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Cooperative Lamb Slaughtering in the Northeast

COOPERATIVE LAMB SLAUGHTERING IN THE NORTHEAST

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Cooperative Service, U.S. Department of Agricultural. ACS Report 14.

Abstract

An analysis of lamb production, marketing, meatpacking, and consumption in the Northeast indicates the need for a lamb processing cooperative. The region currently exports half of its lambs for slaughter and then buys them back for consumption. Cooperative lamb processing alternatives are described and evaluated. Four involve the possibility of using existing plants slaughtering lamb and veal calves. One involves construction of a new plant.

Key words: Lamb processing; cooperative meatpacking; lamb marketing; livestock marketing; meatpacking.

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Highlights

Sheep and lamb production in the Northeast region is continuing to decline; however, many States have begun to turn the trend around. Lamb slaughtering facilities have closed more rapidly than production has declined. Consequently, many northeastern lambs are moving out of the region for slaughter and are being shipped back again for consumption. The region's production/slaughter/consumption ratio is about 2:1:9.

Both producers and consumers would benefit if more lambs could be efficiently slaughtered in the Northeast, saving the cost of transportation to more distant packers and back again for consumption.

The level of lamb production in the region will probably support only one major firm if marketing, slaughtering, and distribution economies are to be achieved.

Five alternatives for cooperative meatpacking are possible. Four of them involve one or more existing meatpacking plants in custom slaughtering, a joint venture, leasing, or purchase by the cooperative. Several plants in the area could be utilized in this way. The fifth alternative is to build a new plant. It is the most risky but could ultimately be the most profitable alternative.

Cooperative Lamb Slaughtering in the Northeast

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Sheep producers in the Northeast are concerned about decreasing competition for their lambs. Several large- and moderate-sized slaughtering plants in the area have closed in the last 10 years. While production has declined, the number of animals slaughtered has declined faster, and lambs must be sold to fewer, more distant buyers.

Northeastern producers are close to the largest lamb consuming market in the United States but feel they are not benefiting from that location advantage, given the existing meatpacking structure. Therefore, several sheep producers' organizations in the region requested that the Agricultural Cooperative Service examine the feasibility of cooperative meatpacking as a means of changing the existing marketing system.

This report includes an analysis of the changes in the industry and their impact on producers, a description of five meatpacking alternatives producers could use, and an assessment of the suitability of existing plants to provide meatpacking services to a producer cooperative.

An engineering study showing the costs and savings of a new plant has been completed by Berger Associates for the West Virginia Department of Agriculture. Producers considering cooperative meatpacking systems should examine alternatives using existing plants as well as building a new plant.

Situation and Trends

The Northeast has experienced many changes in lamb production, marketing, meatpacking, and consumption and in the balances between production, slaughter, and consumption. The future direction of these changes will have a major impact on the success of a cooperative meatpacking venture.

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Production and Marketing

In 1980, 15 northeastern States produced and marketed 491,000 lambs and 113,000 sheep, 7 percent of the 6.7 million lambs and 8 percent of the 1.3 million sheep marketed in the United States. Ohio had the greatest lamb production in the Northeast and provided 40 percent of the region's total. Virginia was second with 22 percent. (See fig. 1 for lamb marketings by State.)

The trend in lamb marketings in Northeast has been downward, with an average annual rate of decline of 41,000 head from 1966 to 1980. Over that period, lamb marketings decreased 51 percent, just slightly less than the decrease of 54 percent for the United States. If the trend continues, the 15-State area will market only 230,000 lambs in 1985 and be out of the lamb business in 1990.

