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Economic and Organizational Aspects of Cooperative Feedlots

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ECONOMIC AND ORGANIZATIONAL ASPECTS OF



COOPERATIVE

FEEDLOTS

ECONOMICS DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE COLLEGE, BROOKINGS

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FOREWORD

The cooperative organization of specialized large-scale feedlots, described in this bulletin, is not the only means open to South Dakota farmers and investors who want to enter the feeding business. A study of the cooperative feedlot was made because so little is known of its potential compared with other forms of business organization. In no case should it be inferred that the Economics Department, South Dakota State College, is recommending that farmers and investors

follow this route in all instances. Other ways of organizing a cattle feeding business include individual proprietorships with ample credit, private corporations, vertical integration contracts, and partnerships.

This study of cooperative feedlots is not exhaustive. It does not begin to answer all the questions that will arise. It does, however, give many of the considerations that groups should keep in mind when organizing and operating a feedlot on a cooperative basis.

SUMMARY

The growth of large-scale cattle feeding operations is one of the most noticeable changes in the cattle industry in the United States during the past few years. Advances in technology in feed processing and distribution, improved rations, and higher quality livestock have brought about lower cost feeding gains. Because some of the new equipment requires a high initial investment, larger scale feeding operations may be necessary to take advantage of these opportunities; moreover, economics of scale have been shown to exist in cattle feeding.

In South Dakota, the cooperative feedlot may be one method for the livestock producer and feeder to expand feedlot operations. The production potential within the state exists for expanding cattle feeding. Production of corn, barley, oats, and sorghum has averaged 5 million tons annually for the past 15 years in South Dakota. Yet only about one-third of the cattle available for feeding in South Dakota from 1956 through 1959 were actually fed out.

This study was conducted to investigate the alternatives in organizing, operating, marketing, and financing a cooperative feedyard in South Dakota and to determine the economic feasibility of cooperative feedyards as a means of expanding cattle feeding operations in the state.

Organizing the feedyard as a new cooperative appears to be preferable to joining an existing co-

operative. A separate cooperative organization would assure that the feedyard was operated in the best interest of its members and afford more flexibility in decision making. Organizing as a part of an existing cooperative might reduce the capital requirements, however.

Many of the considerations related to large-scale feedyards operated under other types of business organization apply to the operation of a cooperative feedlot. Probably the most critical concern in operating a cooperative feedyard is selecting the right manager. Another decision is whether to pool cattle or retain individual ownership. Pooling cattle on feed has advantages in feedlot operation and marketing. However, since pooling requires additional operating capital and a uniform quality of cattle, individual ownership of cattle in the feedyard may be desirable. A straight tonnage markup on feed consumed is a method of charging which combines accuracy in allocating costs with the simplicity of a single charge. A written contract between the cooperative and the individual consigning animals for feeding helps insure an understanding of the responsibilities and liabilities of both parties. Prompt collection of feeding bills places responsibility for providing operating capital on the patrons.

Efficient marketing of slaughter animals is important to the success of a feeding enterprise. Selling through auction markets, terminal markets, or directly to the packer at the feedlot each offer certain ad-

vantages. Operation of a slaughter plant does not appear feasible for a cooperative with the volume described in this study. Selling by contract may become more important in South Dakota in the future. The cooperative membership should explore and evaluate the market outlets available.

Financing a cooperative feedyard may require funds from several sources. Membership fees set at a high level raise capital and encourage membership participation in the enterprise. Certificates of indebtedness and preferred stock are often attractive investments in a cooperative for both members and nonmembers. Other means of membership financing include common stock, deferred patronage refunds, and revolving funds. Local banks and the Omaha Bank for Cooperatives are potential sources of financing for a cooperative feedyard in South Dakota.

The investment per animal fed was shown to be lower for a 5,000-head capacity feedyard than for a 200-head farm feedlot. The bases for comparison were budget estimates at current costs. Annual capital costs per animal fed were higher for the farm lot when uti-

lized 8 months of the year than for the cooperative lot utilized at full capacity. However, when the farm lot was utilized on a year-around basis, the annual capital cost per animal fed was lower than for the cooperative lot.

Budget estimates of total daily nonfeed costs per animal were 2.9 cents for the 5,000 head lot operated at full capacity (7,500 head yearly), 6.8 cents for the farm lot when 200 head were fed annually, and 6.4 cents when the farm lot was operated at full capacity (300 head yearly). Budgets were based on feeding 650-pound yearling steers 240 days to a finished weight of 1,150 pounds.

Returns over costs for the cooperative feedyard utilized at full capacity were greater than for the farm feedlot. The difference was less, however, when the farm feedlot was utilized at full capacity throughout the year. On the basis of the budgeted analysis a cooperative feedyard utilized on a year around basis appears to be economically feasible. It offers the producer a means of expanding his operations without the need for greater managerial ability or a large individual capital investment in plant and equipment.

Cooperative Feedlots

Gerald E. Marousek and Harlan J. Dirks¹

During the past few years the cattle feeding industry in the United States has undergone many physical, technological, and geographical changes. One of the noticeable changes has been the growth of specialized large-scale cattle feeding operations. Most of these "beef factories" are located on the west coast and in the southwestern states. There are a number of reasons why these areas are suited for cattle feeding, including climate, extensive irrigation, and the westward shift in population resulting in an increased demand for meat products.

Most of the specialized large-scale feedyards are privately owned. Some of the larger ones are organized as corporations or partnerships. The cooperative feedyard is a relatively new type of organization. Although only a few are in operation at present, interest in the organization of cooperative feedyards is developing.² Whatever the type of organization, it appears that large-scale cattle feeding is feasible and that economics of scale exist.

