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Management Problems in Dairy Farm Expansion Michigan State University Agricultural Experiment Station and Cooperative Extension Service Research Report John Brake, John Okay, Michigan State University; Myron Wirth, Washington State University Issued July 1968 8 pages

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AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE, EAST LANSING

# **Management Problems in Dairy Farm Expansion**

By John Brake, John Okay, and Myron Wirth<sup>1</sup>

IN RECENT YEARS a number of dairy farmers have expanded to large-scale operations. Probably many others are, or will be, considering similar expansion.<sup>2</sup> This study investigates the expansion problems of a sample of Michigan dairymen who increased their herd size to over 70 cows between 1957-1963. A companion report emphasizes the financing problems involved in changing a small farm to a large dairy operation, especially from the lender's viewpoint.<sup>3</sup>

RESEARC

FROM THE MICHIGAN STATE UNIVERSITY

Although not all potential problems are covered in this report, the group of dairymen who contributed their ideas and experiences represent a good crosssection of the expanding dairymen in Michigan. The small dairy farmer will find the description and analysis of their problems worth considering if he wants to expand his own operation.

### THE FARMERS

Data were obtained from farm interviews of 19 central and south central Michigan Telfarm cooperators who had dairy herds of 70 or more cows by the end of 1963.<sup>4</sup> The farmers were interviewed in May,

June and July of 1965. Other information on income, expenses, herd size, farm investment, etc. over the 1957-63 period was obtained from the cooperator's MSU mail-in account records. Also, some 1966 information was obtained later and will be included at appropriate points in this report.

FARM SCIENCE

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Table 1 summarizes some characteristics of the sample farms at the end of 1957 and of 1963. The average number of dairy cows per farm doubled during the period. The acreage of owned land increased slightly but due to rental of additional land, total land operated increased somewhat more.

### TABLE 1—Changes in selected characteristics of 19 Michigan sample farms, 1957 to 1963

	End of 1957	End of 1963	Change (1957-1963)	
Dairy cows (number)	44	89	+102%	
Land owned (acres)	349	368	+ 5%	
Land rented in (acres)	75	146	+ 95%	
Total land used (acres)	424	514	+ 21%	
Milk production				
(lbs./cow)	10,027	11,769	+ 17%	
Farm assets	\$95,907	\$174,498	+ 82%	
Liabilities	\$29,874	\$ 53,708	+ 80%	
Net worth	\$66,033	\$120,790	+ 83%	
Net farm income/farm	\$ 9,205	\$ 15,292	+ 66%	
Net farm income/family	\$ 5,829	\$ 9,082	+ 56%	
Net income per cow	\$ 209	\$ 172	- 18%	
Investment per cow	\$ 2,180	\$ 1,961	- 10%	
Liabilities per cow	\$ 679	\$ 603	- 11%	
Hired labor				
(man-months)	10.1	17.9	+ 77%	
Operator and family				
labor (man-months)	20.5	18.6	- 9%	
Return to operator and family				
labor and manageme	nt \$ 4,410	\$ 6,567	+ 49%	

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<sup>&</sup>lt;sup>2</sup>One study concludes that the number of Michigan dairy herds with more than 50 cows will quadruple between 1959-1980. In addition, the average size of these herds is expected to increase from about 67 to 104 cows. See *Project '80: Rural Michigan Now and in. 1980-The Dairy Industry*, Res. Rpt. 45, Mich. Agr. Expt. Sta., 1966.

<sup>&</sup>lt;sup>3</sup>Benson, Richard A. and John R. Brake, "Problems of Financing the Expansion to Large-Scale Dairy Farming," manuscript in progress.

<sup>&</sup>lt;sup>4</sup>Telfarm is a mail-in farm record service available to Michigan farmers through Michigan State University.

In doubling herd size, net income per cow dropped 18 percent, but net income per farm increased 66 percent. The farmers expanded without increasing their investment per cow, but increased production costs without a milk price increase reduced net income per cow.

Total labor use increased 5.9 man months per farm or 19 percent. At the same time, total land used increased 21 percent and cow numbers increased by 102 percent. In addition, milk production per cow increased 17 percent. Hence, the volume of output per man increased considerably over the period.