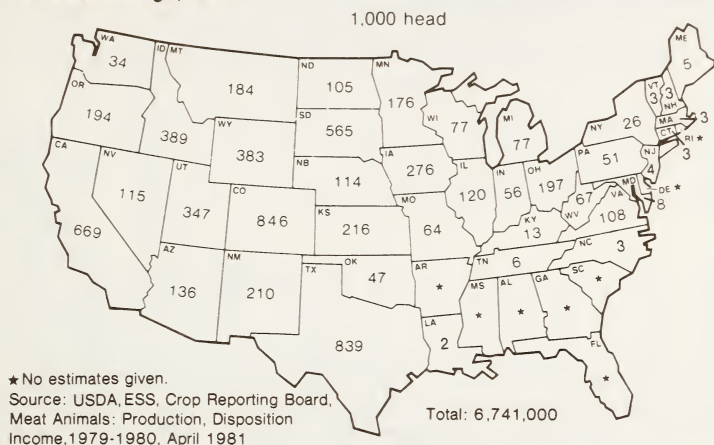
However, the regional trend has moderated since 1975. Many States have reversed the downward trend. Most of the New England States except Maine have been increasing production since 1970. Maine has been doing so since 1976. Maryland, Delaware, and New Jersey have been relatively stable since 1970. Ohio and Virginia, the two largest producing States, seem to have stopped their downward trends and are expected to increase production. Kentucky also appears to be at the bottom of its decline. New York, Pennsylvania, and West Virginia probably have not reached the turning point yet, but they are close. Projections for 1985 and 1990 are shown in table 1 and figure 2.

Lambs are marketed in the region in a definite seasonal pattern (fig. 3). The flow begins in March or April, depending on the occurrence of Passover and Easter, when many families buy small whole lambs for traditional ethnic and religious feasts. Marketings increase each month, peak in the June-through-October period, then taper off. The peaks in seasonal marketings vary somewhat by State within the region, and this helps to spread out the overall seasonal pattern (table 2). From 1981 to 1985, the peaks in the seasonal pattern are expected to moderate slightly (fig. 3).

Most lamb producing operations in the region are small scale. In fact, 84 percent of the farms selling sheep and lambs had an inventory of fewer than 100 head in 1974 (table 3).

Relatively few lambs move directly from farm to packing plant. Small-scale operations require assembly into truckload lots before shipment. Auction markets perform this assembly function. They handled about 61 percent of

Figure 1

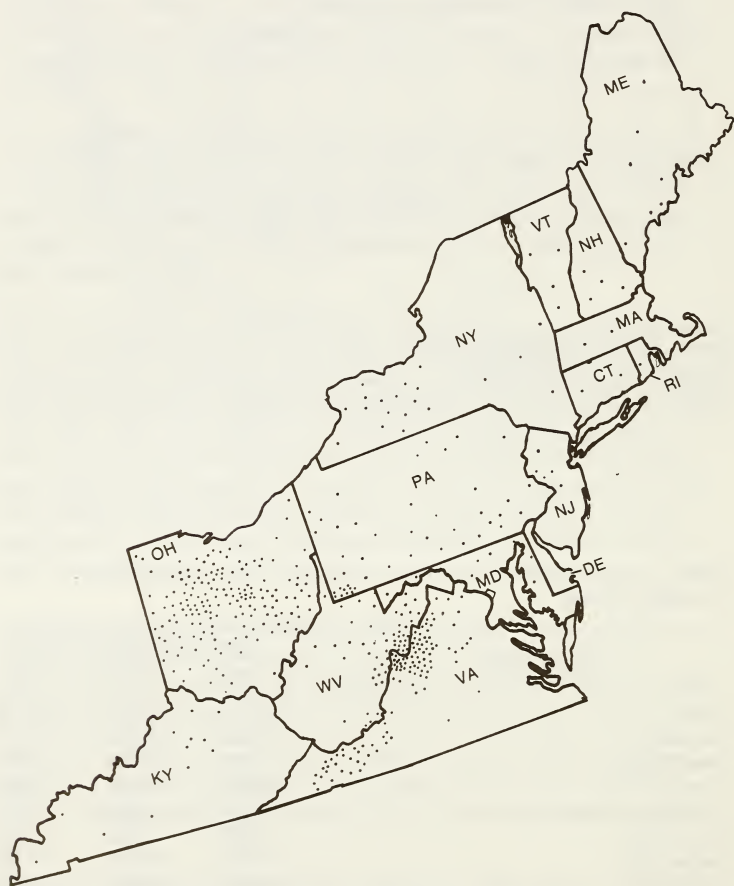
Lamb Marketings, 1980**Table 1—Lamb marketings by State, Northeast, 1980, and projected for 1985 and 1990**

