A study of the organization, operations, and practices of a selected group of successful Montana farms by Willard W Cochrane

A THESIS Submitted to the Graduate Committee in partial fulfillment of the requirements for the Degree of Master of Science in Agricultural Economics
Montana State University
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Abstract:
It has been the principal purpose of this study to discover and analyze those characteristics common to, or peculiar to, financially successful farmers and their farms in Montana. However, since only those farmers netting $1,000 or more per year for the period 1934 through 1936, or for 1936 alone, as recorded on the state income tax records, were defined as successful in this study, it may be inferred that many successful farmer's were not included in the sample, because of the method and basis of selection used. But regardless of this fact it may be concluded that a fair, representative sample of successful Montana farmers was considered in this study.

The final refined sample included 314 successful farms, 241 of which were classed as crop farms, and 73 of which were classed as combination crop-livestock farms. These successful farms were scattered throughout the State of Montana, but over one-third of the farms were concentrated in Pondera and Teton counties alone. The net income per year of successful farmers ranged from $1,000 to well over $10,000, with the income of the modal class being $2,500. This would indicate that these successful farmers were a very successful group.

It is evident from the analysis of the data collected in this study, that there is no set formula for successful farming in Montana. However, if no formula was developed, certain tendencies with respect to farm management were discovered. The range in farm practices and organization was found to be widely divergent, but quite often within the range there were found to be present definite tendencies with regard to practices and organization. These tendencies might be called factors making for successful farming. In short, a majority of farmers in this group possess a combination of factors which are essentially the same, even though their actual farm-organizations and practices differ.

From those characteristics most common to all successful farmers and their farms it is possible to draw several broad generalizations that may help explain why these farmers have made a financial success in recent years. First; successful crop farms are approximately 1100 acres in size, of which nearly one-half or 450 acres are devoted to wheat production each year; a highly commercialized agriculture. Second; the successful farms are located on land which is predominately first or second grade farm land, and consequently are benefited in the form of high wheat yields per acre. Third; the successful farmers are middle aged men; men who started farming in Montana between 1910 and 1920 as small operators with a limited means of capital, and who have gradually increased the size of their farm units by purchasing additional small acreages whenever their funds would permit, especially since 1925, taking advantage of low land values in those years.

A STUDY OF THE ORGANIZATION, OPERATIONS, AND PRACTICES OF A SELECTED GROUP OF SUCCESSFUL MONTANA FARMS

by

WILLARD W. COCHRANE

A THESIS

Submitted to the Graduate Committee
in partial fulfillment of the requirements
for the Degree of Master of Science
in Agricultural Economics at
Montana State College

Approved:

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In Charge of Major Work

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Chairman Examining Committee

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Bozeman, Montana
June, 1938

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A STUDY OF THE ORGANIZATION, OPERATIONS, AND PRACTICES OF A SELECTED GROUP OF SUCCESSFUL MONTANA FARMS

ABSTRACT

It has been the principal purpose of this study to discover and analyze those characteristics common to, or peculiar to, financially successful farmers and their farms in Montana. However, since only those farmers netting $1,000 or more per year for the period 1934 through 1936, or for 1936 alone, as recorded on the state income tax records, were defined as successful in this study, it may be inferred that many successful farmers were not included in the sample, because of the method and basis of selection used. But regardless of this fact it may be concluded that a fair, representative sample of successful Montana farmers was considered in this study.

The final refined sample included 314 successful farms, 241 of which were classed as crop farms, and 73 of which were classed as combination crop-livestock farms. These successful farms were scattered throughout the State of Montana, but over one-third of the farms were concentrated in Pondera and Teton counties alone. The net income per year of successful farmers ranged from $1,000 to well over $10,000, with the income of the modal class being $2,500. This would indicate that these successful farmers were a very successful group.

It is evident from the analysis of the data collected in this study, that there is no set formula for successful farming in Montana. However, if no formula was developed, certain tendencies with respect to farm management were discovered. The range in farm practices and organization was found to be widely divergent, but quite often within the range there were found to be present definite tendencies with regard to practices and organization. These tendencies might be called factors making for successful farming. In short, a majority of farmers in this group possess a combination of factors which are essentially the same, even though their actual farm organizations and practices differ.

From those characteristics most common to all successful farmers and their farms it is possible to draw several broad generalizations that may help explain why these farmers have made a financial success in recent years. First; successful crop farms are approximately 1100 acres in size, of which nearly one-half or 450 acres are devoted to wheat production each year; a highly commercialized agriculture. Second; the successful farms are located on land which is predominately first or second grade farm land, and consequently are benefited in the form of high wheat yields per acre. Third; the successful farmers are middle aged men; men who started farming in Montana between 1910 and 1920 as small operators with a limited means of capital, and who have gradually increased the size of their farm units by purchasing additional small acreages whenever their funds would permit, especially since 1925, taking advantage of low land values in those years.

PART I: INTRODUCTION

Historical Background

The agricultural industry in Montana has been relatively unsuccessful for the past fifteen years. Adverse natural conditions combined with economic maladjustments have literally pinched the majority of farmers into an unprosperous condition.

The great influx of rural population into the plains region of Montana took place from 1910 to 1920. The settlers who took up land during this period in Montana under the Homestead Laws, did not know the limited and varying conditions to which they would eventually be forced to adapt themselves. In this period wheat prices were unusually high, the virgin soil was highly productive, and precipitation was much greater than average. Relatively large profits were made in those first few years; Montana's agriculture boomed. In the early twenties these conditions underwent a great change, constant cropping had mined the soil of much of its fertility; wheat prices dropped from over $2.00 to less than $1.00 per bushel, and from the condition of unusually high precipitation the climate changed to a condition of unusually low precipitation. Then in 1929 the great economic depression swept the country severely straining the old economic order. Hence, only those farmers who were able to withstand the severe stresses and strains of that period, both the economic and the natural, were considered in this study.

Objectives of the Study

It is the principal objective of this study to discover and analyze those factors and conditions which have made it possible for this extremely

limited group of farmers to become economically successful. These factors when isolated and analyzed may serve as a basis for future agricultural policies and economic planning; at least planning agencies can use them as a point of departure for a more intensified investigation. Perhaps it may be possible to formulate a criterion or set of requirements from these factors as a prerequisite for financial success in this region. And, finally, the most desirable farm organization, operations, and practices will be established, which farmers may use to compare with their own farm unit, and use as a guide in their own organization and practices.

Basis of Selecting the Sample

To obtain a representative sample of the successful farmers in Montana all those farmers that netted $1000 or more per year for the period 1934 through 1936, or for 1936 alone, were chosen. 1/ It was first thought that only those farmers actually paying a state income tax for that period would be selected, but on that basis the number of farms selected made up too small a group to be satisfactorily analyzed by the use of group averages. Thus the basis of selection was made more liberal in order to obtain a larger sample. This group included, livestock, cash crop, and combination crop-livestock farms. Approximately 50 per cent of this total group were livestock enterprises, which were not included in this study due to lack of time and lack of similarity of problems. The sample was thus restricted to include only cash crop and combination crop-livestock farms. The terms cash crop and combination crop-livestock as used in this study refer directly

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1/ The record for each farmer's income was obtained from the income tax files at Helena for the period 1934 through 1936. Refer to Individual Income Tax Return, Appendix B.

to the principal sources of income from those farms. 2/

Source of Data

The material for this project was gathered from five principal sources. All data concerning farm expenditures, income and profit were obtained from the state income tax files at Helena. The data concerning acreages, crops, livestock, buildings, equipment, farm practices, family status, living conditions and personal experience were obtained from questionnaires sent directly to the farmers in the sample. The legal description and valuation of land owned, and the numbers and valuation of equipment and livestock were obtained from the county assessor's records. The data concerning character, experience, and community standing of the farmers were obtained from questionnaires sent to the county agents. Data concerned with yields, crop acreages, grade and productiveness of the soil, and precipitation were obtained from secondary sources at the Montana Agricultural Experiment Station.

By using a fairly adequate, representative sample and grouping the informative material for each farmer in statistical averages and charts which best suited the material, a "normal" was established from which justifiable conclusions and generalizations were drawn.

Limitations of the Study

Because of the lack of funds and insufficient time this study was carried on without the desirable field work necessary to obtain adequate and reliable information. As already stated, all the material and data for

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2/ Cash crop farms comprise those where 60 per cent of the farm income is derived from the sale of crops, whereas on combination farms neither crops nor livestock furnish 60 per cent of the total farm income, but each enterprise furnishes more than 40 per cent of the total farm income.

this study were obtained entirely by correspondence and from secondary sources. Therefore one of the chief problems encountered was that of gathering reliable unbiased information on the personal qualifications and experiences of the farmers themselves. M. L. Wilson, in a farm management study of dry farming in the "triangle" region, has clearly shown the value of supplementing generalized material with case histories of individual farmers, thereby, getting a personal feel or "touch" of the situation. 3/ If a field survey of the farmers included in this sample had been carried out, a greater emphasis could have been placed on the subjective or non-material factors making for successful farming. The customary difficulties usually encountered when questionnaires are used made themselves apparent. First, the farmers were slow to answer and return the questionnaires, and second, the answers were inadequate in many cases. However, the return was nearly 40 per cent of those sent out, which made a fairly good representative sample with which to work.

It is realized that this study is very broad and general in its scope, and a conscious effort has been made to consider and study all phases of farm management, as the term is used in its broadest sense. It is hoped that by attacking the problem in this broad general way, that a complete concept of the most desirable farm management practices for Montana may be established.

PART II: THE NUMBER AND LOCATION OF THE SUCCESSFUL FARMS.

The Distribution of Farms According to Income

There are very few farmers in Montana who could be classed as

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3/ Wilson, M. L., Dry Farming in the North Central Montana 'Triangle,' Montana Extension Service, No. 66, June, 1923.

successful, if net farm income is used as a measuring stick of success. The 1935 Census of Agriculture shows that there were 50,504 farms in Montana, yet less than 500 farmers paid an income tax to the state for the period 1934 through 1936. There were slightly over 30,000 cash crop and combination crop-livestock farms in 1930 according to the Census of Agriculture, but less than 300 of these farmers paid an income tax to the state for the period stated above. The average farm family has a tax exemption of $2,600, hence, most farm families would necessarily have to net over $2,600 per year before they would be affected by the state income tax law. From these data it would seem that less than one per cent of Montana farmers paid an income tax each year for the period studied.

Of the farmers selected (those with a net income exceeding $1,000) the greatest number made a net income of between $2,000 and $2,999 per year, in fact 90 out of 314 farmers fall into this group. Furthermore, 221 out of 314 farmers made less than $3,999 per year as a net farm income; thus it would seem that the modal group of successful farmers received a net income of $2,500 per year (see table I).

The Location of Farms

The refined sample included 314 farms, 241 of which are cash crop farms and 73 of which are combination crop-livestock farms. These farms are scattered throughout the state, but there is a definite concentration of the successful farms in the north central triangle region. It must be remembered that these farms were not picked because of their location or any other basis except net farm income, thus the concentration of successful farms in Pondera and Teton counties is accidental as far as selection is

TABLE I.--THE DISTRIBUTION OF SUCCESSFUL FARMERS

BASED ON THE AVERAGE NET INCOMES, 1934 THROUGH 1936*

Net Income in Dollars	Crop Farmers	Combination Farmers	Total
1000 - 1999	46	21	67
2000 - 2999	68	22	90
3000 - 3999	54	10	64
4000 - 4999	32	10	42
5000 - 5999	19	4	23
6000 - 6999	7	3	10
7000 - 7999	4	1	5
8000 - 8999	6	2	8
9000 - 9999	2	--	2
10,000 & over	3	--	3
Total	241	73	314

*Source: Montana State Income Tax returns, 1934 through 1936.

concerned (see table II and figure 1).

The Effect of Rainfall on the Location of Farms

The Effect of Annual Precipitation.--As stated before there is a definite concentration of successful farmers in Pondera and Teton counties, and it has been contended that this grouping may be accounted for by a high precipitation in this region during the period studied. Since nearly 100 per cent of these farmers are dry land wheat producers, one might presume at first blush that rainfall alone would explain their success, as the period studied was an unusually dry period for the state as a whole. However, the data do not clearly establish this presumption. From figure 2 showing the average annual precipitation for Montana, two rather indefinite conclusions may be drawn. First, the average annual precipitation was rather evenly distributed throughout the plains section of the state for the period studied, with all portions receiving in the neighborhood of ten inches. Second, the deviations from average for the entire state were all less than average, but the deviations from average were least in the Pondera and Teton region. In other words those two counties suffered a drought condition, but not as severe a condition as in other parts of the state.

The Effect of Seasonal Precipitation.--The amount of annual precipitation is not as important as the amount of precipitation received during the growing season in the production of small grains in dry land sections. Hence it might be guessed that unusually heavy rains during the growing season in this region made possible high crop yields. But

TABLE II.--LOCATION OF THE SUCCESSFUL MONTANA FARMS

BY COUNTIES, 1934 THROUGH 1936

Counties	Number of crop farmers	Number of combination farmers	All successful farmers
Beaverhead	2	1	3
Big Horn	4	2	6
Blaine	6	1	7
Broadwater	-	2	2
Carbon	3	2	5
Carter	-	-	-
Cascade	16	1	17
Chouteau	14	3	17
Custer	-	-	-
Daniels	1	-	1
Dawson	1	1	2
Deer Lodge	-	-	-
Fallon	-	1	1
Fergus	10	4	14
Flathead	5	-	5
Gallatin	16	7	23
Garfield	-	-	-
Glacier	1	2	3
Golden Valley	-	-	-
Granite	1	2	3
Hill	2	-	2
Jefferson	-	-	-
Judith Basin	3	-	3
Lake	-	-	-
Lewis & Clark	3	1	4
Liberty	7	2	9
Lincoln	-	-	-
McCone	-	-	-
Madison	-	1	1
Meagher	-	-	-
Mineral	-	-	-
Missoula	1	-	1
Musselshell	-	-	-
Park	-	1	1
Petroleum	1	-	1

TABLE II.--LOCATION OF THE SUCCESSFUL MONTANA FARMS

BY COUNTIES, 1934 THROUGH 1936, CONT'D

Counties	Number of crop farmers	Number of combination farmers	All successful farmers
Phillips	1	2	3
Pondera	42	7	49
Powder River	-	-	-
Powell	2	2	4
Prairie	-	-	-
Ravalli	6	7	13
Richland	3	5	8
Roosevelt	4	1	5
Rosebud	2	-	2
Sanders	1	-	1
Sheridan	7	1	8
Silver Bow	-	-	-
Stillwater	2	1	3
Sweet Grass	-	2	2
Teton	61	4	65
Toole	3	2	5
Treasure	1	2	3
Valley	2	-	2
Wheatland	-	-	-
Wibaux	-	-	-
Yellowstone	7	3	10
The State	241	73	314

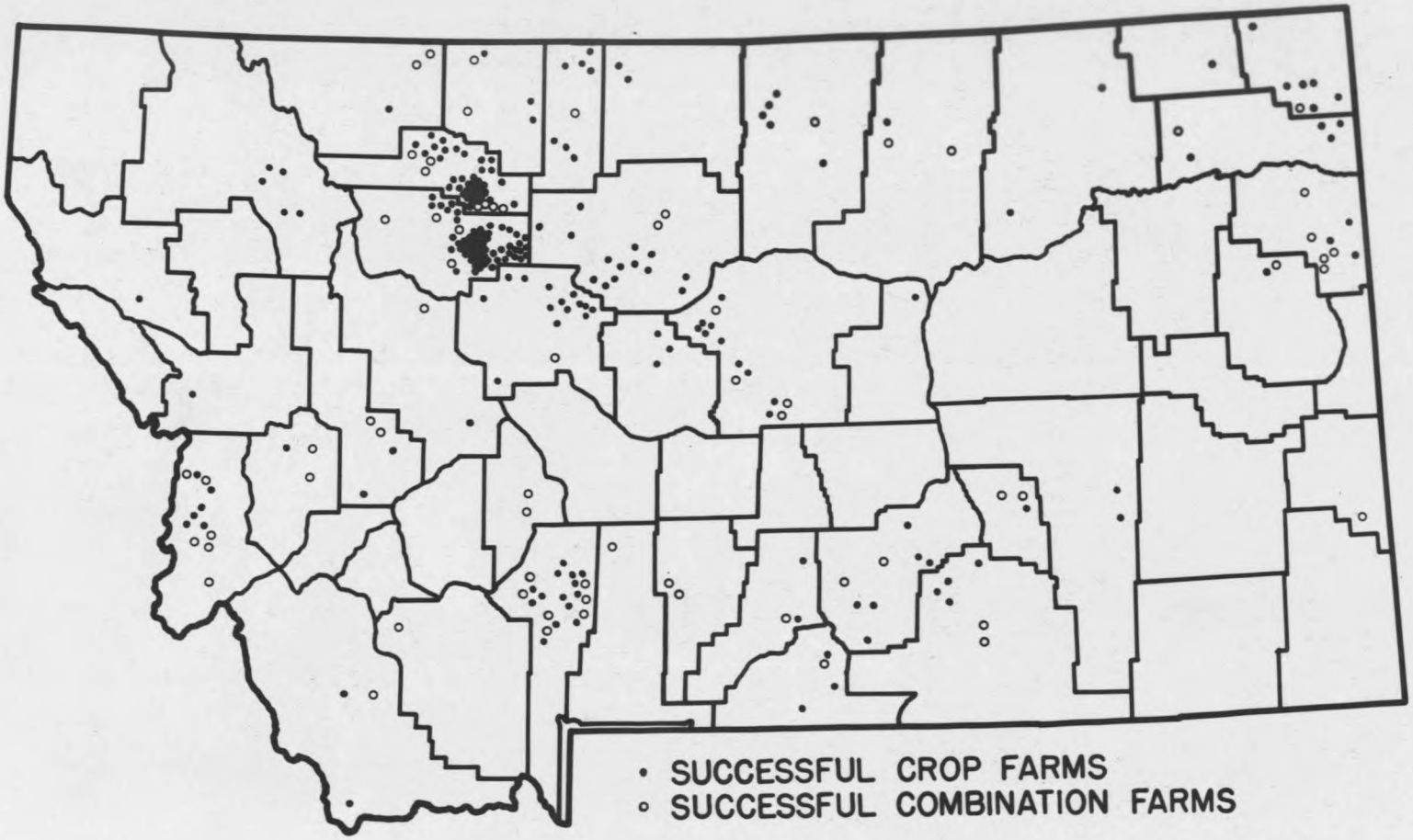


Figure 1.--Map showing the location of successful Montana crop and combination farms.

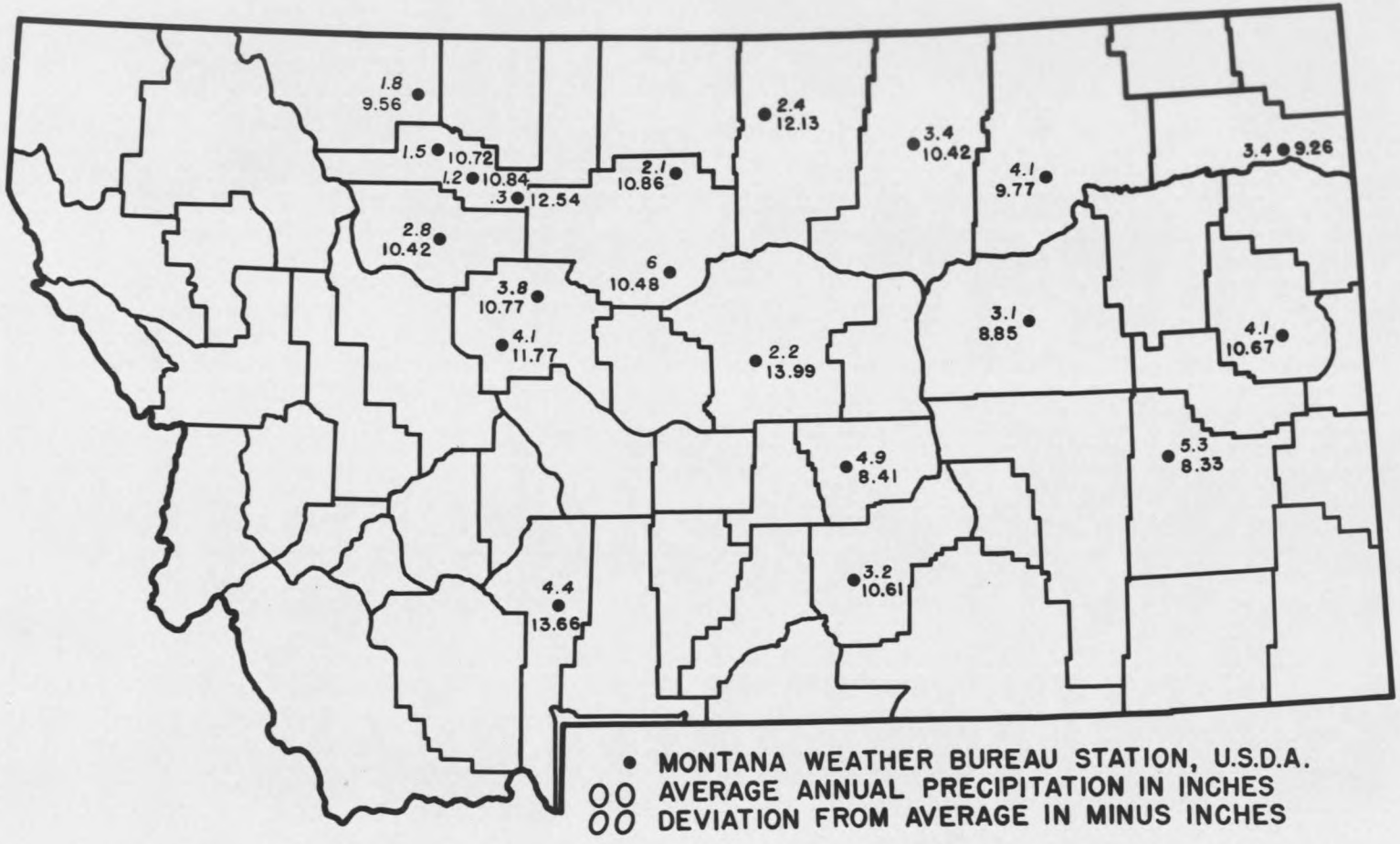


Figure 2.--Map showing the average annual precipitation and deviations from average for the plains region of Montana during the period 1933-1936.

from table III it seems quite evident that this region did not receive any excess precipitation, but experienced the same drought conditions as did the rest of the state. This drought condition was, however, a little less severe even during the growing season in this region, but not decisively.

