

AN ANALYSIS OF VIABLE AND SUBSISTENT FARMING
IN THE INTERLAKE AREA OF MANITOBA

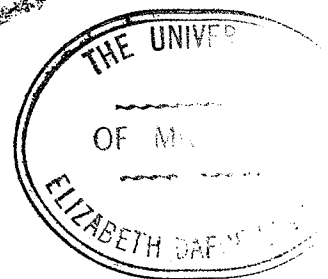
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ABSTRACT

The objective of this study was to prescribe the resources which constitute a viable farm unit in the Interlake area, and to determine the number of viable units which the resources are capable of supporting or allowing to evolve into viable units. Consideration was given to the prospective returns of adding resources to the unit where present ones are insufficient for viability.

The basic problems of the area are: the limited productive capacity of the soils; the under-utilization of grassland^{which is} the prime natural advantage of the area; the inability of present unit productive capacity to allow a margin for growth or serve as a base for borrowing development funds, and the limited alternative opportunities in the utilization of the soil resources.

An analysis of 258 farm records completed during four years by the Economics Division, Canada Department of Agriculture was used in the search for farms which met defined standards for subsistent and viable units. A viable farm was defined as one in which productive income from its resources is sufficient to cover all operating costs, family living costs and annual principal and interest (5%) on production resources amortized over a 30 year term. A subsistent farm was defined as having only the ability to meet operating and living costs. It could not cover the cost of the capital resources within the 30 year term.

A budgetary analysis was used to determine the resources

required to be viable in beef cattle production, utilizing the grassland resource available. The farm records served as a guide to the level of costs required in order to be viable, in view of limited income possibilities. The budgeted farm included 1280 acres of land with 150 acres improved and was valued at \$14,000, building investment was \$7,000, machinery \$6,500. Livestock consisted of a 40 cow beef herd numbering 105 total head (80 animal units) valued at \$15,000. Production income per animal unit was \$99, costs were \$32 for a return over cost on viable farms of \$67 per animal unit.

Some of the more important results of this research study were as follows:

1. Viability in beef cattle production requires farms to obtain a dollars worth of production with an expense of less than 50 cents.
2. Viable farms must have a minimum of 1000 acres and 30 cows.
3. Viable farms milk cows and sell over \$1,000 worth of cream.
4. Farms having \$20,000 to \$30,000 total farm capital can be viable when production income exceeds \$6,000. When capital is \$30,000 to \$40,000 production income required was \$7,500. When capital exceeds \$40,000 production income must exceed \$11,000 to be viable.
5. To be viable farmers first must acquire the necessary resources. Farms having over \$40,000 total capital must have 1800 acres of land, 50 cows and sell about \$1,000 worth of cream.

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CHAPTER I

INTRODUCTION

Federal Legislation emphasizing resource development ^{1/} has focused attention on the Interlake area of Manitoba. Reliable authorities report that the physical resources of the Interlake are generally underdeveloped and underutilized.^{2/} Associated problems of the people living in the area include; low incomes, both farm and non-farm; high fertility ratio (number of children under 5 years per 1000 women 15-44 years of age); high dependency ratio (number of persons under 15 and those 65 and over per 1000 total population); low quality housing; low levels of education; low quantity and quality of services and a limited resource base.

These conditions are particularly apparent in census division 12 between lakes Winnipeg and Manitoba. The government divisions of St. Laurent, Armstrong and Gimli form the southern boundary of the area. Township 25 is the approximate northern boundary of the settled area.

Riecken^{3/} reports on the history of Armstrong Municipality organized in 1917 - nine years after land was made available for home-steading. With poor land as well as good indiscriminately settled, the grain elevator opened at Inwood in 1918 shipped 60,000 bushels

^{1/} Agricultural Rehabilitation and Development Act, 1961.

^{2/} Report of the Committee on Manitoba's Economic Future 1962.

^{3/} Riecken T. O. Farming in the Armstrong District of Manitoba, 1948
Canada Department of Agriculture in co-operation with
the Department of Political Economy, University of
Manitoba, 1953.

that year, but after operating at only partial capacity for the next decade was finally torn down. "The municipality was disorganized in February 1940 after widespread farm abandonment and tax delinquency increased and continued throughout the twenties and into the thirties.^{4/} (It was expected that this would bring tax relief).