Farm assets, liabilities and net worth all increased by slightly over 80 percent from 1957-62. However, one must be extremely careful in interpreting these data because much of this increase in asset values, and consequently in net worth, comes from increased land values. At least an average of \$29,000 per farm comes from an increase in the valuation of farm assets in line with higher land prices. Perhaps the \$29,000 is too low; the data were not adequate in several cases to be sure whether the increase in assets came through additional purchases or through inflated land values. At any rate, one should not assume that these farmers plowed nearly \$55,000 back into their businesses over this period. In fact, they invested no more than \$26,000 net in their businesses-and probably even somewhat less than that.

### WHY THEY EXPANDED

One of the first questions asked sample farmers was why they began thinking about expanding their dairy herd. Sixteen of the nineteen said it was to increase their farm incomes. However, several of the 16 qualified their answers by indicating that the expansion was to support a family partnership where two or more families were involved. In general, these partnerships included a father and one or more sons. Excess land, excess labor, and difficulties with milk laws or milk inspectors were the primary reasons given by 3 farmers. In the latter case, the operator felt he had to expand to improve his facilities or else quit dairying.

Of the 19 farmers in the study, 3 had formed partnerships prior to 1952, but 10 were in partnerships by 1963. While several of these partnerships were started just before the period of this study, they were apparently still in an expansion phase. Also, two more of these study farms became partnerships between 1964 and 1966.

Many alternatives for expanding the dairy operation were considered by these farm operators. Fifteen operators had considered loose housing, 13 considered various types of milking parlors, and 6 considered adding more stanchions as a means of expanding. Two considered both stanchions and loose housing. Comfort stalls were considered by three, and free stalls by two. Keep in mind, however, that these latter two were not well known at the time of the study. Most of the group had visited one or more other dairy farms before making a decision.

Those who decided to expand with stanchions or comfort stalls did so in order to give each cow more individual attention. For those who already had a stanchion operation, adding stanchions was often less expensive than constructing the new buildings required to change systems.

Loose housing, the most common method of expansion, was chosen by 15 farmers. The reasons given were numerous, but convenience, speed of handling, and less labor per cow were most often mentioned. However, these farmers often had major new building investments.

In their expansion plans, 11 farmers aimed for a herd size of approximately 100 cows. Another 6 hoped to achieve a herd size of 70 to 85 cows. One planned for 60, and another for 150 cows.

When asked how long they expected to take to complete their expansion, most farmers had not thought in terms of a specific number of years. Eight operators indicated that they had planned to add cows slowly until they reached capacity. Six planned to take about 3 years, three expected to take less than 3 years, and two planned to take 4-7 years.

The farmers who did not reach the herd size they planned or who were taking longer than they expected were asked why they were delayed. Two indicated that breeding problems were the reason for their difficulties. A third said calf losses of over 30 percent had delayed his expansion program. In another case, the farmer was unable to continue renting additional land, which caused a feed shortage. While labor was not emphasized in response to this particular question, comments on other parts of the questionnaire suggest that labor problems may have been a rather important factor in restricting expansion.

Did the farmers change their herd size plans after beginning expansion? Seven increased, eight stayed the same, and two decreased their herd size intentions. In the latter two cases, inability to obtain satisfactory labor was an important deterrent, however, in one case a health problem of the operator contributed to the cutback as well.

Another check on herd size was made for the end of 1966. Seven farmers were within 10 percent of the herd size they had indicated on the questionnaire, six were more than 10 percent above and six more than 10 percent below the planned size. Two in this latter group had quit dairying by the end of 1966. The largest herd size of the 1966 group was 173 cows and the smallest was 50. Both had given 100 cows as their target on the questionnaire.

### PROBLEMS DURING EXPANSION

Making the transition to a larger herd caused most of the management problems in dairy farm expansion. Presumably, once the herd size stabilized, many of these problems would be over.

The decision to expand led the farmer into many new decisions. Some concerned the selection of the physical layout, planning for feeding and loafing space, and looking to the needs of the expanded operation such as replacing the bulk tank with one of larger capacity. There were also disagreements among family members concerning plans.