State/region	Number of head marketed		
	1980	1985	1990
Ohio	197,000	175,000	200,000
Kentucky	13,000	12,000	15,000
West Virginia	67,000	55,000	55,000
Virginia	108,000	110,000	120,000
Maryland and Delaware	8,000	8,000	8,000
New Jersey	4,300	5,000	5,000
Pennsylvania	51,000	45,000	45,000
New York	26,000	20,000	20,000
Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire	11,700	12,000	13,000
Maine	5,000	6,500	8,000
Total	491,000	448,500	489,000

Source: (1980) USDA, ESS, Crop Reporting Board, *Meat Animals: Production Disposition, Income, 1979-1980*, April 1981.

Figure 2

Projected Lamb Marketings, 1985



(Each dot (•) = Thous. head)

(Total marketings = 448,500 head)

Table 2—Lamb marketings by months, Northeast, 1978

State	Number of head by months												Total¹
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1,000's													
Ohio	12.2	14.1	15.2	12.7	13.9	15.4	14.1	20.1	20.9	18.8	17.5	15.2	190.0
Kentucky	0	0	0	0	1.9	5.1	4.0	1.7	0.9	1.4	0.9	0	16.0
West Virginia	1.3	1.6	0	0	0	5.5	8.8	7.2	8.3	19.3	9.5	5.4	67.0
Virginia	3.1	2.6	0	3.8	10.4	17.9	21.8	13.3	16.0	11.1	6.4	2.6	109.0
Maryland, Delaware,													
New Jersey	0.6	0.6	1.9	1.5	0.9	1.5	1.0	1.0	1.1	0.9	0.9	0.6	12.6
Pennsylvania	1.0	1.2	7.1	4.8	2.5	4.1	2.9	2.8	3.5	2.5	2.6	2.0	37.0
New York	1.6	1.7	6.2	1.0	1.1	1.3	1.4	1.9	4.1	5.2	4.2	2.3	32.0
New England	0	0	2.9	0.7	0.7	0.7	0.7	1.5	2.2	2.9	1.5	0.7	14.5
Total¹	19.8	21.8	33.3	24.6	31.3	51.6	54.8	49.6	57.0	62.1	43.4	28.8	478.1

Source: Derived from marketing data provided by Producers Livestock Association, Eastern Lamb Producers Cooperative, Pennsylvania Dept. of Agriculture, New York Dept. of Agriculture, and University of New Hampshire Cooperative Extension Service.

¹Columns and rows may not add exactly because of rounding.

purchases by packers in the Northeast in 1979, whereas nationwide packers purchased only 8 percent of their lambs through auction markets.¹

Traditional auctions in the Northeast have few competing buyers because most packers are relatively small and buy on a local basis and most auctions do not handle enough lambs at any one time to attract many buyers.

The Eastern Lamb Producers Cooperative introduced its teleauction in 1971 to increase competition and marketing efficiency. The teleauction sells truck-load lots of lambs for efficient movement to packers. Each scale is conducted via a conference telephone call paid for by the cooperative to reduce buyers' cost of bidding on the lambs. As a result, the teleauction increased the number of buyers from 1 or 2 to 10. About half the buyers are from outside the 15-State Northeast region.

¹U.S. Department of Agriculture, Agricultural Marketing Service, Packers and Stockyards, *Resume*, March, 1981.

Figure 3

Lamb Marketings by the Month, Northeast, 1978, 1985 (Projected)