In any dry land region it is recognized that sufficient rainfall is absolutely necessary for crop production and it has been definitely established that the annual precipitation in the years studied was from three to four inches below average. 4/ The climatological data would seem to indicate that rainfall has not been the dominant factor causing one group of farmers to become financially successful, and another group to fail. Thus, it will be necessary to make a detailed analysis of the farm organizations and farm management practices in an effort to explain the causes for successful farming in Montana.

PART III: FARM ORGANIZATION AND OPERATIONS AS PRACTICED ON SUCCESSFUL MONTANA FARMS

Farm Organization

Acreage Characteristics.--There has been a general feeling on the part of agricultural leaders in Montana that large acreages are necessary to enable the farmer to earn an income of at least $1,000 per year. However, just how large the farm unit should be, is still a moot question. The number of acres required to net an income of $1,000 per year will naturally vary with the productiveness of the soil, the climatic conditions, and the source of water supply. These variable factors make it seemingly

4/ Reitz, L. P., Crop Regions in Montana as Related to Environmental Factors, Bulletin 340, May, 1937, page 14.

TABLE III.--AVERAGE RAINFALL AND DEVIATIONS FROM AVERAGE FOR THE GROWING SEASON, (APRIL, MAY, JUNE, JULY), MONTANA 1934 THROUGH 1936 1/

Location	April		May		June		July		Growing Season	
	Ppt. Ave. 2/	D. 3/	Ppt. Ave.	D.	Ppt. Ave.	D.	Ppt. Ave.	D.	Ppt. Ave.	D.
Big Sandy	.73	-.27	1.49	- .38	1.90	- .36	.8	- .42	1.23	- .35
Billings	.72	-.47	1.34	-1.15	1.7	- .48	.67	+ .05	1.11	- .68
Bozeman	1.01	-.67	1.51	-1.34	2.08	- .7	.42	- .93	1.25	- .91
Cascade	.85	-.59	1.3	-1.51	2.61	- .73	.79	- .61	1.38	- .86
Chinook	.73	-.13	1.15	- .98	1.5	-1.08	.62	-1.0	1.00	- .8
Choteau	.78	-.04	.99	- .85	2.67	- .09	.56	-1.1	1.25	- .52
Conrad	1.09	0	.94	- .89	2.44	- .23	.49	-1.05	1.24	- .54
Culbertson	.25	-.62	1.2	- .77	1.95	- .85	2.3	+ .42	1.42	- .45
Cut Bank	.63	-.07	1.0	- .72	2.87	+ .33	.48	-1.28	1.24	- .43
Geraldine	.68	-.74	.92	-1.54	2.12	-1.03	.65	-1.14	1.09	-1.12
Glasgow	.23	-.69	1.16	-1.03	2.0	- .86	1.74	- .08	1.28	- .66
Glendive	.71	-.38	1.08	-1.18	1.93	-1.35	2.08	- .27	1.82	- .79
Great Falls	.82	-.39	1.0	-1.38	2.2	-1.11	.82	- .93	1.21	- .95
Jordan	.24	-.75	1.05	- .75	1.56	- .98	1.97	- .45	1.45	- .75
Lewistown	1.01	-.31	2.17	- .68	2.14	-1.48	1.25	- .62	1.89	- .77
Lytle	1.74	+ .65	.63	-1.25	2.27	- .12	.4	- .96	1.26	- .42
Malta	.23	-.63	1.13	-1.05	1.83	-1.68	1.33	- .56	1.13	- .98
Miles City	.51	-.61	.8	-1.43	.88	-1.77	1.16	- .38	.83	-1.04
Roundup	.47	-.74	.79	- .98	1.72	-1.07	.98	- .56	.99	- .84
Valier	.8	-.02	1.31	- .49	2.81	- .11	.49	-1.22	1.35	- .45

1/ Source: Climatological Data, United States Department of Agriculture. Weather Bureau, Montana Section.

2/ Abbreviation for precipitation.

3/ Abbreviation for deviations from average.

impossible to determine the size of an economic unit. Nevertheless, the material gathered on the size characteristics of successful crop farms shows that there is a tendency for the units to group around 1100 acres in size.

The data concerned with acreage characteristics were obtained from two different sources, (1) questionnaires sent to the successful farmers, and (2) the A.A.A. sign-up records. But regardless of the source of data, or the type of average applied to the data it is clearly shown in both tables IV and V that there is a definite tendency for successful crop farms to be slightly over 1100 acres in size. 5/ Since the average size wheat farm in Montana is approximately 522 acres in size, it can readily be seen that the successful crop farmers operate much larger units than do the rest of the farmers in the state. 6/ The fact that successful crop farms are more than twice as large as the average Montana farm, may help explain the financial success of farmers in this study.

There is a tendency on the part of successful crop farmers to own their own land rather than rent it. Forty per cent of the farmers in Montana own all the land they operate, 7/ yet only 37 per cent of the successful crop farmers own all the land which they farm.

The discrepancy between the successful group and all the farmers in the State is thus very slight as to the percentage of tenancy. These facts

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5/ From table IV it may be seen that the largest group of farmers operate a total acreage of between 751 and 1500 acres, and this modal average coincides exactly with the arithmetic averages shown in table V, parts A and B.

6/ Source: A.A.A. wheat sign-up records as collected by the Farm Security Administration, Bozeman, Montana.

7/ Source: United States Agricultural Census for Montana, 1935.

TABLE IV.--NUMBER OF ACRES OPERATED, OWNED, AND RENTED ON SUCCESSFUL CROP FARMS*

Acres owned and acres rented	Total	Acres Operated				
		0-320	321-750	751-1500	1501-2250	2251 & over
Total	89	12	12	33	15	17
Acres Owned						
0-250	11	9	1	--	--	1
251-500	22	3	6	11	1	1
501-1000	25	--	5	14	3	3
1001-1500	16	--	--	8	8	--
1501 & above	15	--	--	--	3	12
Rent - 0 -	32	10	7	11	2	2
Acres owned						
0-250	7	7	--	--	--	--
251-500	6	3	3	--	--	--
501-1000	9	--	4	5	--	--
1001-1500	6	--	--	6	--	--
1501 & above	4	--	--	--	2	2
Rent 1 - 320	22	2	5	10	3	2
Acres owned						
0-250	3	2	1	--	--	--
251-500	4	--	3	1	--	--
501-1000	9	--	1	7	1	--
1001-1500	3	--	--	2	1	--
1501 & above	3	--	--	--	1	2
Rent 321-640	14	--	--	5	4	5
Acres owned						
0-250	--	--	--	--	--	--
251-500	3	--	--	3	--	--
501-1000	2	--	--	2	--	--
1001-1500	4	--	--	--	4	--
1501 & above	5	--	--	--	--	5
Rent 641 & above	21	--	--	7	6	8
Acres owned						
0-250	1	--	--	--	--	1
251-500	9	--	--	7	1	1
501-1000	5	--	--	--	2	3
1001-1500	3	--	--	--	3	--
1501 & above	3	--	--	--	--	3

*Source: Questionnaires sent to successful crop farmers.

TABLE V.--NUMBER OF ACRES OPERATED, OWNED, AND RENTED ON SUCCESSFUL CROP FARMS

A*

Number of Farms	Operating Status	Average Acreage
90	Operate (total)	1484
88	Own	1037
33	Own all	851
55	Own part	1129
9	Cash rent	774
36	Share rent	572
10	Share & cash rent	844
2	Rent all	1240

*Source: Questionnaires sent to successful crop farmers.

B**

Number of Farms	Operating Status	Average Acreage
135	Operate (total)	1007
122	Own	850

**Source: A.A.A. Wheat Allotment cards.

bring to light two significant points: first, a crop farmer need not own all of his land to be successful, and second, the majority of these farmers own the greater proportion of their land and rent the rest, usually on a share crop basis (see table V, part A).

The situation is much different with regard to the total acres operated on successful combination farms, and furthermore, it should be recognized that there are many less combination farms than there are crop farms. As in the case of the successful crop farms, the data concerning acreage characteristics were obtained from two sources, and different types of averages were applied to the data to serve as checks. However, there was found to be no close agreement between any of the averages, as the total acres operated varied from 3111 acres in one case to 1102 acres in another case. 8/ Hence, it would be unwise to draw any conclusions as to the total acres operated on successful combination farms with results differing so widely.

It is interesting to note that there is a tendency on successful combination farms for the large landowners to increase the size of their units by renting more land, while the small landowners for some reason are content to remain small and not expand their units by renting (see table VI). There does not seem to be any middle-sized group of combination farms. Either these farms are very large approaching three or four thousand acres in size or they are very small of 320 acres or less. Hence, any type of average other

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8/ From the modal distribution in table VI it seems that the combination farms tend to fall into two groups; large units of 2251 acres or more and small units of 320 acres or less. The arithmetic averages shown in table VII, parts A and B of the total land operated, were derived from different samples and different sources, and they do not agree with each other or the modal average in table VI.

TABLE VI.--NUMBER OF ACRES OPERATED, OWNED, AND RENTED ON SUCCESSFUL COMBINATION FARMS*

Acres owned and acres rented	Total	Acres Operated				
		0-320	321-750	751-1500	1501-2250	2251 & above
Total	24	7	4	1	3	9
Acres owned						
0-250	8	5	1	1	1	--
251-500	4	2	2	--	--	--
501-1000	1	--	1	--	--	--
1001-1500	3	--	--	--	--	3
1501 & above	8	--	--	--	2	6
Rent - 0 -	13	7	2	--	1	3
Acres owned						
0-250	5	5	--	--	--	--
251-500	3	2	1	--	--	--
501-1000	1	--	1	--	--	--
1001-1500	--	--	--	--	--	--
1501 & above	4	--	--	--	1	3
Rent 1-320	2	--	1	--	1	--
Acres owned						
0-250	--	--	--	--	--	--
251-500	1	--	1	--	--	--
501-1000	--	--	--	--	--	--
1001-1500	--	--	--	--	--	--
1501 & above	1	--	--	--	1	--
Rent 321-640	1	--	1	--	--	--
Acres owned						
0-250	1	--	1	--	--	--
251-500	--	--	--	--	--	--
501-1000	--	--	--	--	--	--
1001-1500	--	--	--	--	--	--
1501 & above	--	--	--	--	--	--
Rent 641 & above	8	--	--	1	1	6
Acres owned						
0-250	2	--	--	1	1	--
251-500	--	--	--	--	--	--
501-1000	--	--	--	--	--	--
1001-1500	3	--	--	--	--	3
1501 & above	3	--	--	--	--	3

*Source: Questionnaires sent to successful farmers.

TABLE VII.--NUMBER OF ACRES OPERATED, OWNED, AND RENTED ON SUCCESSFUL COMBINATION FARMS

A*

Number of Farms	Operating Status	Average Acreage
25	Operate (total)	3111
22	Own	1156
9	Own all	883
13	Own part	1506
7	Cash rent	4273
4	Share rent	646
2	Share and cash rent	987
3	Rent all	646

*Source: Questionnaires sent to successful farmers.

B**

Number of Farms	Operating Status	Average Acreage
26	Operate (total)	1102
19	Own	910

**Source: A.A.A. Wheat Allotment cards.

than a position average will tend to distort the actual data. It must be constantly kept in mind that all of these acreage figures are averages of one type or another, and probably very few farms, either crop or combination, will approximate these averages, but it can be concluded that farms receiving their income from the sale of cash crops should be at least 1100 acres in size. Further, the data collected on combination crop-livestock farms in this study would indicate that their size does not tend to be constant, and that it is impossible to generalize in any way as to the optimum acreage for combination farms.

Types of Land Operated.--The farm land in Montana has been divided into three main types: dry land, grazing land, and irrigated land. In figure 3, the average number of acres owned of each type of land is shown for successful crop farms; 619 acres of dry land, 205 acres of grazing land, and 49 acres of irrigated land per farm. These figures are again merely averages and do not present entirely a true picture, as each successful crop farmer in the sample does not own all three types of land, in fact, a relatively small percentage own any irrigated land. From figure 5 it can be seen that 71 per cent of these crop farms are entirely dry farmed, 25 per cent are partly irrigated and only 3 per cent are entirely irrigated. These figures compare favorably with those for all farms in the state 9/ of which 73 per cent of the farms are dry farmed, and 27 per cent are partly or entirely irrigated.

From the above facts it would seem that there is some land in Montana that can be farmed successfully without irrigation and that, perhaps,

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9/ Slagsvold, P. L., "Readjusting Montana's Agriculture," VI, Montana's Irrigation Resources, Bulletin 315, 1936, pp. 6 and 7.

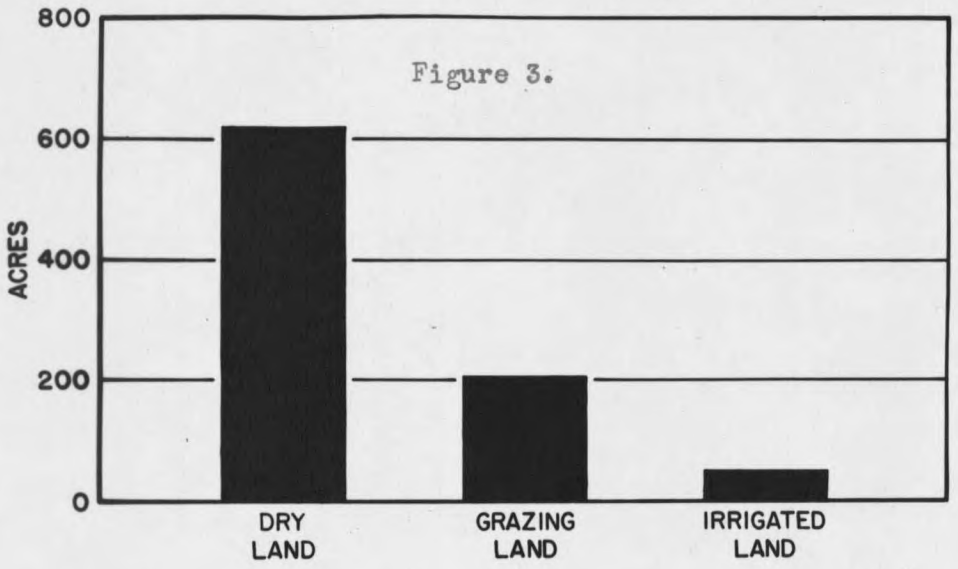


Figure 3.

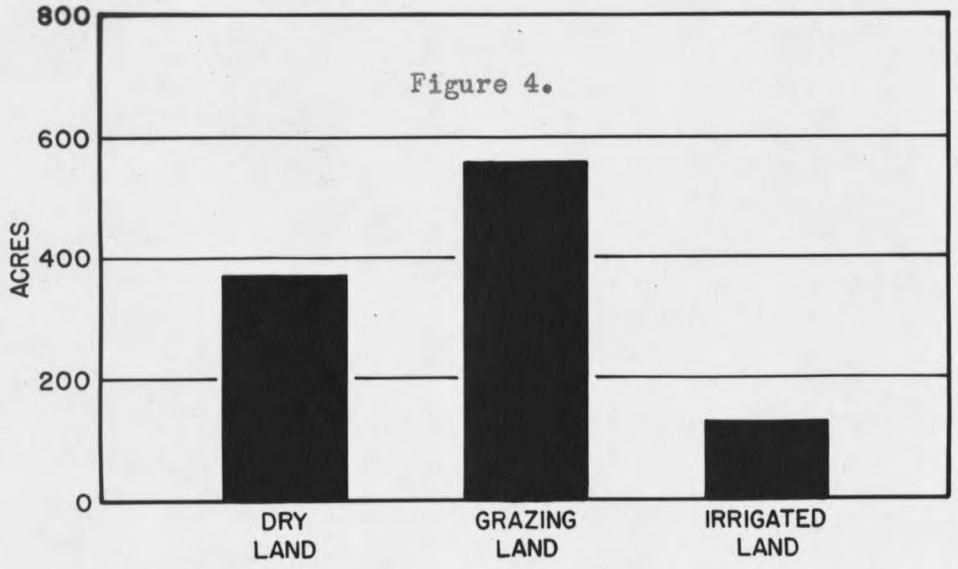


Figure 4.

Figure 3.--(top figure) Shows the number of acres of dry land, grazing land, and irrigated land owned on the average successful crop farm.

Figure 4.--(bottom figure) Shows the number of acres of dry land, grazing land, and irrigated land owned on the average successful combination farm.

irrigation is not the only solution to the problems confronting the individual farmer.

Successful combination farms vary quite markedly from the crop farms in respect to the type of land owned. The number of acres owned on these farms run 558 for grazing land, 370 for farm land, and 125 for irrigated land (see figure 4). In comparison the successful crop farmers own almost twice as much dry farm land as do the combination farmers, but the successful combination farmers own more than twice as much grazing land as do the crop farmers. When computed by an arithmetic average the amount of land under irrigation on combination farms is more than double that on crop farms, and 52 per cent of combination farms are partially irrigated while only 25 per cent of the crop type are classed as such (compare figures 5 and 6). As stated before, 27 per cent of all farms in the state are partially or entirely irrigated, yet of the successful combination enterprises nearly 56 per cent of the farms are partially or entirely irrigated. Farms carrying on livestock enterprises appear to require more irrigated land, and in all probability this extra irrigated land is being used on these farms to produce hay and forage crops.

Grades of Land Owned.--Farm land in Montana is divided into four grades based on the soil characteristics and yields. 10/ The grades are as follows: first grade, 22 bushels and over; second grade, 16-21 bushels; third grade, 12-15 bushels, and fourth grade, 8-11 bushels. 11/ The grazing land is

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10/ The soil reconnaissance work has been done under the direction of L. F. Gieseker, Agronomy Department, Montana Agricultural Experiment Station.

11/ These grades were worked out by the Department of Agricultural Economics, Montana State College, using the historic spring wheat yield records, in combination with the soil classification of the Agronomy Department as developed by L. F. Gieseker.

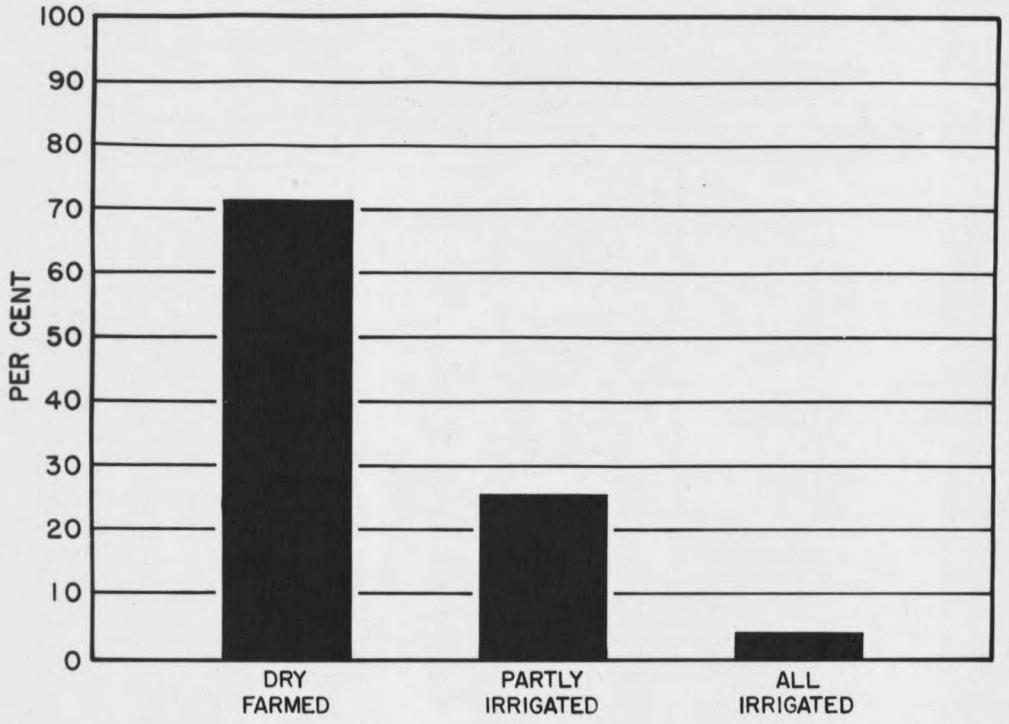


Figure 5.--The number of successful crop farms that are dry farmed, partly irrigated and entirely irrigated, in per cent.