Soils of the Armstrong area are generally of low quality. Pockets of productive soil are found throughout the census division, particularly in Bifrost and Gimli municipalities and the Local Government District (L.G.D.) of Fisher. High quality soils are a small portion of the census division soils. "Only three townships, about three percent of the Interlake Area, have over 60 percent of their area improved".^{5/}

Two-thirds of census division 12 is unimproved land, some in open grassland on poor quality soil or subject to flooding, thus it is not adaptable to improvement for crop or tame hay production. Much of the area is utilized as bush-pasture where land clearing is prevented by the stony condition of the soils or by poor drainage.

Grassland is clearly the most abundant resource and major natural advantage. While hay supply (and summer labor) can become the most limiting factors to the size of a beef cow herd, this enterprise appears most advantageously adapted to the area. In addition the beef cow enterprise may utilize a lower level of managerial ability consistent with the prevailing lower levels of education.

^{4/} Ibid P. 3

^{5/} Garland S. W. and Riecken T. O. "Some Economic and Sociological Information About the Interlake Region of Manitoba 1960"- Economics Division, Canada Department of Agriculture 1962.

Only the beef cow enterprise stands out as a natural choice in utilizing these major resources of the area. Location with regard to markets - the availability of grain supplies; the quantity of legume forages, quality of buildings and level of managerial ability do not warrant serious consideration of alternative enterprises. Most other enterprises would entail the bringing in of outside resources rather than utilizing to the fullest extent those that are present within the area. In this sense there would not appear to be any competitive advantage for enterprises alternative to beef production. Otherwise natural bushland pastures would lay idle as wasteland or revert to wildlife production. However, the beef enterprise is one of low income producing ability not adaptable to small scale production. Some reports indicate that net returns to labor and capital are commonly \$20 to \$30 per cow;^{6/} thus requiring 200 cows to produce a \$5,000 net return. After allotting 5 percent interest on the more than \$100,000 capital required, negative labor returns are realized from the enterprise solely producing calves or stockers. "Perhaps the lesson to be learned is that under conditions where the beef cattle enterprise is the main operation on the farm or ranch and other enterprises are complementary to it, the probability is much greater that it will present a more optimistic financial picture".^{7/}

^{6/} Seale M. E. and Hudson J. P. - Cow-Calf Operations 7th Annual Conference Manitoba Livestock and Poultry Nutrition Council 1965. P. 20.

^{7/} Ibid P. 22.

Cream sales serve as a means of raising net income per cow and also utilize the abundant supply of labor available on most farms. The increase in net income per cow lowers the overall capital requirements in producing an acceptable labor return for the operator and his family.

For the area to be self-supporting the farms within the area must be viable. The major purpose of the study was to prescribe the resources which constitute viable farm units. It also determined the number of viable units which the resources available could support or allow to evolve into viable units.

Problems and Specific Objectives

The basic problems of the area are:

- (a) The limited productive capacity of the soils.
- (b) The under-utilization of the prime natural advantage of the area, grassland.
- (c) The inability of present unit productive capacity to allow a margin for growth or serve as a base for the borrowing of funds for development.
- (d) The limited alternative opportunities in the utilization of the soils resource.

To ascertain the resources which constitute viable farm units, it was hypothesized that viable farm units must have a minimum of 1000 total acres and 30 beef cows. This served as a means for exploring other factors for farms which were viable with less. To direct the study toward the marginal aspects of the income producing ability of land resources, it was hypothesized that capital added in land resources would cover its costs if placed in presently viable farm units. Similarly the

marginal aspects of beef cattle resources were considered in accordance with the testing of the thesis that capital added in the form of beef cattle would cover its costs if placed in presently viable units.

To test the area advantages or disadvantages from the standpoint of returns on capital investment, it was hypothesized that the marginal returns of capital invested in viable farms of the Interlake are not competitive with some other areas of Manitoba. To determine the number of viable farms which the resources of the area can support, it was hypothesized that for all farms to be viable it would require a 50 percent reduction in the number of farms.