Thous. heads marketed

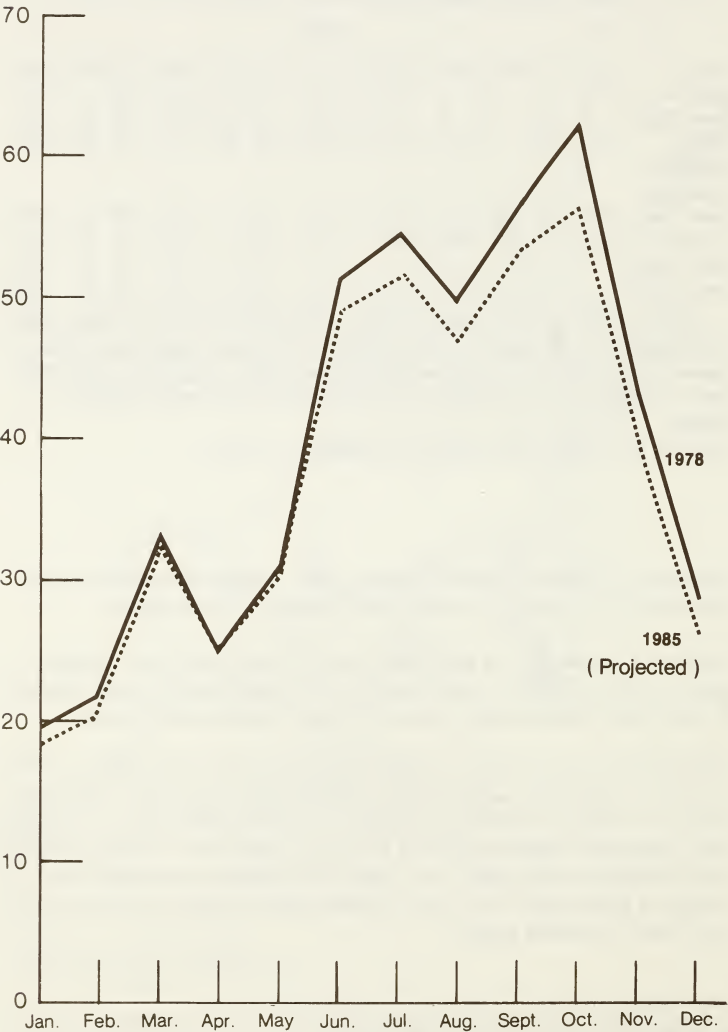


Table 3—Number and size of lamb producing farms, Northeast, 1974

State	Number of farms selling sheep and lambs arrayed by number on farms					Total
	1-24	25-99	100-299	300-999	1,000 or more	
Ohio	2,673	3,344	811	114	12	6,954
Kentucky	195	289	112	14	1	611
West Virginia	222	793	242	20	1	1,278
Virginia	374	993	306	54	15	1,742
Maryland	118	99	32	5	0	254
Delaware	19	6	1	1	0	27
New Jersey	77	46	7	1	0	131
Pennsylvania	776	525	188	20	1	1,510
New York	240	298	122	20	2	682
Connecticut	32	23	2	0	0	57
Rhode Island	7	1	1	0	0	9
Massachusetts	39	16	5	1	0	61
Vermont	47	20	4	2	0	73
New Hampshire	47	26	6	0	0	79
Maine	65	47	13	5	0	130
Total	4,931	6,526	1,852	257	32	13,598
Percent	36%	48%	14%	2%	1	100%

Source: U.S. Bureau of Census, *Census of Agriculture, 1974*.

¹Less than one-half of one percent.

Producers using the teleauction have received about \$1.50 per hundredweight (cwt.) more than they would have received without it. This difference was found by comparing Virginia/West Virginia lamb prices with those in major U.S. lamb markets before and after the teleauction. Even though only 20 percent of the Virginia/West Virginia lambs is sold by teleauction, the added competition in the area has raised the prices received by producers still using the conventional auctions by about \$1.10/cwt. Commission charges in both systems are about the same.

Cooperatives are also active in Ohio, New York, and other States, both on a full-time basis and with occasional lamb pools. A 1975 estimate indicated that cooperatives marketed about 45 percent of all sheep and lambs in the Northeast. The highest concentration was in Ohio where about 85 percent were cooperatively marketed.²

²U.S. Department of Agriculture, Agricultural Cooperative Service.

Meatpacking

The Northeast has a large number of small packing plants, especially in Pennsylvania. In 1980, 384 federally inspected plants and a number of State inspected plants killed 304,300 sheep and lambs (table 4), but only 12 of the federally inspected plants killed more than 3,000 head a year. None of these 12 plants killed more than 50,000 head a year but they accounted for 77 percent of federally inspected slaughter and 67 percent of total commercial slaughter. The Allen Packing Company of New Jersey, closed in the fall of 1978, was the last remaining packing plant killing more than 100,000 head a year in the region.

