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# COMBINING FARMING WITH OFF-FARM JOBS IN NORTHEASTERN MINNESOTA 

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# COMBINING FARMING WITH OFF--FARM JOBS 

IN NORTHEASTERN MINNESOTA
Frank T. Hady, Agricultural Economist*
Background and Introduction

This report deals with the "cut-over area" of northeastern Minnesota, It is a forested area, abounding in lakes and constituting a portion of Minnesota's famous vacationland. Virgin forests have been largely displaced by later growths of timber and brush and by cleared areas in farms. The area includes the iron mines upon which our nation has depended so largely for its sources of steel and iron.

From an agricultural viewpoint, this part of the State has always been a "problem areal". In producing crops, farmers must contend with short and somewhat uncertain growing seasons. This circumscribes their choice of crops and consequently their production opportunities. Land clearing is a back-breaking or expensive job. This tends to limit the size of the farm business and the possibility of obtaining a satisfactory income from farming. Distances to markets for agricultural products are great, and transportation costs are relatively high. Hence it is difficult to market any bulky or lowovalue farm product. These and other limitations have hampered the growth and prosperity of farming in the area.

On the other side of the picture, the normally ample rainfall and the cool summers are ideally suited to production of grass and legumes (hay and pasture). Pasture of limited value can be obtained without clearing the land of trees and brush. Some grain crops - oats, for exampie - can be grown successfullyo This combination of circumstances has made livestock production, and particularly dairy production, the dominant type of farming in the area.

The main problem for the farmer is to build up a sufficientiy large business to provide a satisfactory income for the family. Many farmers have sought jobs *Farm Economics Research Division, Agricultural Research Service, United States Department of Agriculture.
away from the farm as an alternative way to increase the family income. During the decade of full employment just past, these jobs were not hard to find, and an increasing number of farm operators in the area became part-time farmers or stopped farming altogether. In Carlton and Itasca Counties, the number of farms declined by 19 percent between 1950 and 1954. The number of part-time farmers increased by about $l l$ percent.

The Problem
The general purpose of the study reported here was to examine and evaluate a combination of farming and off-farm work, as compared with full-time farming, as a means of making a living. The reasons why farmers tend to shif toward more farming or toward more work off the farm were analyzed. The obstacles to be overcome in making adjustments and the factors to be considered in casting a proper balance between these alternatives were examined.

## Method of Study

Data were obtained from a survey of 144 farms in Itasca and Carlton Counties made during August and September 1955. The survey inciuded many of the usual items of physical inputs and outputs, and of insome and expense and also considerable detail concerning off-farm employment.

Itasca County was chosen because of the diversity of problems or situations found there. This county had most of the problems of production and marketing that could be found anywhere in the region. In addition, it contains part of the mining area, which constitutes an important source of off-farm employment。

Carlton County was selected partly because work had been done there in both 1940 and 1945 and the changes that have since been made could be observed. However, the principal reason for the choice was that more "Grade A" milk is produced in Carlton County than elsewhere in the area, and a greater proportion of it goes into fluid uses。

Settlement within these counties is scattered but tends to concentrate in ＂islands＂or groups of farms that are often rather close together．These group－ ings became the bases for selecting the segments in which survey schedules were obtained．

To qualify as a farm for purposes of this survey，the operator had to have 5 or more milk cows or the equivalent in other farm enterprises．To qualify as a part－time farmer，the operator had to receive $\$ 500.00$ or more per year from em－ ployment away from the farm。 Custom work as it is customarily defined was con－ sidered as farm rather than offofarm income．

Records were obtained from 57 partmime operators，from instances in which the wife or some other family member worked of $f$ the farm，and 76 full－time farm－ ers．Considerable difficulty was encountered in obtaining schedules because of the many rural residents whose places did not qualify as farms under the defini－ tion previously made．An additional difficulty arose because many farm operators were away at their off－farm jobs when the ir farms were visited．Since this report deals chiefly with the problems of part－time farmers，data for full－time farms are seldom given．However，considerable use was made of these data for compara－ tive purposes．

## Description of the Area．

As a part－time farming study，the area to which the study reported here can be applied is difficult to describe geographically．So far as northeastern Minne－ sota is concerned，it is more or less applicable wherever outside employment op－ portunities are available and are acceptable alternatives to full－time farming。 No doubt conditions similar to those on the farms surveyed are present on many other farms in Itasca and Carlton Counties and also in northern Pine，northerr Aitkin，eastern Cass，and southern St。Louis County，and perhaps in Lake County as well（Fig。 1 ）。

## Figure i. Noriheastern Minnesota Showing Segreints where Schedules were Taken



The kinds of empioyment opportunities that were readily available to farm operators vary among the segments in which the survey was taken. All of them had in common such looal employment opportunities as driving a school bus, working in local business establishments, and road work。 However, areas 12 2, and 4 are located within easy commuting distance of the iron mines and many farm operators have found employnent there. Areas 3 and 6 are near enough to the industrial area surrounding Duiuth and Superior so that a considerable number of farm operators commute to jobs. Area 5 is somewhat isolated from mining and industrial employment but offers many opportunities for work in the woods.

Agricultural develapment also differs among segments. Areas 3 and 6 in Carlton County and area 2 in Itasca County are more highzy developed than the other areas. This is true for such measurements as size of farm business, proportion of land in crops, and size of dairy herd. Many of whe farms in these areas
produced "Grade A" milk and most of the milk was sold as milk rather than as butterfat in cream. Area 5 is probably the least well developed area. In this area, the only market for dairy products was as butterfat in cream. Farms were small and home-grown feed was limited. Distances to market were long, and interest rates on loans were high. Problems in this area approach closely those of a typical pioneer community.

## Land Use

Lack of agricultural development in the area covered by the stady reporited is apparent. Of the 1.7 million acres of total land area of Itasca County and the 550,000 acres in Cariton County, oniy about 225,000 in each county we: in farms in 1954. Only 13 percent of Itasca County and 41 percent of Carlton County were in farms.

Lack of development, as well as lack of alternatives, is evident aiso in the picture of land use on the farms in these counties (Table l). In Itasca County, the number of acres in permanent pasture exceeded the number of acres of cropland including both hay and rotation pasture. About 85 percent of this permanent pasture was woods pasture, which is likely to have very low productivityo Woods not pastured also exceeded all cropland in total acreage. In Carlton County, the acreage of permanent pasture equaled that of all cropland, with about three-four ths of the pasture classified as woods.

With only a third of the land in farms available as cropiand, opportunities to produce satisfactory incomes were limited. But this is not the whole of the picture. Seventy-five percent of the cropland in Itasca County and 82 percent in Carlton County were in hay and pasture crops. Hence only 20 to 25 percent of the cropland was used to feed grains or cash crops.