Reasons for Making Study

Should increased cattle feeding be brought about in South Dakota by expanding the number of feed-

lots or increasing the volume of feedlot operations?

In 1958 more than 1,200,000 head of feeder cattle were produced in South Dakota while 388,000 slaughter cattle were marketed. Only about one-third of the cattle available for feeding were actually fed out in South Dakota for the years 1956 through 1959 (Figure 1).

Feed grain production figures also indicate that South Dakota has a potential for an increased cattle feeding industry. Production of corn, barley, oats, and sorghum has averaged 5 million tons annually for the past 15 years. An increase in the production of feed grains is likely to result from improved technology and a shift

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Acknowledgement is made to Arthur W. Anderson, farm management specialist, Leonard R. Benning, associate economist in dairy marketing, and Louis Lubinus, extension agricultural engineer, South Dakota Cooperative Extension Service, for their help with this study.

²Cooperative feedyards are located in Oklahoma City, Oklahoma; Edwall, Washington; Pendleton, Oregon; and Bainville, Montana. Information on the latter is given in *South Dakota Farm and Home Research*, Vol. XII, No. 2, Spring 1961.

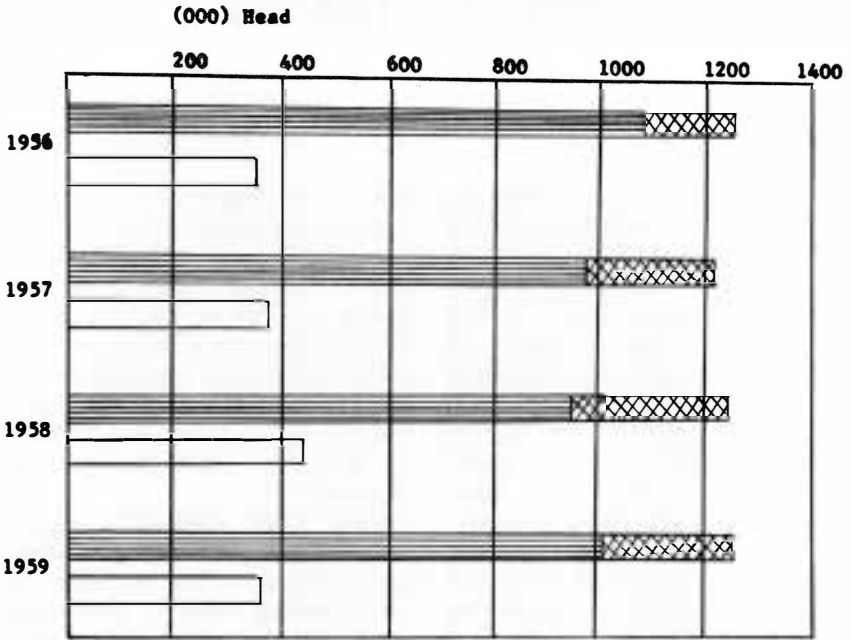





Figure 1. South Dakota Production of Cattle Available for Feeding and Fed Cattle Marketed

-  South Dakota Produced Feeder Cattle*
-  Feeder Cattle Shipped into South Dakota
-  South Dakota Fed Cattle Marketed

Source: South Dakota Crop and Livestock Reporting Service
Sioux Falls, South Dakota

*Includes previous year's calf crop minus deaths, farm slaughter, and stock used for replacement purposes.
Includes both beef and dairy animals.

from cereal grain production. This production potential, along with the increased use of irrigation within the state, increases the possibility for expanded cattle feeding in South Dakota.

If the lack of large-scale feeding enterprises is an obstacle to increased cattle feeding in the state, perhaps South Dakota farmers should consider the possibilities of pooling their resources into large-

scale cattle feeding units. The organization of a cooperative feedyard is one way that farmers can increase the scale of their feeding enterprise when the capital investment in equipment is too high for the individual producer.

Objectives and Method

This study is made to serve as a guide to persons interested in the organization and operation of a cooperative feedyard. Specific objectives are: (1) to investigate the alternative ways of organizing, operating, marketing, and financing a cooperative feedyard and, (2) to determine the economic feasibility of a cooperative feedyard.

Information for the study was obtained in personal interviews, by correspondence, and from published material. One cooperative feedlot in Montana was visited; the management and organization of others in Oregon, Oklahoma, and Washington were studied. Regional cooperatives and governmental agencies provided source material on cooperative organization and financing. Information in their specific areas was obtained from representatives of South Dakota livestock marketing and processing firms and from feed dealers. The alternatives outlined were based on general cooperative principles and the experience of commercial feedlot operators.

The investment and labor costs for a cooperatively organized feedyard of 5,000 head capacity were budgeted on the basis of information collected from case studies,

previous research, and engineering estimates. Similarly, the total non-feed costs of a farmlot feeding system of 200 head capacity were budgeted. These systems were budgeted for 650 pound yearling steers fed 240 days to a finished weight of 1,150 pounds. The estimated net return per animal fed in a farm feedlot was compared with the estimated net return from the larger scale feeding operation. Current cost and price data were used; they cannot provide a picture of what might be expected in the future. However, the budgets can be adjusted to accommodate various prices.

ALTERNATIVE WAYS TO ORGANIZE A COOPERATIVE FEEDYARD

The method of organizing a cooperative feedyard will depend to a large degree upon the possibilities in a local community and the preferences of the members. Two alternative organization methods are discussed here.