Source of Data and Sample Biases

Data were obtained from four separate studies conducted by the Economics Division, Canada Department of Agriculture (Table I).

Reconnaissance surveys enumerated the characteristics of all farms in each study area prior to sampling. The 1962 study did not include farms with less than 17 head of cattle. The proportion of larger herd farms included in the sample was greater than in the population being sampled. Total acreage of the farms in the 1962 study average over 1300 acres, while the 1960 study included only one-half and three-quarter section farms on marginal soil. The 1963 study excludes farms with under 40 head of cattle. Excess rainfall in 1963 combined with the poor drainage illustrates a recurring weather problem. These conditions delayed seeding and were followed by an early fall frost reducing crop yield and quality.

Thus the sample is not representative of all farms in the area,

TABLE I
DESCRIPTION OF FARMS SURVEYED

ITEM	1957	1960	1962	1963
Farm Records	58	49	80	71
Location	St. Laurent Coldwell Eriksdale	Armstrong Gimli Bifrost Fisher	Coldwell Eriksdale Siglunes	Armstrong Gimli Fisher Bifrost Rockwood (4 farms)
Sampling Criteria Excluded	Farms with under 17 head of cattle	Other than two and three quarter section farms	Farms with under 17 head of cattle	Farms with under 40 head of cattle
Farm Type	(NUMBER OF FARMS)			
Total Capital under \$20,000	53	33	30	6
Total Acreage under 500	20	46 ^{a/}	4	16
Improved Acreage under 100	47	16	38	2
Under 20 cows	43	39	19	15
Cream Sales under \$ 500	20	29	27	32
Non-Farm Income Over \$ 1,000	1	10	13	16

^{a/} Three farms with slightly over 500 acres were included in the three-quarter section size criteria.

nor of all years. It is biased toward the larger cattle producing farms excluding straight crop^{farms} and farms specialized in poultry and other livestock production. Farms of the latter type are not common to the area. The reconnaissance survey of the 1962 study listed 97 farms without cattle (16% of total farms).^{8/} These farms had an average of 54 improved acres thus were not likely to be viable crop farms.

Method

An analysis of 258 farm records was conducted in search of farms which met defined standards for subsistent and viable units. The records were stratified according to total farm capital. It was then possible to note the difference in production income^{9/} and net income, living costs and margin for growth on farms with similar resources as well as for those having different resources.

A detailed financial analysis of both subsistent and viable farms was conducted to determine why in the case of farms having similar resources some were viable and some were not.

Numerous frequency counts were conducted to determine the characteristics of viable farms. These included sorts based on farm capital, production income, net income, living expenses, gross expense ratio, total acres, improved acres, number of cows, value of cream sales and off-farm income. The necessary and sufficient conditions for viability were then analyzed.

^{8/} Bayda W. M. Changes in Farm Organization, Lunder-Eriksdale Area Manitoba 1962 P. 4

^{9/} See appendix A - Glossary of Terms.

Concept of Viability

A viable farm was defined as one in which productive income from its resources is sufficient to cover all operating costs (Cash farm expenses and depreciation), family living costs and annual principal and interest (5%) on production resources amortized over a 30 year term.

Concept of Subsistence

A subsistent farm was defined as one in which production income from its resources is sufficient to cover only operating costs and family living costs. No charge is made on the capital resources and in this respect the unit is not self-perpetuated (at least not past a 30 year term).

Description of the Area

The total land area of census division 12 is approximately 5 million acres of which 1.45 million is being farmed. Only .5 million acres is improved farmland. (Approximately 3 million acres were added to division 12 from division 16 after the 1951 Census).