The largest acreage of intertilled crops was in corno However, less than 1,200 acres of corn were harvested for all purposes in 1954 in the two counties. Corn was grown on less than 10 percent of the farms. Practically all of it was

Table 1. Land use in Carlton and Itasca Counties I/

utilized as silage，fodder，or a soiling orop．Only lid farmers hervested corn for grain in 1954。

Approximately 1,500 acres of potatces were grown in the two counties．There were many growers so that the average acreage per farm was smali。 However，a few farms had substantial commercial acreages of potatoes．Nevertheless，both the acreage grown and the number of cormercial growers have been declining rapidly， indicating that most of the farmers in these counties have not established pota－ toes as a paying cash crop．

Among the smail grains，oats were most important．This crop constitutes the major portion of the feed grains produced in the area．

The largest acreage in any crop was in hayo Clover and mixtures containing clover made up about $7 \dot{4}$ percent of the total hay acreage．Alfalfa and mixtures containing alfalfa occupied another 17 percent of the hay acreage。 All other types of hay including wild hay were relatively unimportant．

## Livestock on Farms

The numbers of various kinds of livestock in Carlton and Itasca Counties are shown in tabie 2．Eightymine percent of the farmers reported cattle and calves．All except a few of these livestock are parts of dairy enterprises． All other livestock were relatively unimportant．The hogs raised were mainly for home use or for sale as feeder pige。 Likewise，the few beef cattle fed out were chiefly for home use．Most catile sold were dairy stork．There were 282 farm flocks of sheep in the two counties，but 212 of the fiocks were in Itasca County．Such obstacles as market outlets，fencing，disease，parasites，and predators have discouraged production of sheep．

Table 2。 Numbers of various kinds of livestock and numbers of farms reporting，Carlton and Itasca Counties If

| Kind of Livestook | Number of farms reporting2／ | Percentage of all farms | Number of head |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Average |  |  |
|  |  |  | Total．A | All farms | Farms reporting |
|  | （namber） | （percent） | （number） | （number） | （number） |
| Cattle and calves | 2，921 | 87 | 45.298 | 2 | 15 |
| Milk ©ows | 2，667 | 80 | 20，882 | 6 | 8 |
| Heifers and heifer calves | 2，613 | 78 | 16,424 | 5 | 6 |
| Steers and bulls，including buli calves | 2，273 | 68 | 6，921 | E | 3 |
| Sheep and Lambs | 282 | 8 | 10，629 | 3 | 38 |
| Hogs | 1,002 | 30 | 4.736 | 1 | 5 |

$17 \mathrm{U} . \mathrm{S}_{0} \mathrm{Census}, 1954^{\circ}$
2／Total number of famm in the 2 counties was 3，344。

## Part－time Farming

General
Many different combinations of farming and of f－farm employment were found in northeastern Minnesota。 Some operators confined their offwfarm job activities to occasional odd jobs for short periods of time．Other operators had full－time jobs throughout the year．Many who worked in the mines or at such seasonal activities as highway or railroad construction，worked full time during the sumner but had no winter employment other than farming．Another group worked full time in the woods during the winter and spent the summer farming．Still others ．．．．for instances， school bus drivers worked only at part－ntime jobs for all or part of the year． In some instances，the wife provided the outside source of income．School teaching was a common employment for wives．Although this is a special type of part－time family organization，it was ruled out as part－time farming for this studyo

The Advantages and Disadvantages of Part－otime Farming
The chief advantage of accepting employment away from the farm is increased family income．On the average，partotime farmers obtain higher incomes than full－ time farmers．This reason for taking an outside job was expressed frequently by
the farmers themselves．Furthermore，the income received from wages may be ob－ tained immediately and without large investment in plant and equipment，No capi－ tal savings or borrowing are involved．This also means that the income received is largely available for family living．

The return per hour of labor from an off－farm job usualiy exceeds the return that can be made from farming．Ordinarly，hours and wage rates are fixed and income can be estimated fairly accurately in adrance．As some of the farmers ex－ press it，＂As long as you are working，it is easier and surer。＂This added cer－ tainty of income probably makes family budgeting simpler and such things as in－ stallment credit easiex to obtain。

A less common advantage of off－farm employment concerns retirement benefits． A few operators are employed in occupations in which retirement programs are in force．These are in addition to the regular social security program，for which full－time farmers as well as part－time operators are eligible。

The distaste for offefarm employment probably centers mainly around the regi－ mentation that it entails．One who takes an off $\infty$ farm job is no longer his own boss．He must contend with a different set of human relationships．He loses con－ trol of many things，and this loss of control may bother him．He cannot know how long the job will last or how abruptly it will be terminated．This injects an element of insecurity into his planning。 He must satisfiy a＂boss＂and be satism fied by one．Otherwise，he is unhappy．While farming opexations regiment the use of his time to a considerable degree，off－farm employnent is likely to do so more rigidly and more completely．

In a sense，part－time farming is an unstable or unbalanced way of making the family living．For some families，it is considered as a transitional phase．The family feels that i，t is headed either toward fullutime farming or toward full－time work in nonfarming occupations．On these farms，the conflict between the two activities may be greater than their supplementation．Either the farming activity
or the job activity is circumscribed by the time and effort placed on the other. It is only on farms where there is unused family labor or where the operator has time and energy he is willing to expend beyond the requirements of his off-farm job that a permanent balance may be expected.

The balance that makes part-time farming a permanent possibility is complicated by seasonality of empioyment. Many farmers in northeastern Minnesota find summer jobs that end with the coming of winter. It is more difficult to find employment in winter。 Part-time farming fits into this picture fairly well. It gives the operator something to do as well as income during the period when he might otherwise remain unemployed. No doubt this is one of the main reasons for the expansion of part-time farming in the area. By using family labor, work. ing harder and longer hours themselves, and hiring custom work done, these farmers succeed in overcoming the summer confict and then become fuil--time farmers for the winter.

Such winter emplcyment as working in the woods would appear to combine better with farming than does summer employment. Under this arrangement, the operator can work fuil time at farming during the growing season. The advantage is not great, however, as added chore time in winter takes up much of the difference, especially in an area where haying and grain harvesting are the main summer activities。

From these descriptions, it becomes evident that the probiem is one of resolving various aspects of maximizing money income, security, independence, job satisfaction, and use of family labor resources in the way that appears to be most satisfactory for each family involved.