Table 4—Sheep and lamb slaughtering plants and number slaughtered, Northeast, 1980

State	Number of federally inspected plants	Number of head slaughtered	
		Federal inspection	All commercial
Ohio	6	1,477	18,400
Kentucky	17	7,904	8,400
West Virginia	1	2,732	5,000
Virginia	9		
Maryland	7	21,235	35,100
Delaware	2		
New Jersey	22	15,820	16,500
Pennsylvania	203	153,564	153,300
New York	76	52,121	52,400
Connecticut	13	9,503	14,300
Rhode Island	3		
Massachusetts	9		
Vermont	0		
New Hampshire	3		
Maine	13		
Total	384	264,356	304,300

The closing of major sheep and lamb slaughtering plants in the Northeast has paralleled a nationwide decline. The United States had 31 plants killing 100,000 or more head in 1970. Two of these plants were located in New Jersey and one in Kentucky. By the end of 1980, only 13 of the 31 plants remained, and none was located in the 15 northeastern States (fig. 4).

The rapid closing of major packing plants during the 1970's has been an adjustment to earlier declines in sheep and lamb production. If production does not increase, more of these plants will likely close. It should be noted, however, that in the last couple of years, some smaller, more local packers have increased their kill. This is true in the Northeast; and in 1980, 16,000 more sheep and lambs were slaughtered in the region than in 1979.

Consumption

Consumption of lamb is concentrated in the eastern United States where there is not only a concentration of population but also Mediterranean and Middle Eastern ethnic groups that consume relatively large quantities of lamb. The Boston-New York-Philadelphia-Washington corridor (fig. 5) consumes about

Figure 4

Major Sheep and Lamb Slaughtering Plants, 1970 and 1980

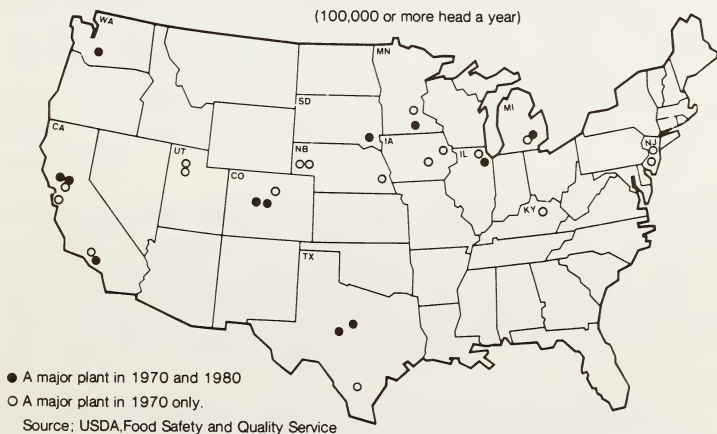
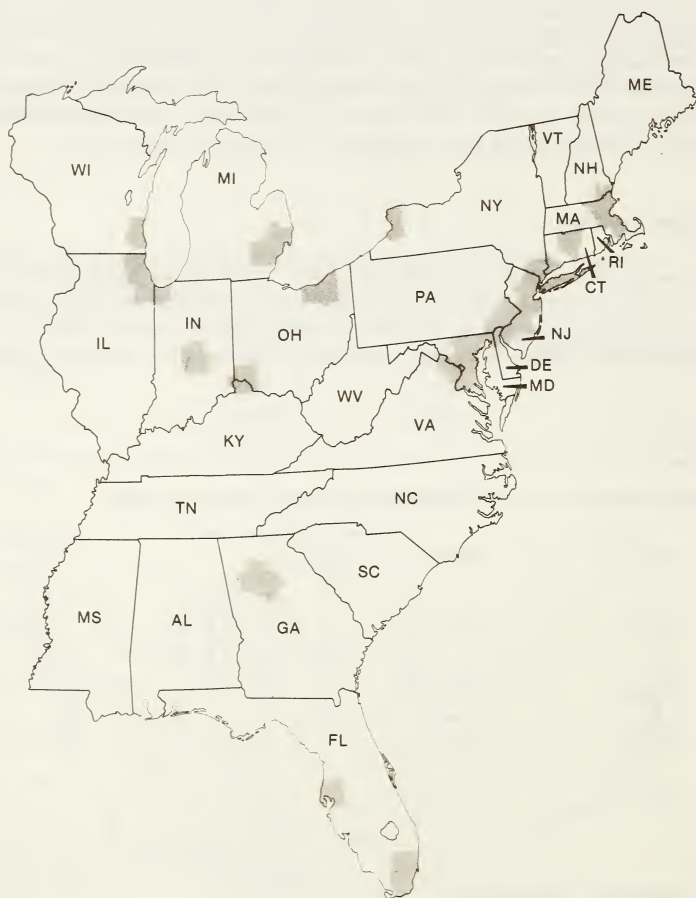


