lane and D. F. Fienup

Historically, family-operated farms have been the mainstay of Minnesota agriculture. In recent years more farm families have had to decide if they should continue farming. Are family-operated farms decreasing or are they as prevalent as ever in our changing agriculture?

Increasing amounts of capital and management are needed to operate a profitable farm business. Farms are larger and need more machinery; feed and fertilizer must be purchased. To improve family living, with better housing and expanded use of electricity, gas, and running water, also means larger farms and larger investments.

However, some families are unable to provide the capital necessary to farm on a sound economic basis and also enjoy levels of living comparable to city families. Many farmers have adjusted to these changes by leaving agriculture, but what about those who remain?

This article covers past trends, present status, and future prospects of family farming and employment of people on Minnesota farms. Briefly this includes a discussion of the interaction of forces affecting the demand for labor on farms and the supply as characterized by the family structure.

## Demand for Farm Labor

Mechanization has reduced the labor required in Minnesota agriculture. For instance, from 1944 to 1954 the labor required to produce an acre of corn decreased from 20 to 8 man-hours while for wheat the change was from 10 to 6.<sup>1</sup> Labor required for dairy cows and for hogs decreased 20 to 30 percent with practically no change for beef.

Capital has been substituted for labor on Minnesota farms. From 1947-49 to 1957 total acres of land in farms remained constant while the number of workers employed declined by 21 percent.<sup>2</sup> Increased investment in machinery and equipment roughly offset the decreased farm labor force. This trend will undoubtedly continue, thereby

continuing to reduce the labor required in Minnesota agriculture.

Large seasonal variability is another important aspect of the demand for labor on Minnesota farms. The number of family workers increases about 30 percent during the spring season. In addition, the number of hired workers is four times greater in July than in March. This seasonal variability has been typical for at least the past 15 years, even though total labor requirements on Minnesota farms declined drastically. Therefore, mechanization of farms had little influence on the seasonal variability in demand for farm labor.

Some tasks formerly performed by farm families have been transferred to related agricultural businesses. One example was the shift from farm-produced power (horses and feed) to tractors and purchased fuel. Ready-mixed feeds and concentrates are now purchased extensively from feed companies. Marketing agencies and processors have assumed some of the marketing and production functions previously handled by farm families in some enterprises. These examples illustrate the variety of ways farm families have given up certain tasks and become more specialized. The article on page 1 deals with the extent and growth of "agribusiness."

## Farm Labor Supply

Not only do families manage and control their farm businesses but they also contribute most of the labor. About 85 percent of the farm workers is supplied by families. The other 15 percent is hired. These proportions remained about the same despite a decrease in the total farm labor force from 359,000 in 1947 to 273,000 in 1958.

Both family and hired workers, however, are highly variable with respect to experience, age, and time employed. Family workers include unpaid family members working from a few hours per week to full-time operators. Hired workers often range from school-aged children working two or three months in the summer to highly trained full-time farm managers.

Family-operated farms meet the variable seasonal labor needs during the busy summer months fairly well. For instance, school children on summer vacations and farm women with modern home facilities assist in the farming

activities, evidenced by the increased number of family workers reported during June and July. Nearly 300,000 family workers were reported in these months compared to 200,000 reported in November and December of 1958.

In the absence of family-operated farms, it would be difficult for operators to hire sufficient workers to meet the peak summer labor needs. Most hired workers seeking employment prefer and need year-round jobs.

Perhaps the most striking aspect of numbers of hired workers employed on Minnesota farms is seasonal variation. For example, in 1958 the number varied from about 20,000 in January to over 120,000 in July. However, there was a noticeable decline (about 20,000) in the July peak since 1947. The January figures tended to remain fairly steady. The average number of hired workers on farms three acres or larger was 0.3 which remained the same for the period 1947-58. Thus the number of hired workers decreased at about the same rate as the number of farms in this state.