TABLE II

TOTAL AND IMPROVED ACREAGE BY CENSUS SUBDIVISIONS--CENSUS
DIVISION 12, 1961

CENSUS SUBDIVISION	Farmland		Number Farms		Per Farm Acreage	
	Total	Improved	Total	Commercial	Total	Improved
	(000 acres)				(acres)	
Armstrong L. G. D. ^{a/}	236.5	61.9	599	304	395	103
Bifrost	140.5	96.8	487	356	288	199
Coldwell	155.0	18.4	197	148	787	93
Eriksdale	89.6	16.2	152	107	590	106
Fisher L. G. D.	300.4	157.4	892	522	337	176
Gimli	58.7	27.2	255	110	230	106
Grahamdale L. G. D.	179.4	52.2	379	221	473	138
St. Laurent	48.2	1.0	86	56	561	12
Siglunes	166.0	23.0	242	168	686	95
Unorganized	41.5	3.1	27	18	1537	115
Indian Reserves	5.8	1.3	30	5	193	43
TOTAL	1421.7	458.6	3346	2015	425	137

^{a/} L. G. D. denotes Local Government District, an area not organized under a local municipal council.

The municipalities of Bifrost and Gimli, and the L. G. D. of Fisher have a relatively high improved acreage per farm at 69, 46 and 52 percent respectively. The entire census division has only 32 percent of total farm acreage improved, while the percentage improved drops as low as 2 percent in St. Laurent municipality. In Coldwell, Siglunes and Eriksdale this percentage stands at 12, 14 and 18 respectively.

The acreage devoted to cash crops is low with emphasis placed on utilization in feed grains, tame hay and pasture. This is supplemented in many cases by native wild hay and pasture.

Land improvement has risen sharply since World War II. Table III shows the growth in improved acreage since 1936 for the government districts presently included in the census division (excludes Indian Reserves and unorganized territories).

TABLE III
GROWTH IN IMPROVED ACREAGE BY CENSUS SUBDIVISIONS -
CENSUS DIVISION 12 - 1936 - 61^{a/}

CENSUS SUBDIVISION	1936	1941	1946	1951	1956	1961
			(000 acres)			
Armstrong L. G. D.	22.6	30.4	34.2	43.7	58.2	61.9
Bifrost	22.9	38.8	49.0	75.6	89.8	96.8
Coldwell	6.3	6.2	5.0	15.1	12.1	18.4
Eriksdale	11.9	10.5	13.2	12.4	16.6	16.2
Fisher L. G. D.	29.8	50.2	59.0	111.5	146.3	157.2
Gimli	10.3	17.7	19.1	21.5	25.7	27.2
Grahamdale L. G. D.				41.2	47.2	52.2
St. Laurent	.6	1.0	1.9	2.2	1.2	1.0
Siglunes	7.0	9.0	8.9	20.6	25.4	23.1
Total	111.5	163.7	190.5	343.9	422.5	454.2

^{a/} Data from special census tabulations Economics Division,
Canada Department of Agriculture.

Present land use indicates a low acreage in cash crops with the exception of Gimli, Bifrost and Fisher areas.

TABLE IV
LAND USE BY CENSUS SUBDIVISIONS-
CENSUS DIVISION 12, 1961

CENSUS SUBDIVISION	Improved Farmland	Cash ^{a/} Crops	Summer Fallow	Feed ^{b/} Grains	Tame ^{c/} Hay	Pasture	Other ^{d/}
	(000 acres)						
Armstrong L. G. D.	61.9	3.2	6.6	11.7	21.6	14.2	4.6
Bifrost	96.8	20.5	13.4	28.4	24.7	6.7	3.1
Coldwell	18.4	0.8	1.6	3.5	2.4	8.0	2.1
Eriksdale	16.2	0.9	2.6	3.6	2.1	5.5	1.5
Fisher L. G. D.	157.4	36.2	32.5	39.6	30.1	12.1	6.9
Gimli	27.2	6.0	4.0	4.9	9.1	2.1	1.1
Grahamdale L. G. D.	52.2	6.5	8.9	11.3	12.3	8.7	4.5
St. Laurent	1.0	0.1	0.1	0.2	0.3	-	0.3
Siglunes	23.0	2.8	4.9	5.4	5.5	2.6	1.8
Total	454.2	77.0	74.6	108.6	108.1	59.9	25.9

^{a/} Cash crops include wheat, field peas and beans, flaxseed, rapeseed and mustard.