Figure 5

Major Metropolitan Areas Near Northeastern Lamb Producers



50 percent of all lambs produced in the United States.³ This was equivalent to 2.6 million head in 1980. Other major metropolitan areas in or near the Northeast provide additional market centers for lamb close to producers in the Northeast.

Production/Slaughter/Consumption Balances

The number of sheep and lambs slaughtered in the Northeast is actually declining faster than production, so there are now more produced than slaughtered. In 1970, the region marketed only 0.8 sheep and lambs for each one slaughtered. In 1980, it marketed 2.0 for each one slaughtered. In the 5 months of June through October when 58 percent of the lambs go to market, the imbalance is greater than the annual average of 2.0, and a larger percentage of lambs leave the region.

An increasing production/slaughter imbalance means that more and more lambs are leaving the region to be slaughtered. However, many of these lambs later return to the region for consumption, because consumption in the Northeast is many times greater than production.

Need for Cooperative Meatpacking

Lamb producers in the Northeast need to initiate some changes in the marketing, processing, and distribution system that delivers their products to consumers. Otherwise, they must continue to tolerate a situation in which production is greater than slaughter, and many lambs move west for slaughter and return east for consumption. The result is lower prices to producers and higher prices to consumers than if the lambs were slaughtered in the Northeast.

As the production/slaughter ratio increases, the price of lambs received by northeastern producers declines relative to prices received by midwestern and western producers. In 1961, Virginia/West Virginia producers, for example, received a premium over major U.S. markets of \$3.19/cwt. The premium declined to \$.99 in 1970 and -\$1.50 in 1977. Without the teleauction, it probably would have been about -\$2.50 in 1977.⁴

³Based on estimates supplied by American Lamb Council and by Wilson and Company.

⁴David L. Holder, "Benefits of a Sheep and Lamb Teleauction in Virginia and West Virginia," contributed paper at Southern Agricultural Economics Association meeting, Feb. 4-7, 1979.

The production/slaughter imbalance is not due to insufficient slaughter capacity in the remaining plants in the Northeast. Interviews at 7 of the 13 largest plants indicated they had capacity for about 5.5 times as many sheep and lambs as they killed in 1978. If all plants in the region have this much overcapacity, more than 1 million head could have been slaughtered. There are also plants killing veal calves that have capacity to kill lambs.

Although the reasons why excess capacity exists in the Northeast are not clear, here are two possible explanations: (1) The packers may not be getting full value for lamb byproducts because they don't have sufficient volume for adequate market development; (2) The efficiency of their plants can also have an effect on their ability to compete with other regions. Both of these factors can limit the price packers can pay for lambs.

Northeastern lambs are leaving the region to be slaughtered because packers in other regions are bidding more for the lambs. These packers are not only bidding higher prices but also paying additional transportation costs to move the lambs to their plants and to move lamb products east to consumers. If northeastern producers could slaughter their lambs in the Northeast, they would probably have an economic advantage over packers in other regions who are currently buying every second lamb produced in the Northeast.

A cooperative meatpacking operation could make many improvements that might increase net returns to producers. Larger slaughter operations could be used to gain efficiencies of large-scale slaughtering, cutting, selling, and merchandising lamb and byproducts. Many plants have capacity for larger volume but lack adequate procurement or distribution systems to utilize their inplant capabilities. A producer cooperative also could organize procurement to regularly supply a plant with a large volume. Eastern Lamb Producers already markets as a sizable volume of lamb each year. While removal of all seasonal production fluctuations probably would be impractical, a cooperative meatpacker might be able to use pooling concepts or other means to structure proper incentives to reduce these fluctuations. The cooperative could also initiate new distribution and merchandising systems such as portion-controlled retail and food service packages and newly processed lamb products direct from the packing plant. The cooperative could also develop better markets for byproducts than many packers with low volumes of output.