Financial problems presented one type of difficulty. The actual cost of expansion was typically larger than had been expected, and in several cases difficulties developed in getting sufficient financing to complete the plan. In a couple of cases, the expanding operator had to tap additional sources of credit to obtain the needed financing. The lender with whom they started was unable to provide the necessary funds to complete the expansion.

Another financial problem was that income tended to be below expectations. In several cases, production per cow dropped with the change in environment. This was usually temporary, and production recovered within a couple of years. Feed and other production expenses increased with herd size. Net income per cow dropped with the reduced milk production and increased costs. Another factor contributing to decreased net income per cow is that less culling typically took place with expansion so that cash receipts from the sale of cull cows were lower.

Production problems were also important. Among these were difficulties in purchasing good quality cattle and in getting the cows adjusted to the new pattern of handling. Extra land was often hard to findeither for purchase or rent—and that often created a feed problem. Where more intense cropping systems were possible or where additional land was available, there was a need for larger capacity field machinery.

The larger business enterprise was accompanied by organization and management problems. In addition, the division of effort between work on the expansion and the day-to-day farm work made time allotment difficult (many of the farmers did a major part of the remodeling and building themselves). Organizing the timing of purchases and the breeding schedule for the additions to the herd took extra time. Getting additional hired labor for the extra work was another problem. Table 2 presents a summary of expansion problems mentioned by study farmers.  
 TABLE 2—Problems arising with dairy farm expansion as cited by 19 Michigan farmers, 1965

Problem	armers mentioning this problem Number	
Planning problems		
Selecting the best physical plan	4	
Disagreements with family about expansion	2	
Planning for more feeding and loafing space	2	
Bulk tank too small for expanded herd	$\frac{1}{2}$	
Financial problems		
Getting enough financing to carry out		
long-run expansion goals	4	
Insufficient income in early stages of		
expansion	1	
Organization problems		
Getting buildings up while keeping up with	h	
other work	3	
Just getting organized	1	
Organizing buying and breeding of heifers		
to keep up with expansion plan	, 1	
	1	
Getting more hired labor	1	
Production problems		
Getting good quality cattle	2	
Getting additional <i>productive</i> land	2	
Getting cows adjusted to new setup		
and maintaining production	2	
Need for larger field equipment with		
larger capacity	1	
Growing enough feed	1	
Unable to cull enough while building herd	1	
Physical problems		
Setting up automated feed handling system Unhappiness with quality of building	2	
built by contractor	1	
Changing over from stanchions to parlor	1	

# FINANCIAL AND TENURE PROBLEMS

### **Record Systems**

An important part of the expansion is keeping farm and herd records. The sample farmers were asked about the kinds of records they used in their expanded dairy operations (Table 3). All were Telfarm cooperators; a large proportion used DHIA<sup>5</sup> records, MABC<sup>6</sup> breeding records, and neck chains for identification of cows. Other devices used were notebooks, bulletin boards, and blackboards for keeping daily notes on cows. Several kept a permanent card for each cow. Breeding charts, registration records, or weigh-a-day-a-month production records were also used. The consensus was that more book work was associated with the expanded herd operation. In at least one case, individual cow records had been discontinued after the expansion because of the work involved.

<sup>&</sup>lt;sup>5</sup>Dairy Herd Improvement Association is a cooperative organization. Typical DHIA records stress production and butterfat records for individual cows.

 $<sup>^{0}\</sup>mathrm{MABC}$  is Michigan Animal Breeders Cooperative which provides artificial breeding services.

### TABLE 3—Records and information systems used by sample farmers after expansion

Type of record or information system	Number of farmers using
TELFARM records	19
Michigan Artificial Breeding Cooperative	
breeding records	15
Dairy Herd Improvement	
Association records	14
Identification neck chains	14
Notebook, bulletin board or blackboard	
for daily notes	9
Information card for each cow	
(in a file or notebook)	6
Other individual information systems	
(registration records, weigh-a-day-a-n	
record, owner sampler records, etc.)	8

### **Financial Considerations**

Attention given to their cash flow position after expanding was no more a problem than it had been with a smaller operation, according to three-fourths of the farmers. One-fourth felt that it was necessary to give more attention to timing of receipts and expenditures; they felt it was necessary to budget more carefully with the expanded operation.