1. Part of an existing cooperative: In some cases it might be feasible and advantageous to organize as part of an existing cooperative. Record keeping, financing, management, and the distribution of refunds could be simplified under this system. There are many other requirements of a feedyard that could complement the services offered by existing cooperatives. A grain marketing cooperative could assist in procuring feed grains. A feed supply cooperative, through expanded output, might be in a good position to

serve the feedyard. A marketing cooperative could be utilized in marketing the finished cattle as well as in helping supply feeder cattle from nonmembers.

Even though the feedyard would be considered as part of the cooperative, generally it is advisable to organize as a separate department. In all probability, only a limited number of the members would be using the feedyard service at any given time. A policy of membership in a new department would need to be established. Because the feedyard would represent a considerable investment, it would not be advisable to charge all of its construction costs against the original association; the feedyard may not be used by the entire membership.

One of the main advantages of organizing within an existing cooperative is in reducing the total capital outlay. This is especially true when existing feed preparation facilities can be utilized. One of the largest items of expense in organizing a cooperative feedyard involves the costs of the feed mill.

On the other hand, a modern feedyard is a highly specialized enterprise. The advantages in utilizing existing facilities might be more than offset by disadvantages. The distance of the feed mill from the yard site will influence the cost of feed distribution. The problems associated with the preparation of complete rations, including silage and hay, at a mill located some distance from the yard can be a serious disadvantage.

2. Organizing as a new cooperative: The organization of a new cooperative feedyard may be the more advantageous alternative in the long run, even though the initial capital outlay is greater. When a new feedyard is constructed the design and location of the feed processing facilities can be tailored to the needs of the particular yard.

A new cooperative could still work closely with other cooperatives in the procurement of feed ingredients and supplements. Such an arrangement would tend to stabilize the operations of both cooperatives. However, the feedyard would be operated in the interest of its members, not in the interest of another cooperative. Also, as technological and economic conditions change, the independent association would be free to make decisions on the basis of the probable effects on the feeding enterprise only.

Other Aspects of Organizing A Cooperative Feedyard

Several physical factors need to be considered when planning a cooperative feedyard, such as location, drainage, design, and water supply. Expansion may be limited by deficiencies in these areas. A long range plan should be developed which will allow flexibility in growth through an increase in the operations of present members, an expansion in membership, or the undertaking of additional functions by the cooperative.

The requirements for membership should be clearly defined. A

limited, rather than open, membership might be preferred. In any event, certain standards for membership should be established. One requirement might be that sufficient cattle be provided to fill a pen at the feedyard. It would also be advisable to obtain some assurance of continued membership support. A relatively high initial investment would be one means of helping assure support.

A policy of full utilization of the feedyard needs to be established and adhered to. Building the yard to fit the needs and capabilities of the immediate membership will help minimize the problem of under-utilization. Building a yard for anticipated membership does not appear to be economically sound.

OPERATING POLICIES

There are many factors to consider relating to operating policies of a large-scale feedyard. Most of the more important points discussed here apply to all large-scale feedyards, whether organized as a cooperative, corporation, or partnership.

Management

Probably the most important single factor in the success of a cooperative feedyard is management. The manager must have a good background in feeds and feeding and must be a good businessman. He will have to assume full responsibility for the operation of the feedlot. His greatest responsibility will be to see that the yard operates as closely to capaci-

ty as possible and that adequate feed is on hand at all times.

The manager will be responsible for supervising the labor required to operate the feedlot. A rule-of-thumb is that seven to eight employees are required to handle a 5,000-head capacity feedlot. In most yards the manager is also responsible for keeping the records. Usually it helps to have a part-time bookkeeper, especially when the lot is of sufficient size to warrant the additional expense.

The level of management cannot be over-emphasized in considering the success of a feedlot. An incentive salary or a bonus plan program of some type may be necessary to attract the kind of manager needed.

Pooling Arrangements

An important decision to be made by members is whether to operate the yard on an inventory contract basis or to maintain individual ownership of the cattle. The procedure used in one cooperative feedyard is to put each member's cattle in an individual pen and to keep separate records of feed consumption for each lot.³ Under the inventory contract system the cattle are pooled and no ownership identity is maintained. An alternative method that may be used is a combination of the individual ownership and the pooling systems. Under this system, members are given the opportun-

³Policy of the Little Muddy Cooperative Livestock Feeders Yard, Bainville, Montana.

ity to pool their cattle or have them fed separately.

Although there are many advantages to be gained by pooling, it is doubtful that a new association could operate initially under this plan because of lack of the capital needed to purchase the cattle outright. Since capital would be a limiting factor when using the pooling method, this study directs more attention toward the individual ownership arrangement. However, as capital reserves build up, the association may want to develop a pooling system in its long-run planning.

The advantages of operating the feedlot on a pool basis are: (1) requires fewer pens, (2) lessens record keeping, (3) makes it easier to group and handle small incoming lots of cattle, (4) facilitates grouping of cattle according to weight, quality, and grade for marketing, (5) levels seasonal price variations by continuous year-around marketing, (6) eliminates under- and over-utilization of individual pens, and (7) provides greater potential bargaining power when marketing.

The most difficult part of the pool, or inventory, system is developing a formula that is acceptable to the entire membership. A brief example of the inventory contract system is described below.

Members of the cooperative deliver their cattle to the feedyard to be fed. The cattle are sorted, graded, and appraised according to current market prices. If the member agrees to the price, he

signs a contract and the cattle are turned into the lot. He receives either cash or a book entry for the value of the cattle. If he refuses the price, he can ask that the cattle be fed separately.

Members using the inventory basis become eligible for patronage refunds after the cattle have been in the lot a certain length of time. Refunds are based on net pounds of gain and the margin above all costs per pound of gain. With the pooling system, the profit or loss is calculated on the entire operation and is referred to as averaging. Members are prorated refunds in direct proportion to the amount of business done with the cooperative, which would be the net pounds of gain in relation to the pounds of feeder livestock pooled.