^{b/} Feed grains include, oats for grain, barley and mixed grains.

^{c/} Tame Hay includes, alfalfa and mix, other tame hay, oats for hay, other fodder and corn.

^{d/} Other includes, vegetables and nursery crop, idle land, yards, lanes and roads, new breaking and sod production.

Description of Area Farms

The limiting factor for farming in the Interlake is the quality of the soil. It has poor natural drainage and much of it is covered with aspen or burr oak. Any extension of the improved acreage is expensive and proceeds rather slowly.^{10/} While there has been a large

^{10/} Nelson Lowry - Area Development in the Interlake. Problems and Proposals. P. 13

percentage increase in improved acreage, the overall percentage of improved land remains relatively low.

TABLE V
AVERAGE FARM ACREAGE ACCORDING TO USE BY
CENSUS SUBDIVISIONS 1961

CENSUS SUBDIVISION	Acres per Farm	IMPROVED				UNIMPROVED	
		Crops	Fallow	Pasture	Other	Acres	Percent
Armstrong L. G. D.	395	61	11	24	8	291	73.7
Bifrost	289	151	28	14	6	90	31.1
Coldwell	787	35	8	40	10	694	88.2
Eriksdale	590	44	17	36	10	483	81.9
Fisher L. G. D.	337	119	36	14	8	160	47.5
Gimli	230	79	16	8	4	123	53.5
Grahamdale L. G. D.	473	80	23	23	12	335	70.8
St. Laurent	561	8	1	1	2	549	97.9
Siglunes	686	57	20	11	8	590	86.0

Over two-thirds of the land area is unimproved. The variability of the improved acreage between subdivisions is indicative of the quality of the soil. The present natural advantage of the area is this abundance of grassland. While much of the area could not be tilled it could be cleared for higher productivity in native grassland pastures.

Physical Features of the Area^{11/}

The climate is cool and semi-arid and rainfall averages about 19 inches with most of it received in June. Average daily temperatures in the period April to September inclusive are possibly below the 55.0°F

^{11/} Damnjanovic Zivko B. - Ranch Beef Operations and their potential in the Interlake Area of Manitoba, 1964.

recorded at Stony Mountain and Warren which are south of the area.

Frost is the most crucial and restrictive climatic factor with regard to crop production. The frost free period averages between 100 to 110 days. Late frosts have been recorded at Gimli on July 6 and as early as September 2 in the fall. The average frost free period is May 30 to September 19.

A 1961 soils report^{12/} states -

"This district comprises the portion of the Manitoba Lowlands between Lake Manitoba and Lake Winnipeg. It is well known locally for the general high-lime content and stoniness of the soils. The topography is level to gently undulating and much of the land has a distinctive low ridge and swale form with a general northwest to southeast linear pattern. The climate is sub-humid with a definite summer maximum of precipitation. Slow surface drainage affects the soil moisture regime over much of the area. The native vegetation is dominantly aspen woods, with some burr oaks in the southern portion and white spruce in the northern portion.

The mapped area may be divided into two main regions on the basis of physical features and agricultural value. Approximately 65 percent of the area consists of a stony till plain with many features that tend to restrict its agricultural use. The glacial till is very high in lime carbonate content having been derived mainly from underlying limestone rocks. In some places the limestone bedrock is exposed at the surface or covered by only a few inches of glacial drift. The soils belong to the Isafold and Garson Associations. They are very stony and have very thin surface horizons. The other 35 percent of the mapped area consists of a glacial lake basin and terrace area with lacustrine soils of much greater agricultural value. These soils range in texture from sand to clay. Some are imperfectly drained and high in lime content, while others on higher land are well-drained and degraded under woods. Over much of the area the lacustrine sediments are thin and are underlain with high lime till."

12/

Pratt, L. E., Ehrlich, W. A., Leclaire, F. P. and Barr, J. A.
 Report of Detailed Reconnaissance Soil Survey of the Fisher and Teulon
 Map Sheet Areas. Manitoba Soil Survey, Manitoba Department of
 Agriculture and Conservation, Soils Report 12, 1961.