The use of credit increased as expansion took place. Twelve operators indicated that their credit needs increased two to five times as much as before the expansion. Presumably, these operators were referring to short-term credit needs since the year-end debt-asset ratio does not show a change this large. Four indicated that their credit usage increased in proportion to the expansion of their operation, and for the sample as a whole, this seemed to be the case. Only three indicated that their credit use changed very little.

When asked whether the lenders had become more involved in the decision making of the farm operation as their credit use had increased, 14 said "no" and 5 said "yes." This involvement took the form of more discussion with their lender before committing themselves on major new investments.

Complaints were heard about some of the credit terms. Several operators indicated the need for "long term" credit when expanding buildings and facilities. In several cases, credit for milking parlors, pole barns, silos, etc. was extended on a relatively short term basis for 3, 5, or 7 years. In only two or three cases was such credit written for repayment in as long as 10 years. Expanding operators felt that these short credit terms put too much burden on them in the early years of expansion when they were also more prone to production and management problems.

Two farmers added that they felt it was still too easy to get credit. They emphasized the importance of recognizing how much credit can be profitably used. In other words, they felt the farmer must exercise restraint rather than expecting lenders to exert the restraint.

### **Tenure Arrangements**

Another point of interest is the tenure arrangement, or form of ownership, on these farms. Eight of the farms were partnerships in 1957, and two more became partnerships by 1963. All 10 were father-son partnerships. Nine of the farms were sole proprietorships in 1963, but two of these have since become partnerships.

Did farmers wish they had made any changes in the legal organization of their farms? Thirteen said "no." Three expressed concern about possible future inheritance problems. In one case, a junior partner reported that his father had no will. This junior partner, the active operator of the farm, does not know his father's intended disposition of the property. In another instance, a son felt the distribution of shares under his father's will was unfair. Two reported that they would like to have a change in the sharing arrangements for their partnerships. Circumstances had changed since the partnership was organized, and they felt the present partnership arrangements should be changed to reflect this. In another case, a father who was the operator of the farm wished that he had formed a three-way partnership with his sons.

### THE POST EXPANSION SITUATION Problems After Expanding

Most of the farmers interviewed had reached or were close to reaching the herd size they had originally planned. Had the expansion solved their problem? Had new problems arisen? The farmers were asked what the most important problems were after expansion. Half mentioned labor as one important problem, since year-around labor was particularly hard to obtain, and the wage rates were higher than many farmers felt they could pay.

Six respondents indicated that getting good quality hay was an important problem. Four farmers reported that another difficulty was maintaining and improving production per cow. When they expanded their herd size, production per cow had dropped. Other problems mentioned were high calf losses, poor luck with artificial insemination and difficulty in harvesting crops on time.

Respondents suggested that it was more difficult to watch income and expenditures closely in the larger operation. Also, they felt it was more difficult to keep track of and meet payments on time. Another said that it was important to obtain better advice and to do a better job of management than with a smaller operation. Low milk price was mentioned as a problem by several of the respondents, and at least one was questioning whether he should quit dairying altogther (he quit soon after the study). Another problem mentioned by one farmer was that his son was getting married and could not afford to stay and work on the farm. Apparently, they felt that the business required more than one man's labor, yet it could not support two families.

How did the 19 farmers feel about the added responsibility of the larger operation? Seven reported that their debt load was the biggest worry they had after their expansion. Five said that their biggest worry was the additional work load with their larger operation. One individual commented that the bigger responsibility was a mental burden. The labor problem was the biggest worry for another. Still another said that he was having difficulty with the milk inspector and this was a bigger headache since he now had more at stake with the larger operation. Five reported no particular problems to managing the larger operation.