## Employment Off the Farm

The part--time farmers were engaged in a variety of jobs. Table 3 provides a picture of the types of employment, wage rates, and hours worked for 35 of the part--time farmers interviewed. Most of the men who worked in the woods worked

Table 3. Off-farm employment: type of work, wage rates, and hours worked by 35 part-time farmers

| Case <br> No. | Type of work | Wage rate | Unit | Hours worked in 1954 | $\begin{aligned} & \text { Length } \\ & \text { of } \\ & \text { worko- } \\ & \text { day } \end{aligned}$ | Days <br> worked <br> per <br> week |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (dollars) |  |  |  | (number) |
| 1. | Highway truak driver | 2.35 | hour | 555 | 9 | 2 |
| 2. | Dumpman - mines | 2.00 | " | 1,000 | 8 | 5 |
| 3. | Mine worker | 1.92 | " | I,980 | 8 | 5 |
| 4. | Highway construction worker | 2.00 | " | 1.750 | 9 | 6 |
| 5. | School bus driver | 1/ | 1/ | 540 | 3 | 5 |
| 6. | Carpenter | 2.00 | hour | 1,484 | 8 | 5 |
| 7. | Truck loader -. mines | 1.48 | " | 1,216 | 8 | 5 |
| 8. | Carpenter in Greenland | 1000.00 | month | $1 /$ | $1 /$ | $1 /$ |
| 9. | School bus driver | 150.00 | 18 | -540 | 3 | \% |
| 10. | Mine workez | 2.00 | hout: | 12507 | 8 | 5 |
| 11. | Mine worker | 1.70 | 1 | 1,773 | 8 | 5 |
| 12. | Mine worker | 2.17 | " | 1,843 | 8 | 5 |
| 13. | Machine operator ..- mines | 1.900 | 18 | 1,939 | 8 | 5 |
| 14. | Mine worker | 1.80 | " | I,667 | 8 | 5 |
| 15. | Mine worker | 2.15 | " | 884 | 8 | 5 |
| 16. | Highway worker | I. 40 | " | 2,071 | 1.0 | 4 |
| 17. | Truck driver | 275.00 | month | 2,400 | 8 | 6 |
| 18. | Mine worker | 1.97 | hour | 1,523 | 8 | 4 |
| 19. | Odd jobs worker | 1.60 | " | 972 | I/ | 1/ |
| 20. | Hatchery worker | 1.80 | ${ }^{19}$ | 944 | 9 | 6 |
| 21. | Railroad section worker | 1. 54 | 19 | 779 | 8 | 5 |
| 22. | Crane operator | 2.00 | " | 1,300 | 8 | 5 |
| 23. | Railroad extra gang worker | 1.54 | 18 | 706 | 8 | 5 |
| 24. | Farm worker | 1.13 | " | 1/ | $1 /$ | I/ |
| 25. | Lumberyard worker | 1.25 | 9 | I/ | I/ | I/ |
| 26. | Feed mill worker | 1.25 | " | 2.112 | 8 | 6 |
| 27. | Mechanic | 65.00 | week | 1.733 | 8 | 6 |
| 28. | Mine worker | 250.00 | month | 1.280 | 8 | 5 |
| 29. | Mine worker | 2.64 | hour | 2,083 | 8 | 5 |
| 30. | Mine worker | 2.64 | 1 | 1.780 | 8 | 5 |
| 31. | Telephone employee | 1.50 | " | 2,933 | 8 | 5 |
| 32. | 8 months in woods, and other jobs | 1.30 | $"$ | 2,115 | I/ | 1/ |
| 33. | $\$ 2,780$ mechanic; $\$ 817$ as school bus driver | I/ | 1/ | $1 /$ | If | 1/ |
| 34. | $\$ 2,500$ in woods; , \$1,000 as school bus driver | I/ | 1./ | $1 /$ | 1/ | I/ |
| 35. | \$3,315 in woods | If | I/ | I/ | I/ | I/ |

I/ Not available。
on a piecework basis or as small independent operators. Typical wage rates for summer jobs averaged close to $\$ 2.00$ per hour.

## Age of Operators

The average age of the part-time farmers surveyed was 42 years. Tabie 4 shows the distribution by various age groups. Eighty-nine percent of all partotime operators were between the ages of 25 and 55

Table 4。 Age distribution or cperators

| Age group | Nuber | Percent |
| :--- | :---: | :---: |
| Under 25 years | 0 | 0 |
| $25-34$ years | 19 | $3 i$ |
| $35-44$ years | 17 | 28 |
| $45-54$ years | 18 | 29 |
| $55-64$ years | 6 | 10 |
| $65-74$ years | 0 | 0 |
| 75 years and over | 7 | 2 |
| All operators | 61 | 100 |

Young men just starting to farm and those with families of young shildren found it necessary to take jobs in inaustry in order to support their families and to obtain capital with which to expand their farming operations. When the children become old enough to help on the farm they can aid in making part-time farming possible. Furthermore, these are the men who are most likely to be employed by industry when they seek employment.

## Size of Fams

In total acreage, the part-time frams covered by the stady reported averaged 216 acres. Quarter-section farms were most comnon. The distribution of sites in both total and crop acreages are shown in Table 5.

Table 5．Distribution of sampie part－time farms by size and acreages in crops

| Size group | Number <br> of farms | Ave。size | Ave acreage <br> in crops I／ |
| :--- | :---: | :---: | :---: |
|  | 1 | acres | acres |
| Under 70 acres | 4 | 60 | 5 |
| $70-99$ acres | 10 | 82 | 10 |
| $100-139$ asres | 16 | 117 | 13 |
| $140-179$ acres | 12 | 156 | 15 |
| $180-219$ acres | 6 | 193 | 14 |
| $220-259$ acres | 10 | 239 | 18 |
| $260-499$ acres | 3 | 344 | 26 |
| 500 acres and over | 62 | 575 | 42 |
| All farms | 216 | 17 |  |

I／Excluding aeres in hay

Measured in total acreage，size is not especially meaningftil in this area。 Much of the land is covered with brush，trees or stones，or is swampy and pooriy drained．While this land is a part of the farm，it may have no use for farming。

The average acreage in crops excluding hay was 17 acres．There was only a slight relationship between the acreage in crops and the size of the farm．The distribution of farms by acreage in crops is shown in table 6。

Table 6．Distribution of sample part－time farms by acreage in crops other than hay

| Acreage in crops | Number <br> of farms | Percentage of farm： |
| :--- | :---: | :---: |
| Under 10 acres | 18 |  |
| $10-19$ acres | 23 | 29 |
| $20-29$ acres | 8 | 37 |
| $30-39$ acres | 8 | 13 |
| $40-49$ acres | 3 | 13 |
| 50 acres and over | 2 | 5 |
| All farms | 62 | 3 |

Two－thirds of the partotime farms had less than 20 acres of crops other than hayo Although this acraage may seem small，it is about the same as that of the full－ time farms included in the study．

The average acreage in hay on the part－－time farms was 50 acres．However， some of the farmers did not cut all of their hay acreage．These farms averaged

92 acres in pasture, most of which was woods or brush pasture with very low carrying capacity. Even so, it is likely that the available pasture land was somewhat underutilized。

## Crops on Farms

It has been stated that northeastern Minnesota is primarily a grass and small grain area. Part-time farms are no exception to this general mule. The average acreages of the different classes of crops on part--time farms are shown in the tabulation below.