The pooling system is complicated by the fact that the quality of the cattle will vary among members. One of the more satisfactory ways of handling quality differences is by adjusting inventory values at the time of entry. A fairly high degree of uniformity of quality is needed to make the pooling system work effectively. At any rate, certain minimum quality standards would need to be established.

Schedule of Charges

Several criteria can be used to develop a schedule of charges. Charges must be set at a level so that income to the cooperative will cover the current operating expenses and build a reserve for fu-

ture emergencies, depreciation, and other needs of the yard. This is an operating policy which must be determined by the board of directors and the members.

Basically there are four methods of making charges for cattle being fed in the yard:

- (1) Charge straight tonnage feed markup in addition to cost of the feed.
- (2) Charge daily yardage plus feed costs.
- (3) Charge per pound of gain from entry into the lot until departure.
- (4) Charge a flat daily rate per head fed.

The first two methods are the ones most commonly used by commercial feedlots. However, meat packers who contract for cattle feeding usually insist on the cost per pound of gain type of agreement. Most yards tend to use a uniform system for all their customers.

The straight tonnage markup offers accuracy in allocating costs combined with the simplicity of a single charge. In using this system, it is important to have adequate equipment for measuring, weighing, and mixing the feed. The general procedure is to have the yard prepare a list of various rations available and the price per ton. Enough markup is added to each ton of feed to cover the operating expenses and whatever margin the cooperative considers necessary.

Contracts, Credit, and Custom Feeding

The matter of written or verbal contracts is a problem of local management. Complete understanding on the part of the members regarding their responsibilities and liabilities is important. Members are more likely to arrive at such an understanding if there is a written agreement. Written contracts also necessitate a clear formulation of credit policy.

A definite policy for collecting feed and yardage bills should be established. Collecting bills monthly or bi-weekly places responsibility for providing operating capital on the patrons.

Some cooperative feedyards follow a policy of allowing members to sell surplus feed to the cooperative. The members may accept cash payment or receive credit on their account.⁴ This procedure may reduce the amount of operating capital needed as well as assist in the procurement of an adequate feed supply.

Custom feeding of cattle for nonmembers of the cooperative may be advisable under certain conditions, especially as a means of keeping the yard operating at full capacity. Nonmember customers could be farmers and ranchers, meat packers, and speculators. The policy for charging could be the same for nonmembers as for members, but with the savings from the entire operation prorated back to

⁴Policy of the Little Muddy Cooperative Livestock Feeders Yard, Bainville, Montana.

the members in the form of patronage refunds.

Losses and Sickness

In most commercial feedyards the owner of the cattle assumes all death losses. Regardless of the policy adopted for death losses, complete understanding by those concerned will eliminate disagreements when losses occur.

All commercial feedyards have some policy for handling sick animals. Usually they are removed to an infirmary pen for treatment. In some yards a veterinarian makes a daily inspection of the pens to detect sick animals. The most common procedure is to charge the owner for the cost of treatment. However, some commercial and cooperative feedyards assume all veterinarian and drug costs, considering them as an operating expense.⁵

Patronage Refunds

Feed tonnage utilization and dollar volume of business done with the cooperative are two preferred methods for computing patronage refunds. Either of these methods would be more satisfactory than to prorate refunds on the basis of the number of head fed, since the age, weight, and feed consuming ability of the animals may vary widely.

MARKETING CHANNELS AVAILABLE

Efficiencies in the marketing phase of a large-scale feeding operation are, unfortunately, often neglected in favor of production

efficiencies. The question of whether to put additional resources into marketing activities or to use these resources in production and utilize established marketing channels is important to the membership of a cooperative feedyard. Information on the marketing alternatives available to a cooperative is a prerequisite to arriving at a sound decision.

The advantages of a feedyard organized on a pool basis are particularly evident in the marketing phase. The most important advantages are being able to sort all of the cattle according to weight and grade, leveling out seasonal price fluctuation by continuous marketing, and possibly achieving greater bargaining power in selling. Marketing on an individual basis would mean the handling of many small loads of cattle which may create selling and transportation problems. However, since pooling may not be feasible during the early years of operation of an association, this study is directed toward the individual ownership arrangement.

One of the problems associated with the use of certain marketing channels is that of having an adequate volume. Annual volume can be computed by adding to the output of the cooperative yard (7,500 head in this study) the receipts from two additional sources. These sources, shown in Figure 2, are: (1) receipts from independ-

⁵Policy of the Tovrea Land and Cattle Company Commercial Feedlot, Phoenix, Arizona.

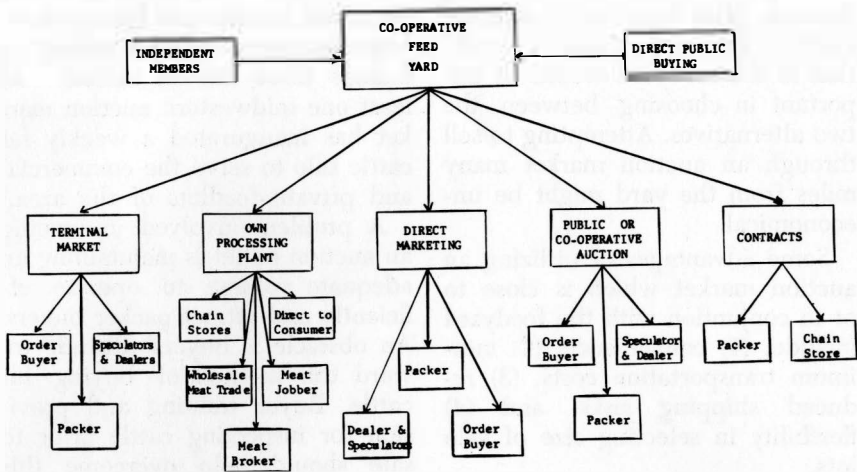


Figure 2. Alternate Marketing Channels Available to a Large Scale Feed Yard

ent members of the cooperative who feed on their own farms, but use the association for marketing purposes, and (2) direct public purchases of slaughter animals when necessary to satisfy slaughter plant and market order requirements, if the feedlot has such an arrangement.