### Satisfaction with Expansion

We asked the farmers several questions to find how they were satisfied with their expansion once it was completed. First, how did the expansion affect the amount of free time available for such things as travel, participation in community activities, family activities and others? Over half the farmers reported that they had more free time after their expansion since they either had a hired man or a partner to share the work; two of the operators indicated that the work load was about the same; the other seven felt that they had less free time available after expansion. Four of these last seven stated that with the expansion completed they had no free time at all. No doubt it was these operators who had indicated difficulties in finding labor to help in the expanded operation.

When asked whether the results of expansion compensated for the extra responsibilities, 13 answered "yes" and 6 answered "no." For the 6, results had fallen short of their expectations, and they had difficulty in maintaining production. Rising costs and low milk prices continued to pinch them.

Did the expansion help cure financial problems? The figures suggest that expansion was at least partially successful. Net farm income per farm increased from \$9,200 to about \$15,300 from 1957 to 1963. By 1966, with more favorable milk prices, it had risen to \$24,400 per farm.

However, since a number of the farmers indicated an objective was to increase income to support more families, let's look at net farm income per operator family (treating each partner in partnerships as a family). In 1957, net farm income per family was \$5,829; by 1963, it was \$9,082; by 1966, it had risen to \$13,836. One could look at the return to operator and family labor (deducting 5 percent return on investment and imputing the remainder to family labor and management) as a measure of returns. Using this measure, the return to operator and family labor per farm went from \$4,410 in 1957 to \$6,567 in 1963 and to \$13,904 in 1966. On a per family basis, this was \$2,793 in 1957, \$3,899 in 1963, and \$7,879 in 1966. While the returns in 1957 and 1963 were rather low, the 1966 returns were somewhat more favorable.

### FUTURE PLANS

The farmers were asked about their plans for the near future now that their expansion was completed. Seven of the 19 expected to maintain their operation about as it was when they were interviewed. Five others planned to increase their herd size still more in coming years. Two planned to make some changes in their dairy practices, but they were not planning to increase herd size. Two expected to quit dairying and raise cash crops, and by 1966 these two had quit dairying. Two others said their plans would depend on their son's interest in the farm operation—if the son wanted to continue farming they would continue; but, if the son decided to quit farming, they would reconsider their plans. One farmer planned to stop growing any cash crops and go completely to dairying.

When questioned whether they could handle more cows with their existing facilities and equipment, seven said they could not. The other 12 felt they could handle more cows either by hiring more labor to help with the cows or by spending more time milking.

The 12 who felt they still had growing room were asked whether they planned additional expansion. Four were not planning further expansion, and three reported planning only a change in the physical aspect of the dairy operation rather than in the number of cows. Two replied that further expansion would depend upon finding labor to help with the operation. Three were uncertain: their decision would depend on such things as whether high producing cows were available or whether they wanted to put more effort into the dairy operation.

### SUGGESTIONS TO OTHER DAIRYMEN

On the basis of their experience, the farmers were asked what advice they would give others planning a transition to a large-scale dairy operation. Replies covered a wide range from land use to labor and credit. In several instances advice was contradictory. The major points were:

### Plan Carefully for Feed Needs

About half the farmers recommended that an expanding dairy farmer plan to raise all his own feed. Several pointed out that they would plan to grow their own feed even at the expense of reducing acreage in cash crops, if necessary. One farmer suggested that it was often possible to rent additional land on which additional feed could be grown and that renting might be preferable to buying during an expansion.

The push for more feed to supply an expanding dairy herd often necessitates growing more corn and expanding existing facilities. Growing more corn or increasing total acreage may make larger capacity machines necessary. Finally, there may be cases where additional land is needed to support an expanded herd. If the expanded operator buys a neighborhood farm, however, he may add a great deal to his debt load.

### Get Help in Planning Building Changes

Study farmers generally agreed that it was important to consider prevailing winds, snow removal and drainage when planning building sites. A dairy farm management specialist could help with related problems of having "room to grow" in the future and considering various features which might be included in the buildings. But whether the expanding operator should build new buildings or remodel present buildings was a point of disagreement.

Most farmers felt that the expanding operator should build a new milking parlor and housing area for the cows. Older buildings could be used for heifers, hay and storage. With the new milking parlor and housing, the potential efficiencies in labor use could be achieved.