## Crop

Intertilled
Small Grain
All hay
All pasture

Acres
3
14
50
92

Table 7. Distribution of sample part-time farms by acreage in intertilled crops

| Acreage in intertilled crops | Number of farms | Percentage of farms |
| :--- | :---: | ---: |
|  |  |  |
| None | 40 | 64 |
| $1-4$ | 6 | 9 |
| $5-9$ | 10 | 17 |
| $10-14$ | 4 | 6 |
| $15-19$ | 1 | 2 |
| $20-24$ | 1 | 2 |
| All farms | 62 | 100 |

Table 8. Distribution of farms by acreage in small grain crops

| Acres | Number | Percent |
| :--- | :---: | :---: |
|  |  |  |
| None | 12 | 19 |
| $10-9$ | 17 | 28 |
| $20-29$ | 20 | 32 |
| $30-39$ | 6 | 10 |
| $40-49$ | 2 | 3 |
| $50-$ over | 3 | 5 |
| All farms | 2 | 3 |

Corn for silage or fodder was the jntertilled crop most frequentiy grown. None of the part-time farmers rew corn for grain. Potatoes on rutaragas were grown on a few farms but the acreages were small. Roth crops use more labor than most part-time farmers have available. Among the small grains, oats were favored. An occasional field of mixed grains or barley or a little flax or rye was founda

## Livestock

Because the cropping pattern on part-time farms is limited mainly to grass and oats, the livestock is limited chiefly to dairy cows. On most of the farms, one or two head of cattle were raised to provide meat for the household. Practim cally none was raised for sale. Many farmers raised hogs for home use. A few farrowed a limited number of pigs to be sold as feeder pigs. As much of the feed had to be purchased, few hogs were raised for market. Sheep were not commonly raised by part-time farmers, despite the fact that most of them had plenty of grass and hay. Apparently, the odds against sheep in the form of care at lambing time, disease, insect pests, and predators were too great to make them popular. Poultry would appear to be naturally fitted to farms where family labor contributes much to the farming operations. But because much of tire feed min be purchased, local markets are not good, and relatively expensive nousing must ve privided, few commercial poultry flocks were found on part-time farms. Trocify the size of flocks was kept down to the level of home use. No turkeys were raised by any of the part-time farmers surveyed.

All of the 62 part-time farmers kept some milk cows, with the numbers ranging from 2 to 22. The average was $12 \frac{1}{2}$. The distribution of milk cow rumbers is shown in table 9. Almost three-fourths of the farmers kept from 6 to 15 cons.

Tahie 9。 Distribution of sample part-time farms by number of milk cows

| Number <br> of cows | Number <br> of farms | Percent <br> of farms |
| :--- | :---: | :---: |
| Under 5 | 4 | 6 |
| $6-10$ | 24 | 39 |
| $12-15$ | 20 | 32 |
| $16-20$ | 9 | 15 |
| $21-25$ | 5 | 8 |
| All farms | 62 | 100 |

The farmer with 22 cows worked for the railrcad during the summe:. He had ar 18-year-old son who worked full sime on the farm. His wife helped out during the summer and this farmer wanted to continue ofform work because he believed it gave him more income than he could get by expanding his farming business. The second hishest in number of cows also had ample labor available. In this instanee, the operator runs a milk route that takes $1 \frac{2}{2}$ or 2 hours a day. The rest of his time is devoted tc farming. A 25 -year-old son spends fuli time on the farm.

## Labor Suppiy

The number of hours of labor that part-time operators are able and willing to put into their farming operations vary widely. In the group covered by the study, they reported, varied from 20 to more than 70 hours per week. The rumber depends on such things as hours of off-farm work, regularity and seasora"ity of employment, and the operatcr's willingness and energy.

Family labor may be the key to the possibility of part-utime farming on many farms. Much of the time, it may take the form of helping with the milking and the other chore woric. In other instances, it may extend to all the farmork. Table 10 shows the kind of family labor on the part.time farms studied.

Table i0. Distribution of sampie partutime farms by family labor suppiy

| Labor Source | Nurnber of farms | Percent |
| :--- | :---: | :---: |
| Wife only | 20 | 33 |
| Wife and sons | 11 | 38 |
| Son or sonsain-law | 7 | 12 |
| Other | 4 | 7 |
| None | 28 | 30 |

Ordinarily, part-time farmers in northeastern Minnesota do not use hired labor. Seventy-one percent of them hired no labor. Only 10 percent of the farmers paid out more than $\$ 200$ for hired labor during the year. Tise largest payment was $\$ 685$. In most instances, the labor hired was utilized fim short periods in harvesting ats and hay.

## Custom Work

Part-time farmers used custom work to a considerable extent in carrying out their farming operations. Limited size of business and limited time for doing farmwork combined to make this desirable. Frequently, the smail seaie of operation made it uneconomical to own the more expensive and speciaizzed machines. These farmers alsc lacked the additional time necessary to do jome job aritio cal periods. The amount spent on various types of custom work on each of the part--time farms is shown in table 11. Fortyofour of the 62 farmers hired some custom work done or did some custom work for others. Custom work was nost comm monly used for grain harvesting (outting, binding, threshing, or combining), followed by hay harvesting, usually baling. Only a few farmers hired piowing or planting done. Several of the farmers hired more than one kind of serrice.

## Machinery on Farms

In general, the part-time farms were well equipped with machinezy. Each of the farmers had at least one tractor and a few had two。 All had piows and other soil-fitting machinery. Practically all had drills. Corn and potato machinery

Table ll. Custom work hired and work done for others, part-time farmers surveyed I/

