

FARM COSTS and RETURNS

On WHEAT - SMALL GRAIN - LIVESTOCK

Farms in North Dakota

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Wheat - small grain - livestock farming characterizes the central and east central areas of North Dakota (Figure 1). Wheat is by far the major enterprise, with barley ranking second in importance among the crop enterprises, followed by oats and flax. Livestock and dairying play minor roles in the general farm organization.

Table 1 provides a fairly good picture of the financial results of farming in this area and the changes that have occurred over the past 33 years. Most of the data included in the table are averages per farm and have been adapted from "Farm Costs and Returns" published annually by the United States Department of Agriculture.

There has been a gradual increase in the size of farms and at the same time, labor utilized in the operation of the farms has declined. For example, during 1935-39, size of farms averaged 478 acres or 341 acres per man equivalent. In 1963-67, the corresponding figures were 766 acres per farm and 595 acres per man equivalent. That is, average size had increased 60 per cent and acres per man equivalent, 84 per cent.

Operator and family labor accounted for 74 per cent of the total labor used in 1935. The proportion dropped to 68 per cent in the early 1940's, but since then it has gradually climbed and averaged nearly 89 per cent in 1966 and 1967.

The farms included in this study are considered to be owner-operated. Net income is the return to the operator and unpaid members of his family for their management and labor on the farm and return on total investment in the farm and its equipment.

To obtain an estimate of return to operator and family labor, an estimated charge is made for capital. It should be noted, however, that a charge

for capital represents a return to the owner of the capital. This estimated charge is obtained by multiplying total capital invested in the farm assets, except the working capital, by the current

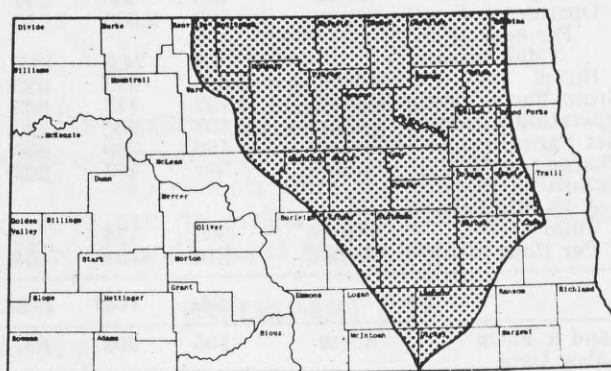


Fig. 1. Location of the Wheat-Small Grain-Livestock Type of Farming in North Dakota.

interest rate in effect on January 1 for new loans by the Federal Land Bank. A further charge is added for production credit (working capital) which is calculated at short term rates charged by Production Credit Associations on loans outstanding.

Examination of the condensed operating statement of the average farm included in this type of farming area indicates that the financial risk looms large. During 1935-38, the net farm income (gross income minus operating expenses) never exceeded \$407 and in 1936, the year of extreme drouth, it was negative. Adding a capital charge of \$487 in 1963 left a -\$766 as a return to operator and family labor or a return of $-\$.31$ per hour of labor.

The extremely small return in 1954 was primarily due to disease which greatly affected the durum wheat crop that year. Labor received practically nothing in 1959 because of low yields caused by drouth.

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The most severe drouth since the 1930's occurred in 1961. Gross income declined 50 per cent from the previous year. With only a slight reduction in operating expenses and capital charge, the return to operator and family labor dropped to -\$2,747 per farm or -\$1.29 per hour of labor.

The financial situation was reversed in 1962 when gross farm income and net farm income reached their highest peaks during the 33-year

period. Operating expenses and capital charge increased only slightly. Consequently, the returns to operator and family labor amounted to \$9,007 or \$3.99 per hour of labor, the highest ever recorded for these farms.

The annual fluctuations subsequent to 1962 have been marked with return per hour of labor varying from a low of \$.90 in 1967 to a high of \$2.61 in 1965.

Table 1. Wheat-small grain-livestock type of farms: Land in farm, labor used, and financial return.