Five possible marketing channels are: (1) ownership of a processing plant, (2) the auction market, (3) direct sale to packer, (4) the terminal market, and (5) sale by contract (Figure 2).

Cooperative Processing Plant

One market outlet open to a cooperative feedyard is to operate its own processing plant. Two critical factors would be the volume of livestock available and the level of management. Federal inspection is a requirement for meat moving in interstate commerce. An

estimate places the minimum volume necessary for a plant marketing meat in interstate channels at 40,000 head of cattle annually.⁶ If the plant were selling beef only within the state the potential market would be much more limited. Securing a manager capable of operating a plant would be critical. Merchandising dressed beef requires knowledge and resources. The operation of a slaughter plant by a feedyard of the volume discussed in this report does not appear to be a feasible method of marketing.

Auction Market

A cooperative feedyard might market cattle through an auction either by using the facilities of an

⁶Del Greenlee, Plant Manager of the Greenlee Packing Company, Sioux Falls, South Dakota, in a personal interview, April 16, 1960.

existing auction or by constructing its own. The location of existing auction market facilities in relation to the feedyard would be important in choosing between the two alternatives. Attempting to sell through an auction market many miles from the yard might be uneconomical.

Some advantages of utilizing an auction market which is close to or in conjunction with the feedyard include: (1) convenience, (2) minimum transportation costs, (3) reduced shipping risks, and (4) flexibility in selecting size of sale lots.

An argument in favor of the association's building its own auction is that the physical plant would be built to the precise needs of the feedyard. Adjoining alleys and holding pens would minimize the physical movement of livestock. If a local association should decide to build its own auction, it would seem advisable to set it up as a separate department even though it is considered a part of the cooperative. This would not only provide a neutral marketing agency, but it would allow the auction to serve livestock marketing functions of the community in addition to those of the feedyard.

In communities where adequate marketing facilities are lacking, the construction of a cooperative livestock auction market might have considerable potential. The auction in such a case would be constructed to serve the general public as well as the feedyard. New auction facilities have been con-

structed in several states in recent years and farmers and feeders have been interested in and willing to finance these market outlets. At least one midwestern auction market has inaugurated a weekly fat cattle sale to serve the commercial and private feedlots of the area.⁷

A problem involved in owning an auction outlet is maintaining an adequate volume to operate efficiently and attract packer buyers. An obstacle is buyers' attitude toward this method of buying fat cattle. Buyer training and provision for inspecting cattle prior to sale should help overcome this obstacle.

Direct Sale

Two factors in favor of selling direct from a large-scale feedyard are that the input of resources in marketing is small and that a large concentration of cattle will tend to create its own market, attracting buyers to the yard. Selling slaughter cattle direct to the packer, with the packer buyer bidding on and taking possession of the animals at the feedyard has several advantages for members of the cooperative. Compared with shipping to market, direct selling results in (1) less cash marketing expense, (2) greater convenience, (3) reduced shipping risks, and (4) elimination of the hazard of a price drop while cattle are enroute to market.

Terminal Market

Terminal public markets are the most important outlet for slaugh-

⁷McKinnely-Winter Commission Company, Dodge City, Kansas.

ter cattle in South Dakota and other midwestern states. Among their assets as a market are: (1) a concentration of buyers of all types on the market, (2) participation in a nationwide market news network, and (3) the availability of professional salesmen to represent the seller. The additional cost of transportation and other services incurred when selling at a terminal market, as compared to selling at or near the feedyard, would need to be considered when evaluating the marketing outlets available.

Sale by Contract

Sale of slaughter cattle by contract is currently of little importance in South Dakota. It may be of greater importance in the future because of integration in the livestock feeding and packing industries and the desire of packers to stabilize their operations, level out seasonal price fluctuations, and achieve a higher degree of quality control.

Many types of contracts are used. The most common practice is to complete the contractual arrangement two or more weeks in advance of the marketing date. Contract selling offers a hedge against future price drops and gives a basis for credit for the cooperative. An off-setting factor may be the buyer's greater knowledge of future price trends.

METHODS OF FINANCING

Financing a cooperative enterprise of the size budgeted in this

study is a major undertaking. Assistance from persons with experience in cooperative financing can be valuable. Three basic sources of capital for financing a cooperative feedyard are the cooperative members, nonmember investors, and lending agencies. Each source provides several possible means of obtaining funds.

Membership Capital

1. **Membership fees:** A cooperative feedyard manager has recommended that a minimum of 50% of the necessary capital for a feedlot operation be provided through membership fees.⁸ This type of financing encourages the membership to maintain democratic control of the enterprise, helps assure that the feedlot will be operated in the interest of the membership, and places responsibility for the success of the venture on the membership. A relatively large membership fee will tend to stimulate membership participation in the enterprise.

2. **Sale of stock:** Purchase of stock is a condition for membership in many cooperatives. The number of shares and the par value may vary, although \$25 to \$100 is typical.