| Farm | Custom work hired |  |  |  |  | Work done for others |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Plowing <br> or | Grain harvest | Hay harvest | Miscellaneous |  | Type of work | Amount earned |
|  | planting |  |  | Description | Cost |  |  |
|  |  | (dollars) |  |  | (dollars) |  | (dollars) |
| 1 |  | 50.00 |  |  |  |  |  |
| 2 |  | 12.00 | 84.00 |  |  |  |  |
| 3 | 80.00 |  |  | Bulldozing | 500.00 |  |  |
| 4 | 18.00 | 70.00 | 70.00 |  |  |  |  |
| 5 |  | 40.00 | 30.00 |  |  |  |  |
| 6 | 40.00 | 10.00 | 310.00 |  |  | Sprayed potatoes | 65.00 |
| 7 | 42.00 |  |  |  |  |  |  |
| 8 |  |  |  | Silo filling | 160.00 |  |  |
| 9 |  | 27.00 | 98.00 |  |  |  |  |
| 10 |  | 19.50 | 20.00 |  |  |  |  |
| 11 |  | 25.00 |  |  |  | Baling hay | 30.00 |
| 12 |  | 50.00 |  |  |  |  |  |
| 13 |  | 25.00 |  |  |  |  |  |
| 14 |  |  |  | Silo filling | 200.00 |  |  |
| 15 |  |  | 100.00 |  |  |  |  |
| 16 |  | 45.00 |  |  |  |  |  |
| 17 |  |  |  | Sheep shearing | 20.00 |  |  |
| 18 | 34.00 |  |  |  |  |  |  |
| 19 |  | 40.00 | 30.00 | Chopping | 100.00 |  |  |
| 20 |  |  | 11.00 |  |  |  |  |
| 21 |  | 20.00 | 40.00 |  |  |  |  |
| 22 |  | 15.00 | 50.00 |  |  |  |  |
| 23 |  |  | 96.00 |  |  |  |  |
| 24 |  |  | 40.00 |  |  |  |  |
| 25 |  | 72.00 |  |  |  |  |  |
| 26 |  | 20.00 |  |  |  |  |  |
| 27 |  | 93.00 |  |  |  |  |  |
| 28 |  |  |  |  |  | Threshing | 450.00 |
| 29 |  | 85.00 |  |  |  |  |  |
| 30 |  | 60.00 |  |  |  |  |  |
| 31 |  |  | 112.00 |  |  | Road work | 55.00 |
| 32 |  | 6.00 |  |  |  |  |  |
| 33 |  | 60.00 |  |  |  | Hay baling | 350.00 |
| 34 |  |  |  |  |  |  |  |
| 35 |  | 25.00 |  |  |  |  |  |
| 36 |  |  | 76.00 | Bulldozing | 100.00 |  |  |
| 37 |  | 7.00 |  |  |  |  |  |
| 38 |  | 25.00 | 100.00 |  |  |  |  |
| 39 |  | 63.00 | 100.00 |  |  |  |  |
| 40 | 25.00 |  |  |  |  |  |  |
| 41 |  | 40.00 |  |  |  |  |  |
| 42 |  |  | 37.00 | Silo filling | 230.00 |  |  |
| 43 |  | 10.00 |  |  |  |  |  |
| 44 |  |  |  |  |  | Hay baling | 300.00 |
| I/ No | custom hi | ed work | or work | ne for others | eported by | 18 part-time op | ors. |

were found on more farms than were growing these crops. Sidemdelivery rakes were universal on part-time farms. If farms were not equipped with balers, they had hay loaders. Pick-up balers were found on about a third of the farms. A number of the farms had milking machines, even though the small number of milk cows hardly justified their cost.

In generai, the machinery was in good condition. Machinery rated very good or excellent on more farms than it rated poor or fais. Apparently, on some of the farms, income obtained from offafarm work has gone into the purchase of farm machinery and it may be difficult to recover the cost from the farming operations. The decision to buy was made on the basis of the immediate and apparent need to save labor rather than on a longer term plan of organization.

## Work Units

For part-time farms where labor is characteristically a limiting factor, it would be desirable to get a measure of the size of the business in terms of labor requirements. This can be done roughly in terms of "work units". A work unit as used here is the average accompishment of a farmworkero in a lomour day, working on crops and livestock at average efficieney. The number of work units for each acre of crop and for each class of livestock are presented in table 12.

Part-time farms vary considerably in size of business as measured by work units. About half of the farms had enough work units to equal or closely approximate a one-man full-time farm run by the operator aione.
The percentage distribution of part-time farms by number
of work units is shown belows

| Number work units |  |
| :--- | :---: |
| Under 150 | Percentage of farms |
| $150-199$ | 8 |
| $200-249$ | 15 |
| $250-299$ | 15 |
| $300-349$ | 25 |
| 350 and over | 25 |

These farms have little opportunity to increase in size on a part－time farming basis．

Table 12．Number of work units for each acre of crop and class of livestock I／

| Type of crop | Unit | Work |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| units | $\therefore:$ Type of livestock | Unit | Work |
| units |  |  |  |

I／Estimated work units（modified and adapted from other Minn．areas）。

## Family Incomes

The family incomes as used in the study reported consist of two parts．The first part is the net realized income from farming，which includes the gross inw come from farming minus the cash operating expenses and the value of farm products used in the home．It does not include inventory changes．Hence it is the sum left over to pay the farmer for his labur and for the depreciation and use of his own capital and rent for his own land．The second part consists of the wages or salaries obtained from working at of fofarm employnent。 Farm and nonfarm income are not strictly comparable．On the one hand，the cost of obtaining the farm in－ come is taken out in determining the net income．This is not true for the nonfarm income．For example，the cost of commating was nct subtracted from wages or sala－ ries received．On the other hand，the farm income shown is not all spendable for family living．No depreciation costs were removed，and no provision was made to provide funds for capital improvements on the farm。

Family incomes on these partotime farms averaged $\$ 3.529$ in 1954。 It was slightly lower（\＄3．339）if the famiilies where the wife worked are omitted from
the calculation. The average family income was made up of $\$ 2,085$ of wages and salaries, $\$ 1,068$ of income from farming, $\$ 303$ of wages earned by the wife, and \$73 of other income. The other income consists of veterans' payments. About two-thirds of the incomes of these part-time farmers came from wages and salaries.

Among the families who chose to obtain their family incomes partly from farming and partly from offefarm employment, incomes varied greatly。 The highest family income was $\$ 9,211$; the lowest was $\$ 334$. The highest net income from farmm ing was $\$ 5,464$; the lowest was a loss of $\$ 1$, 666 . The highest income from wages or salary was $\$ 5,500$. Some families had above-average incomes from both the farm and outside wages. Others with high incomes obtained them mainly from wages or chiefly from the farmi. In some families, the wages brought in by the wife's em-w ployment exeeeded the operator's income. Data for individual farms are given in table 13.

In a general way, the higher wage incomes were associated with lower farm incomes and vice versa (table 14). Farm needs and the offofarm job compete directly for the operator's time and labor. Operators with high wage incomes usually spend a larger part of the year on their offofarm jobs and their farming enterprises may suffer as a resuit.

On about one-fifth of the part-time farms, the net incomes from farming operations were negative, that is, they showed a loss. on these farms, the family in comes averaged $\$ 2,363$ and incomes from wages $\$ 2,884$. The operator spent a part of his wage income to support the farm。 On these borderline farms, it is likely that the farm ineome seldom contributes much to the family income. The farm is more a place to live and perhaps a form of unemployment insurance than a source of income.