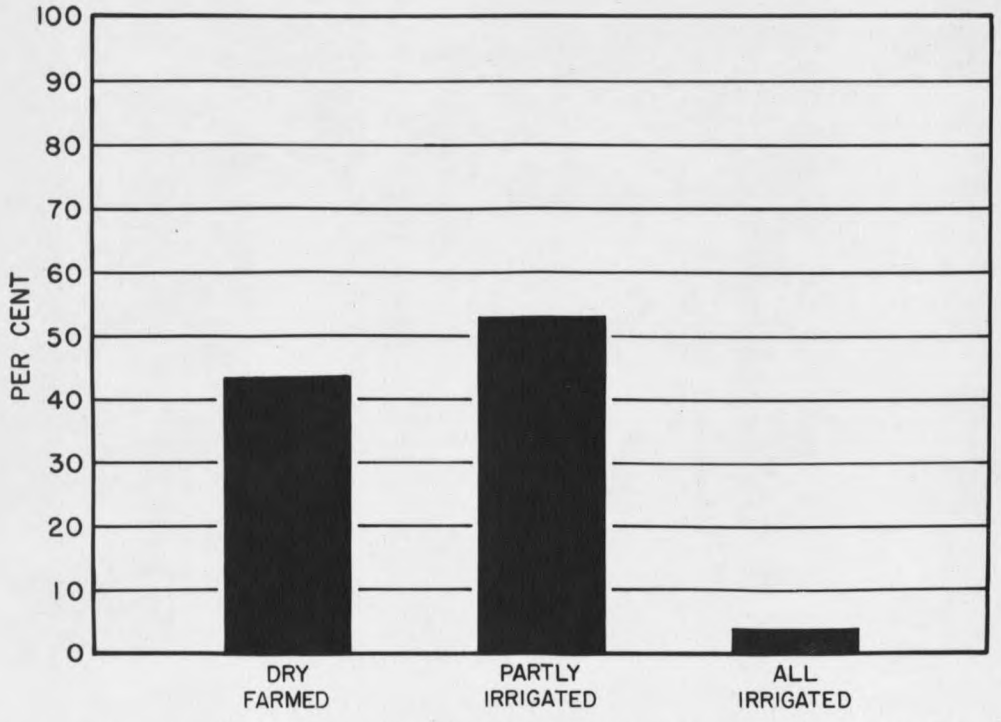


Figure 6.--The number of successful combination farms that are dry farmed, partly irrigated, and entirely irrigated, in per cent.

divided into five grades based on the carrying capacity of the land. 12/ First grade, 18 acres or less; second grade, 19-27 acres; third grade, 28-37 acres; fourth grade, 38-55 acres; fifth grade, 56 acres or more. Of the 240 successful crop and combination farms studied as to grade of land, 81 are located on predominantly first grade farm land, and 55 on second grade farm land, or 53.5 per cent of the entire group are located on either first or second grade farm land (see table VIII). It is also significant to note that out of the 240 farms recorded, 190 were situated on land classed as farm land, while only 50 farms were situated on land classed as grazing land.

The first grade farm land for the 41 counties mapped and classified makes up only 6.7 per cent of the total farm land of that area, yet the amount of first grade farm land owned by the successful farmers is 49 per cent of the total farm land owned by that group. 13/ In short, the successful farmers own a much greater proportion of the good farm land in the state, that has been mapped and classified, than it is physically possible for all farmers to own. In the opposite extreme there is 41.8 per cent of the total land in the classified area classed as fourth grade farm land, while fourth grade farm land makes up only 11.6 per cent of the total land owned by successful farmers. From the data in figures 8 and 9 it would be safe to conclude that the majority of successful farmers in this state are located

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12/ The grades of grazing land were worked out by the Department of Agricultural Economics, Montana State College, and are expressed in terms of the number of acres required to graze a 1000 pound steer for 10 months.

13/ Only 26 counties have been actually mapped and classified for soil productivity, but the Extension Service in conjunction with L. F. Gieseker have worked out approximations for 15 other counties. See Montana Extension Service, General Information Relating to Montana Agriculture.

TABLE VIII.--GRADES OF LAND OWNED ON SUCCESSFUL CROP AND COMBINATION FARMS*

Grade of Land	Total	Acreage 0 - 320	Acreage 321-640	Acreage 641-960	Acreage 961 & over
Total: Farms	240	81	74	55	30
Farm	190	61	65	44	20
1st	81	25	26	20	10
2nd	55	21	22	10	2
3rd	39	10	11	11	7
4th	15	5	6	3	1
Grazing	50	20	9	11	10
1st	12	10	--	1	1
2nd	11	1	3	4	3
3rd	21	9	5	4	3
4th	5	--	1	2	2
5th	1	--	--	--	1

*Source: County Assessor's Records and the Soil Classification maps of the Department of Agricultural Economics, Montana Agricultural Experiment Station.

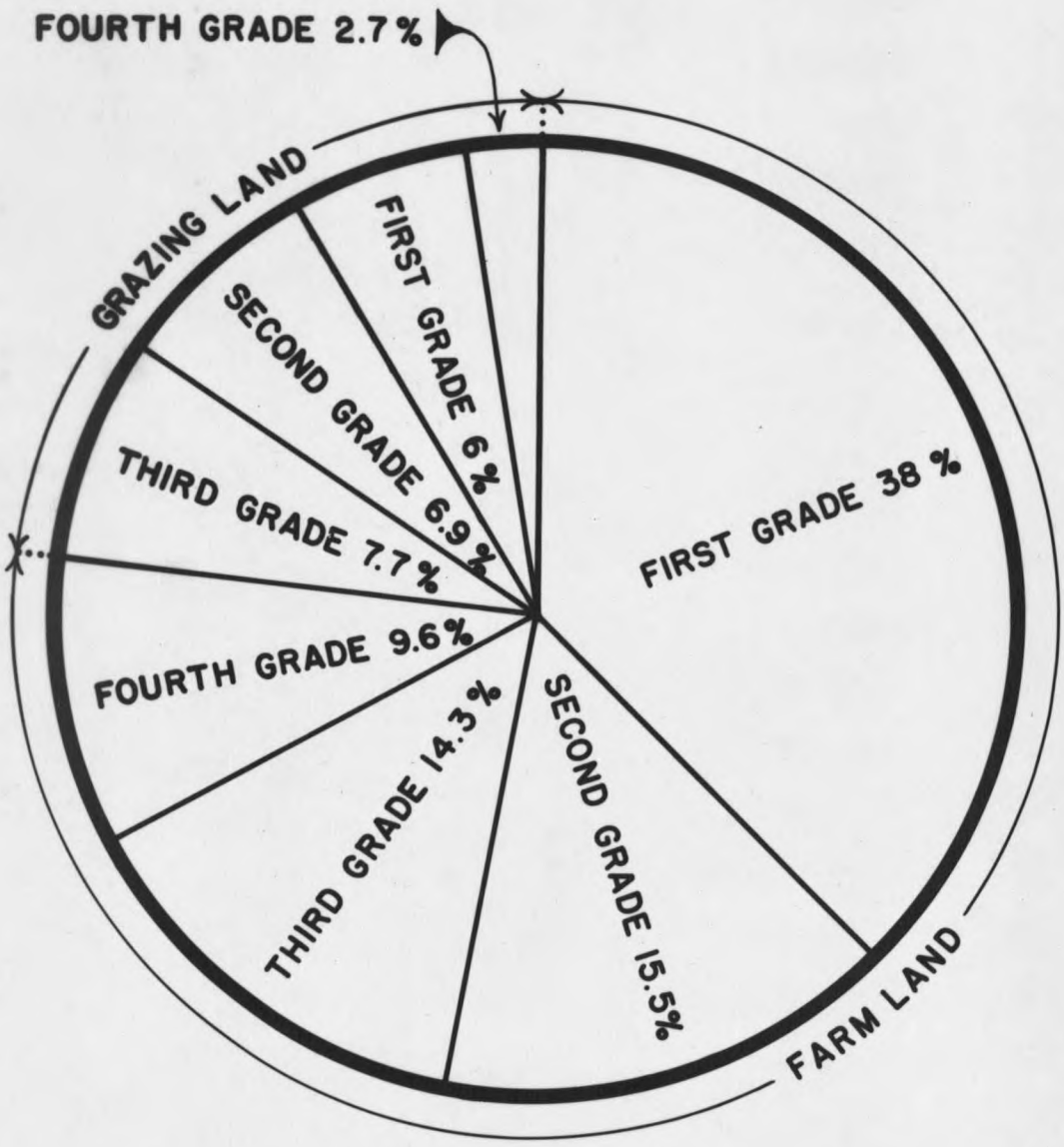


Figure 7.--Grades of farm land and grazing land owned by successful farmers in per cent of the total land owned.

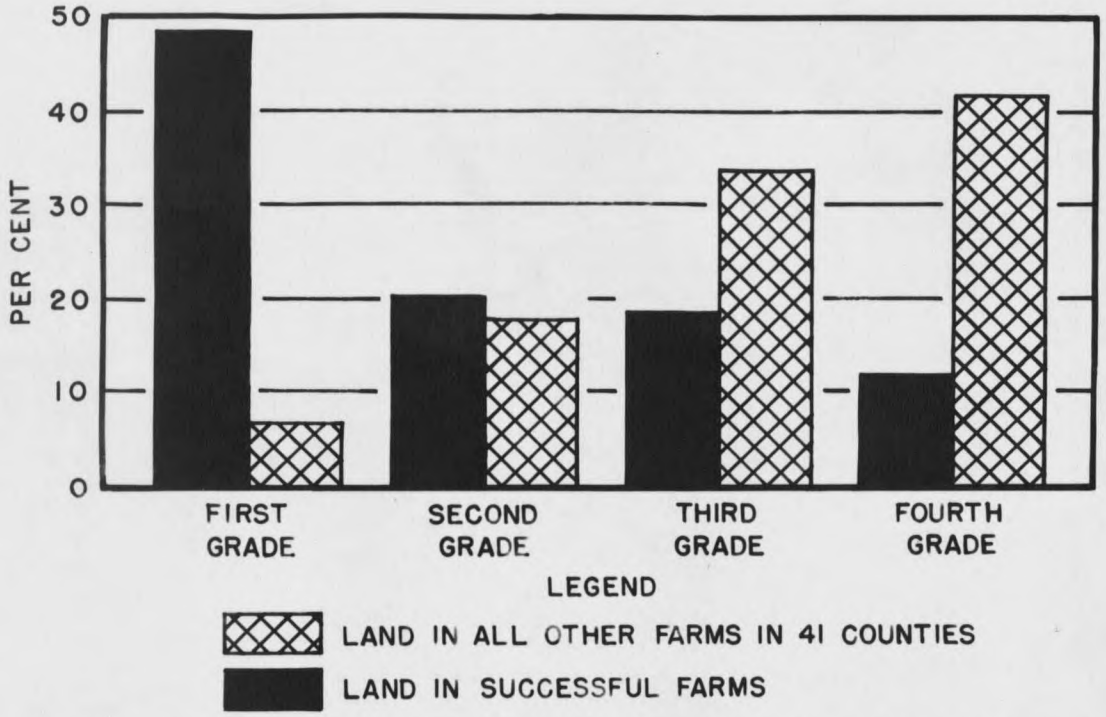


Figure 8.--The total number of acres of each grade of farm land owned by successful farmers compared with that owned by all other farmers in 41 Montana counties, expressed in per cent.

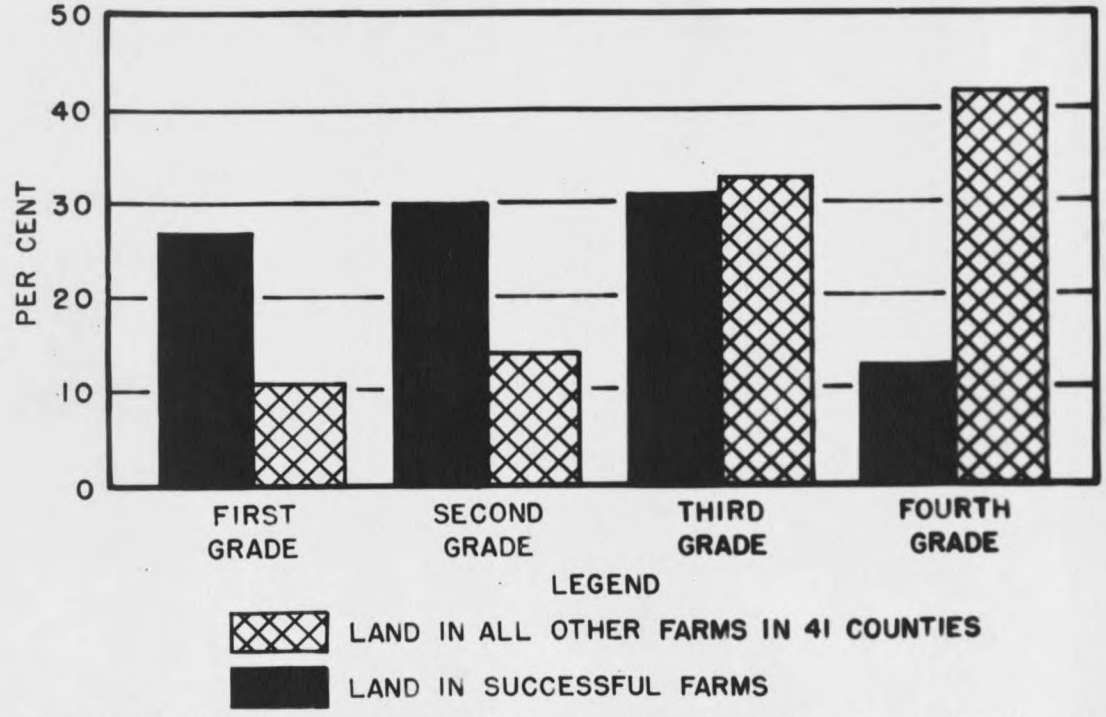


Figure 9.--The total number of acres of each grade of grazing land owned by successful farmers compared with that owned by all other farmers in 41 Montana counties, expressed in per cent.

on very good land, and that the possession and operation of good land has been an important factor in making this group of farmers successful.

Crop Acreages.--A knowledge of the total acres operated is important, and does have a direct bearing on the number of acres in crops, but it is probably more important to know the acreages devoted to crops each year, because it is only from productive land that the farmer gains an income. From an eight-year average, 1928-1935, inclusive, it was found that 742 acres were devoted to crops of all types and 415 acres to wheat production each year on successful crop farms. 14/ The combination farms averaged 642 acres of crop land of which 342 acres were devoted to wheat production for the same period. This is conclusive evidence that successful farmers in Montana, whether crop or combination, are relatively large operators. The data taken from the questionnaires sent to successful farmers for 1936 show the total crop acreages to be somewhat less than those taken from the A.A.A. data, but the wheat acreages are almost identical, (see table IX). It is not the intention at this point to show the combination of crop enterprises, but it is evident from table IX that wheat is the principal enterprise, constituting 80 per cent of the total land in crops. These figures become increasingly significant when it is discovered that the total crop acreage for the average Montana farm is only 259 acres, of which 158 acres are devoted to wheat production. 15/ This means that the successful Montana farmer crops at least 250 acres more than the average farmer, and in many cases 300 to 400 more acres. This undoubtedly has been a tremendously

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14/ Data secured from A.A.A. Wheat Allotment cards, Montana Agricultural Experiment Station.

15/ A.A.A. wheat sign-up data for State of Montana for 1933, Farm Security Administration, Montana Agricultural Experiment Station.

TABLE IX.--CROP ACREAGES ON SUCCESSFUL MONTANA FARMS FOR 1936*

Type of Crop	Crop Farms		Combination Farms	
	Number of Cases	Average Acreage	Number of cases	Average Acreage
Total Crop Acreage	90	510	26	351
Wheat acreage	83	441	23	267
Oat "	46	38	15	30
Barley "	22	32	5	21
Alfalfa "	34	48	19	68
Beet "	14	46	9	74
Other hay acreage	17	113	10	87
Other crop "	23	115	12	41

*Source: Questionnaires sent to successful farmers.

important factor in making this group of farmers successful financially.

Number and Kind of Livestock.--Successful crop farmers have their crop enterprises well supplemented with livestock, as 91 per cent of these farmers average 46 animal units per farm. 16/ It is important to note from table X, part A, that the majority of crop farmers in the sample carry on a supplementary dairy enterprise; the average farm carrying eight milk cows. Very few farmers in this group raise any sheep, but those that do, keep flocks of 600 or more animals. It is also evident from this material that a large majority of successful crop farmers raise poultry for home use or limited cash sale. The average size flock kept by these successful farmers is approximately 100 fowls (either chickens or turkeys), which is nearly double the number of fowls kept by the average Montana farmer. 17/

The combination crop-livestock farms naturally raise more livestock than crop farms or they would not be classed as such. Farmers in this group raise on an average of 143 animal units per farm, or 97 more animal units per farm than the crop farmers. The combination farmers on an average raise more than twice as many beef animals as the crop farmers, which is one of the chief differences between the two groups. A larger percentage of these farmers raise sheep than do the crop farmers, but there is the same tendency present, namely that of concentrating sheep in large flocks. From a total of 116 crop and combination farms studied for livestock

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16/ The animal units were compiled on the basis of one unit per beef animal, three units per dairy cow, one-fifth unit per sheep, one-third unit per hog, one-fourth unit per horse, and one-twentieth unit per fowl.

17/ Source: U. S. Census of Agriculture for Montana, 1935.

TABLE X.--NUMBERS AND KIND OF LIVESTOCK RAISED ON SUCCESSFUL MONTANA FARMS, - 1937*

A
Crop Farms - Sample 90

Kind of Livestock	Number of Farmers	Average number of animals per farm
Total Livestock	82	46 a.u.'s**
Beef cattle	44	33
Dairy cattle	64	8
Hogs	35	10
Sheep	5	660
Horses, riding	42	4
Horses, work	56	4
Poultry	75	95

B
Combination Farms - Sample 26

Kind of Livestock	Number of Farmers	Average number of animals per farm
Total Livestock	26	143 a.u.'s
Beef cattle	21	86
Dairy cattle	22	8
Hogs	16	14
Sheep	8	698
Horses, riding	17	4
Horses, work	21	7
Poultry	25	81

*Source: Farmers' Questionnaire.

**a.u.: Abbreviation for term "Animal Units."

numbers only 15 raised sheep, which would seem to indicate that sheep production does not lend itself as a supplementary enterprise to crop farming, but rather to large scale sheep ranching.

M. L. Wilson has pointed out that it is a desirable practice for dry farmers to raise some marketable livestock, to do some dairying, and to raise poultry for home use. 18/ This factor which he considered so very important in making for successful farming in Montana is strikingly illustrated in a positive manner by the successful farmers studied in this analysis. Although they have not emphasized livestock production too strongly, they have consciously or unconsciously followed the advice which he gave in 1923.

Size and Type of Buildings and Equipment.--These successful farmers have not, for the most part, tied up large amounts of capital in buildings. The assessed value of buildings and improvements on the average successful farm is $1786. This figure is very low when it is considered that nearly every farm studied has one house, one barn, one to three granaries, one machine or tool shed, and one or more smaller buildings. It would seem from these data that these farmers have been exceedingly frugal in their expenditures for buildings.

The assessed value of machinery is higher than for buildings on these farms, the figure being $2104 per farm. The average successful farmer owns nine or ten different kinds of machinery, and often two or more machines of the same kind (see table XI). These farms are quite completely

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18/ Wilson, M. L., Dry Farming in the North Central Montana "Triangle," Montana Extension Service, No. 66, 1923, pp. 53-64.

mechanized with the most modern and efficient types of equipment. A very large majority of successful farmers own all their own equipment and therefore are not dependent on their neighbors as a source from which to borrow machinery and equipment.

Farm Management Practices

Cropping Systems.--There is no real system of crop rotation used in dry farm operations in Montana. In the years of the heaviest homestead settlement, 1908 to 1919, yields were high due to a fertile soil and plenty of moisture; prices were high due to war conditions, thus Montana farmers cropped their land year after year with wheat and other small grains. The combination of greatly lowered prices and severe drought conditions forced the settlers to abandon their wasteful practices and adapt drought resistant varieties of grains and summer fallow tillage methods. 19/ As a result there has developed in Montana a system of cropping the land one year and fallowing the land the next year, called an alternate fallow and cropping system. In the past few years this system has been modified in several ways. First by a two crop system, consisting of fallow, grain and grain, covering a three-year period; or second the substitution of an intertilled crop, such as corn, for fallow, or combined with grain and fallow, making either a two- or three-year system. 20/

The cropping systems of 116 successful farmers were considered, and of that group 37 used an alternate fallow and cropping system, 24 employed

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19/ Renne, R. R., Readjusting Montana's Agriculture, I, Need and Basis for Readjustment, Bulletin 306, 1935, p. 21.

20/ Bell, M. A., The Effect of Tillage Methods and Crop Sequence, Bulletin 336, 1937, pp. 43-47.

TABLE XI.--NUMBERS AND KINDS OF EQUIPMENT OWNED BY 116 SUCCESSFUL MONTANA FARMERS, - 1937*-

Kind of Machinery	Number of Farmers Owning Machines	Number of Farmers Owning One	Number of Farmers Owning Two	Number of Farmers Owning 3 or more
Tractor	108	68	32	8
Combine	71	64	7	--
Plows	111	64	27	20
One-way Disc	81	60	18	3
Disc	79	58	19	2
Drill	108	65	31	12
Duckfoot	91	61	27	3
Pod Weeder	64	44	17	3
Harrow	105	78	15	12
Other kinds	28	--	--	--

*Source: Questionnaires sent to successful farmers.

a system combining fallow, grain and a cover crop, 11 used a system combining grain, fallow, and an intertilled crop, and 44 used various systems. From this it can be concluded that the successful farmers do not use any special type of cropping system, but have probably adopted the system best suited to the conditions in their specific area. However, when the successful farmers were asked which factors they considered most important in making for success, the greatest number replied "a good clean, early summer fallow." Even though these farmers are not in agreement as to the most desirable cropping practices, there is a definite feeling that good summer fallowing is a cardinal requisite for successful dry land farming in Montana.

Crop Use of Land.--The successful crop farmers are in reality wheat farmers, as 80 per cent of their total tilled land is devoted to wheat production. The other 20 per cent of crop land is divided rather evenly between oats, hay, sugar beets, and other crops. In short these farmers are specializing in one cash crop, a highly commercialized agriculture. The combination farms have 60 per cent of their total land producing wheat, with 20 per cent of their land producing some type of hay or forage crop, (see figure 10). In 1933 all farmers who signed up with the A.A.A. had only 55 per cent of their total land devoted to wheat production, but summer fallow was included as crop land in this case, which accounted for 18 per cent of the total land in crops. 21/ If summer fallow had not been included the figure on wheat acreages would have been much higher, perhaps

21/ Starch, E. A., Readjusting Montana's Agriculture, VII, Montana's Dry Land Resources, Bulletin 318, 1936, p. 7.