## Farm Income and Wages

The disparity between farm and non-farm income increased in the past decade. Per capita income to farm families from all sources declined from \$1,000 in 1947-49 to \$900 in 1956 while non-farm per capita income rose from \$1,400 to \$2,000.<sup>3</sup>

Hourly wage rates to hired farm workers in Minnesota increased from \$.71 to \$.86 from 1949 to 1957.<sup>4</sup> Farm wages were only 52 percent of manufacturing wages in 1949 and declined to 41 percent by 1957.<sup>5</sup>

## Migration from Agriculture

The net movement of people in and out of Minnesota agriculture has resulted in a 25 percent decrease in the farm population from 1940 to 1958. This migration is a result of private decisions based upon a variety of factors.

Migration is sometimes described as the result of forces that *push* and others that *pull* families from agriculture. On the push side, mechanization has generated a persistent pressure for some families to operate additional acres. This pressure has been reflected, in part, in the steady rise of land values during a period of declining farm

<sup>1</sup> Computed from data published by Reuben W. Hecht: *Farm Labor Requirements in the U.S.*, USDA-BAE, F.M. 59, April 1947, p. 32; and *Report of the Governor's Study Commission on Agriculture*, Minnesota, 1958, p. 190.

<sup>2</sup> *Employment Trends*, monthly report, Minnesota Department of Employment Security.

<sup>3</sup> Governor's Study, *op.cit.*, Appendix Table 50.

<sup>4</sup> *Farm Labor*, USDA-AMS, February 1958.

<sup>5</sup> *Economic Guidelines for Unemployment Insurance*, Minnesota 1958-67, Report prepared for Minn. Dept. of Emp. Security; p. 205.

incomes. The lack of opportunities for young people to start farming and the rising incidence of family assistance for beginning operators also are indications of this pressure. However, in Minnesota the larger farms generally continue to be operated by families.

The pull effects, on the other hand, are generated by the relative social and economic conditions on farms and in cities. The prosperity and generally larger incomes in nonfarm occupations are attractive to many farm families. Often lighter work and shorter hours provide strong incentives to leave farming. Better schools, hospitals, and recreational activities may attract farm families to urban areas.

### Summary

Total employment opportunities in Minnesota agriculture have declined

substantially over the past decade. This has occurred at approximately the same rate as the decline in number of farms. Those continuing to farm have expanded the size of their farm business by acquiring the land and other resources of people leaving farming.

Yet, farms are still predominantly family operated. Since 1947 the average number of both family and hired workers per farm remained constant. On the average, 85 percent of all labor on Minnesota farms comes from the farm family. Also the substantial variation in seasonal employment has remained the same since 1947. The seasonality of the labor requirement coincides closely with the availability of family labor.

In nonfarm industries, mechanization has brought the development of large corporations that employ many men; family-operated businesses have

largely disappeared. Farming has also become mechanized but the family-operated farm has remained. Many farm enterprises cannot be operated on an assembly line basis. In addition considerable value has been placed on farming as a "way of life."

The future role of the family-operated farm in Minnesota agriculture will depend on the family's ability to adapt to changing conditions. These include the family's access to capital, their ability to manage and assume the risks associated with larger investments, and their ability to supply the market with the kinds and quantities of products the market demands. The adaptability of credit institutions to the changing capital needs of farming as well as our national farm policy will have profound effects on the future of family farms.

## Agribusiness—

(Continued from page 1)

treated in the accompanying article on farm employment.)

### Output Group

Employment declined in the output (processing and distributing) group by 5.5 percent from 1948 to 1954. In the sub-groups, manufacturing employment increased, but the large decrease in retailing employment and slight decrease in wholesaling employment caused an overall decline in this component. The decline in retail employment may be partially due to the advent of supermarket food stores and decline of neighborhood groceries during this time. Personal income derived from this group increased 1.5 times the average income increase of all state industries, making this group almost as large as farming itself.