Table 13. Sample partmime farms arrayed according to amount and source of family income

| Farm:family:wages or :come fromswages or: Farmafamily:wages or :come from:wages or rank:income: salary : farm : salary : : rank:income: salary : farm : salary |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |
| (dollars) |  |  |  | :\% (dollars) |  |  |  |  |  |  |
| 1 | 9,211 | 4,000 | 5,211 | -- | : | 36 | 3,293 | 1,555 | 1,738 | -- |
| 2 | 8,614 | -- | 5,464 | 3,150 | : | 37 | 3,205 | i,100 | 2.105 | -- |
| 3 | 7,552 | 3,000 | 4,552 | , | : | 38 | 3,742 | 4,000 | -858 | -- |
| 4 | 6,183 | 1,100 | 2,383 | 2.700 | : | 39 | 3,069 | 1,800 | 1,269 | -- |
| 5 | 6,147 | 5,500 | 647 | -- | $\because:$ | 40 | 3,007 | 3,315 | -308 | --> |
| 6 | 6,006 | 5,000 | 1,006 | - | : | 4.1 | 2,998 | 453 | -153 | 2,700 |
| 7 | 5,682 | 5,414 | 268 | -- | : \% | 42 | 2,948 | 1,600 | 448 | 900 |
| 8 | 5,562 |  | 2,562 | 3,000 | : \% | 43 | 2,937 | 2,640 | 297 | -- |
| 9 | 5,236 | 3,500 | 1,736 | 3 | : | 44 | 2,755 | - | 955 | 1,800 |
| 10 | 5,168 | 975 | 2,068 | 2,125 | : 8 | 45 | 2,642 | 2,087 | 2.555 | -- |
| 11 | 4.780 | 4.600 | 180 | - | : | 46 | 2,560 | -1,200 | 1,360 | -- |
| 12 | 4.603 | 1,862 | 2,741 | -- | : \% | 49 | 2.493 | 3,600 | -. 1,10 ? | -- |
| 13 | 4,537 | -- | 3,137 | 1,400 | : \% | 48 | 2,459 | 2,000 | 459 | $\cdots$ |
| 14 | 4,278 | 3,800 | 478 | 1, | : \% | 49 | 2,373 | 1,055 | 1,318 | -- |
| 15 | 4,240 | 4,029 | 211 | -- | : | 50 | 2,350 | 825 | 1,525 | -- |
| 16 | 4,239 | 3,000 | 18239 | -- | : | 5.1 | 2,306 | 1,700 | 606 | -- |
| 17 | 4,234 | 4,700 | -466 | -- | : | 52 | 2,217 | 1.350 | 867 | -- |
| 18 | 4.189 | 3,000 | 1,189 | - | $\because$ | 53 | 2,109 | 536 | 工,573 | - |
| 19 | 4,158 | 3,300 | 858 | -- | : | 54 | I. 924 | -- | 760 | 1,164 |
| 20 | 4.134 | 3,015 | 1, 119 | -- | \% \% | 55 | 1,888 | 750 | 1.,138 | 1,164 |
| 21 | 4,086 | 3,500 | 586 | - | : \% | 56 | 1.875 | 2,185 | -310 | -_ |
| 22 | 3,998 | 2,900 | 1.8098 | -- | : \% | 57 | 1,871 | 600 | I. 271 | -- |
| 23 | 3,961 | 1,200 | 2,761 | -- | : 8 | 58 | 1,870 | 2,130 | -260 | --- |
| 24 | 3,922 | 2,640 | 1,282 | -..* | : 8 | 59 | 1,655 | 1,170 | 485 |  |
| 25 | 3,890 | 3,597 | 293 | , | : | 60 | 1,493 | 900 | 593 | -- |
| 26 | 3,809 | -- | 2,645 | I. 164 | I/: | : 61 | 1.273 | 534 | 739 | -- |
| 27 | 3,673 | -- | 1,738 | 1.935 | \%\% | 62 | 1, 213 | 886 | 1.27 | -- |
| 28 | 3,661 | 3,800 | -139 | -- | $\because$ | 63 | 739 | 800 | -61 |  |
| 29 | 3,622 | 780 | 2,842 | - | ¿: | 64 | 634 | 1.,500 | -866 |  |
| 30 | 3,567 | 3,000 | 567 | - | : | 65 | 334 | 2,000 | --1.666 | $\cdots$ |
| 31 | 3,542 | 2,749 | 793 | -as | : |  |  |  |  |  |
| 32 | 3,433 | 2,968 | 465 | - | : \% |  |  |  |  |  |
| 33 | 3,403 | -- | 973 | 2,400 | I/: |  |  |  |  |  |
| 34 | 3,375 | 3,430 | -55 | - | \%: |  |  |  |  |  |
| 35 | 3,302 | 1,900 | 1,402 | - | $\because$ \% |  |  |  |  |  |

Table I4. Income distribution of sample partotime farms in $\mathbb{N} . E$. Ninnesota ( 65 farms)

|  | Total <br> family <br> income | Income from operator 's wages | Net income from farm | Other <br> income <br> (wife <br> or vets。) | $\begin{aligned} & \text { Percen } \\ & \text { total } \\ & \text { Wages } \end{aligned}$ | $\begin{aligned} & \text { ntage } \\ & \text { incom } \\ & \hline \text { Farm } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (dollars)(dollars) (dollars)(dollars) |  |  |  |  |  |  |
| Average of all families | 3,529 | 2,085 | 1.068 | 373 | 60 | 30 | 10 |
| Highest $1 / 3$ of farms: |  |  |  |  |  |  |  |
| Total family income | 5,310 | 3,009 | 1.739 | 562 | 57 | 33 | 1.0 |
| Income-operator wages | 4,604 | 3,822 | 782 | 0 | 83 | 17 | - |
| Income from farm | 4,431 | 1,287 | 2,441 | 703 | 29 | 55 | 16 |
| Middle $1 / 3$ of farms: |  |  |  |  |  |  |  |
| Total family income | 3.415 | 2,025 | 957 | 433 | 59 | 28 | 13 |
| Incomeooperatoris wages | 2,909 | 12912 | 826 | 171 | 65 | 27 | 8 |
| Income from farm | 3,234 | 2,138 | 893 | 255 | 66 | 27 | 7 |
| Lowest $1 / 3$ of farms: |  |  |  |  |  |  |  |
| Total family income | 1,856 | 1,218 | 503 | 135 | 67 | 27 | 6 |
| Income-operator ${ }^{\text {s }}$ s wages | 3,046 | 513 | 1.585 | 948 | 17 | 52 | 31 |
| Income from farm | 2,910 | 2,884 | -137 | 164 | 99 | - | I |

The average incomes of partotime farmers exceeded those of fullotime farm families by a considerable margin. The income distribution of 65 full-time farmers in N.E. Minnesota is shown in the tabulation belows

| Income groups | Total family inco |
| :--- | ---: |
| Average of all families | $\$ 1,792$ |
| $1 / 3$ with highest incomes | 3,107 |
| $1 / 3$ with middle incomes | 1,577 |
| $1 / 3$ lowest incomes | 855 |

The average income of the highest onemithrd of these farmers was $\$ 422$ less than the average of ali part-time operators. The average of all full-time farmers was slightly less than that of the lowest $1 / 3$ of the part-time farms. The average of all full-time farms was $\$ 293$ less than the average income from wages alone for the part-time operators.

## Dairying

Dairying is the chief source of farm income on part-time farms. A relatively few operators produced Grade A milk and sold to a fluid milk market. Most of them
sold their dairy products for manufacture. About half of them sold whole milk and the other half sold only cream. The type of market was determined partly by locam tion within the region, partly by the size of the dairy enterprise, and partly by choice. In one local area studied, the only market available was a cooperative creamery that handled only cream. In most areas operators could choose from altemative outiets. Frequently, those operators with small herds and little product to market stored their cream for a time and hauled it to market themselves.