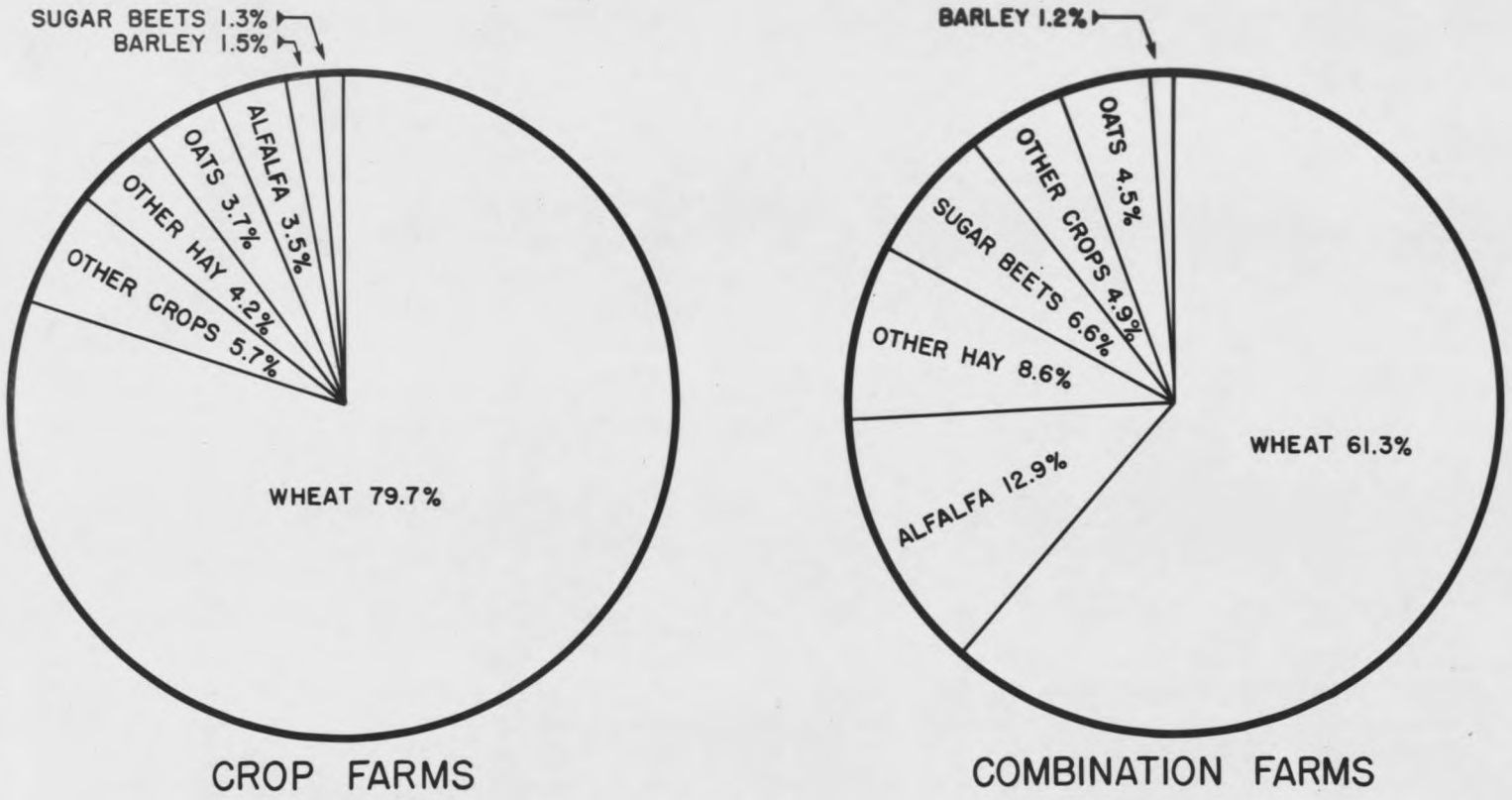


Figure 10.--The proportionate number of acres devoted to each crop on successful farms, expressed in per cent.

approaching 70 per cent of the total crop land. As the summer fallow was not included as crop land in this analysis, the latter figure of 70 per cent is more comparable on this basis of statistics. Nevertheless it seems clear from the above data that the successful crop farmers have from 10 to 15 per cent more of their land producing wheat than the rest of the farmers in the state.

The principal variety of wheat grown by these farmers is Marquis. Some Ceres, Karmont Winter, and other varieties are grown, but only to a limited extent. The successful farmers prefer Marquis over other varieties which is not unusual, because Marquis is the most popular variety grown in the state, due to its high quality characteristics. The favorite variety of oats grown by this group of farmers is Victory.

Crop Yields.--One of the most important factors making for successful farming, especially on crop farms, should be the yield of wheat per acre. Since 80 per cent of the total tilled land on crop farms is producing wheat, and the average successful crop farmer has approximately 450 acres planted to wheat each year, the yield of wheat per acre is extremely important to the farmer. The average yield of wheat per acre on successful crop farms is 18.66 bushels, and 16.68 bushels on successful combination farms. These figures represent an eight-year arithmetic average, 1928 to 1935, inclusive, of the wheat yield data from the A.A.A. sign-up records. This arithmetic average compares quite favorably with the cross classification shown in table XII, where 109 successful farmers out of 166 operate land which produces over 16 bushels to the acre. The wheat yield data taken from

TABLE XII.--WHEAT YIELDS ON SUCCESSFUL MONTANA FARMS, 1928-1935*

Wheat Acreages	Yields in bushels per acre					
	Total	0-7	8-11	12-15	16-21	22 & over
Total	166	8	27	22	63	46
1-100	22	1	2	3	2	14
101-200	15	1	2	1	5	6
201-300	32	1	3	6	9	13
301-400	30	1	4	5	18	2
401-500	27	--	3	4	16	4
501-600	12	--	4	--	7	1
601-700	10	1	3	2	2	2
701-800	4	1	1	--	1	1
801-900	3	--	1	1	1	--
901-1000	1	1	--	--	--	--
1001-1100	3	--	1	--	--	2
1101-1200	1	--	--	--	1	--
1201-1300	2	1	1	--	--	--
1301-1400	--	--	--	--	--	--
1401-1500	1	--	1	--	--	--
1501 & over	3	--	1	--	1	1

*Source: A.A.A. Wheat sign-up cards; an eight-year average, 1928 through 1935.

the farmers' questionnaires for 1936 shows that these farmers produced only 11 bushels per acre, but 1936 was an exceedingly dry year, and therefore should not be given too much weight. The eight-year average taken from the A.A.A. sign-up records includes both "good" and "bad" years, and is therefore more representative of the normal conditions. An average yield of 18.66 bushels per acre is very good when it is considered that the average for the entire state taken from the same source of data is only 11 bushels to the harvested acre. 22/ Another consideration of wheat yields is in connection with the size of enterprise as measured in terms of wheat production. It has been found in this study as shown in figure 11 that high yields of over 20 bushels per acre are common on farms producing less than 2000 bushels and on farms producing more than 15,000 bushels. For all groups between the above classes the yields fluctuate between 16 and 18 bushels, which is far above the average for the state. Hence, it may be concluded that the modal successful Montana farmer produces between 5000 and 6500 bushels of wheat at an average yield of 18 bushels per acre.

Table XIII gives a brief summary of the relative importance of some crops other than wheat which are produced on successful Montana farms, and it also gives the average yield per acre for those crops. The average number of crop enterprises on crop farms is 2.5, while on combination farms it is 3.5. In short, the crop farms usually produce wheat and one or two less important crops, but the combination farms are more diversified, giving less emphasis to wheat and at the same time producing one or two more crops than are found on successful crop farms.

22/ Starch, E. A., Readjusting Montana's Agriculture, VII, Montana's Dry Land Resources, Bulletin 318, 1936, p. 7.

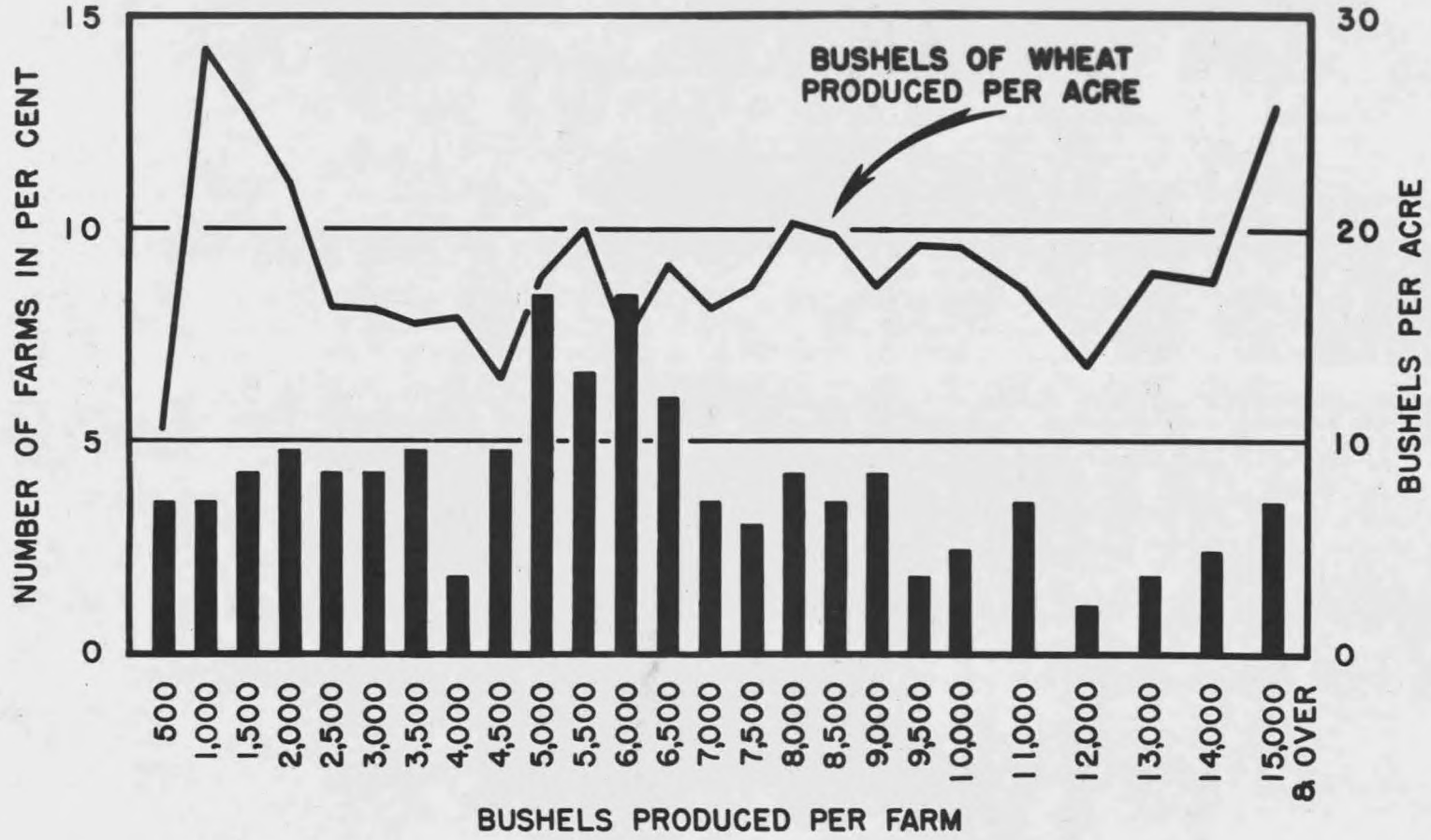


Figure 11.--The relationship of the size of successful farms, measured in terms of the total bushels of wheat produced per farm, to the yield of wheat per acre for the same farms.

TABLE XIII.--CROP YIELDS ON SUCCESSFUL MONTANA FARMS, PER ACRE, 1936*

A

Crop Farms--Number of Cases: 90

Crop	Number of farms producing crops	Yield per acre
Oats	46	32 bushel
Barley	22	22 bushel
Alfalfa	34	5 tons
Sugar Beets	14	13 tons

B

Combination Farms--Number of Cases: 26

Crop	Number of farms producing crops	Yield per acre
Oats	15	44 bushel
Barley	5	39 bushel
Alfalfa	19	2.5 tons
Other hay	10	1 ton
Sugar Beets	9	15 tons

*Source: Questionnaires sent to successful farmers.

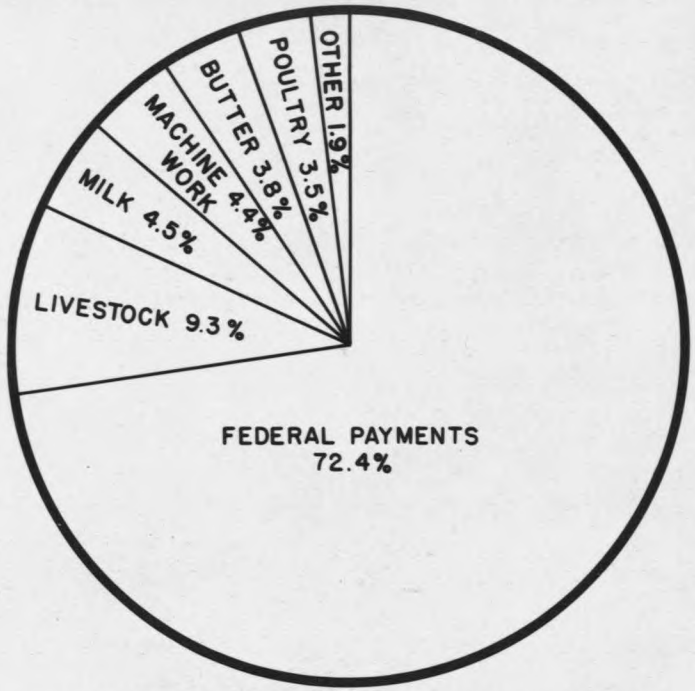
Supplementary Enterprises.--Although it has been found that successful crop farmers specialize in one crop, namely wheat, supplementary enterprises do play an important part in farm management practices. The average gross income on successful crop farms is $6565, and of that amount $1228 comes from supplementary enterprises, or a little more than one-sixth of the total gross income is derived from supplementary enterprises. 23/ The average gross income on the successful combination farms is $8794, and of that amount only $479 comes from supplementary enterprises. But it must be remembered that the livestock enterprise is not included as a supplementary enterprise for this latter group, and that $4206 of the total gross income is derived from the sale of livestock.

From figures 12 and 13 it can be seen clearly that the income from federal payments make up the largest share of the income from supplementary enterprises. 24/ The sale of livestock and the production of whole milk and butter are the principal sources of income from supplementary enterprises directly connected with the farm on successful crop farms. The sale of whole milk and the production of butter are the only two really important supplementary enterprises on successful combination farms, not including federal payments. The approximate number of supplementary enterprises on successful crop farms is two per farm, and for successful combination farms is one per farm. These data indicate that crop farms average one more

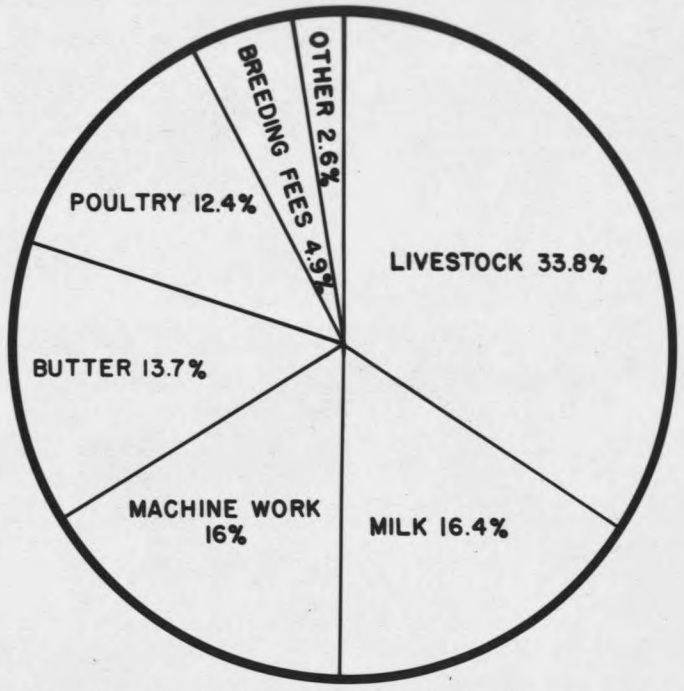
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23/ The term supplementary enterprise as used in this study refers to a sideline enterprise, which in no case adds more than 40 per cent to the total gross farm income, and more often adds less than 10 per cent.

24/ The gross income from supplementary enterprises will decrease by more than 50 per cent if federal payments, such as benefit payments for crop reduction and soil conservation are not included as supplementary enterprises, as they have been in this study.



FEDERAL PAYMENTS INCLUDED



FEDERAL PAYMENTS NOT INCLUDED

Figure 12.--The combination of supplementary enterprises on successful crop farms, based on the proportionate value added to the gross farm income by each enterprise, expressed in per cent.

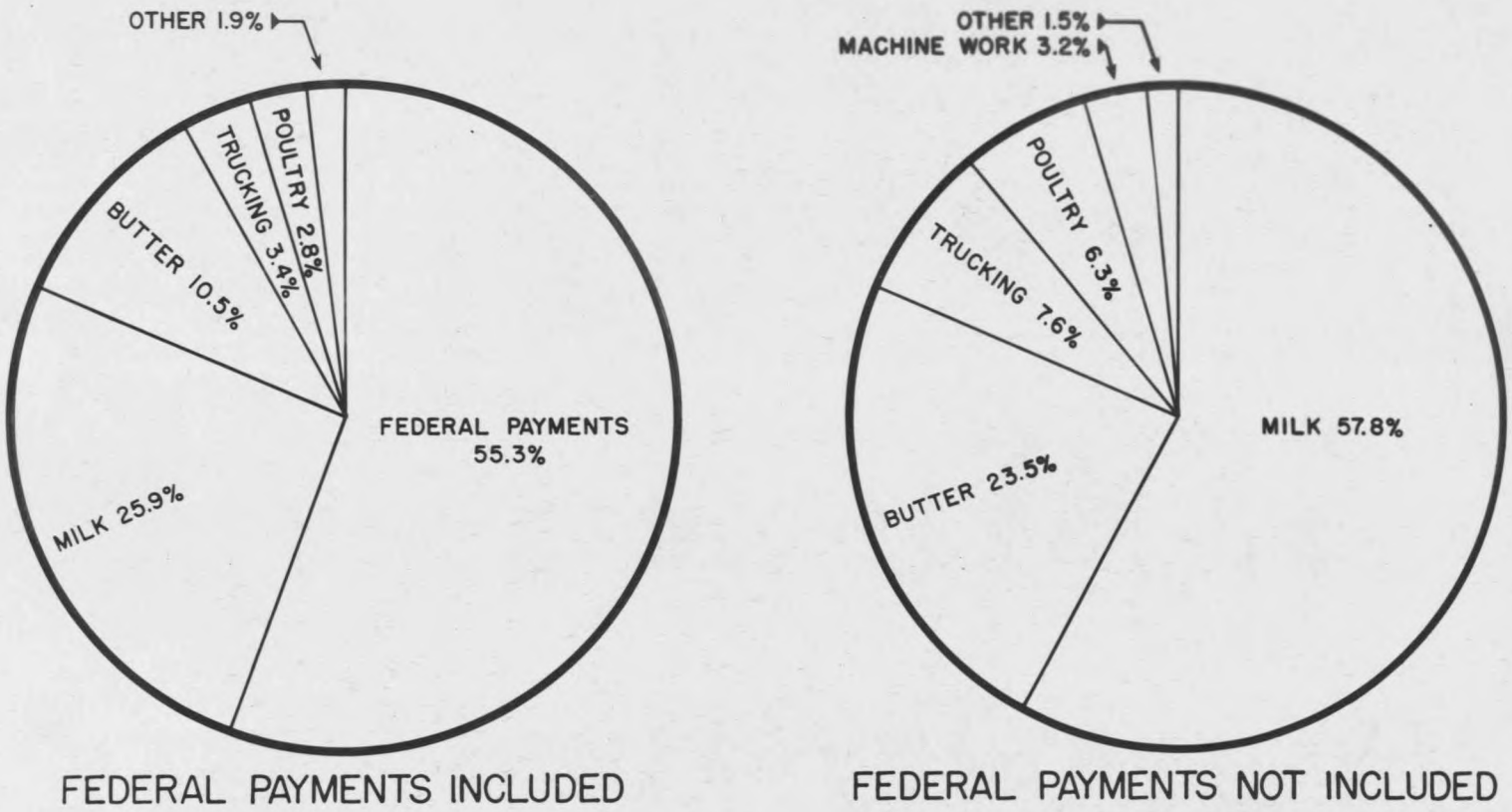


Figure 13.--The combination of supplementary enterprises on successful combination farms, based on the proportionate value added to the gross farm income by each enterprise, expressed in per cent.

supplementary enterprise per farm than do the combination farms, but the average number of enterprises for each type of farm is nearly the same. As crop farms average two supplementary and one main enterprise per farm, and combination farms average one supplementary and two main enterprises per farm, there is an approximate average of three enterprises on both types of farms (see table XIV).

Since livestock and dairy production are the principal supplementary enterprises on successful crop farms and livestock is one of the principal enterprises on combination farms it is important to know the breeds of livestock raised. Herefords are by far the most popular breed of beef cattle raised on these farms, but there is a distinct minority which favor Shorthorns. However, it is quite clear that these farmers do not favor mixed or mongrel breeds of beef cattle. The Holstein seems to be the favorite breed of milk cow, but there is a group which milk mixed breeds.

For the most part the successful farmers on both crop and combination farms do not raise many hogs, but the most popular breed raised seems to be the Chester White. Since few farmers in this group raise sheep it would be unwise to draw any generalizations as to the breeds raised. Horses are pretty much a mixed lot. A few farmers raise some purebred Percherons, but the great majority of the farmers raise only scrub horses. As for poultry these farmers raise several breeds; the most popular seem to be White Leghorns, Buff Orpingtons, Rhode Island Reds, and White Rocks.