The total amount which can be obtained through the sale of capital stock is not likely to be sufficient to finance a large-scale feedlot.

⁸Clarence W. Detienne, Manager of the Little Muddy Cooperative Livestock Feeders Yard, Bainville, Montana, in a personal interview December 29, 1959.

Funds may be borrowed by issuing certificates of indebtedness which bear interest. This method offers possibilities for financing a new cooperative with a limited membership.

The advantage of certificates of indebtedness is that members are willing to invest funds when they know that they will receive a specified rate of interest. The certificates may attract capital which would not be invested in a cooperative's capital stock. Certificates also have priority over capital stock in the distribution of assets in the event of business failure.

4. Preferred stock: Some cooperatives sell preferred stock with a fixed dividend. Preferred stock is equity capital, but the cooperative may face an income tax liability on the amount paid in dividends. In contrast, interest on certificates of indebtedness is considered a business expense.

5. Deferred patronage refunds: Cooperatives may obtain capital from their members by deferring patronage refunds. Rather than to pay patronage refunds in cash, certificates with a future redemption date may be issued to members. By this method member investment is in direct proportion to the volume of business done with the cooperative.

The question often arises as to whether deferred patronage refunds are to be considered as member equity or as claims against the cooperative. When the cooperative issues capital stock or stock credit

3. Certificates of indebtedness: for deferred refunds, they become member equity. In other cases they may be considered a liability of the cooperative. Sometimes legal clarification is necessary.

6. Revolving funds: Among the methods employed in paying out patronage refunds, the revolving fund has been commonly used in recent years. Patronage refunds are held by the cooperative for a certain number of years and when cash payments are made, the oldest obligations are paid first. This is one means of maintaining a constant amount of working capital and a reserve for emergencies.

7. Advance payments: Payments made in advance for feeding cattle in the yard may be used to obtain capital. This method of financing may be of value when operating capital is low or when an emergency arises. However, the use of this method will be dependent upon the willingness and ability of the membership to make advance payments to the cooperative.

Nonmember Investment

Nonmembers, whether or not they patronize the cooperative, may be willing to invest funds in the enterprise. Such persons are often willing to help finance a cooperative because they believe it will be an asset to the community.

Nonmember capital is usually obtained through the sale of preferred stock or certificates of indebtedness; certificates of indebtedness are the more widely

used. They have the same advantages whether sold to members or nonmembers. Usually a guaranteed rate of return is placed on both preferred stock and certificates of indebtedness, not to exceed 8% in South Dakota.

Loans From Other Agencies

1. Local banks: Local banks can play an important role in financing a cooperative. They can be useful in providing short-term operating capital and assisting in negotiating facility loans. Also banks generally act as loan correspondents in the local community for life insurance companies and other investment agencies.

2. Bank for Cooperatives: The Omaha Bank for Cooperatives makes loans to local cooperatives in the area which includes South Dakota. Although its policies vary with the type of business, it can loan up to 60% of the appraised value of the property of the cooperative to which the loan is made. The Bank for Cooperatives makes both physical facility loans to finance buildings and other property, and working capital loans to finance current operations.

3. Joint account dealings: The financing problems of a local cooperative can be alleviated to some extent by conducting joint account dealings. Such book credit arrangements may often be worked out with sister cooperatives for such items as feed supplies, building materials, equipment repairs, and fuel. Although this method has

considerable potential, it also has limitations inasmuch as local cooperatives are in business to serve their members, not other cooperatives.

INVESTMENT AND OPERATING COSTS FOR ALTERNATIVE FEEDING SYSTEMS

The costs of constructing and operating a farm feedlot of 200 head steer capacity and a cooperative feedyard of 5,000 head capacity were budgeted to serve as a means of comparing the two feeding systems and to act as a guide to individuals and groups interested in constructing feeding systems. The systems were budgeted for 650-pound yearling steers fed 240 days to a finished weight of 1,150 pounds.

Cost of Cooperative Feedyard

Costs for the model feedyard were placed into three categories: (1) capital requirements for constructing the feedyard, (2) capital costs on an annual basis, and (3) current operating expenses.

The total requirements for a feedyard of 5,000-head capacity were estimated at \$228,050. This figure includes the fixed assets as well as the equipment necessary to operate a modern large-scale feedyard. The estimate includes \$125,000 for a feed mill capable of preparing feed for 10,000 cattle per 8-hour day. A mill of this size allows for future expansion. It is assumed that all feed will be handled in bulk and no provision is made for pelleting. A summary of

the capital requirements is shown in Table 1 of the Appendix.

A breakdown for the estimate of the capital costs on an annual basis is shown in Table 2 of the Appendix. The total capital costs on an annual basis are \$22,337. This includes such items as depreciation, repairs, interest, insurance, and taxes.

The volume of cattle fed annually has a direct effect upon the yearly capital cost per head. When the yard is operating at full capacity, 7,500 head annually, the capital cost per head fed is \$2.98. When the total number fed drops to 7,000 the cost increases to \$3.19 per head. With 5,000 head the annual capital cost is \$4.47 per animal.

The current operating expenses include the salaries of employees, utilities, supplies, and miscellaneous expense. The total nonfeed operating costs on an annual basis are \$78,187. With the yard operating at full capacity, the daily nonfeed operating cost is 2.9 cents per head. A summary of the nonfeed costs is shown in Table 3 of the Appendix.

Cost of Farm Feedlot

Costs of a farm feedlot were computed by estimating the capital investment in feedlot equipment and current operating expenses. The total investment for a modern 200 head capacity feedlot was estimated at \$13,000. The annual capital cost on a per head basis is \$3.25 per year when 200 head are fed each year. If the

feedlot is operated on a year around basis, with 300 head fed annually, the per animal cost is \$2.25. A summary of the nonfeed costs is shown in Table 4 of the Appendix.