Several farmers emphasized the importance of the present setup to the decision. These farmers felt that if the buildings were in reasonable condition, it would be desirable to remodel and build on rather than to erect new facilities. Undoubtedly, this decision would depend on the individual situation, whether there were possibilities for adding on and whether he has the resources to consider major new buildings. These farmers talked with county agents, farm management specialists, dairy specialists, and farm lenders to help them assess the alternatives.

### Keep Machinery Costs Down

The recommendations on machinery are rather consistent. About two-thirds of the sample farmers felt that an expanding operator should use his present equipment if at all possible while he was expanding. They agreed that expansion put a great deal of pressure on income and that additional debt payments for new machinery might be a great burden. Six farmers specifically mentioned the possibility of hiring custom operators during the critical expansion period. At the same time most farmers recognized that it might be necessary to buy larger tractors and machines to improve efficiency in working a larger acreage. Apparently many of them felt that there is a danger that the expanding farmer might "get talked into" buying too much new equipment at a critical time when his income would not support it.

Two other points were made by individual farmers. One pointed out the importance of buying a reliable brand from a reliable dealer rather than risking a purchase of an off-brand for which parts might not be easily and quickly available. Another recommended that an expanding dairy farmer have his own equipment for handling hay and silage in order to insure feed quality.

### Have Dependable Labor

Labor was a major problem in expansion according to half the farmers. In fact, it was enough of a problem that 14 farmers recommended that the expanding operator plan to get along mainly on family labor. Several farmers who had problems keeping hired labor concluded that family labor was the only dependable labor. Four respondents pointed out the importance of paying adequate wages to keep good hired labor. One farmer stated strongly his preference to use older men with maturity rather than "kids." Another farmer even went so far as to say that a middle-aged farmer shouldn't expand without a younger family member who could work into the operation.

### Use Credit Cautiously

The farmers had a cautious attitude toward the use of credit. Six felt expansion should move slowly to keep debt to manageable size. Throughout the questionnaires, the attitude was that the less credit used in expansion the better. Eight farmers suggested that an expansion plan should rely heavily on longterm rather than short-term loans. With longer term credit, there would be less pinch on income for quick debt repayment. Three farmers indicated that they thought the farmer's equity should be at least 50 percent in any operation.

Again on this point, two farmers emphasized the importance of getting competent advice on financial aspects of the expansion. As one farmer put it, "If the lender won't finance you, you better get out because he knows the score."

### **Improve Management Capabilities**

Several other pieces of advice were offered by the respondents. Half mentioned the importance of good management, especially the ability to supervise labor and take time to manage the operation more effectively. Taking time to read about new developments, keeping up with new methods, and budgeting ahead for income and expenses were three specific items listed under managing more effectively.

### CONCLUSIONS

Study farmers expanded primarily in hopes of improving their income. In many cases, a second or third partner had just come into the business or was to come into the business soon. Hence, there was the suggestion that more income was needed to support more families as well as to support them at a higher level.

Net farm income increased from \$9,200 in 1957 to \$15,300 by 1963 and to \$24,400 by 1966. On a per family basis, this was \$5,829 in 1957, \$9,082 in 1963 and \$13,836 in 1966. The return to the operator and his family for their own labor and management after deducting a charge for the use of capital investments was \$2,793 in 1957 and \$3,899 in 1963 on a per family basis. By 1966, it had risen to \$7,879.

*Credit* was not a major problem for most expanding operators as these operators were relatively well established with a number of years of farming experience. Equity ratios were favorable. In addition, much of the expansion was generated "from within" as the increase in cow numbers came primarily from home grown stock.

Labor problems were a major difficulty for nearly every farmer. Some had solved the problem by relying almost entirely on family labor (including the partnership arrangement) while others considered quitting dairying because of it. Even those who had a relatively dependable hired man were concerned that he might be attracted by other jobs with higher wages and better work hours. The going wage rate for such hired men was from \$350 per month to \$100 per week (1957-1963) for 60-70 hours of work. Farmers felt uncomfortable because there were often better paying jobs available requiring but 40 hours of work per week.