Labor Supply.--There are four principal sources of farm labor in this state: the farm family, the farm neighbors, townspeople, and transients. The successful farmers obtain their labor from all four sources. From

TABLE XIV.--SUPPLEMENTARY ENTERPRISES ON SUCCESSFUL CROP AND COMBINATION FARMS, 1934 THROUGH 1936 a/

Enterprise	Crop Farms		Combination Farms	
	No. of farmers out of sample of 241	Av. gross income from enterprises in dollars	No. of farmers out of sample of 73	Av. gross income from enterprises in dollars
Milk	13	762	5	1817
Butter	54	153	14	246
Poultry	64	121	13	76
Fruit	4	69	2	103
Sale of live-stock	115	611	--	--
Team hire	3	90	--	--
Machine work	26	395	3	169
Trucking	5	140	2	603
Breeding fees	2	1504	--	--
Federal payments b/	174	902	33	584

a/ Source: State income tax files.

b/ It is doubtful if this item should be considered as a supplementary enterprise, perhaps, it should be included in the gross income from crops, or it might better be included as income from sources other than farming.

questionnaires sent to these farmers it was found that 23 per cent use only family labor, 23 per cent used a combination of family labor and hired neighbors, 38 per cent used some family labor and hired townspeople, and 16 per cent used some family labor and hired passing transients. This would indicate that the successful group do not follow any given rule, but have adapted their methods to meet the farm needs in the most efficient manner possible.

Method of Bookkeeping.--It is a well known fact that farmers are notoriously poor at keeping efficient, accurate accounts. It is then significant to note that only 9 per cent of these successful farmers keep no accounts, although it is again discouraging to learn that 39 per cent keep their accounts in some peculiar manner of their own, and not by any recognized method. There are, however, 36 per cent of these farmers that employ some type of the single entry bookkeeping system, and 11 per cent that use the double entry system. Then there are 5 per cent that use their bank stubs and cancelled checks as a method of accounting. It seems that even among this group of relatively successful farmers there is a genuine lack of understanding of the importance of keeping a recognized system of accounts for future reference.

The Farmers' Own Ideas.--Since these farmers have by one reason or another been able to prosper during a period of an economic depression and adverse natural conditions, it was deemed wise to consult the farmers themselves on the reasons for their success. The following farm management practices are listed in the order of their importance to successful farming as expressed in the farmers' questionnaires.

1. Good clean early summer fallow.
2. Good machinery.
3. Good, fertile seed.
4. Conservation of moisture in the soil.
5. Good management.
6. Deal on a cash basis.
7. Proper crop rotation.
8. Strip farming.
9. Proper weed control.

Farm Marketing Practices

If farming consisted only of planting, growing, and harvesting crops the job would be a relatively easy one, but the farmer must also represent his business as a salesman and distribute his product. His job does not end when the wheat is in the granaries, but only when the wheat is sold to the local elevator. From these sales it is necessary for the farmer to gain a differential large enough to pay all his expenses and earn himself a livelihood. Thus, it is all important that farmers give more attention to the sale and distribution of their products, as it is impossible to produce a commodity over the long period of time if the product cannot be exchanged for a value sufficient to pay for the cost of production.

Methods of Marketing Products.--There are five principal channels through which Montana farmers market their products; they are in order of their importance: local buyers, farmers' cooperatives and pools, terminal markets and shipments on consignment. The successful farmers use only

three of these methods, as 50 per cent sell their products to local buyers, 24 per cent sell through cooperatives and 23 per cent ship their produce to terminal markets and sell it there (see figure 14).

These farmers show a conservative tendency in their marketing operations, as 60 per cent of the group sell their grain immediately at harvest time, and only 40 per cent ever hold their grain to speculate on future prices. Of this latter group 5 per cent hedge their "future" trading. Thus the greater majority of successful farmers sell their grain to local elevators at harvest time, not caring to gamble on future prices. The livestock from these farms are usually marketed in the fall, as 85 per cent of the sample group ship their livestock to market in the autumn months.

There is a great variety of types of market information available to farmers in this region concerning price, supply, and future market conditions. The two types of market information most generally used by the successful farmers are the radio and the daily paper. Approximately one-third of these farmers receive their information over the radio, one-third from reading the market reports in the daily paper, and the other one-third use other or all sources of market information, which include weekly papers, outlook reports, the county agent, and the "Montana Farmer." The radio in recent years has come into the homes serving more and more needs, and in all probability will in the future be the principal distributor of information concerning crops and markets in rural areas.

Method of Buying Supplies.--The farm is both the home and the place of business for the farmer, hence he must be adept at purchasing both production and home supplies.

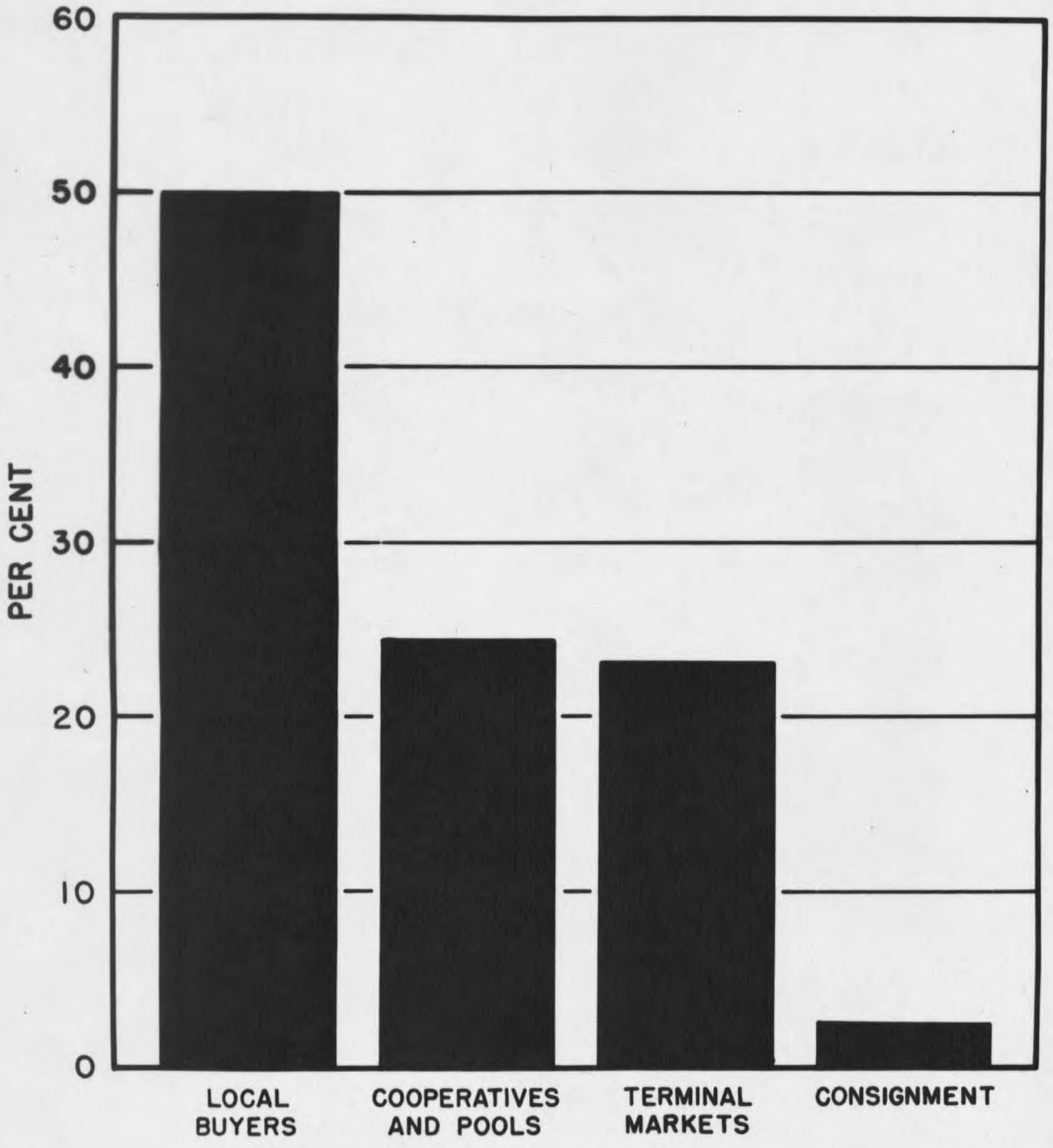


Figure 14.--Marketing channels used in the sale and distribution of farm products by successful farmers, expressed in per cent of their use.

The successful farmers seem to favor buying their supplies from local independent merchants. Over 58 per cent of the farmers signified by their answers in the questionnaires sent to them that they buy principally from local merchants. The other 42 per cent buy from mail order houses, chain stores, through cooperatives, and from peddlers, but none of these sources are significantly important as compared with the percentage of farmers that deal with local independent merchants. In the purchasing of production supplies the picture is nearly the same as outlined above, only in this case over 66 per cent of the successful farmers buy from local merchants. In other words, two-thirds of the successful farmers in this state purchase their machinery, seed, fertilizer, feed, and other supplies from local independent merchants. The other 33 per cent purchase their supplies from traveling company salesmen, direct from the factory, or through cooperatives. From the above data it is very evident that the majority of successful farmers either feel that it is their duty to buy at home, or find it more economical or convenient.

Supplies Produced at Home.--As far back as 1920 M. L. Wilson was advocating that farmers build permanent homes through diversification. 25/ That is, raising home supplies such as a garden, poultry, milk cows, and other livestock. To quote M. L. Wilson: "almost without exception successful farmers of North Montana were found to have raised excellent gardens each year, enough to supply home needs." What was true then is true today; out of 116 successful farmers analyzed in this study, as to the amount and

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25/ Wilson, M. L., Dry Farming in the North Central Montana "Triangle," Montana Extension Service, No. 66, 1923, pp. 44-56.

type of supplies raised on the farm, 109 raised gardens, 102 raised milk cows, 105 raised poultry, and 91 did some slaughtering. To put it in another way, 90 per cent of the farmers in this successful group raised some supplies for home use on the farm. Although fifteen years have elapsed since M. L. Wilson made his famous "triangle" study, the successful farmers in Montana still find it exceedingly important to raise gardens and livestock on the farm for home consumption.

The average successful farmer produces 49 per cent of the total supplies consumed in the farm home. Since these farm families must of necessity buy clothes, furniture, and other supplies that cannot be produced on the farm it can be concluded that a very large percentage of them must raise most of the food consumed by the family and the hired help. This last factor cannot be stressed too strongly as an important cause making for permanent and successful farming in Montana.

Farm Income and Costs

In present day society success is often if not generally measured in terms of income. The farms included in this study were chosen as being successful because they had met a specific income requirement for a given period of time. If these farmers were picked as being successful on a basis of income it becomes increasingly important to know the principal sources of their income and expenditures.

Sources of Farm Income.--The average crop farmer of this successful group makes an annual gross income of $6565 of which $5337 comes from the sale of crops and $1228 from the sale of supplementary products. As it was

found earlier in this study that 80 per cent of the total crop land is devoted to wheat production, it would seem safe to conclude that at least 75 per cent of the gross income from crops or $4000 is derived from the sale of wheat. The expenditures for the average successful crop farm amount to $3618, which leaves $2947 as the net profit from farming (see table XV). In short the average successful Montana crop (or wheat) farmer makes a net profit of $2947 from farming per year, and a labor income of $2430, after $517 is deducted from the net profit from farming as the return to capital invested in the farm enterprise by the farmer.

The farming operations on the combination farms are carried out in a larger scale than on the crop farms. The gross income on the average successful combination crop-livestock farm is $8794 of which $4109 comes from the sale of crops, $4206 from the sale of livestock, and $479 from supplementary products. As the main crop raised on these farms is wheat, and the principal livestock enterprise is beef production, it can be inferred that the greater part of the gross income on these farms comes from the sale of those two products. The average expenditures for a combination farm in this group are close to $6204, leaving a net profit per farm of $2590 a year--or some $400 less than for successful crop farms (see table XVI). Moreover, when $534 is deducted from the net profit from farming as the return to capital invested in the farm enterprise by the farmer, the farmer's labor income is $2056. Although the gross income on combination farms is considerably greater than on crop farms the net income is less. The causes for this condition are not self evident, and a more detailed analysis would be required before any generalizations should be made.

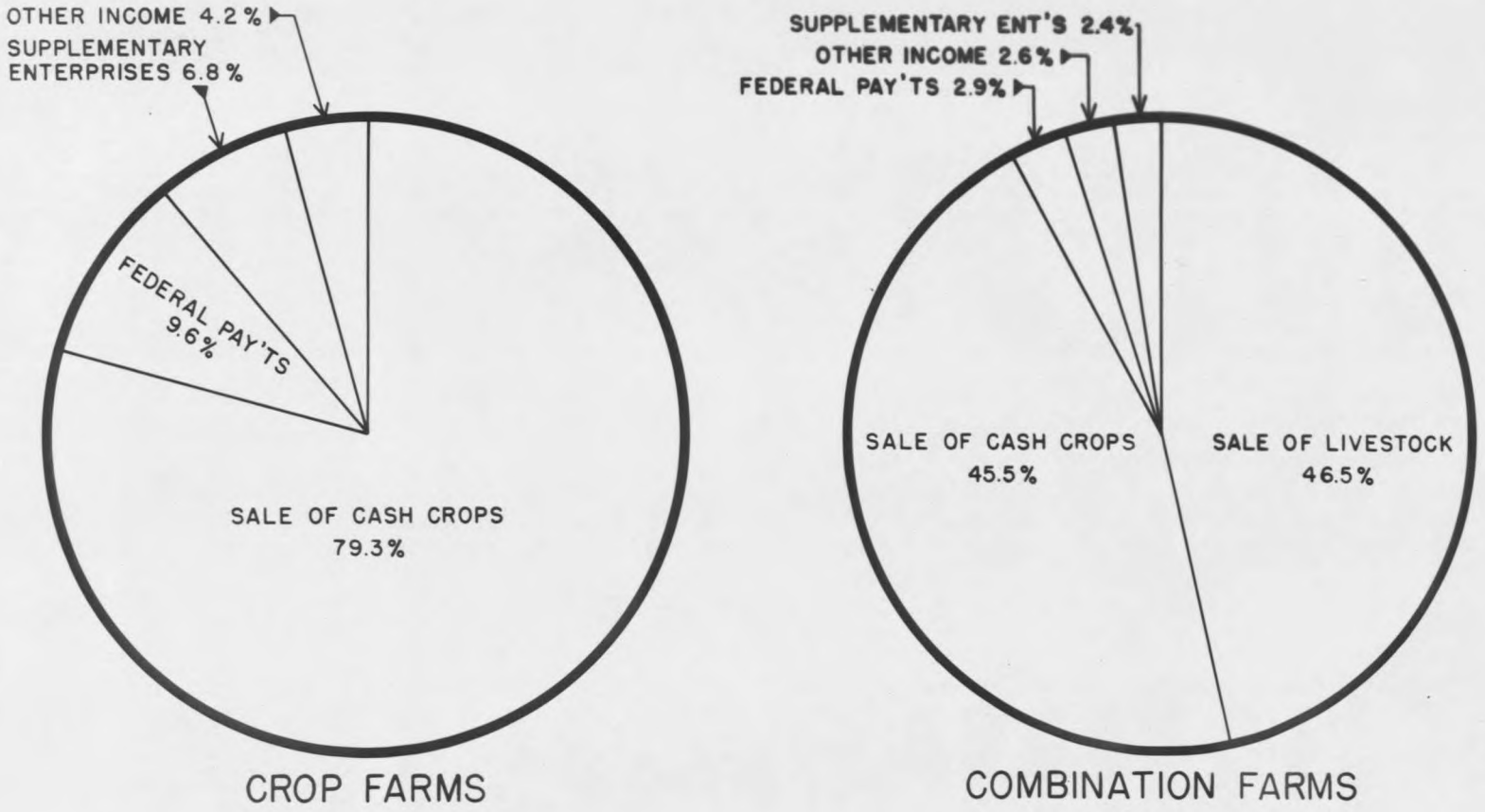


Figure 15.--The principal sources of gross income on successful farms, for the period 1934-1936.

TABLE XV.--A STATEMENT OF PROFIT AND LOSS FOR AN AVERAGE SUCCESSFUL CROP FARM - 1936

Gross income from sale of crops		$5337	
Gross income from supplementary enterprises		1228	
Gross profit on sales			$6565
Operating expenses			
Labor	$796		
Feed	109		
Seed	109		
Board	109		
Grinding	36		
Fuel and oil	518		
Implements and tools	36		
Taxes	326		
Insurance	84		
Depreciation and repairs	903		
Interest on borrowed capital	217		
Rent	109		
Inventory loss	182		
Other	84	$3618	
Total operating expenses			$3618
Net profit from operations			2947
Interest on investment*			517
Labor income			$2430
Other income			286
Labor income plus non-farm income			$2716

*An assumed rate of interest of 5 per cent has been applied to the capital invested in the farm enterprise by the farmer, because that is approximately the rate of interest paid by the farmer for borrowed capital invested in the farm enterprise.

TABLE XVI.--A STATEMENT OF PROFIT AND LOSS FOR AN AVERAGE SUCCESSFUL COMBINATION FARM - 1936

Gross income from sale of crops		$4109	
Gross income from sale of livestock		4206	
Gross income from supplementary enterprises		479	
Gross profit on sales			$8794
Operating expenses			
Labor	$1613		
Feed	868		
Seed	62		
Board	186		
Grinding	62		
Fuel and oil	465		
Implements and tools	93		
Taxes	558		
Insurance	62		
Depreciation and repairs	268		
Interest on borrowed capital	372		
Rent	248		
Other	251		
Inventory loss	434		
Purchases	62	6204	
Total operating expenses			$6204
Net profit from operations			$2590
Interest on investment*			534
Labor income			$2056
Other income			222
Labor income plus non-farm income			$2278

*An assumed rate of interest of 5 per cent has been applied to the capital invested in the farm enterprise by the farmer, because that is approximately the rate of interest paid by the farmer for borrowed capital invested in the farm enterprise.

It would seem that there should be a close correlation between amount of income, yields of wheat per acre, and the number of acres operated. This presumption is fairly well established from the material shown in table XVII; as three points make themselves evident. First, as the acreages increase the net income tends to increase. Second, as the yields increase the net income tends to increase. Third, a large proportion of the sample fall in the income group $2000 to $4000 regardless of yields or acreages. With some reservation it may be then stated that net income is in direct relation to yields and acreages.

Income other than from Farming.--A considerable number of farmers in this sample have an income other than that from farming. Just how much this outside income has aided these farmers is not evident, but an effort has been made to keep the extra income from affecting or disturbing this analysis. It is quite probable that the income from sources other than farming has helped many of these farmers through periods of economic stress. However, it is just as valid to assume that most of these farmers made the money that they now have invested in other industries from farming their present unit. There are 98 crop farmers out of 241 that receive an income from some outside source, and for that group the average amount received per farmer is $701. Out of 73 combination farmers studied, 23 received an income from some source other than farming. 26/ The importance of this outside income is doubtful, and not too much emphasis should be given to it as a factor making for successful farming, because it is

26/ This other source of income, which has been referred to, does not include federal payments for crop reduction, and in most cases represents interest payments on investments other than the farm enterprise.

TABLE XVII.--RELATIONSHIP OF ACRES OPERATED AND YIELD PER ACRE TO NET INCOME ON SUCCESSFUL MONTANA FARMS - 1934 THROUGH 1936

Acres operated / Yield per acre	Total	Net Income				
		0-2000	2001-4000	4001-6000	6001-8000	8001 & over
Total acres	160	27	75	39	9	10
Under 8 bu.	12	4	5	3	--	--
8-11 "	23	7	12	4	--	--
12-15 "	26	4	15	6	1	--
16-21 "	56	3	30	14	7	2
Over 22 "	43	9	13	12	1	8
Acres 0-750	61	13	34	12	--	2
Under 8 bu.	3	2	1	--	--	--
8-11 "	6	1	2	3	--	--
12-15 "	12	2	10	--	--	--
16-21 "	20	2	12	5	--	1
Over 22 "	20	6	9	4	--	1
Acres 751-1500	67	8	30	21	5	3
Under 8 bu.	4	--	3	1	--	--
8-11 "	11	3	7	1	--	--
12-15 "	11	2	4	4	1	--
16-21 "	22	--	12	7	3	--
Over 22 "	19	3	4	8	1	3
Acres 1501 & over	32	6	11	6	4	5
Under 8 bu.	5	2	1	2	--	--
8-11 "	6	3	3	--	--	--
12-15 "	3	--	1	2	--	--
16-21 "	14	1	6	2	4	1
Over 22 "	4	--	--	--	--	4

impossible from the data collected in this study to determine whether it is a cause or an effect of successful farming.

Farm Expenses.--Expenses are naturally very important to any industry or business. It is expenses which are constantly being analyzed by any operator in an effort to reduce costs, and thereby increase the differential between the cost of production and the selling price. The farm operator has direct control over all his expenses except taxes, and thus is in a position to manipulate them to the best advantage. Therefore, the alert farmer by efficient management attempts to lower expenses and thus increase his profits (see tables XV and XVI for farm expenses).

The principal expenses on successful crop farms are labor costs, depreciation and repairs, fuel and oil costs, and taxes. These four items make up 70 per cent of the total expenses, 25 per cent for depreciation and repairs, 22 per cent for labor costs, 14 per cent for fuel and oil costs, and 9 per cent for taxes. The other 30 per cent of the total expenses is made up of ten items (see figure 15). The two items, taxes and interest on farm mortgages which make up such a large proportion of the farm expenses for all farms in the state are relatively unimportant for this group of successful farmers. 27/

The largest single expense on successful combination farms is that of labor. The expense for labor is 26 per cent of the total farm expenses. The resulting 74 per cent of farm expenses are distributed over 14 other items, with no one item being significantly important. The proportional

27/ Renne, R. R., Readjusting Montana's Agriculture, VIII, Tax Delinquency and Mortgage Foreclosures, Bulletin 319, 1936.