Table 15 summarizes the dairy enterprise on both part-time and full-time farmso Part-time farmers have slightly smaller herds, produce a littie less butterfat per cow, and have a somewhat smaller income per cow and per farm than do full-time farmers.

Table 15. Dairy enterprise on full and part-time farms

| Item | Unit | Part-time farms |  |  | Full-time farms |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Average | $\mathrm{H} \times \mathrm{gh}$ | Low | Average | High | Love |
| Milk cows | Number | 12.5 | 22 | 2 | 14. 3 | 50 | 4 |
| Butterfat per cow | Pound | 227 | 359 | 100 | 238 | 468 | 98 |
| Value of dairy products sold: |  |  |  |  |  |  |  |
| per farm | Dollars | 21.33 | 8324 | 500 | 2785 | 10293 | 300 |
| per cow | " | 173 | 308 | 50 | 202 | 462 | 49 |
| Feed purchased | 9 | 579 | 24.72 | 0 | 918 | 3446 | 0 |

## Organization of Part-time Farms

It has been pointed out that, in general, the oxganization of part-time fiarms does not differ greatly from that of other farms. Most of the partmtime farms are essentially dairy farms so far as cash income is concerned. However, the amount of time that the cperator spends on his of fofarm job limits his availability for farmwork. As a result, family lavor, hired labor, or custom work must be provided to supplement the labor of the operator, or the size of the enterprise must be curtailed。

Included in the study were 8 farms whose operators worked more than 2,000 hours each at off-farm employment during the year". This is roughly equivalent to a full.
time job for the entire year. Also inciuded were 16 farms whose operators worked between l, 000 and 2,000 hours each at off-farm employment. This approximates employment for half the year. The acreages of the various classes of crops and the kinds and numbers of livestock on these farms are shown in table 16。

Table 16. Land use and kinds and numbers of livestock, sample partotime farms whose operators worked of fafarm $l_{2} 000$ or more hours during the year

| Item | Unit | Farms where operator worked a offefarm jobs |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2 2000 hours or more |  |  |  |  | $12000-1,999$ hours |  |  |
|  |  | Ave。Highest Lowest |  |  | Percent age reas porting: |  | Highest | Lowest | $\begin{aligned} & \text { ercer } \\ & \text { ge re } \end{aligned}$ ortir |
|  |  | : |  |  |  |  |  |  |  |
| Crops: | Acres |  |  |  |  |  |  |  |  |
| Intertilled | " | 1/ | 4 | 0 | 13 | 5 | 21. | 0 | 50 |
| Grain | ${ }^{1}$ | $1 \overline{3}$ | 26 | 0 | 75 | 14 | 30 | 0 | 90 |
| Hay | " | 39 | 76 | 20 | 100 | 35 | 95 | 0 | 94 |
| Livestock: | Number |  |  |  |  |  |  |  |  |
| Milk cows | " | 10 | 1.6 | 5 | 100 | 9 | 15 | 2 | 100 |
| Beef cows, bulis, steers | , | 1 | 2 | 2 | 75 | 2 | 13 | 0 | 75 |
| Calves, heifers | " | 10 | 14 | 5 | 100 | 9 | 15 | 2 | 100 |
| Sheep | " | 0 | 0 | 0 | - | 13 | 75 | 0 | 25 |
| Pigs | 4 | 2 | 6 | 0 | 40 | 4 | 20 | 0 | 69 |
| Laying hens | " | 47 | 100 | 0 | 40 | 34 | 200 | 0 | 50 |

I/ Less than I acre

The average acreages in crops were simslar for the two groups. Both intertilled and small grain acreages were about the same as the averages for the entire group of farms. Hay acreages were considerably smaller than the average for all farms; probo $a b l y$ this difference reflects the reduction in amount of available labor on the farm. While the crop acreages did not differ much on the farms in the two groups shown in table 19, the proportion of farmers growing intertilled and grain crops was substan tially higher in the group who had employment for half the year. Livestock numbers were about the same in both groups, but the variation between the highest and lowest in each group was considerabie.

Net income from farming was only slightly higher for the half-time than for the foll-time group and both were under $\$ 1,000$ (table 17). Close to half of this income was in the form of family living from the farm. It should be recognized that if the halfotime operators are employed during the surmers, they may have no more time for farming during that period than the farmers who work offe farm for the entire year. Variations in farm income from farm to farm were considerable。

Table 17. Income from farming and off $\rightarrow$ faxm employment, sample partotime operators who worked 1,000 hours or more during the year

| Income | Farms where operator worked at of ferfarm jobs |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2,000 hours or more |  |  | 1,000 to 1,999 hours |  |
|  | Average | Highest | Lowest | Average | Highest Lowest |
|  | (dollars) |  |  | (doliars) |  |
| Income from farming: |  |  |  |  |  |
| Gross receipts I/ | 2,505 | 4.435 | 1.1214 | 2,384 | 7,084 936 |
| Cash operating expense | 1.735 | 3,953 | 821 | 1.582 | $3,329 \quad 940$ |
| Net farm income | 770 | 1928 | 2.11 | 802 | 5,211 -1,666 |
| Value family living | (368) | (564) | (129) | (350) | (763) (139) |
| Wages and salaries | 3,565 | 5.500 | 2,640 | 3.101. | $4,700 \quad 1.800$ |

## I/ Includes family living from the farm

This reflects differences in size and organization resulting from different amounts of available family labor, abilities individual operators, and the particular conditions that affect the farms during the year.

The breakdown of farm cash expenses is shown in table 18. Main items of expense are feed bought, fuel and electricity, and raxes. Those who worked at fulltime jobs throughout the year spent mare on feed purchased and fuel and electricity. Total cash operating expenses were higher for the group of operators employed fullo. time off the farm.

