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FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension
Paul E. Miller, Director Agricultural Extension

No. 203

UNIVERSITY FARM, ST. PAUL

NOVEMBER 1939

Checking Conservation Plans by Budgeting

SELMER A. ENGENE and GEORGE A. POND

Cropping plans designed to control erosion more effectively and to promote soil conservation must be carefully analyzed before they are adopted. Changes in acreages of the various crops may seriously affect the rest of the farm organization and the earnings. A simple farm budget will help formulate accurate decisions. Such a budget worked out for a Winona County farmer illustrates the method. Records kept by this farmer since 1935, in cooperation with the Division of Agricultural Economics of the University of Minnesota, provide accurate data to serve as the basis for planning. When records are not available, careful estimates must be used.

The crops grown on the farm at the present time and their acreages are presented in the first column of table 1. An increase in the acreage of hay crops on some of this land is desirable in order to promote erosion control and maintain fertility. A tentative cropping system was worked out in cooperation with the conservationists of the Soil Conservation Service. The crop land was classified into three groups according to steepness and need for specific erosion-control measures. A 6-year rotation of 2 years of small grains and 4 years of alfalfa or a mixture of alfalfa and timothy was suggested for the steepest land; a 5-year rotation of corn, small grain, clover, small grain, and clover for the medium land; and a 3-year rotation of corn, small grain, and clover for the most level land.

Table 1. Acres and Production of Crops

Crop	Acres		Yield per acre	Production	
	Present	Proposed		Present	Proposed
Corn, grain	18	16	36 bu.	650	576
Corn, silage	15	15	8.5 T.	127	127
Potatoes	1	1	75 bu.	75	75
Barley	63	40	23 bu.	1,449	920
Oats	35	30	42 bu.	1,470	1,260
Wheat	22	15	18 bu.	396	270
Alfalfa	24	27	2.0 T.	48	54
Clover	24	58	1.4 T.	34	81
Wild hay	1	1	1.0 T.	1	1
Total acres crops 203	203				
Total concentrates (corn and small grains)				88 T.	66 T.
Total roughage (hay equivalent)*				125 T.	178 T.

* Three ton silage equivalent to one ton hay.

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Monday through Friday
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Contour strips, already laid out on this farm, can be readily adapted to these rotations. Six fields or groups of fields of equal size would be used for the first rotation, five for the second, and three for the third. Such systematic rotations would simplify the planning for each year and would provide the same acreage for each crop each year. The resulting acreages of crops, as presented in the second column of table 1, show a material reduction in the acreage of small grains and an increase in the acreage of leguminous crops. The crop work could be readily handled with the labor, power, and machinery now available.

What would be the effect of this change upon the production of crops? Past yields, as determined from the records of the farm, are presented in the third column of table 1. Since the influence of the change in crops would affect yields rather slowly, these data can be used in estimating future production. The total production of grain (corn and small grains), as presented in table 1, would be reduced 25 per cent, from 88 to 66 tons. The total production of roughages would be increased 42 per cent, from 125 to 178 tons. Clover seed, as well as hay, has been harvested in the past and, with the increase in clover acreage, seed production would be increased in the future.

How could the additional roughage be utilized? Since the market outlet for roughages is limited in this area, it must be used by livestock. The kinds and quantities of livestock kept at the present time are presented in the first column of table 2. The cows are of milk-and-beef breeding with an average of 190 pounds of butterfat per cow available for sale. All young cattle not needed for replacement are sold when slightly more than 2 years old after being fed some grain. Thirteen feeder cattle, weighing about 450 pounds, are purchased each year and are handled in the same way as the calves produced on the farm. The quantity of feed fed each year per unit of livestock, as presented in table 2, is fairly typical for the area. On the basis of these rations, the livestock at present utilize all of the roughage available and leave about

Table 2. Number of Livestock and Feed per Head

Kind of Livestock	Number		Pounds feed per head	
	Present	Proposed	Concentrates	Roughages
Horses, head	6	6	1,000	4,500
Cows, head	17	21	1,150	5,400
Bull, head	1	1	2,000	4,600
Calves, head	14	18	250*	1,000
Heifers, head	6	8	250	3,500
Fattening cattle, head	28	32	750	3,200
Hogs, cwt. produced	90	90	420*	.....
Hens, head	150	150	10,000*	.....

* Skim milk fed in addition to feed shown.

35 tons of grain available for seed and for sale. About one thousand bushels of barley and two hundred bushels of wheat are sold annually.