### Facilitating Group

Increased employment in truck transportation serving agriculture offset an employment decline in railroad transportation of farm products. But an in-

crease in government employment caused an overall increase in this component from 1948 to 1954. While employment increased 7.5 percent in this group, personal income increased 42 percent, again a greater increase than that found in other Minnesota industry.

### All Groups

Employment in the agribusiness sector of the Minnesota economy accounted for 44.8 percent of the total labor force in the state in 1948. The large decline in farm employment from 1948 to 1954, despite employment increases in the "off-the-farm" groups, caused agribusiness employment (as a percent of total labor force for the state) to decline to 39.4 percent in 1954.

The personal income derived from the agribusiness sector of Minnesota's economy declined by 17 percent despite a significant increase in the personal income received from the off-farm groups.

The composition of the agribusiness sector has changed considerably in terms of personal income generated by the various groups. The businesses surrounding farming paid out more personal income (in the form of wages, rent, interest, and dividends) than did agriculture itself in 1954, even though farming employed about twice as many people.

These income declines in farming are not illustrated by a corresponding decrease in farm output, as may be expected. Instead, farm output increased by over 11 percent during this period. The decrease in farm personal income is explained by a lower wage bill for

hired labor, but more significantly, a decrease in prices received for farm products.

### Conclusion

Agribusiness is a major source of employment and income for the people of Minnesota. Over time there has been a continual change in the composition of agribusiness with farming itself becoming an increasingly smaller part. Much of this is explained by the increasing specialization and interdependence that has developed between farming and the businesses that serve it. Many so-called farm functions are now performed by off-farm businesses.

This means an increasing share of the employment opportunities to be found in agribusiness are in the non-farm area. Yet total employment opportunities in agribusiness have declined. The off-farm component has grown but not nearly fast enough to employ all those leaving farming. Again this can, in part, be explained by specialization with increased productivity of workers.

The income and employment opportunities in the off-farm part of agribusiness in Minnesota do not appear to be highly dependent on the well-being within farming itself. The prosperity of these businesses appears to depend mainly on a high volume of agricultural production and a high level of national income and employment. In the 1948-54 period Minnesota farm income generally declined while employment and especially income in the off-farm sectors increased substantially.

## MINNESOTA

# farm business

## NOTES

Prepared by the Department of Agricultural Economics and Agricultural Extension Service.

Published by the University of Minnesota Agricultural Extension Service, Institute of Agriculture, St. Paul 1, Minnesota.

# The Outlook Corner — FARM COSTS

Farmers' production cost rates have generally increased since 1947-49. The index numbers of prices of all commodities, interest, taxes, and wage rates have increased 17 percent (table 1). There is, however, variation in trends among the different production items. For example, farm-produced items such as feed and seed have generally declined.

While prices of all nonfarm-produced farm cost items have increased, the amount of increase is not the same for each group of items. Motor vehicles, machinery, buildings, and fencing rates are up 30 to 48 percent. Wage rates have increased 34 percent. The price of fertilizer increased 7 percent and the prices of farm supplies increased 12 percent. These trends have continued into the early months of 1959 for all these items except fertilizer which is down slightly.

Total production expenses for United States farmers have increased to a greater degree than cost rates have. In 1958 they reached an all-time peak of 25.1 billion dollars and were 40 percent above 1947-49 levels. As indicated above, production cost rates increased only 17 percent during this same period.

Even though prices of farm-produced items were stable, total expenses of feed, seed, and livestock increased 37 percent since 1947-49. Expenses of non-farm-produced items increased 43 percent. While wage rates increased 34 percent, total wage expenses were down slightly during this period. Generally, farmers hire less labor and buy

more feed, machinery, fertilizer, gasoline, electricity, and pesticides than in 1947-49.