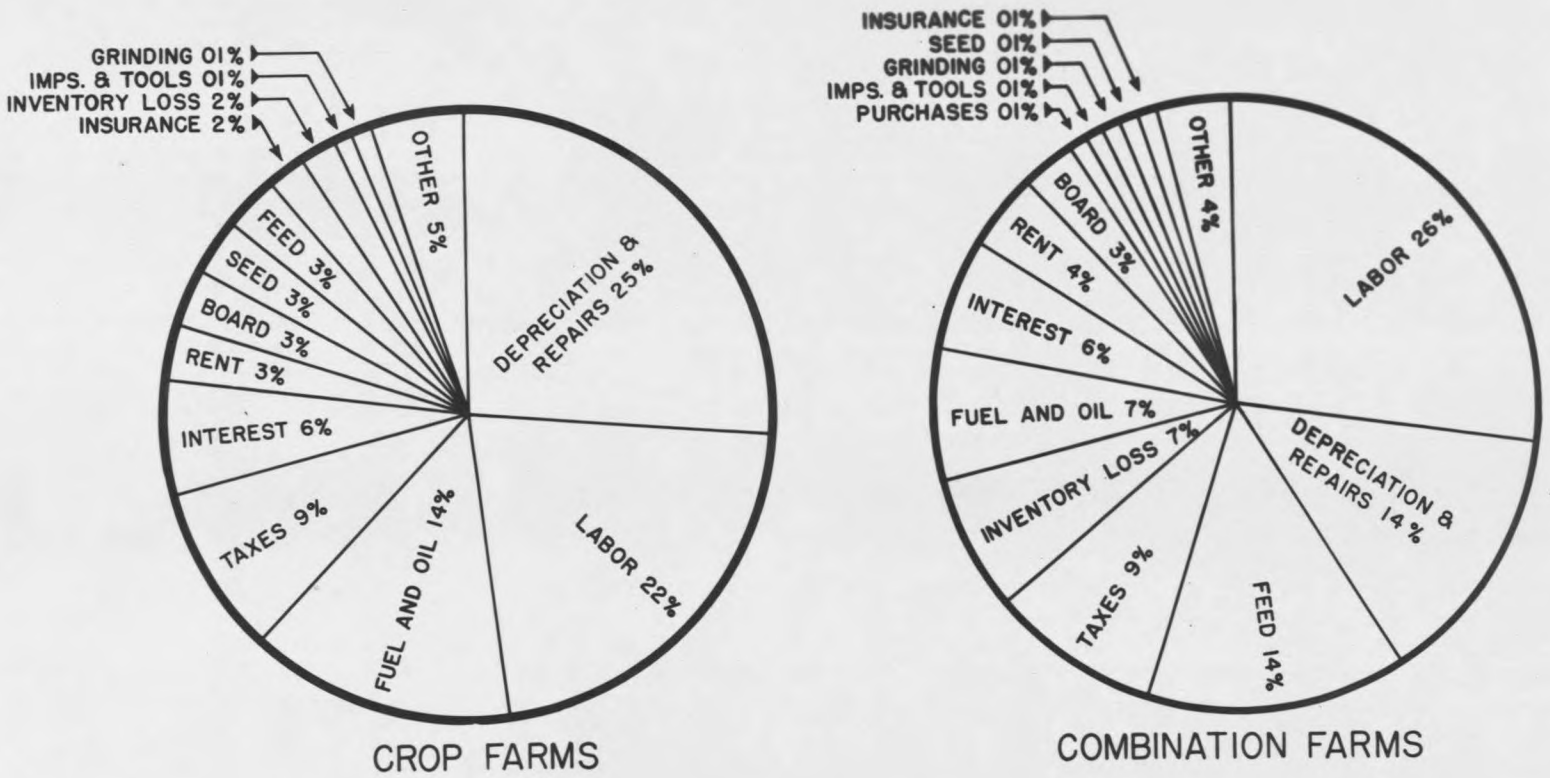


Figure 16.--The proportionate amount of each farm expense to the total farm expenses, expressed in per cent.

expense for feed has increased on combination farms, and decreased for depreciation and repairs, and fuel and oil. This condition is only natural as more livestock are carried and less land tilled on combination farms (see figure 16).

Very little work has been done on farm costs and expenses, because most farmers do not keep accurate enough records concerning the cost of their operations to enable investigators to collect the necessary information to carry out a complete, accurate farm cost study. Cost figures are available from a study made on farm organization as affected by mechanization on an 800 acre experimental farm. 28/ The cost figures from this study should be pertinent as a means of comparison, since this farm was supposedly operated in the most efficient manner possible. Of the total farm operating costs on this experimental farm, 42 per cent were for field operating expenses, of which 7 per cent was for labor, 12 per cent for fuel, 17 per cent for depreciation and repairs and 8 per cent for miscellaneous. Overhead costs ran 20 per cent for such items as building repairs and general upkeep of the farmstead. Land rent made up 16 per cent, crop insurance 8 per cent, hauling grain 8 per cent, and seed costs 6 per cent, of the total expenses.

It is interesting to note that overhead costs are much greater on the experimental farm than on the successful farms, and that labor and depreciation costs make up a larger proportion of the total expenses on the successful farms than on the experimental farm. Fuel costs are nearly

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28/ Starch, E. A., Farm Organization as Affected by Mechanization, Bulletin 278, 1933, pp. 19-23.

equal, and on the successful crop farms the field operating costs make up a greater proportion of the whole, than on the experimental farm. It is difficult to compare these two sets of cost data since they were compiled and presented at different times with different objectives, but they do serve as a check against each other. Although only a naive person would draw definite conclusions from the data presented here, nevertheless it can be assumed with some safety that the expense figures presented in the profit and loss statements in tables XV and XVI are at a minimum. Furthermore, the proportion or relationship of the farm expenses as presented in figure 16 must be the optimum combination for the type of farming carried on in Montana.

Capital Invested in the Farm Enterprise.--The average successful crop farmer has $10,340 invested in his farm enterprise, which is valued at a total of $14,678. Of this total valuation of $14,678, land alone is valued at $10,207. Machinery and equipment are valued at $1996, buildings and improvements are valued $1678, and livestock are valued at $797. From these figures it can readily be seen that land is the principal asset on these farms.

The average successful combination farmer has $10,640 invested in his farm enterprise, which is valued at a total of $18,120. Of this total valuation of $18,120, land alone is valued at $12,480. Machinery and equipment are valued at $1240, buildings and improvements are valued at $1800, and livestock are valued at $2600. Although land is the principal asset on these combination farms as on crop farms, there is a much larger amount of capital invested in livestock on the former than on the latter

as naturally would be expected. Both crop and combination farmers have approximately the same amount of capital invested in their respective enterprises, but the combination farmers have less capital invested in the farm enterprise in proportion to its total valuation than have the crop farmers. Furthermore, the total valuation of both crop and combination farms as shown in this study is rather low considering the average size of these farms. 29/

Cash Reserves.--Banking institutions keep cash reserves on hand to protect themselves against "runs," corporations build cash reserves to tide themselves over business slumps, and farmers, to be successful over the long period of time, just as the other businesses named, must build cash reserves on which to fall back on in distressing times. M. L. Wilson in his "Triangle" study stated in large bold print that the building of cash reserves in good years to meet the reverses of bad years is absolutely necessary for successful farming in the Montana plains area.

From the questionnaires sent to the successful farmers in this study it was found that 107 out of 116 or 93 per cent of these farmers try to build cash reserves in good years, and the amazing fact discovered was that 67 out of 116 or 57 per cent of the successful farmers have succeeded in creating reserves large enough to keep them operating through the years of drought and poor prices. There can be no doubt but what this last factor

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29/ These data showing the valuation of the farm unit were taken from the county assessor's records, and from past experience it has been found that the assessed value of machinery, buildings, and livestock is anywhere from 25 to 50 per cent below the sale value of these items. Also, first and second grade farm lands are more generally underassessed than overassessed. Hence, it can be inferred that the values given in this study with respect to the farm unit based on the assessor's records are in reality too low; and if this assumption is true, then it can be concluded that these farmers have considerably more than $10,000 invested in their respective farm enterprises.

has been instrumental in making this group of farmers financially successful. In the future farmers will have to pay more attention to this factor in Montana, where the business of farming is so hazardous.

Acquiring and Financing the Farm Unit

Theoretically it might seem that farmers who have obtained free land either from the government or from their family should stand a greater chance of succeeding financially than those farmers who purchased their land. Practically it does not work out that way--or at least not among the successful farmers considered in this study. Of the total land owned in this state by successful farmers 19 per cent was homesteaded, and 3 per cent inherited, making a total of 22 per cent of the land acquired without money costs. In short, 78 per cent of the land was purchased at an average price of $26.58 per acre. Some of the land was purchased with borrowed capital, and some by cash payments. Approximately 52 per cent or over half of the land was acquired with part borrowed funds and the rest cash, 22 per cent was acquired by cash payments, and only 4 per cent was acquired entirely with borrowed capital (see table XVIII). This material shows that the successful farmers have made generous use of borrowed capital. Borrowing capital in the form of money is neither good nor bad in itself, and can only be judged by the use made of it and the objectives for which it was borrowed. In this case it can be vindicated, but many times in the past farm loans have been made regardless of the objectives or conditions.

Cost of Land.--Dr. R. R. Renne and H. H. Lord in a study of the inequalities resulting from assessing dry land and range land worked out

TABLE XVIII.--THE PROPORTION OF CAPITAL BORROWED TO PRICE PAID FOR LAND BY SUCCESSFUL MONTANA FARMERS a/

Price paid per acre, in dollars		Percentage of Capital Borrowed				
	Total	- 0 -	1 - 25%	26-50%	51-75%	76-100%
Total	80	28	11	16	13	12
0 b/	3	3	--	--	--	--
1 - 5	6	4	--	1	--	1
6 - 10	10	6	--	1	3	--
11 - 15	7	4	1	--	1	1
16 - 20	20	6	1	8	2	3
21 - 25	7	1	3	2	--	1
26 - 30	10	3	2	1	1	3
31 - 35	1	--	--	--	--	1
36 - 40	2	--	2	--	--	--
41 - 45	1	--	--	--	1	--
46 - 50	4	--	--	1	2	1
51 & over	9	1	2	2	3	1

a/ Source: Farmers' questionnaires.

b/ Land homesteaded or inherited.

a price value for land based on its productiveness. 30/ They found in their study that first grade farm land is worth $33 per acre; second grade farm land $18 per acre; third grade farm land $3 per acre; and fourth grade farm land $1.50 per acre. Since 53 per cent of the total land owned on successful farms is either first or second grade farm land, it would seem that the average price of $28.52 paid for land by the successful crop farmers is not exhorbitant, especially when it is considered that the sale price of irrigated land is included in the figure $28.52.

The figure $28.52 is the average price paid per acre for all land purchased by successful crop farmers, but when free land is entered into the average the figure decreases to $26.50 per acre. The average price paid for land by the combination farmers is only $18.62 per acre, or some $10 less per acre than the price paid by crop farmers. When the prices paid for land by crop and combination farmers are averaged together with the proper weighing according to the number of acres purchased, the price paid by all successful farmers is $26.58, and the cost per acre to successful farmers which again includes free land is $25 per acre.

In summarizing these data on cost of land it has been found that crop farmers paid more for their land than combination farmers, but it has also been pointed out that crop farmers own mostly first and second grade farm land which on the average is worth as much if not more than cost of land per acre to these farmers. The cost of land to combination farmers was $18.50 which is probably more than the land is worth, as this group of

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30/ Assessment of Montana Farm Land, Bulletin 348, 1937, pp. 53-56.

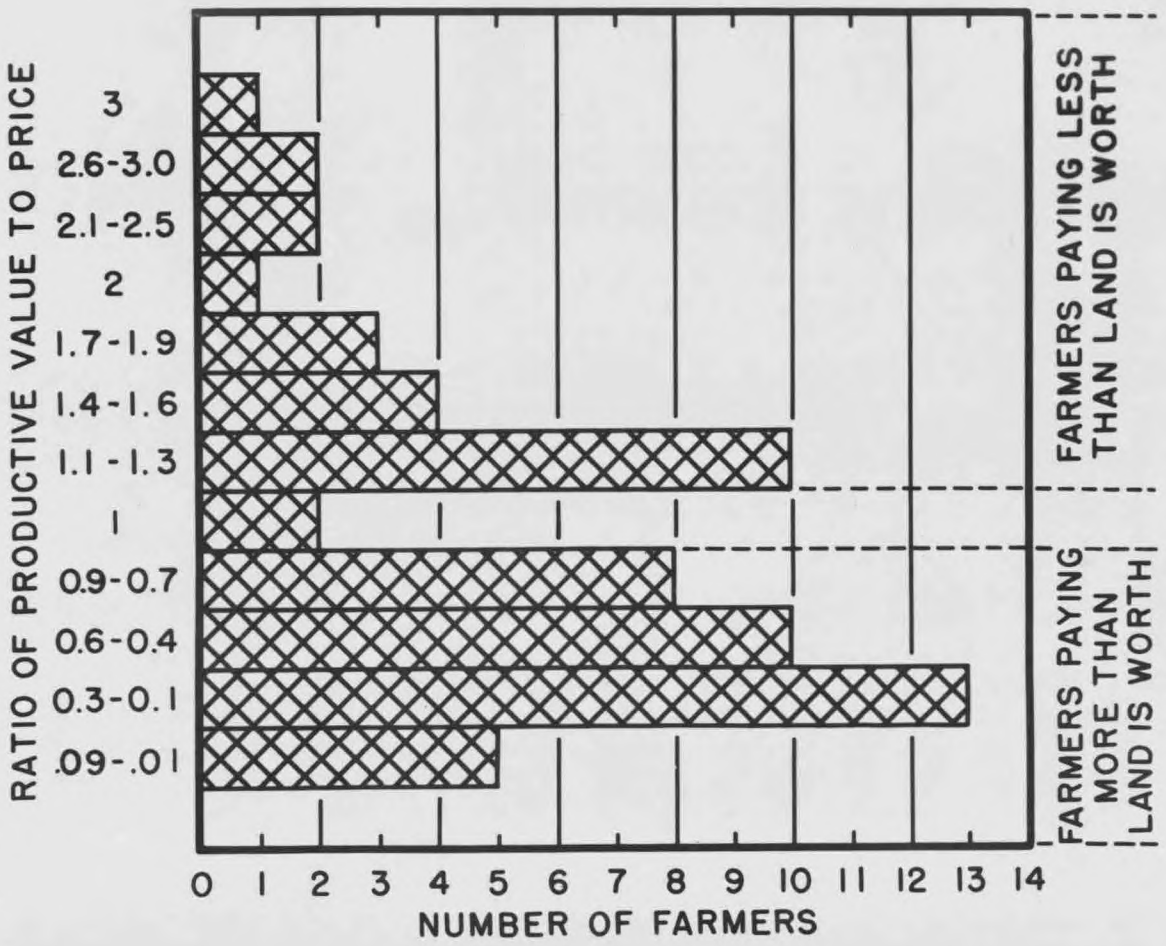


Figure 17.--The relationship of the productivity value of the land owned by successful farmers to the original price paid for the same land. (Productivity value divided by price paid).

farmers own a preponderence of third grade grazing land which is worth only $1.50 per acre. Hence, it would seem that the majority of crop farmers paid less than their land is worth, and the majority of combination farmers paid more than their land is worth. However, the combination farmers own a large percentage of irrigated land, which would be a factor in causing the cost of their land to be as high as $18.50 per acre.

In the renting of land the majority of crop farmers use the share crop method; the average share of the crop returned to the landlord for the use of the land is 30 per cent of the total crop. Only a relatively small number of farmers of this type rent for cash, and the average cash price paid per acre for the use of the land is 48 cents for one year. The combination farmers rent more land than do the crop farmers, and they more often rent on a cash basis. The average price paid per acre for the use of land by farmers of this type is 13 cents per year, and this figure includes the rate of rent paid for dry farm land, grazing land, and irrigated land. Comparing the figure 18 cents, 31/ which was the average cost per acre of leases to a sample group of Montana cattle ranchers in 1932, to the 13 cents paid by successful combination farmers in 1937, it will be noted that the latter group paid on an average of five cents less per acre for the use of all types of land than did the former group.

Date of Acquiring the Land.--It will come as a great surprise to most investigators of farm problems to learn that most of the land purchased by both the successful crop and combination farmers has been purchased since

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31/ Income and Cost Factors in the Range Beef Industry of Montana, 1932, Montana Agricultural Experiment Station.

1925. Over 62 per cent of the land purchased by successful crop farmers has been purchased since 1925 (see table XIX), but from the farmers' questionnaires it was found that 89 out of 115 farmers had been operating their present unit for more than 11 years. Also it was learned from these same questionnaires that the majority of farmers did not buy all of their land at one time, but have been steadily acquiring land as the opportunities warranted the purchase of additional acres. Considering all the available material the facts indicate that the majority of successful farmers began as small operators during the period 1910 to 1920, but have constantly secured more land, taking special advantage of the low land prices in Montana since 1925.

Sources and Cost of Farm Credit.--It has already been pointed out that a large majority of the successful farmers purchased their farm units with borrowed capital. 32/ There are many sources of credit available to the successful farmer both private and governmental. The Federal Land Bank is the largest single source of farm credit, making loans to 38 per cent of these farmers. Private individuals and commercial banks have made loans to 22 and 21 per cent of the successful farmers respectively. Insurance and loan companies have made loans to only 19 per cent of this successful group.

The Federal Land Bank has been a great aid to all farmers, and farmers generally have been quick to take advantage of this type of indirect subsidy. A preliminary analysis of Montana farm mortgages indicates that

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32/ Refer to table XVIII for distribution of farmers according to percentage of capital borrowed.

TABLE XIX.--PRICE PAID FOR LAND AT DATE OF ACQUISITION BY SUCCESSFUL CROP FARMERS*

Price paid & acres acquired	Total	Date of Acquisition							
		Before 1900	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930 & after
Total	188	--	1	8	18	34	14	57	56
$0-14	69	--	--	4	12	15	1	19	18
$15-29	63	--	--	1	2	12	4	24	20
30-44	32	--	1	2	2	2	2	11	12
45-above	24	--	--	1	2	5	7	3	6
0 - 160 acres	81	--	--	7	10	15	8	15	26
0-14	19	--	--	3	6	6	--	2	3
15-29	29	--	--	1	1	7	2	8	10
30-44	20	--	--	2	2	2	1	4	9
45-above	13	--	--	1	1	1	5	1	4
161 - 320	69	--	1	1	6	8	6	30	17
0-14	29	--	--	1	4	3	1	11	9
15-29	20	--	--	--	1	2	2	12	3
30-44	10	--	1	--	--	--	1	5	3
45-above	10	--	--	--	1	3	2	2	2
321 & above	38	--	--	--	2	11	--	12	13
0-14	21	--	--	--	2	7	--	5	6
15-29	14	--	--	--	--	3	--	4	7
30-44	2	--	--	--	--	--	--	2	--
45-above	1	--	--	--	--	1	--	--	--

*Source: Questionnaires sent to successful farmers.

TABLE XX.--PRICE PAID FOR LAND AT DATE OF ACQUISITION BY SUCCESSFUL COMBINATION FARMERS*

Price paid & acres acquired	Total	Date of Acquisition							
		Before 1900	1900-1904	1905-1909	1910-1914	1915-1919	1920-1924	1925-1929	1930 & after
Total	38	2	1	2	--	5	1	12	15
$ 0-14	25	2	--	1	--	3	1	6	12
15-29	5	--	1	--	--	1	--	3	--
30-44	2	--	--	--	--	--	--	2	--
45-above	6	--	--	1	--	1	--	1	3
0 - 160 acres	16	2	--	1	--	1	1	5	6
0-14	9	2	--	--	--	1	1	2	3
15-29	1	--	--	--	--	--	--	1	--
30-44	1	--	--	--	--	--	--	1	--
45-above	5	--	--	1	--	--	--	1	3
161 - 320	6	--	--	1	--	--	--	3	2
0-14	5	--	--	1	--	--	--	2	2
15-29	1	--	--	--	--	--	--	1	--
30-44	--	--	--	--	--	--	--	--	--
45-above	--	--	--	--	--	--	--	--	--
321 & above	16	--	1	--	--	4	--	4	7
0-14	11	--	--	--	--	2	--	2	7
15-29	3	--	1	--	--	1	--	1	--
30-44	1	--	--	--	--	--	--	1	--
45-above	1	--	--	--	--	1	--	--	--

*Source: Questionnaires sent to successful farmers.

about three-fourths of the strictly real estate mortgages on farm lands are held by the Federal Land Bank. 33/ From this comparison it is clear that all farmers in Montana have made greater use of the Federal Land Bank as a source of credit than have the successful farmers, but the successful farmers have also been quick to accept this more liberal source of credit.

Another factor which may help explain why this group of farmers has been successful is the low cost of credit or rate of interest paid on loans. Exactly 66 per cent of these farmers paid between 4 and 6 per cent interest on their loans. In other words two-thirds of the successful farmers paid an average of 5 per cent on borrowed capital, which compares almost exactly with rate of 5.5 per cent charged by the Federal Land Bank. Furthermore, the expense of interest on loans was only 6 per cent of the total farm expenditures, which would indicate that these farmers are not borrowing heavily at the present time.

PART IV: THE PERSONAL QUALIFICATIONS OF SUCCESSFUL MONTANA FARMERS

The Experience of the Farmer and Family Status

Farming Experience.--If environment has any effect upon the individual, and most authorities contend that it has, then past experience and training should be an important cause for the success of this group of farmers. The early home training probably has the greatest effect on the abilities, attitudes, and character of men, but it was impossible in this study to

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33/ Renne, R. R., and Lord, H. H., Assessment of Montana Farm Lands, Montana Agricultural Experiment Station Bulletin 348, October, 1937, p. 20.

collect much valuable information on the childhood of these farmers. At best it was found that 109 successful farmers out of 116 were reared on farms. Thus these farmers were for the most part raised in an environment and atmosphere of the agrarian life. Of these farmers 79 per cent worked on their father's farm for five or more years, and the greater majority of this 79 per cent worked on their father's farm until they commenced farming for themselves. This leaves a very small percentage that have ever worked as laborers on other farms.