More Pasture Can Be Used

Since pasture has been scant in the past, an additional 10 acres of pasture could be used advantageously. By adding more stalls and extending the air line for the milking machine, more milk cows could be kept. Space is also available for the additional young cattle. Four more cows, with the accompanying young stock, would utilize an additional 10 acres of pasture and, with the same rations as in the past, the increase in roughage. After allowing for seed requirements, only two hundred bushels of grain would now be available for sale.

Table 3. Changes in Income and Expenses

	Present		Proposed	
Changes in income				
Butterfat, @ 35¢	3,230 lbs.	\$1,130	4,200 lbs.	\$1,470
Cattle, @ \$60	29 head	1,740	33 head	1,980
Barley, @ 60¢	1,000 bu.	600	.....	.....
Wheat, @ 70¢	200 bu.	140	200 bu.	140
Clover seed, @ 25¢	1,200 lbs.	300	2,400 lbs.	600
Total		\$3,910		\$4,190
Increase in income				\$280
Changes in expenses				
Int. and depreciation on new equipment				\$20
Int., taxes, and other costs on additional cattle				\$50
Savings in power, twine, and other exp. on crops		\$40		
Total		\$40		\$70
Increase in expenses				\$30
Increase in net income				\$250

This change in crops and livestock appears to be practicable, but what would be the effect upon the net income of the farm? More butterfat would be sold because the increased acreage of pasture would increase the production per cow, and the number of cows would be increased. Using the average price received during the past 10 years, the income from the sale of dairy products would be increased about \$340 as shown in table 3. Sales of cattle and clover seed would also be increased, but the sale of grain would be reduced sharply. Gross income would be increased \$280. Some charges for interest, depreciation, and upkeep of the additional barn equipment would be added. Interest, taxes, and cash expenses for cattle would be increased. Some expenses for crops would

be reduced. No additional labor would have to be hired. Total expenses would increase slightly. The net income would be increased by an estimated amount of \$250.

Cropping System Practicable

This proposed cropping system could be readily put into practice on this farm. The work could be handled with the labor supply that is now available. Some outlay of cash would be necessary to remodel the barn and to make other changes but could be readily financed on this farm. The net income of the farm would most likely be increased by a small amount even during the first years after making the change. Gains in crop yields resulting from more effective erosion control, increased acreage of legumes, and more manure would tend to further increase the net income in the future.

This proposed plan is only one of many reorganizations that could be suggested for this farm. By making similar budgets for each of the other alternatives, the change which would effectively fulfill the objectives of conservation and yet give the largest increase in earnings could be selected. The use of budgets for this purpose will aid in increasing the accuracy of planning soil conservation, making it easier to detect errors in reasoning by the use of inexpensive paper rather than through expensive trial and error.

Effective Use of Labor Increases The Farmer's Income

W. P. RANNEY

One of the reasons some farmers earn considerably more than their neighbors is that they use their labor more effectively. There is always a wide range in productive accomplishment per man among farms in any community. This is well illustrated in figure 1 which shows the range in productive man work units per worker among a large group of dairy farms in southeastern Minnesota during

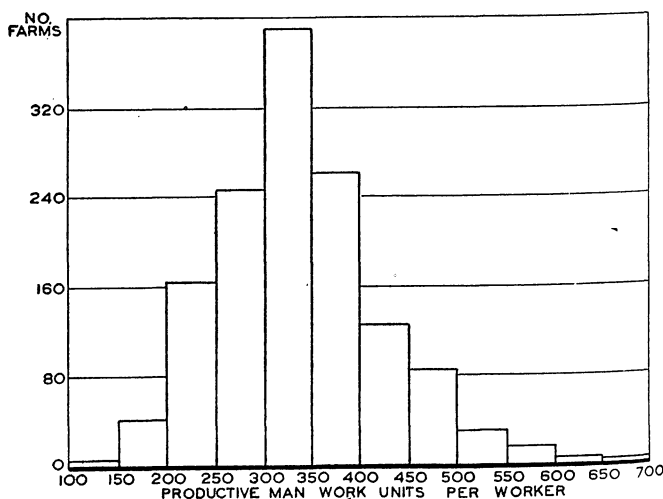


FIGURE 1. DISTRIBUTION OF FARMS ACCORDING TO WORK UNITS PER WORKER

the 10-year period from 1928 to 1937. A productive man work unit is the accomplishment of a farm worker in a 10-hour day working on crops or productive livestock at average efficiency.