As a result of faster rising production levels since about 1951 the production expense per unit of output has generally leveled off about 15-17 percent above 1947-49 levels. Figure 1 shows that farm production expenses, both total and per unit of output, rose at approximately the same rate from 1940-51. Since then, except for a slight dip in 1953, total production expenses have moved up continuously while production expenses per unit of output have changed very little. This is due to technological improvements, adjustments in farm size, favorable weather, crop

conditions, and economic environment during this period.

The forces that governed cost rates in the past will continue to operate in the years ahead. Farm wage rates will likely continue to rise. The rate will depend on employment opportunities and industrial wage rates. Prices of machinery and farm supplies will continue to trend upward, depending on prices of steel, industrial wage rates, and freight rates. Feed and seed prices will likely continue at lower levels due to plentiful feed and crop supplies. Livestock prices will vary with slaughter market supplies and prices. Feeder cattle, a major item, will likely trend toward lower prices in the immediate years ahead. Farm property taxes are likely to increase because of increasing costs of local government services, particularly roads and schools.

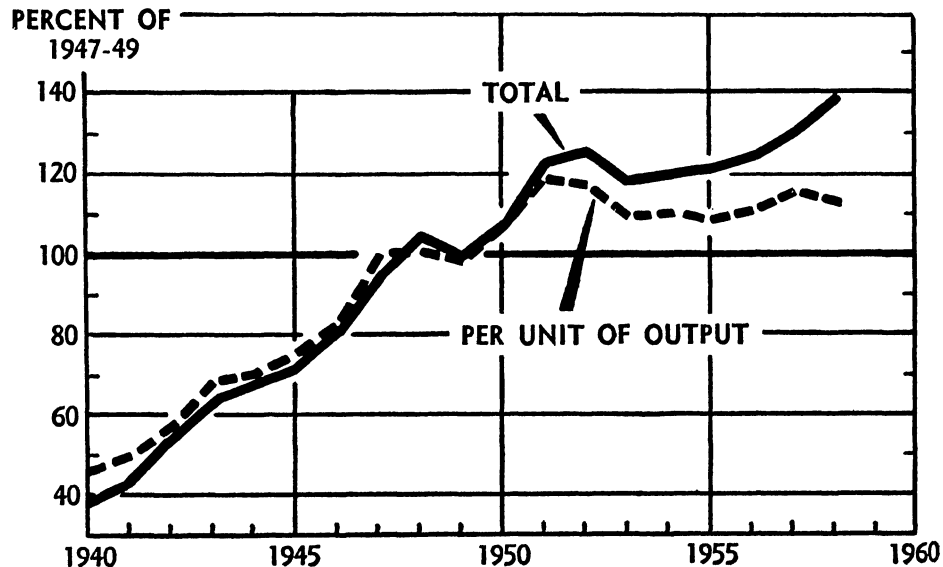


Fig. 1. Farm production expenses, AMS data.

**Table 1. Index numbers of prices of goods and services used in farm production, United States\*, 1947-49=100**

	1955	1958	March-April 1959
Commodities, interest, taxes, and wage rates .....	110	117	121
<b>Farm produced</b>			
Feed .....	91	86	87
Seed .....	98	88	83
Livestock .....	85	110	118
<b>Nonfarm produced</b>			
Motor vehicles .....	122	142	147
Motor supplies .....	117	123	123
Farm machinery .....	131	148	153
Farm supplies .....	110	112	112
Building and fencing .....	120	130	132
Fertilizer .....	109	107	106
Wage rates .....	120	134	144

\* Farm Cost Situation, AMS, May 1959.

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Service and United States Department of Agriculture Cooperating, Skuli Rutford, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914

UNIVERSITY OF MINNESOTA  
Institute of Agriculture  
Agricultural Extension  
St. Paul 1, Minn.  
SKULI RUTFORD, Director  
Minn. 7-8-59-2700

PENALTY FOR PRIVATE  
USE TO AVOID PAY-  
MENT OF POSTAGE, \$300

FREE—Cooperative Agricultural Extension  
Work, Acts of May 8 and June 30, 1914.