Among this group complete tenancy has not been popular. Only eight farmers out of 116 have ever farmed as a tenant, or less than 7 per cent. The farm ladder commonly referred to in agricultural economics including the steps, laborer, tenant, and then farm owner has surely not been a factor among these successful farmers. By far the largest percentage jumped directly from their father's farm to the status of an independent owner-operator. This means that these individuals had the initiative and drive to start on their own at once with probably some aid from their family.

The farmers in this group are not real "old timers"--nor are they, for the most part, new to the country. About 48 per cent have been located on their present unit for over 20 years, 29 per cent have been on their present unit for over 11 years and less than 23 per cent have been located on their present unit 10 years or less. It is significant to note that the period of heaviest settlement for the state, 1908-1919 coincides perfectly with the above data, as some 48 per cent of these farmers settled in this area before 1918. However, it should be carefully noted that 23

per cent of these farmers have located on their present unit during the past 10 years, a period of depopulation for Montana. It would be interesting in a more intensified study to analyze more carefully the process of settlement by these farmers.

Most of these successful farmers are past middle age--in fact 76 per cent of this group are past 45 years of age. It requires time and patience to acquire the necessary capital to operate an economically sized unit, which means specifically that young men, due to economic conditions, are not financially successful in this area. Middle age men, well seasoned by hard knocks, who have had sufficient capital to buy good land at low prices in the past ten years to increase the size of their original units are the ones that have been making money farming.

Education of the Farmer.--It is highly important to note that 110 farmers out of this group of 116, or practically every successful farmer considered in the sample has received some formal education. It is true that 58 per cent of the successful farmers have not received any education higher than the eighth grade, but many of these farmers stated that experience had been their best teacher. Men who are able to profit by mistakes are the type who usually make a success in anything they undertake. But interesting enough, 20 per cent of these farmers have attended college, and one-half of the 20 per cent have spent some time in an agricultural college. From these data it can be concluded that the majority of farmers in this group have received only a very limited education, but almost all have attended grade school.

The Family Status.--Just how necessary a family has been to successful farming in the past two decades is a debateable question. Economically

TABLE XXI.--THE FAMILY STATUS COMPARED WITH NET INCOME FOR SUCCESSFUL MONTANA FARMERS, 1936 1/

Marital status and number of children	Total	Net Income Groups									
		-$1000 to 1999	$2000 to 2999	$3000 to 3999	$4000 to 4999	$5000 to 5999	$6000 to 6999	$7000 to 7999	$8000 to 8999	$9000 to 9999	$10,000 and over
Total:	314	98	112	51	23	9	10	4	2	2	3
Married	244	72	99	31	20	7	7	4	1	1	2
Single	37	20	5	9	3	--	--	--	--	--	--
Other 2/	33	6	8	11	--	2	3	--	1	1	1
0 - Children 3/	140	49	43	23	9	4	6	1	2	2	1
Married	78	24	31	8	7	2	3	1	1	1	--
Single	32	19	4	7	2	--	--	--	--	--	--
Other	30	6	8	8	--	2	3	--	1	1	1
1 & 2 Children	110	31	39	19	9	4	3	3	--	--	2
Married	103	30	38	15	8	4	3	3	--	--	2
Single	5	1	1	2	1	--	--	--	--	--	--
Other	2	--	--	2	--	--	--	--	--	--	--
3 & 4 Children	43	17	18	4	2	1	1	--	--	--	--
Married	43	17	18	4	2	1	1	--	--	--	--
Single	--	--	--	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--	--	--	--	--
5 & over Children	21	1	12	5	3	--	--	--	--	--	--
Married	20	1	12	4	3	--	--	--	--	--	--
Single	--	--	--	--	--	--	--	--	--	--	--
Other	1	--	--	1	--	--	--	--	--	--	--

1/ Source: State income tax files. 2/ Partnerships, estates, widows, or widowers.

3/ Children living at home and under 18 years of age.

speaking, children who formerly indirectly added to the family income by the means of their labor on the farm, now are the reason for increased family expenditures necessitated by sending these same children to high school and college.

Nevertheless, a family tie brings a feeling of conservatism and permanence to a man who otherwise might shirk community and social activities, to the detriment of himself and those individuals about him. Nearly 250 farmers out of 314 were married and had a family at the time this study was made, and 188 out of 246 of these farm families had some children living at home under 18 years of age. The average number of children per family, where there were children under 18 years of age was 2.5, and for the entire sample was 1.4 children per family. 34/ These data clearly show that families on the successful farms are small at the present time, but, it must be remembered that 76 per cent of the successful farmers are over 45 years of age, and that many families in this group have grown children not living at home.

Since these farmers have very few children at home, it is certain that family labor has not been an important factor making for their success in the past few years. The expense for labor was one of the largest single costs on successful farms, and it can now be more readily understood after the size of the families have been considered. 35/

Personal Qualities Making for Successful Farming

"It is the man not the land that makes farmers successful" is an

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34/ These data were taken from income tax sources, and no children over 18 years of age were recorded on the data, since only for those below 18 years of age is the taxpayer allowed exemption for computing taxable income.

35/ Compare with tables XV and XVI, pages 61 and 62 for data on farm expenses.

oft quoted saying that carries considerable weight. It is the opinion of the investigator that personal qualities, capabilities, and character are the most influential and determining factors making for success regardless of the industry or enterprise. It is also most difficult to obtain information on these non-material qualities hence we know least about them. These successful farmers have not differed to any marked degree in their farm organization and practices from the rest of the farmers in the state, yet for some reason they have prospered. To measure statistically managerial ability, courage, and initiative is nearly impossible; some men have these characteristics and others do not, and the investigator finds it most difficult to isolate and measure these qualities. It is from this angle that economic investigators meet their greatest obstacle, that of measuring the variable factor--human nature.

Degree of Success.--According to the judgment of the various county agents, 35 per cent of the farmers picked in this sample were unusually successful farmers, both from actual farming practices and the financial consideration. One-half--or 50 per cent exactly, were judged as being fairly successful and the remaining 15 per cent were only average farmers. It should be understood that this classification is purely the judgment of a few men, but men who should be in an excellent position to judge.

Character of the Farmers.--The statement that any farmer in any area must be a conscientious, hard worker to make a financial success will not be doubted by any person who has ever farmed. The ability to work hard is quite common among this group, it is estimated that over 80 per cent of these farmers practice the virtue of working hard. Good managerial ability

is as important, if not more so, to successful farming than the ability to work hard. All industries pay a premium for efficient management and agriculture is no exception. In the estimation of the county agents over 60 per cent of these successful farmers are far and away above the average in managerial ability. The greater majority of the successful farmers have shown their willingness to cooperate with their neighbors and governmental agencies. Very few anti-social individuals are successful over the long period of time, and this group is no exception to the rule. They have, for the most part, shown a definite willingness to accept new ideas and cooperate with those agencies endeavoring to aid them. There are some in this group, who consider it more profitable to play a lone hand, but it is a distinct minority.

The nationality of successful farmers may or may not throw some light on the problem of successful farming in this area. For the most part there is a mixed group of nationalities represented; however, the two most prominent types are the Germans and the Scandinavians, respectively. In all probability the environment that these two races were subjected to in Europe has had some effect on their ability to adapt themselves to Montana's conditions.

Reasons for Success.--According to the county agents these farmers have been successful because they:

1. Work hard
2. Farm good land
3. Are willing to cooperate with neighbors and governmental agencies.

4. Build cash reserves
5. Produce many supplies on the farm
    a. Milk cows
    b. Raise poultry
    c. Slaughter livestock
    d. Raise gardens
6. Have good managerial ability
7. Employ family labor
8. Have received optimum rainfall
9. Are alert to new ideas
10. Follow accepted proven farming practices of the region

SUMMARY

In retrospect it may be concluded that different farmers attained success by different methods. One man was successful with a certain type of organization, and another man was just as successful with an entirely different type of organization. However, this wide range in farm organization and practices may be attributed to the great variations in geographic location and natural conditions to which the farms considered in this study were subjected. Nevertheless, it is possible to generalize from those tendencies discovered, and enumerate certain factors which may be prerequisite to successful farming, if the limitations of group averages are fully understood.

The factors making for successful farming isolated by the use of group averages are as follows:

1. An annual rainfall of at least 10 inches is necessary for success in dry land regions with a growing season (April, May, June, July) precipitation of 1.33 inches as a very minimum.
2. Successful crop farms tend to be 1100 acres or more in size; 71 per cent of which are entirely dry farmed; 25.5 per cent of which are partially irrigated and 3.5 per cent of which are entirely irrigated.
3. Successful crop farmers own the greater share of their land; usually owning 850 acres or more per farm; 620 acres of dry farm land, 200 acres of grazing land, and 50 acres of irrigated land.
4. The successful farms are located predominately on the better grades of land; 53.5 per cent of the land owned by these farmers, in the 25 counties with soil classifications, is either first or second grade farm land.
5. Approximately 80 per cent of the crop land on these farms is devoted to wheat production, or an average of 415 acres of wheat per farm. The modal farm producing between 5000 and 6500 bushels of wheat per season.
6. Crop yields are high--the average yield per acre of wheat ranging between 16 and 21 bushels.
7. Clean, early summer fallow is a requisite to successful wheat farming in the dry land sections.
8. The farmsteads have been well diversified by the raising of gardens, poultry, and milk cows; together with a limited production of livestock for cash sale and home slaughtering.

9. The majority of successful farmers do not speculate on future prices; over 60 per cent of these farmers sell their grain at harvest time.

10. These farmers build cash reserves in good years to meet the reverses of bad years.

11. A financial statement for the average successful Montana farmer:

Item	Crop Farmer	Combination Farmer
Gross income	$6565	$8794
Farm expenses	3618	6204
Net profit from farming	2947	2590
Interest on investment	517	534
Labor income	2430	2056

12. The greatest percentage of land was purchased in relatively small acreages since 1925, at an average price of $28.52 per acre on crop farms, and $18.62 per acre on combination farms.

13. Nearly all of these farmers were reared on farms, and thus received the benefit of a practical agricultural training.

14. These farmers possess the personal qualities that are necessary to success in any line of endeavor; namely that of good managerial ability and the willingness to work hard and accept new ideas.

APPENDIX A

TABLE XXII.--AVERAGE ANNUAL RAINFALL AND DEVIATIONS FROM AVERAGE FOR MONTANA, 1933 THROUGH 1936 1/

Location	1933		1934		1935		1936		Average	
	Ppt. 2/	D. 3/	Ppt.	D.	Ppt.	D.	Ppt.	D.	Ppt.	D.
Big Sandy	15.32	+1.2	9.57	-2.8	9.38	-3.0	8.47	-3.8	10.86	-2.1
Billings	13.16	-1	8.68	-5.4	11.41	-2.4	9.20	-3.9	10.61	-3.2
Bozeman	15.89	-2.4	10.54	-7.8	15.46	-2.6	12.78	-4.9	13.66	-4.4
Cascade	13.06	-4.3	13.49	-3.9	9.28	-7.0	11.39	-4.5	11.77	-4.07
Chinook	17.78	+5.1	11.54	-7.2	9.33	-3.9	9.69	-3.7	12.13	-2.4
Choteau	12.07	-1.3	14.94	+1.3	6.22	-6.9	8.47	-4.3	10.42	-2.8
Conrad	13.85	+2.4	14.55	+2.7	7.26	-4.7	7.62	-5.3	10.84	-1.2
Culbertson	12.08	-1.5	4.65	-8.9	12.6	--	8.86	-3.1	9.26	-3.4
Cut Bank	8.60	-2.4	12.32	+ .33	5.36	-5.9	12.01	+ .82	9.56	-1.8
Geraldine	14.71	-2.6	10.83	-6.5	8.20	-7.8	8.21	-7.3	10.48	-6.0
Glasgow	14.30	- .69	6.83	-6.8	10.02	-3.2	7.93	-5.5	9.77	-4.1
Glendive	14.70	- .42	4.83	-10.3	14.18	- .4	9.19	-5.5	10.67	-4.1
Great Falls	16.25	+ .71	10.26	-1.8	7.45	-7.9	9.16	-6.6	10.77	-3.8
Jordan	12.22	- .04	6.48	-5.8	10.11	-1.5	6.60	-5.1	8.85	-3.1
Lewistown	15.99	-1.8	14.09	+3.7	12.69	-5.7	13.04	-5.3	13.99	-2.2
Lytle	16.50	+4.2	16.03	+3.7	8.60	-5.0	9.06	-4.3	12.54	- .3
Malta	16.67	+2.8	9.03	-4.8	8.73	-4.9	7.28	-6.7	10.42	-3.4
Miles City	10.22	-3.5	5.51	-8.3	11.54	-2.2	6.06	-7.7	8.33	-5.3
Roundup	8.79	-4.9	7.71	-6.9	9.30	-3.6	7.99	-4.2	8.41	-4.9
Valier	12.99	+1.0	14.24	2.2	7.01	-5.5	8.66	-3.6	10.72	-1.5

1/ Source: Climatological Data: U. S. D. A., Weather Bureau, Montana Section.
2/ Ppt. is the abbreviation for precipitation.
3/ D. is the abbreviation for deviations from average.

TABLE XXIII.--ACRES AND TYPE OF LAND OWNED ON SUCCESSFUL CROP FARMS [1]

Tot. Acres Owned and Irrigated	Dry Land and Grazing Land Owned																			
	Tot. Grazing & D.L.[2]					Grazing 0 - 160					Grazing 161-320					Grazing 320 & --				
Acres Owned	Tot.	1-160	161-320	321-640	641 & -	D.L. Tot.	1-160	161-320	321-640	641 & -	D.L. Tot.	1-160	161-320	321-640	641 & -	D.L. Tot.	1-160	161-320	321-640	641 & -
Total	213	52	30	49	81	150	37	20	44	49	34	12	6	1	15	29	4	4	4	17
Acres O.[3]																				
0-250	35	33	1	1	--	31	29	1	1	--	4	4	--	--	--	--	--	--	--	--
251-500	55	13	22	20	--	45	7	18	20	--	10	6	4	--	--	--	--	--	--	--
501-1000	66	5	4	26	31	52	1	1	23	27	8	2	1	1	4	6	2	2	2	--
1001-1500	31	--	2	1	28	15	--	--	--	15	7	--	--	--	7	9	--	2	1	6
1501 & -	26	2	1	1	22	7	--	--	--	7	5	--	1	--	4	14	2	--	1	11
Irrig. -0-	154	10	26	46	74	107	6	17	41	43	24	2	6	1	15	23	--	3	4	16
Acres O.																				
0-250	11	10	1	--	--	7	6	1	--	--	2	2	--	--	--	--	--	--	--	--
251-500	39	--	20	19	--	35	--	16	19	--	4	--	4	--	--	--	--	--	--	--
501-1000	58	--	3	25	30	48	--	--	22	26	6	--	1	1	4	4	--	2	2	--
1001-1500	24	--	1	1	22	10	--	--	--	10	7	--	--	--	7	7	--	1	1	5
1501 & -	24	--	1	1	22	7	--	--	--	7	5	--	1	--	4	12	--	--	1	11
Irrig. 1-150	28	18	3	3	4	26	17	3	3	3	1	1	--	--	--	1	--	--	--	1
Acres O.																				
0-250	15	14	--	1	--	15	14	--	1	--	--	--	--	--	--	--	--	--	--	--
251-500	7	4	2	1	--	6	3	2	1	--	1	1	--	--	--	--	--	--	--	--
501-1000	3	--	1	1	1	3	--	1	1	1	--	--	--	--	--	--	--	--	--	--
1001-1500	3	--	--	--	3	2	--	--	--	2	--	--	--	--	--	--	--	--	--	--
1501 & -	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	1
Irrig.150 &	31	24	1	--	3	17	14	--	--	3	9	9	--	--	--	5	4	1	--	--
Acres O.																				
0-250	9	9	--	--	--	7	7	--	--	--	2	2	--	--	--	--	--	--	--	--
251-500	9	9	--	--	--	6	6	--	--	--	5	5	--	--	--	--	--	--	--	--
501-1000	5	5	--	--	--	1	1	--	--	--	2	2	--	--	--	2	2	--	--	--
1001-1500	4	--	1	--	3	3	--	--	--	3	--	--	--	--	--	1	--	1	--	--
1501 & 0	2	2	--	--	--	--	--	--	--	--	--	--	--	--	--	2	2	--	--	--

[1] Source: County Assessors' Records. [2] D. L. is abbreviation for dry land.

[3] O. is abbreviation for owned.

TABLE XXIV.--ACRES AND TYPE OF LAND OWNED ON SUCCESSFUL COMBINATION FARMS 1/

Tot. Acres Owned and Irrigated	Dry Land and Grazing Land Owned																			
	Total Grazing & D.L. 2/					Grazing 0 - 160					Grazing 161 - 320					Grazing 320 & --				
Acres Owned	Tot.	1-160	161 320	321 640	641 &-	D.L. Tot.	1-160	161 320	321 640	641 & -	D.L. Tot.	1-160	161 320	321 640	641 & -	D.L. Tot.	1-160	161 320	321 640	641 & -
Total 3/	55	28	2	9	16	23	15	1	4	3	9	5	--	1	3	23	8	1	4	10
Acres O.																				
0-250	10	10	--	--	--	10	10	--	--	--	--	--	--	--	--	--	--	--	--	--
251-500	9	6	1	1	1	7	4	1	1	1	2	2	--	--	--	--	--	--	--	--
501-1000	12	7	--	5	--	4	1	--	3	--	4	3	--	1	--	4	3	--	1	--
1001-1500	11	3	--	2	6	--	--	--	--	--	3	--	--	--	3	8	3	--	2	3
1501 & -	13	2	1	1	9	2	--	--	--	2	--	--	--	--	--	11	2	1	1	7
Irrig. -0-	25	3	2	6	14	7	--	1	3	3	5	1	--	1	3	13	2	1	2	8
Acres O.																				
0-250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
251-500	4	1	1	1	1	3	--	1	1	1	1	1	--	--	--	--	--	--	--	--
501-1000	4	--	--	4	--	2	--	--	2	--	1	--	--	1	--	1	--	--	1	--
1001-1500	7	1	--	1	5	--	--	--	--	--	3	--	--	--	3	4	1	--	1	2
1501 & -	10	1	1	--	8	2	--	--	--	2	--	--	--	--	--	8	1	1	--	6
Irrig.1-150	17	15	--	2	--	12	11	--	1	--	--	--	--	--	--	5	4	--	1	--
Acres O.																				
0-250	7	7	--	--	--	7	7	--	--	--	--	--	--	--	--	--	---	--	--	--
251-500	3	3	--	--	--	3	3	--	--	--	--	--	--	--	--	--	--	--	--	--
501-1000	5	4	--	1	--	2	1	--	1	--	--	--	--	--	--	3	3	--	--	--
1001-1500	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	--	--	--
1501 & -	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	--
Irrig. 150 &	14	10	--	2	2	4	4	--	--	--	4	4	--	--	--	6	2	--	2	2
Acres O.																				
0-250	3	3	--	--	--	3	3	--	--	--	--	--	--	--	--	--	--	--	--	--
251-500	2	2	--	--	--	1	1	--	--	--	1	1	--	--	--	--	--	--	--	--
501-1000	3	3	--	--	--	--	--	--	--	--	3	3	--	--	--	--	--	--	--	--
1001-1500	1	1	--	1	1	--	--	--	--	--	--	--	--	--	--	3	1	--	1	1
1501 & -	1	1	--	1	1	--	--	--	--	--	--	--	--	--	--	3	1	--	1	1

1/ Source: County Assessors' Records. 2/ D. L. is abbreviation for dry land.
3/ O. is abbreviation for owned.

TABLE XXV.--LIVESTOCK NUMBERS ON SUCCESSFUL CROP FARMS 1/

Animal Units and Hog Numbers	Cattle and Sheep Numbers														
	Total Cattle & Sheep					Sheep - 0 -					Sheep 1 & over				
		Cattle					Cattle					Cattle			
	Total	0	1-15	16-30	31 -	Total	0	1-15	16-30	31 -	Total	0	1-15	16-30	31 -
Total	242	107	83	23	29	233	105	81	22	25	9	2	2	1	4
A.Units															
0-20	183	107	76	--	--	180	105	75	--	--	3	2	1	--	--
21-40	28	--	7	21	--	26	--	6	20	--	2	--	1	1	--
41-60	2	--	--	2	--	2	--	--	2	--	--	--	--	--	--
61 &	29	--	--	--	29	25	--	--	--	25	4	--	--	--	4
Hogs - 0 -	192	103	60	12	17	191	103	60	11	17	1	--	--	1	--
A. Units															
0-20	159	103	56	--	--	159	103	56	--	--	--	--	--	--	--
21-40	15	--	4	11	--	14	--	4	10	--	1	--	--	1	--
41-60	1	--	--	1	--	1	--	--	1	--	--	--	--	--	--
61 &	17	--	--	--	17	17	--	--	--	17	--	--	--	--	--
Hogs 1-10	46	4	23	11	8	39	2	21	11	5	7	2	2	--	3
A. Units															
0-20	24	4	20	--	--	21	2	19	--	--	3	2	1	--	--
21-40	13	--	3	10	--	12	--	2	10	--	1	--	1	--	--
41-60	1	--	--	1	--	1	--	--	1	--	--	--	--	--	--
61 &	8	--	--	--	8	5	--	--	--	5	3	--	--	--	3
Hogs 10 & --	4	--	--	--	4	3	--	--	--	3	1	--	--	--	1
A. Units															
0-20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21-40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
41-60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
61 &	4	--	--	--	4	3	--	--	--	3	1	--	--	--	1

1/ Source: County Assessors' Records.