As shown in figure 1 there was more than twice as much productive work accomplished per worker on some farms as on others. The relationship of these differences in amount of work accomplished to the operator's earnings is illustrated in table 1. The wages and board for hired labor and a charge for use of family labor other than the operator make up about one fourth of the expenses on these farms. Hence it is not surprising that efficient use of labor on these farms should correlate with the operator's earnings as shown in table 1. More productive work accomplished per worker reduced the labor charge per unit of business.

Table 1. The Relationship of Labor Efficiency to Earnings

Work Units per Worker (Per cent of average of all farms)		No. of Farms	Average Earnings
Group	Average		
74 and less	66	126	\$1,304
75-94	86	528	1,569
95-114	103	483	1,885
115 and more	130	325	1,997

Higher labor accomplishment can be secured in several ways. In the first place, the business must be large enough so that there will be at least sufficient work for the available labor. The farm should be so organized that the labor requirements are well distributed throughout the year. Handling pastures in such a way that as large a proportion as possible of the year's feed for livestock may be obtained from them helps to reduce labor requirements. Well-arranged buildings and farmstead, proper planning of the farm work, and economical use of labor-saving machinery help increase the work accomplished per worker.

Minnesota Authorizes Rural Land Use Zoning

ROY M. GILCREAST

The 1939 session of the State Legislature passed "an act¹ authorizing the boards of county commissioners in certain counties in conjunction with town boards to enact ordinances establishing districts and regulating the location and use of structures and the use or occupancy of lands therein." This act, commonly known as the Rural Zoning Law, applies to all counties in which there is now or may hereafter be located a state forest, a federal forest, or a state conservation area. At the present it applies to Cook, Lake, St. Louis, Carlton, Pine, Kanabec, Mille Lacs, Morrison, Aitkin, Crow Wing, Cass, Wadena, Hubbard, Becker, Mahanomen, Clearwater, Beltrami, Itasca, Koochiching, Lake of the Woods, Roseau, and Marshall counties. In these counties the county board is empowered to regulate and restrict (1) the location and use of

buildings and structures; and (2) the use, condition of use, or occupancy of lands for residence, recreation, agriculture, water conservation, forestry, and other purposes.

This law is entirely permissive. It does not require the board of commissioners of any county to establish districts or to adopt ordinances regulating the use or occupancy of lands. It merely permits the county boards to do so when it appears that an ordinance regulating or restricting the use of occupancy of certain lands within the county would be of general benefit to the people of the county.

Procedure for County Board

If the board of commissioners of a county wishes to avail itself of the powers granted under the act, the following procedure is provided for. (1) The county board, in conjunction with the town boards, shall investigate and determine the necessity of establishing districts and prescribing regulations. (2) After such investigation the county board shall prepare a proposed ordinance establishing districts and prescribing the regulations which shall apply to the different districts. This proposed ordinance shall be approved by the town boards. (3) The county board shall then hold a public hearing at which the proposed ordinance shall be submitted for discussion and at which citizens shall have an opportunity to be heard. (4) Following the public hearing the county board may adopt the proposed ordinance with such changes as it deems advisable. (5) The ordinance may be amended or repealed by the board of county commissioners by the same procedure used in its adoption.

Controls Future Settlement

This act was passed primarily to provide a method of controlling the future settlement and development of the cut-over counties. It is a recognition of the fact that there are wide differences in various sections of these counties. Some areas are well adapted to agricultural development while other areas might better be devoted to forestry, recreation, or other purposes. In the past, agricultural settlement has taken place in some areas where the quality of the soil or other conditions have made successful agriculture practically impossible. In such cases, settlement has usually been sparse and isolated, making the costs of roads, schools, and other public services excessive. In one county, a settler located 5 miles from his nearest neighbor, on a road maintained largely for his exclusive use, has cost the various governmental units approximately \$10,000 during his life time for the education of his children and maintenance of road facilities. In another county, it cost an average of \$185 per family to furnish school transportation for the children of 28 families for one year, while the average tax levied against these farms was only \$10 and not all of that was paid. Since rural zoning cannot be retroactive, it alone can not correct these conditions, but if it is wisely used, it can prevent similar situations from developing in the future.

Minnesota is one of ten states now having laws which permit some form of rural-land zoning.

¹ Chapter 340—Session Laws of 1939.

Minnesota Farm Prices for Oct. 1939

Prepared by W. C. WAITE and W. B. GARVER

The index number of Minnesota farm prices for the month of October 1939 was 68. When the average of farm prices of the three Octobers, 1924-25-26, is represented by 100, the indexes for October of each year from 1924 to date are as follows:

1924— 93	1928— 95	1932— 38	1936— 94
1925—104	1929—107	1933— 50	1937— 82
1926—104	1930— 82	1934— 67	1938— 61*
1927— 98	1931— 52	1935— 74	1939— 68*

* Preliminary.