		1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
Land in Farm	Acres	464	467	477	489	496	506	516	532	548	565	582
Labor Used												
Total	Hours	3,890	3,420	3,540	3,450	3,280	3,340	3,380	3,560	3,760	3,920	3,660
Man Equivalent												
Acres Per Man	Hours	1.56	1.37	1.42	1.38	1.31	1.34	1.35	1.42	1.50	1.49	1.46
Equivalent	Acres	297	341	336	354	379	378	382	375	365	379	398
Operator & Family	Hours	2,880	2,530	2,610	2,500	2,290	2,300	2,290	2,460	2,730	2,710	2,740
Per cent of												
Total Labor	Hours	74.0	74.0	73.7	72.5	69.8	68.9	67.7	70.2	72.6	72.7	74.9
Hired	Hours	1,010	890	930	950	990	1,040	1,090	1,100	1,030	1,010	920
Gross Farm Income	Dollars	1,797	717	1,842	1,573	2,020	2,394	4,125	5,503	7,915	7,294	8,698
Operating Expenses	Dollars	1,607	1,006	1,435	1,366	1,388	1,514	1,830	2,281	2,766	2,941	3,217
Net Farm Income	Dollars	190	-289	407	207	632	880	2,295	3,222	5,149	4,353	5,481
Charge for Capital*	Dollars	580	487	502	511	473	444	465	529	602	703	744
Return to Operator												
& Family Labor												
Total	Dollars	-390	-776	-95	-304	159	436	1,830	2,693	4,547	3,650	4,737
Per Hour of Labor	Dollars	-0.14	-0.31	-0.04	-0.12	0.07	0.19	0.80	1.09	1.67	1.35	1.73
		1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Land in Farm	Acres	595	608	621	634	647	667	670	671	680	690	695
Labor Used												
Total	Hours	3,490	3,380	3,270	3,200	3,150	3,230	3,220	3,260	3,310	3,300	2,930
Man Equivalent												
Acres Per Man	Hours	1.40	1.35	1.31	1.28	1.26	1.29	1.29	1.30	1.32	1.32	1.17
Equivalent	Acres	425	450	474	496	513	517	519	516	515	523	594
Operator & Family	Hours	2,560	2,360	2,250	2,390	2,380	2,550	2,630	2,620	2,670	2,660	2,480
Per Cent of												
Total Labor	Hours	73.4	69.8	68.8	74.6	75.6	78.9	81.9	80.4	80.7	80.0	84.6
Hired	Hours	930	1,020	1,020	810	770	680	590	640	640	640	450
Gross Farm Income	Dollars	9,478	13,077	10,812	7,961	10,051	12,020	8,909	9,055	7,396	11,258	12,245
Operating Expenses	Dollars	3,245	4,142	4,727	4,564	4,682	5,202	5,022	5,295	5,197	5,303	5,273
Net Farm Income	Dollars	6,233	8,935	6,085	3,397	5,369	6,818	3,887	3,760	2,199	5,955	6,972
Charge for Capital*	Dollars	830	974	1,199	1,304	1,298	1,462	1,672	1,679	1,655	1,654	1,674
Return to Operator												
& Family Labor												
Total	Dollars	5,403	7,961	4,886	2,093	4,071	5,356	2,215	2,081	544	4,301	5,298
Per Hour of Labor	Dollars	2.11	3.37	2.17	.88	1.71	2.10	.84	.79	.20	1.62	2.14
		1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Land in Farm	Acres	700	705	710	715	720	730	740	750	760	780	800
Labor Used												
Total	Hours	2,890	2,910	2,730	2,810	2,490	2,660	2,540	2,550	2,600	2,650	2,690
Man Equivalent												
Acres Per Man	Hours	1.16	1.16	1.09	1.12	1.00	1.06	1.02	1.02	1.04	1.06	1.07
Equivalent	Acres	603	608	651	638	720	688	725	735	731	736	748
Operator & Family	Hours	2,460	2,450	2,310	2,360	2,130	2,260	2,200	2,240	2,300	2,370	2,400
Per Cent of												
Total Labor	Hours	85.3	84.2	84.9	84.0	85.5	85.0	86.6	87.8	88.5	89.4	89.3
Hired	Hours	430	460	420	450	360	400	340	310	300	280	290
Gross Farm Income	Dollars	9,578	12,323	8,767	11,436	5,798	18,246	13,244	14,506	15,886	14,100	14,406
Operating Expenses	Dollars	5,556	5,965	5,960	6,337	5,560	6,131	5,622	6,243	6,170	6,415	6,917
Net Farm Income	Dollars	4,023	6,388	2,807	5,099	238	12,115	7,622	8,263	9,716	7,685	7,489
Charge for Capital*	Dollars	2,030	2,650	2,651	3,223	2,985	3,108	3,274	3,470	3,706	4,078	5,338
Return to Operator												
& Family Labor												
Total	Dollars	1,993	3,738	156	1,876	-2,747	9,007	4,348	4,793	6,010	3,607	2,151
Per Hour of Labor	Dollars	0.81	1.53	0.07	0.79	-1.29	3.99	1.98	2.14	2.61	1.52	.90

* Charge for capital based on prevailing interest rates.

SOURCE: U. S. Department of Agricultural Economics Research Survey, "Farm Costs and Returns," Washington, D. C.