TABLE XXVI.--LIVESTOCK NUMBERS ON SUCCESSFUL COMBINATION FARMS 1/

Animal Units and Hog Numbers	Cattle and Sheep Numbers														
	Total Cattle & Sheep					Sheep - 0 -					Sheep 1 and over				
		Cattle					Cattle					Cattle			
	Total	0	1-15	16-100	101 -	Total	0	1-15	16-100	101 -	Total	0	1-15	16-100	101 -
Total	66	18	20	15	13	55	18	12	14	11	11	--	8	1	2
A. Units															
0-20	30	18	12	--	--	29	18	11	--	--	1	--	1	--	--
21-100	14	--	3	11	--	11	--	1	10	--	3	--	2	1	--
101-180	4	--	--	4	--	4	--	--	4	--	--	--	--	--	--
181 &	18	--	5	--	13	11	--	--	--	11	7	--	5	--	2
Hogs - 0 -	51	17	18	8	8	42	17	10	8	7	9	--	8	--	1
A. Units															
0-20	28	17	11	--	--	27	17	10	--	--	1	--	1	--	--
21-100	7	--	2	5	--	5	--	--	5	--	2	--	2	--	--
101-180	3	--	--	3	--	3	--	--	3	--	--	--	--	--	--
181 &	13	--	5	--	8	7	--	--	--	7	6	--	5	--	1
Hogs 1-10	12	1	2	6	3	10	1	2	5	2	2	--	--	1	1
A. Units															
0-20	2	1	1	--	--	2	1	1	--	--	--	--	--	--	--
21-100	7	--	1	6	--	6	--	1	5	--	1	--	--	1	--
101-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
181 &	3	--	--	--	3	2	--	--	--	2	1	--	--	--	1
Hogs 10 &--	3	--	--	1	2	3	--	--	1	2	--	--	--	--	--
A. Units															
0-20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21-100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
101-180	1	--	--	1	--	1	--	--	1	--	--	--	--	--	--
181 &	2	--	--	--	2	2	--	--	--	2	--	--	--	--	--

1/ Source: County Assessors' Records.

TABLE XXVII.--THE RELATIONSHIP OF INCOME TO TYPE OF SUCCESSFUL FARM, 1936 1/

Type of Farm and No. of Supplementary Enterprises	Distribution of Net and Gross Incomes											
	All Gross Incomes				Gross Inc. 0 to $9999				Gross Inc. $10,000 & -			
	Tot.	Net Income			Tot.	Net Income			Tot.	Net Income		
		$0 2999	$3000 5999	$6000 & -		$0 2999	$3000 5999	$6000 & -		$0 2999	$3000 5999	$6000 & -
Tot. All Types	314	211	82	21	258	197	59	2	56	14	23	19
Crop	241	162	64	15	214	158	54	2	27	4	10	13
Combination	73	49	18	6	44	39	5	--	29	10	13	6
No Supp'l Ent. 2/	65	42	18	5	45	36	9	--	20	6	9	5
Crop	36	23	11	2	27	21	6	--	9	2	5	2
Combination	29	19	7	3	118	15	3	--	11	4	4	3
1 Supp'l Ent.	104	63	33	8	85	58	26	1	19	5	7	7
Crop	74	45	24	5	68	44	23	1	6	1	1	4
Combination	30	18	9	3	17	14	3	--	13	4	6	3
2 Supp'l Ent.	63	44	13	6	57	43	13	1	6	1	--	5
Crop	60	41	13	6	54	40	13	1	6	1	--	5
Combination	3	3	--	--	3	3	--	--	--	--	--	--
3 Supp'l Ent.	37	27	9	1	31	26	5	--	6	1	4	1
Crop	29	21	7	1	26	21	5	--	3	--	2	1
Combination	8	6	2	--	5	5	--	--	3	1	2	--
4 & -Supp'l Ent.	45	35	9	1	40	34	6	--	5	1	3	1
Crop	42	33	8	1	38	32	6	--	4	1	2	1
Combination	3	2	1	--	2	2	--	--	1	--	1	--

1/ Farms picked from Montana income tax returns.

2/ Abbreviation for the word enterprises.

TABLE XXVIII.--EXPENDITURES OF CROP FARMERS IN PER CENT, BY INCOME GROUPS, 1934 THROUGH 1936*

Expense Items	Expenses by Net Income Groups										
	$1000 1999	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 6999	$7000 7999	$8000 8999	$9000 9999	$10,000 & over	Entire Sample
Labor	24.7	26.3	21.3	20	16.1	15.6	12.4	20.9	11.6	20.3	22.10
Feed	4.3	3.6	2.6	3	3.3	.8	1.4	1.7	.7	2.6	3.12
Seed	3.5	2.9	2.9	2.3	2.7	1.7	1.5	1.3	1.4	1.5	2.72
Board	2.7	2.4	2.9	1.3	2.5	3.5	1.6	3.2	5.1	5.3	2.60
Grinding	1.3	1.5	1.1	1.2	1	.8	2.8	--	--	--	1.23
Fuel and oil	9.7	11.6	16.7	13.9	21.2	17.8	18.8	17.9	19	13.5	14.25
Imps. & tools	3.5	1.3	1.5	.3	.1	.2	--	.3	1	--	1.21
Taxes	9	8.0	8.6	8.4	11.6	11	6.5	11.1	11.6	14.7	9.10
Insurance	1.2	1.9	2.5	2.1	3.9	2.8	.3	2.7	.7	3.8	2.24
Depreciation and repairs	13.3	20.2	27.9	28.3	28.6	38.3	31.2	32.7	47	33.4	24.92
Interest	6.5	7.7	5.8	4.8	5.9	2.8	7.	3.8	--	2.1	5.96
Rent	3.4	4.3	2.7	2.9	.2	3.5	2.7	.2	--	.2	2.95
Inventory loss	1	1.8	--	7.3	--	--	7.6	--	--	--	2.03
Other	15.2	5.3	2.8	3.6	2.2	1.7	5.6	3.3	1.4	1.9	5.34
Purchases	.4	.5	--	--	--	--	--	--	--	--	.16
Total	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.8	99.9	99.9	99.93

*Source: State Income Tax Files.

TABLE XXIX.--EXPENDITURES OF COMBINATION FARMERS IN PER CENT, BY INCOME GROUPS, 1934 THROUGH 1936*

Expense Items	Expenses by Net Income Groups										
	$1000 1999	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 6999	$7000 7999	$8000 8999	$9000 9999	$10,000 & over	Entire Sample
Labor	27.4	27.8	20.3	26.3	29.6	32.6	6.5	12.1	--	--	26.03
Feed	10	17.4	18	14.7	9.9	7.7	4	3.2	--	--	13.95
Seed	1.1	1.7	1.2	1.6	1.3	1.1	.5	2.0	--	--	1.47
Board	5.9	1.4	3.6	2.9	5.8	1.6	3.7	5.9	--	--	3.09
Grinding	.1	.7	.4	.7	.5	.1	7.1	.2	--	--	.58
Fuel and oil	10.6	6.4	6.2	7.3	9.4	6.6	3	15.9	--	--	7.50
Imps. & tools	.2	.8	.7	2.9	3.4	2.4	.2	--	--	--	1.50
Taxes	9.8	8.6	5.8	11.3	10	6.5	19	10.4	--	--	8.71
Insurance	1.3	.9	.2	.9	1.1	.8	1.3	4.	--	--	.92
Depreciation and repairs	18	9.2	13.9	11.2	7.3	20	23.1	36.2	--	--	13.82
Interest	4.5	7	7.9	2.9	8.8	1.7	8.6	5	--	--	5.51
Rent	4	4.5	2.7	7.4	5.8	2.2	8.8	.6	--	--	4.38
Inventory loss	.6	10	15	4.9	1.8	2.2	--	--	--	--	7.14
Other	2.5	3	3.4	4.3	4.7	9.9	13.5	3.8	--	--	4.43
Purchases	3.3	--	--	--	--	4	--	--	--	--	.89
Total	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	--	--	99.92

*Source: State Income Tax Files.

APPENDIX B

SCHEDULE USED IN TAKING INFORMATION OFF INDIVIDUAL INCOME TAX RETURNS

FARM INCOME TAX REPORT 193__

Number_____ P.O._____ County_____

FARM INCOME:

Milk	$_____	Labor	$_____	Married	
Butter & Cr.	$_____	Feed	$_____	No. of Depend.	_____
Poultry	$_____	Seed	$_____		
Crops	$_____	Board	$_____	TAXES:	
Fruit & Tr.	$_____	Grinding	$_____	Federal	$_____
Livestock	$_____	Fertilizer	$_____	State & Co	$_____
Misc. Sales	$_____	Fuel & Oil	$_____	City	$_____
Team Hire	$_____	Imps. & Tools	$_____	Total	$_____
Mdse. In Exch.	$_____	Taxes	$_____	Less Impr.	$_____
Mach. Work	$_____	Insurance	$_____	Net	$_____
Trucking	$_____	Deprec. & Rep.	$_____		
Breeding Fees	$_____	Interest	$_____	NET INCOME	$_____
Fed'l Pay'ts	$_____	Rent	$_____	EXEMPTIONS	$_____
Other	$_____	Other	$_____	TAXABLE INCOME	$_____
				TAX PAID	$_____
Total	$_____	Total	$_____		

OTHER INCOME:

Interest $_____
Rent & Roy. $_____
All Other $_____

DEPENDENTS:

Relation _____ Age _____
" _____ " _____
" _____ " _____

TOTAL INCOME $_____

Montana State Board of Equalization—Form 2A

THIS RETURN MUST BE FILED WITH THE STATE BOARD OF EQUALI ATION, HELENA, MONTANA, ON OR BEFORE

April 15th, 1937,

OR ON OR BEFORE THE 15TH DAY OF THE FOURTH MONTH FOLLOWING THE CLOSE OF THE ACCOUNTING PERIOD

STATE OF MONTANA

INDIVIDUAL INCOME TAX RETURN

FOR NET INCOMES FROM SALARIES OR WAGES OF MORE THAN $5,000, or Incomes, Regardless of Amount, from Business, Profession, Rents, or Sale of Property For Calendar Year 1936

Or for period begun ..... 193..... and ended ..... 193.....

(Please print name and address plainly)

..... (Name)

..... (Street and Number or Rural Route)

..... (Post Office) County (State)

Business or Profession .....

Do not write in this space

Serial Number

Amount Paid

Cash Check M. O.

CASHIER'S STAMP

See Instruction	Explain In Schedule	INCOME					
1		1. Salaries, Wages, Commissions, Etc. (State Name and Address of Person or Firm Whom Received)					
		(a)	$				
		(b)					
		(c)					
2	A & L	2. Income from Business or Profession					
3	F	3. Interest on Bank Deposits, Notes, Mortgages and Bonds ..... (Including Interest on Obligations of States or Their Subdivisions, Except Interest Received from Federal Securities which must be Entered in Schedule F.)					
4		Income from Partnerships or Fiduciaries, Etc. (Give Name and Address of Partnership, Etc.)					
		(a)					
		(b)					
5	E	5 Rents and Royalties					
6 & 6A	D	6. Profit from Sale or Exch. of Real Estate, Stocks, Bonds, etc.					
7	G	7. Dividends (Attach Schedule)					
8		8. Other Income (State Nature of Income)					
		(a)					
		(b)					
		9. **Total Income**				$	
		DEDUCTIONS					
9A	I	10. Interest Paid	$				
9B	H	11. Taxes Paid					
9C	J	12. Losses by Fire, Storm, Etc.					
9D	J	13. Bad Debts (Attach Itemized Schedule)					
10	K	14. Contributions (Itemize in Schedule K, or Attach Schedule)					
11	J	15. (a) Other Deductions					
		(b)					
		16. **Total Deductions**					
A		17. Net Income (Item 9 minus Item 16)				$	
D	M & N	18. Personal Exemption and Credit for Dependents					
		19. **Balance of Net Income Subject to Tax (Item 17 minus Item 18)**				$	
		COMPUTATION OF TAX	**Taxable Income**			**Tax**	
		20. Amount, not over First $2,000.00 of Item 19, Taxable at 1%	$			$	
		21. Amount, not over Next $2,000.00 of Item 19, Taxable at 2%					
		22. Amount, not over Next $2,000.00 of Item 19, Taxable at 3%					
		23. All net Income in excess of $6,000 of Item 19, Taxable at 4%					
		24. Penalty and interest					
A		25. Every person liable for a tax under this Act shall pay a minimum tax of $1.00					
		26. Total Tax—Items 20 to 25, inclusive				$	

The Total Tax due may be paid in full at the time this Return is filed, or, it may be paid in two instalments, one-half thereof to be paid at the time of Filing, and one-half within six months from the original due date.

Make checks or money orders payable to the State Treasurer. (Do not send currency by mail. Postage stamps will not be accepted in payment of tax.)

SCHEDULE D—PROFIT FROM SALE OF REAL ESTATE, STOCKS, BONDS, ETC.

1. KIND OF PROPERTY	2. Date Acquired	3. Amount Received	4. Depreciation	5. Cost	6. Value Jan. 1, 1933	7. Subsequent Improvements	8. Net Profit (Enter as Item 6)
		$	$	$	$	$	$
		$	$	$	$	$	$

SCHEDULE E—INCOME FROM RENTS AND ROYALTIES (See Instruction 5)

1. KIND OF PROPERTY	2. Amount Received	3. Cost	4. Value as of Jan. 1, 1933	5. Depreciation	6. Repairs	7. Other Expenses	8. Net Profit (Enter as Item 5)
			$	$	$	$	$
	$	$					
	$	$	$	$	$	$	$

SCHEDULE F—INTEREST RECEIVED DURING 1936

Including municipal, county and state bond interest.
List below name and address of payor and amount received from each.

Name	Address	Amount
		$
Total to Item 3		$

SCHEDULE G—DIVIDENDS RECEIVED IN 1936 BOTH CASH AND PROPERTY

Include Bank Dividends, Dividends on Paid-Up Stock of Bldg. and Loan Associations, Dividends on all other Stocks. Do not include Dividends on Installment Stock of Bldg. and Loan Associations until said Stock matures, is cancelled or transferred.

Name of Corporation	Amount of Dividend
	$
Total to Item 7	$

SCHEDULE H—TAXES PAID

TAXES:

Federal	$
County	
City	
Total	
Less Improvement Dist. Taxes	
Total Taxes Paid (Page 1, Item 11)	$

SCHEDULE I—INTEREST PAID

(Deduction will be allowed only when the following information required by law is furnished.)

Paid to	Address	Purpose of Debt	Amount Paid
			$
Total			$

SCHEDULE J

Details of deductions claimed at Items 16, 17, and 21 of Schedule A, and Items 12 and 13 on page 1 of return.

1 Refer to Item No.	2 EXPLANATION	3 AMOUNT	4 Refer to Item No.	5 EXPLANATION	6 AMOUNT
		$			$

SCHEDULE K

Details of contributions claimed as deductions at Item 14 on Page 1 of Return. This deduction must not exceed 15% of the amount of Item 17.

1 Name and Address of Organization	2 Amount	3 Name and Address of Organization	4 Amount
	$		$

SAMPLE QUESTIONNAIRE SENT TO SUCCESSFUL FARMERS

Please fill out the following questionnaire and return it to the Department of Agricultural Economics, Montana Experiment Station, Bozeman.

1. Name_____ County_____ P.O._____

2. Total Acres operated_____ of which_____ acres are owned,

_____ acres are cash rented, and _____ acres are share rented.

3. If cash rent what is average rent per acre paid?_____ If share rent,

what proportion of the crop goes to the landlord?_____.

4. What length of time does the lease run?_____.

5. Legal description of land you operate. (Use other side if necessary).

Section	Township	Range

6. List all livestock.

Livestock	Breed	Number
Beef Cattle		
Dairy Cattle		
Work Horses		
Other Horses		
Hogs		
Sheep		
Poultry		

7. Machinery owned: tractor_____, combine_____, plows_____, one way

disc_____, disc_____, drill_____, duckfoot_____, rod weeder_____,

harrow_____, other_____.

8. Number, approximate size and age of buildings:
   (a) House_____
   (b) Barns_____
   (c) Granaries_____

SAMPLE QUESTIONNAIRE SENT TO SUCCESSFUL FARMERS (Cont'd)

(d) Machine and stock sheds
(e) Other buildings

9. Crop use of land in 1936.

Crop	Variety	Acreage	Total Yield	Yield Per Acre
Wheat				
Oats				
Barley				
Corn				
Alfalfa				
Other hay				
Sugar beets				
Peas				
Beans				
Other (Specify)				

10. Cost of land per acre at date of purchase.

	Cost per acre	Acres acquired	Date of acquisition
1			
2			
3			

11. How did you acquire your present farm: through inheritance?____, by outright cash payment?_____, entirely on borrowed capital?_____,partly by borrowed capital?_____. Indicate approximate percentage borrowed _____.

12. If your farm was or is being financed by the use of borrowed capital, from which of the following sources did you get loans: Federal land bank?_____ Insurance company?_____,Commercial banks?_____Loan company?_____ Private individual?_____, and at what rate of interest?_____.

SAMPLE QUESTIONNAIRE SENT TO SUCCESSFUL FARMERS (Cont'd)

13. Through what channels do you market your crops or livestock: to local buyers?_____ ship on consignment to terminal markets?_____,directly to terminal markets?_____,through a cooperative?_____by pools?_____, other methods (specify)?_____.

14. Do you usually market your produce at harvest time?_____. What time of the year do you market your livestock?_____. At what age and weight for cattle?_____other stock?_____.

15. Do you feel that it is ever worth while to store your grain and speculate on a future market price?_____. If you store your grain do you hedge by buying futures?_____.

16. Upon what type of market information do you rely: a daily paper?_____, weekly paper?_____,radio?_____, county agent?_____, Montana Farmer?_____, other sources? (specify)_____.

17. Do you use any system of crop rotation or crop and animal rotation?_____, if so, what is the program or rotation?_____.

18. How many acres of your grazing land does it require to graze each animal unit (a thousand pound steer, or one horse, or 5 sheep) for the grazing season?_____. How many months per year do you graze your livestock?___.

19. Do you raise all your own feed?_____. If not, how much feed do you usually buy each year?_____.

20. Do you carry any crop insurance?_____, if so, what type?_____.

21. Are you signed up with the wheat production control phase of the agricultural conservation program?_____, with the range program?_____.

22. Do you use any system of bookkeeping?_____,if so, what system: double entry?_____, single entry?_____, other type?_____.
If not how do you keep your accounts?_____.

SAMPLE QUESTIONNAIRE SENT TO SUCCESSFUL FARMERS (Cont'd)

23. From what sources do you obtain your labor: own family?____, neighbors' sons?_____, town?_____, other (specify)?_____.

24. Do you employ a farm manager?____, or do you actively manage your own operations?_____.

25. Do you buy your household supplies mainly from mail order houses?____, local merchants?____, chain stores?_____, a consumers cooperative?____, peddlers?_____, other sources (specify)?_____.

26. From whom do you buy your farm supplies: company salesmen?_____, local merchants?_____, through a cooperative?_____, or directly from the factory?_____.

27. Experience of farmer. (a) Were you reared on a farm?____, (b) How many years have you operated your present unit?____, Where were you located five years preceding this?____, ten years?____, (c) How much education did you receive? eighth grade graduate?____, high school graduate?____,college graduate?_____. If college graduate please indicate colleges attended and degrees received_____.
(d) How many years did you spend working on a farm before you became a farm operator?_____. How many years on your father's farm?_____, as a farm laborer for another farmer?_____. If you are not a farm owner, how many years did you farm as a tenant?_____.

28. What is your present age?_____.

29. Are you affiliated with any farm organizations? (list organizations)

_____.

30. Do you try to build up cash reserves in good years to meet the reverses of bad years?_____. Have you been successful in building up these reserves?____.

SAMPLE QUESTIONNAIRES SENT TO SUCCESSFUL FARMERS (Cont'd)

31. Do you raise a garden for home use?_____, keep milk cows for home use?_____, keep poultry for home use?_____, do any slaughtering for home use?_____. What percentage of your total family living expenses could you say all of the above together supplied?_____.

32. What percentage return per year on your investment do you consider satisfactory?_____.

33. Do you follow any definite calendar of operations in your work throughout the year, or do you plan only for the near future to meet current problems as they arise?_____.

34. What in your estimation are the five most important factors that make for successful farming in your county?

1.

2.

3.

4.

5.

SAMPLE QUESTIONNAIRE SENT TO THE COUNTY AGENTS

Name of Farmer_____County_____

Do you consider this farmer unusually successful?___fairly successful?_____, average?_____, below average?_____.

Please check any of the following factors, qualities, or conditions which helped to make this farmer successful.

1. Good land___, good rainfall___, well diversified enterprises___,specialization on one crop_____, irrigated land_____.
2. Inherited farm_____, possessed large amounts of capital before beginning present enterprise_____, builds cash reserves in good years to meet reverses of bad years_____.
3. Lucky___, hard worker_____, considerable education___,self educated___, above average in managerial ability_____.
4. Willingness to cooperate with neighbors_____, with governmental agencies___, with county agent_____.
5. Reduces labor costs by employing only family labor___, or employs part family and part outside help_____, or hires all labor used_____.
6. Decreases family expenses by raising a large percentage of home supply from garden____milk cows_____, poultry_____, and slaughtering_____.
7. Approximate age_____, nationality_____,approximate year that farmer settled in the community_____.
8. List any other reasons or conditions which you believe help to explain why this farmer is successful.

   1.

   2.

   3.

ACKNOWLEDGMENTS

The author would like to express his thanks and appreciation to Dr. R. R. Renne for his careful guidance in all phases of this study, to Harold Halcrow for his many ideas and suggestions, to Charles A. Herring, Instructor in English, Dr. P. L. Slagsvold, Professor of Agricultural Economics, and Dr. M. G. Burlingame, Professor of History, for editing the manuscript. Recognition is also due the Works Progress Administration, Work Projects Numbers 6007-1294 and 1905, for assistance in gathering and compiling data and in preparing charts.

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