The price index of 68 for the past month is the net result of increases and decreases in the prices of farm products in October 1939 over the average of October, 1924-25-26, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, October 15, 1939 with Comparisons*

	Oct. 15, 1939	Sept. 15, 1939	Oct. 15, 1938		Oct. 15, 1939	Sept. 15, 1939	Oct. 15, 1938
Wheat	\$0.71	\$0.75	\$0.55	Cattle	7.10	7.40	6.30
Corn .....	.37	.45	.33	Calves	9.10	9.30	8.20
Oats .....	.25	.26	.18	Lambs-sheep	7.70	7.59	6.71
Barley .....	.39	.40	.35	Chickens .....	.09	.11	.11
Rye .....	.39	.38	.30	Eggs .....	.18	.16	.23
Flax	1.65	1.53	1.64	Butterfat .....	.29	.26	.26
Potatoes .....	.50	.55	.37	Hay	4.54	4.28	4.55
Hogs	6.50	7.00	7.20	Milk	1.60	1.40	1.45

* These are the average prices for Minnesota as reported by the United States Department of Agriculture.

The index, at 68, is unchanged from the September level. More than the usual seasonal declines occurred from September levels for all the crops except flax and potatoes. Flax rose 12 cents and potatoes declined somewhat less than the seasonal amount. The principal livestock quotations also declined from September levels with only lambs-sheep showing a small seasonal rise. Cancelling the declines in crops and livestock was the strength shown in prices for butterfat and milk. The 3-cent rise to 29 cents was somewhat more than seasonal expectations for butterfat, while milk advanced from \$1.40 to \$1.60. Chickens, however, declined more than the usual seasonal decline, and eggs rose less than their customary September to October rise.

Indexes and Ratios of Minnesota Agriculture*

	Oct. 1939	Sept. 1939	Oct. 1938	Average Oct. 1924-26
U. S. farm price index.....	70.3	71.5	68.8	100
Minnesota farm price index.....	67.7	68.0	61.2	100
U. S. purchasing power of farm products	87.6	89.1	86.4	100
Minn. purchasing power of farm products	84.3	84.6	76.9	100
Minn. farmer's share of consumer's food dollar		43.5	43.7	53.8
U. S. hog-corn ratio	13.7	12.6	17.4	12.8
Minnesota hog-corn ratio	17.6	15.6	21.8	14.6
Minnesota egg-grain ratio	19.8	15.7	32.5	21.7
Minnesota butterfat-farm-grain ratio	38.2	31.9	42.6	38.3

* Explanation of the computation of these data may be had upon request.

UNIVERSITY FARM, ST. PAUL, MINNESOTA

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Division and United States Department of Agriculture Cooperating, P. E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.

Minnesota Farmer's Share of Consumer's Food Dollar

The producer's share of the consumer's food dollar tends to fluctuate directly with rises and declines in the level of farm prices. The share was 60 per cent in the high price period of early 1920 and 35 per cent in the low price period of 1932. Calculation of this share for Minnesota producers is based upon the Minneapolis retail price of 22 food items weighted according to the relative amounts purchased and the Minnesota farm price of farm commodities required to produce them.

The farmers' share rose to an average of 53 per cent for the period covered by the last half of 1936 and the first half of 1937. Accompanying the decline in farm prices beginning in 1937 the share declined to a low of 40 per cent for June 1939. It has since that month been rising slightly. September is the latest month for which figures are available. The rise for September over August was from 40.4 per cent to 43.5 per cent. Retail and farm prices have, of course, both advanced since midsummer, but farm prices have risen slightly more than retail quotations. Analysis of the individual quotations indicates that in September farmers were receiving prices equivalent to 57 per cent of the consumer's food dollar for beef and 59 per cent for pork; 55 per cent of the consumer's egg dollar went to producers; for chickens and potatoes, the farmer's share was 48 per cent. The smallest shares relatively were for milk and wheat. The share of the consumer's milk dollar in September was 39 per cent, while the wheat dollar of the consumer, expended mostly for bakery bread, netted the farmer 20 cents. The relatively smaller share for milk and wheat products is, as has previously been pointed out in these pages, largely the result of greater amounts of processing entering into the final products of these two raw commodities.

It is not easy to say at what percentage figure the farmer's share would be a fair distribution of the consumer's dollar, but future increases in that relative share are almost entirely dependent upon higher prices for farm products.

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P. E. MILLER, Director

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