Current nonfeed operating expenses for the farm feedlot were estimated at \$13 per head fed. This estimate was made under the assumption that 200 head of cattle would be fed in the lot 240 days with a net gain of 500 pounds each. Labor requirements were estimated at 5 hours per head at a cost of \$1.50 per hour or a total of \$7.50. Miscellaneous expenses include veterinary expenses, death loss, minerals, and equipment operating costs. These costs are estimated to be \$1.10 per hundred-weight of gain or a total cost of \$5.50 per head.

ESTIMATED RETURNS FROM ALTERNATIVE FEEDING SYSTEMS

The estimated returns from selling 650-pound, Good-to-Choice yearling steers both from feeding in a farm feedlot and from cooperative feeding, are shown in Table 5 of the Appendix. The analysis was made by holding the price of feeder steers, feed costs, and the market value of the slaughter steers constant and comparing the nonfeed costs for the three alternatives.

The nonfeed costs for the cattle fed in the farm feedlot were estimated at \$22.35 per head when 200 head are fed annually and \$21.35 with a yearly volume of 300 head. This estimate was computed from two sources: (1) the total operating and capital investment cost,

and (2) interest on investment in feeder animals. The total operating and capital investment expense was estimated at \$16.25 per head with 200 head annual output and \$15.25 per head with 300 head. This was computed by multiplying the daily nonfeed expense times the number of days in the feedlot. The interest on investment in livestock was calculated at 5% on \$182 for 8 months or \$6.10.

An estimate of the nonfeed costs for the cattle fed in the cooperative feedlot was \$15.78. This cost was broken down into four categories which included yardage, death loss, interest on investment in feeder animals, and transportation. The yardage charges were computed by multiplying 2.9 cents times 240 days, totaling \$6.96. Since members of the cooperative are assumed to stand their own death losses, the rate was estimated at 1% for 8 months or \$1.22 per head. An additional \$1.50 was added to cover the cost of transporting the cattle to the feedlot and \$6.10 was added for interest on investment in livestock.

In this analysis, no advantage was attributed to either the farm feedlot or the cooperative for savings which may be possible from purchasing commercial feed in large quantities. However, a survey of three feed companies indicated that a saving of \$6 a ton could be made on quantity buying of supplement. With sufficient storage capacity both a farm feedlot operator and a cooperative might realize this saving.

Summary of Analysis

Feeding the steers in the cooperative feedlot showed an advantage of \$6.57 per animal over feeding 200 head of steers annually in the farm feedlot. If the farm lot was utilized at full capacity throughout the year (300 head annually) the cooperative lot showed an advantage of \$5.57 per head over the farm operation. Total returns on 200 steers from the three alternatives were as follows: (1) profits from feeding 200 steers annually in the farm feedlot plus the value of the feeder steers, \$42,130; (2) profits from feeding 200 steers in the farm feedlot with the lot utilized at capacity (300 head annually) plus the value of the feeder steers, \$42,330; and (3) profits from feeding the steers in the cooperative feedlot utilized at full capacity plus the value of the feeders, \$43,444.

Technological advances pressure toward increasing the size of the farm and ranch business and a cooperative feedyard provides a means for a farmer to expand his beef enterprise without a need for greater managerial ability or for a large individual capital investment in equipment.

The capital investment in the farm feedlot was \$65.00 per head fed with a 200 head annual volume and \$45.00 with a 300 head annual volume as compared with \$30.41 per head fed in the cooperative feedlot. The transfer of ownership in a cooperative feedlot would be simpler, too, since only a share in a specialized enterprise is involved

Appendix; Table 1. Budgeted Capital Requirements
for Feedyard of 5,000 Head Capacity

Land and Improvements	
Land—40 acres	\$ 4,000
Concrete—(for around waterers and 10 ft. behind bunks)	17,500
Feed bunks (fence line, wood).....	17,250
Pen construction (windbreak).....	6,900
Infirmary pens, loading, and holding facilities.....	1,750
Feed mill and storage.....	125,000
Other buildings—office and equipment storage.....	5,000
Two-way scale and pens.....	2,400
All weather water system and well.....	10,000
Excavation of trench silo (15 cents a yard).....	750
Total Land and Improvements	\$190,550
Manure-handling Equipment	
Used cat with scoop.....	3,000
Dump truck, used.....	1,500
Total Manure-Handling Equipment	4,500
Feeding Equipment	
Auger wagon	850
Flat bed wagon.....	250
Tractor and silage loader.....	2,800
Two trucks	3,000
Two feeding boxes.....	2,600
Total Feeding Equipment.....	9,500
Miscellaneous Equipment	
Tractor	1,000
Pickup	1,500
Cattle-handling equipment	1,000
Total Miscellaneous Equipment.....	3,500
Working capital	20,000
Total Investment Required.....	\$228,050
Investment per Head Fed Annually (7,500 head per year basis).....	\$30.41

Appendix Table 2. Budgeted Annual Capital Investment
Costs for Feedyard of 5,000 Head Capacity