Partotime farming is largely a coordinated family mode of operation. Without family participation, less part-time farming would be done than is now the case。 Nearly all of the farms in both these groups used considerabie amounts of family

Tabie 18. Average expenses, part-time farms whose operators worked i,000 hours or more at off-farm employment

| Item | On farms whose operators worked 2,000 hours or more at off...farm work | On farms whose operators worked 1,000 to 1,999 hours at off-farm work |
| :---: | :---: | :---: |
|  | (dollars) | (dollars) |
| Fuel and electricity | 355 | 319 |
| Machinery and tractor repairs | 588 | 96 |
| Building and fence repairs | 64 | 6 ? |
| Feed bought | 553 | 353 |
| Hired labor and custom work | 183 | 151 |
| Milk hauling | 27 | 47 |
| Livestock bought | 68 | 48 |
| Taxes | 281 | 383 |
| Miscellaneous | 113 | 128 |
| Total | $\overline{19735}$ | 1,582 |

labor. On 60 percent of the farms, the wife helped with the farmwork. Her contribution varied from about an hour a day, or 365 hours a year, to 5 hours a day, or 1,800 hours a year. The most common contribution was one or two hours a day, and the time was spent chiefly in helping with the milking and doing chore work. About a third of the farmers indicated that they had sons who helped with the farmwork. In most instances, there was only the one son, but on three of the farms there were two. The boys ranged in age from 12 to 2 years and the average age of the group was 16. On most of the farms where sons worked, the wife helped out aisco Labor was hired on only 3 of the 26 farms. The amount spent for hired labor on these farms was $\$ 48, \$ 120$, and $\$ 148$, respectively. No custom work was hil"ed. Four of the farmers gave no indication of use of either family or hired help. On these farms, the operators worked long hours in addition to their outside employment. They grew abcut the average acreages of grain and hay and kept 5 milk cows. Their net farm earnings averaged $\$ 350$. It is doubtul that this income was worth the extra effort entailed unless the need for additional invome was very greato

Farms in this group were well-equipped wi th machinery, and in general, the overall condition of the equipment was good to very good. On oniy 3 farms did the
enumerator rate the machinery as poor or fair. Ali of the farms had at least one tractor, and 20 percent of them had 2。 All had the usual plows, harrows, and other soil-fitting machines. For grain harvesting, 50 percent of the group had binders. One farmer had a combine. For forage harvesting, almost half of the farmers had hay balers, most of which were of the pick-up variety. Most of them had hay Ioaders. One farmer had a field chopper. Despite the fact that they had few milk cows, about half the farms had milking machines. Although data on machinery investment were not obtained, the amount of capital tied up in machinery was probabiy high for the limited size of the farming operations.

On the whole, these farmers were in good financial circunstances. Half of them were free from debt. About onewfourth had real estate or chattel mortgages of less than $\$ 1,000$ and the remaining fourth had mortgages of $\$ 1,000$ or more. The average debt of the last group was $\$ 2,550$. The maximum debt was $\$ 6,000$. This farmer was the youngest of the group; he borrowed to buy his farm, obtain equipment, and pay operating expenses.

As dairying was the main source of farm income, comparing this group of farmers with others in the study reported will indicate how well they farm。 Table 19 shows the costs and returns from dairy cows for this particular group of farms and for (1) the 20 farms in the study that were highest in value of dairy products sold per cow and (2) the 20 farms that were median in value of dairy products sold per cow. The comparison is not very favorable to the group who have a great deal of off-farm employment. Lower production per cow and higher feed costs combine to cut their "return above feed" to about half that of the median group and oniy about I/5 that of the highest group. Undoubtedly, lack of coordinated management and interest, as well as lack of time at critical periods, contribute to the poorer showing of this group.

Table 19. Costs and returns from dairy cows, sample partotime farmers

| Item | Unit | Farm operators worked 1,000 hours or more off farm | Value of dairy products sold per cow |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | highest farms | $\begin{gathered} 20 \\ \text { median farms } \end{gathered}$ |
| Cows | Number | 10.0 | 18.6 | 11.6 |
| Butterfat per cow | Pounds | 212 | 325 | 229 |
| Price received per pound of butterfat | Dollars | 5 . 72 | . 9 ? | . 73 |
| Average per cows |  |  |  |  |
| Feeds fed: |  |  |  |  |
| Grain |  | 1,689 | 2,282 | 1,355 |
| Hay |  | 7,900 | 6,623 | 7,184 |
| Silage |  | - | 4.766 | $\xrightarrow{2} 831$ |
| Feed cost: |  |  |  |  |
| Grain | Dollars | - 28 | 32 | 20 |
| Hay | " | 57 | 46 | 50 |
| Silage | " | - | 11. | 4 |
| Commercial feed | " | 34 | 76 | 28 |
| Total feed cost | " | 119 | $\overline{134}$ | 102 |
| Value of products sold <br> per cow |  |  |  |  |
| Return over feed cost | " | 33 | 153 | 65 |
| Cash return above purchased feed cast, | " | 118 | 267 | 140 |
| Average net form income | " | 791 | 3,488 | 1.697 |
| Average spendable income | " | 4,047 | 3,488 | 3,699 |

The success of the group with highest value of dairy products sold was due largely to the higher price reeeived for the milk. These farmers sold to a limited fluid milk marketg their success could not be generaliy duplicated under existing market conditions. Even with conditions as favorable as they were for this group of farmers, it took a herd of about 25 milk cows to equal the income of the average part-time farmer who was employed at least haif the year at offafarm work. Operated at the level of efficiency of the median or average farmer and with butterfat instead of fluid milk prices, it is doubtful that the income of the part-time farmer could be equaled by a onerman operation. It would take a 29 recow herd to yield $\$ 4,000$
above＂purchased feed＂alone．Add the cost of other feed and other farm expenses and the herd would need to be much larger to attain a $\$ 4,000$ net income

These data indicate that an offofarm job is difficult to equal through an inm crease in size or efficiency of farming operations in northeastern Minnesota．Only the favored few who can operate efficientiy and sell their product in a favorable but limited market can expect to attain an income comparable to that of an average operator who has an offafarm job for a substantial part of the year．

## Observations and Conslusions

Under present conditions，the agricultural resources of northeastern Minnesota are limited and difficult to exploit．Farms of adequate size are difficult to de－ velop because of soil variations，woods，rocks，and swamps．The climate and soils limit the production alternatives。 Location limits marketing possibilities。 Inade－ quate volume of production limits the processing industry possibilities．

Income for family living can usually be obtained more readily in employment other than farming．This has led to the rapid increase in partotime farming。

Part－time farming is frequentily a transition phase during which the operator is either getting out of farming on getting into it on a full－time scale．In the former situation，he will eventually become a rural resident or he wili move to town．In the latter situation，he may invest his income from offefarm work in farm capital investments．He may build new farm buildings or buy new machinery from income the farm has not earned．In many instances，this is capital that the farm cannot repay．

As the decision regarding whether or not the operator wants to become a fulle time farmer is a fluid one（it can be changed at any time）it would be good policy for many operators to save their incomes in liquid form（bank accounts，bonds，etc．） until they are ready to make a final decision．They can then invest it all at one time in building up an economic farming unit if this is the direction in whith they wish to turn．

Successful part-time farming usually depends on family labor. If this labor consists of the willing cooperation of the housewife, it may continue for a considerable period of time. If it depends on children, they may leave the farm as soon as they are grown. However, when properly organized, off--farm work may be a source of added family income when it is most needed。

There appear to be few possibilities of improving farm incomes so that fulltime farming can compete successfully with off-farm employment for providing maximum income. By shifting to Grade A milk and developing a stable fluid milk outlet, a few farmers may succeed. However, most farmers who sell only cream or milk for manufacture find it difficult to develop a farming unit that will provide as much income as a regular off-farm job。