The operator thinking of expanding needs to know where he'll get his labor. If he is to obtain the major share from his family, that in turn will limit expansion to what they can handle. If he plans on hired help, the operator will want to insure that this labor be as reliable as possible and this may mean meeting wage competition. Also, to justify higher wages, the operation needs to be organized for labor efficiency.

Feed needs were another important consideration in expansion. Sample farmers were nearly unanimous that there be sufficient land base to grow all, or a major part, of the feed needs. Those who could not grow all their feed did typically grow their high concentrate feeds such as corn and corn silage, then purchased additional hay.

Loose housing-parlor arrangements were chosen by most expanding operators, particularly those expanding to 100 or more cows, depending on their original facilities. Their main reason was the lower labor requirement per cow with loose housing-parlor. Several utilized present buildings and facilities and expanded with stanchions rather than build a completely new setup. Others built some new buildings and used old buildings for young stock or storage.

Some sample farmers felt they had made mistakes in the type of milking parlor they built. Generally those who had built double herringbone parlors were well satisfied. Farmers obtained advice from specialists, their county extension agents, and had visited other farmers' milking parlors to get ideas and evaluations concerning layout, type and building capacities before finalizing their own expansion plans.

Partnership arrangements were common. About half of the sample farmers were operating under partnerships which started out in many different ways. In some cases, the junior partner purchased a share of the personal property and then obtained a share in the real estate several years later. In other situations, each partner owned part of the combined farm unit or the junior partner owned a small fraction of the land himself and leased the remainder from his father with personal property held jointly.

While partnership arrangements varied with individual circumstances and goals, a number of partners expressed concern over the arrangements, particularly over inheritance. In some instances, the senior partner had made no will leaving the junior partner in a nebulous situation. If the real estate were all in the father's name, with several other brothers and sisters the junior partner could be put out of business when the estate was settled. Share arrangements sometimes brought dissension, generally from the partner who felt he was contributing more labor, management, and/or capital than his share in the profits.<sup>7</sup>

<sup>&</sup>lt;sup>7</sup>For a discussion of the problem of distribution of shares in a fatherson partnership, see Hill, E. B. (1966). *Father-Son Farming Agreements: Some Important and Troublesome Features*. Mich. Agr. Expt. Sta. Res. Rep. 56.

Concern over partnership agreements points up the importance of competent legal consultation. All partners need to understand the details of the arrangements and it is desirable for each partner to have a will; and since the distribution of the estate under that will affects the business, pertinent terms of the will should be made known to the other partners. In addition, other provisions such as partnership life insurance should be made so that the business can be continued without undue duress if one of the partners should die or become incapacitated. Finally, any partnership arrangement needs provision for changing the terms of the partnership when circumstances change.

The *rate of expansion* was one of the problems this research had hoped to answer—whether expansion might best be undertaken gradually or in one large jump. By and large sample farmers preferred to grow from within and in only two or three instances did farmers purchase a number of additional animals to expand rapidly. One of those who did felt afterward that gradual expansion would have been better as he had both breeding and production problems with his purchased cows. One possibility which was untried was the purchase of a large number of open heifers which might be preferable to buying older cows. Most of the sample farmers added to their herd with home grown replacements keeping most of their heifers and culling less than normal. Milk production suffered somewhat because of reduced culling, however, and reduced culling lowered cattle income. However, milk production per cow over a 5 or 6 year period was increased.

Buildings and facilities often had to be expanded dramatically, of necessity. A change from stanchion housing to loose housing with a double 4 herringbone milking parlor requires substantial additional capital. Even with such dramatic changes, farmers preferred to adjust herd size gradually and "grow into" new facilities. Obtaining additional capital for such expansion was not a problem as indicated earlier, but farmers did feel that too often credit for such changes was written for repayment too quickly.

In general, sample farmers were satisfied with expansion. Income improved, and many, because they had moved to a two or more man operation, were able to "get away" from the farm once in a while. It was also agreed that expansion did not solve all their problems. In fact, it was often true that different problems such as feed and labor arose with the expansion to larger operations, and the problems that did arise were more critical because stakes were higher.