Land		
Interest \$4,000 @ 5½%.....	\$ 220	
Taxes @ \$2 per acre.....	80	
Annual Cost		\$ 300
Working Capital: \$20,000 @ 6%.....		1,200
Improvements		
Feed mill and storage.....	125,000	
Pens	6,900	
Bunks	17,250	
Concrete	17,500	
Other buildings	5,000	
Infirmary pens	1,750	
Cattle scales	2,400	
Total Improvements	\$175,800	
Taxes (20-year depreciated value).....	1,250	
Interest ½ of \$175,800 @ 5%.....	4,395	
Depreciation @ 5%.....	8,790	
Insurance (50% value of mill @ \$1.30).....	812	
Repairs	500	
Annual Cost		15,747
Equipment		
Cat and blade.....	3,000	
Dump truck	1,500	
Two trucks	3,000	
Feeding boxes and wagons.....	3,700	
Water system	10,000	
Tractor	1,000	
Tractor and silage loader.....	2,800	
Pickup	1,500	
Cattle-handling equipment	1,000	
Total	\$ 27,500	
Depreciation at 10%.....	2,750	
Interest ½ of \$27,500 @ 6%.....	825	
Insurance	350	
Repairs	1,000	
Taxes (depreciated value).....	165	
Annual Cost		5,090
Total Annual Capital Cost		\$22,337

Appendix Table 3. Budgeted Nonfeed Costs for 5,000 Head Capacity Feedyard, Annual and Daily Bases

Item	Annual Cost	Daily Cost
Salaries		
Manager	\$ 7,500	\$ 20.55
Employees (8) @ \$3,600.....	28,800	78.90
Bookkeeper @ \$2,400.....	2,400	6.58
Utilities		
Electricity	4,800	13.15
Equipment Expense		
Gas and oil.....	6,000	16.44
Other	2,000	5.48
Other		
Office maintenance and supplies.....	350	.96
Veterinarian and supplies.....	4,000	10.96
Capital Cost*	22,337	61.20
Total Nonfeed Cost	\$78,187	\$214.22
Total Nonfeed Cost per Head† (7,500 head per year basis).....	10.42	.029

*Includes land, improvements, equipment, working capital (Appendix Table II).

†Does not include death loss allowance and transportation cost to yard.

Appendix Table 4. Budgeted Nonfeed Costs for 200 Head Capacity
Farm Feedlot, per Head Basis

	200 Head per Year	300 Head per Year
Feedlot Improvement Items	Capital Investment*	
Two 20x60 concrete silos.....	\$ 6,000.00	\$ 6,000.00
Silo unloader	1,250.00	1,250.00
Grain and supplement storage.....	800.00	800.00
1,500 square feet concrete.....	525.00	525.00
750 feet fence-line bunks.....	750.00	750.00
Two automatic waterers.....	225.00	225.00
350 feet fencing.....	350.00	350.00
Water system	500.00	500.00
Wiring, switches, etc.....	300.00	300.00
Power wagon	1,200.00	1,200.00
Machine use (manure spreader, loader, tractor: per hour basis).....	1,100.00	1,600.00
Total	\$13,000.00	\$13,500.00
Investment per head fed annually.....	65.00	45.00
Operating Expense Items	Cost per Head†	
Capital investment cost (20-year-life).....	\$ 3.25	\$ 2.25
Labor cost (5 hours per head @ \$1.50).....	7.50	7.50
Miscellaneous cost (gain x \$1.10/cwt.)‡.....	5.50	5.50
Total Annual Nonfeed Cost, per head.....	\$16.25	\$15.25
Total Daily Nonfeed Cost, per head068	.064

*Estimates by Louis Lubinus, Extension Agricultural Engineer, South Dakota State College, Brookings, South Dakota.

†Feeding 650-pound yearling steer for 240 days; from Hal Routhe and Paul Hasbarger, *Planning Your Cattle Feeding Program*, Leaflet FM9, Agricultural Extension Service, University of Minnesota, St. Paul 1, Minnesota, October, 1959.

‡Includes veterinary expenses, death loss, minerals, and equipment operating costs.

Appendix Table 5. Budgeted Costs and Returns for Alternative Methods of Feeding Steers*

	Farmplot feeding		Cooperative feeding
	200 head per yr.	300 head per yr.	
Price of feeder steers/cwt.†.....	\$ 28.00	\$ 28.00	\$ 28.00
Selling price of slaughter steers/cwt.....	27.00	27.00	27.00
Value of feeder steers.....	182.00	182.00	182.00
Feed costs‡			
Corn, 52 bu. @ \$1.05.....	54.60	54.60	54.60
Hay, 1,500 lbs. @ \$22/ton.....	16.50	16.50	16.50
Supplement, 160 lbs. @ \$80/ton.....	6.40	6.40	6.40
Total feed costs.....	77.50	77.50	77.50
Nonfeed costs.....	22.35§	21.35¶	15.78
Total costs (including cost of feeders).....	281.85	280.85	275.28
Market value, slaughter steers.....	310.50	310.50	310.50
Profit from feeding (per steer).....	28.65	29.65	35.22
Total returns (including value of feeder steer)....	210.65	211.65	217.22

*Yearling steers on full feed 240 days and sold as 1,150-pound Choice and Prime slaughter steers.

†Good to Choice 650-pound yearling steers.

‡Arthur W. Anderson and Leonard R. Benning, *Livestock Feeding Outlook for the 1959-60 Feeding Season*, Circular No. 509, Agricultural Extension Service, South Dakota State College, Brookings, South Dakota, September 1959, pp. 27-30.

§Includes \$16.25 operating and capital investment cost (6.8 cents per day times 240 days) plus \$6.10 interest on investment in feeder animal.

¶Includes \$15.25 operating and capital investment cost (6.4 cents per day times 240 days) plus \$6.10 interest on investment in feeder animal.

||Includes \$6.96 operating and capital investment cost (2.9 cents per day times 240 days), \$1.22 death loss allowance (1%), \$1.50 transportation cost to yard, and \$6.10 interest on investment in feeder animal.