Most of the above improvements also could be provided by a new non-cooperative meatpacking operation. However, the region needs only one large-scale operation—possibly with more than one plant—to be efficient

and effective in slaughtering, processing, merchandising, and distributing lamb products. If producers continue to concentrate only on lamb marketing, while another interest owns and operates the meatpacking venture, producers still will have trouble obtaining competitive and fair prices for their lambs. The one large-scale packer would probably seek and achieve some monopolistic profits, and while it would increase the demand for lambs in the region and probably raise prices somewhat, a major portion of the benefits of the new system would probably be enjoyed by the firm's stockholders, not producers.

Through a cooperative, producers would invest in the meatpacking operation and receive benefits in proportion to their use of the cooperative. This means producers would bear the cost of investment and the risk associated with it. It also means producers, through their elected board of directors, would remain in control of changes and receive any profits.

Producers could significantly reduce their level of investment and risk from changing the slaughtering/distribution system by concentrating on marketing and staying out of meatpacking and distribution activities. However, they would limit their profit potential and their effectiveness in redesigning the system to meet their needs.

A producer cooperative probably could improve total system coordination and efficiency by becoming involved in all stages of the system. For example, the cooperative could better match consumers' desires with producers' ability to vary size, quality, and type of product. Producers could test the hypothesis that it is more profitable to raise larger, more meaty lambs (125-135 pounds) rather than the standard 100-110-pound lambs. Production and processing costs per pound of meat probably would be less. But at what price would the consumer buy the larger cuts? Or could new cuts of meat be merchandised to take advantage of large legs and chops? These kinds of questions could be answered and production decisions made more quickly and effectively if an innovative cooperative coordinated the entire process from farmer to consumer.

Cooperative Meatpacking Alternatives

Meatpacking includes the functions of slaughtering and cutting. Slaughtering is the process of killing the animal and producing a carcass and byproducts. Cutting reduces the carcass to primal and, in some cases, subprimal fresh cuts. Carcasses and primal cuts are sold in the wholesale trade to retailers and food service firms.

A cooperative may engage in meatpacking by owning and operating its own plant, or by having some other firm perform those functions under contract. This section discusses five possible approaches to cooperative meatpacking. The first four involve the use of existing plants, and the fifth requires building a new plant. The suitability of several plants in the area is the subject of a later section, Survey of Packing Plants in the Northeast.

Custom Meatpacking

Custom meatpacking would enable a cooperative to obtain meatpacking services without owning and operating a plant of its own. The cooperative would contract with one or more existing packers to kill lambs and cut them according to the cooperative's specifications. In return, the cooperative would pay a fee based upon the number of head slaughtered.

The cooperative would be responsible for coordinating the whole marketing system from farms to wholesale buyers. It would schedule the flow of lambs to the packing plant(s) and be responsible for selling the lamb products. It would also be responsible for collecting from wholesale customers and paying producers, custom meatpackers, and others.

Custom meatpacking would have several advantages when compared with a cooperative's ownership and operation of its own plant. The two greatest advantages would be a lower capital outlay and a greater access to experienced personnel in meatpacking.

The cooperative would avoid the capital outlay for building and equipping a new plant or acquiring an existing plant. The cooperative, however, would have to provide operating capital for paying producers, carrying inventory and accounts receivable, and covering prepaid items. The amount of investment and operating funds needed would depend on how the cooperative and custom meatpacker agreed to share various responsibilities. For example, the cooperative might be asked to help finance improvements in plant and equipment that would enable the custom meatpacker to meet mutually agreed upon contract specifications.

The cooperative would gain the use of an operating plant with experienced management and labor. Thus, the cooperative could avoid the costs of finding and training people and the startup costs associated with beginning a new operation.

A major responsibility of the cooperative would be to market lamb products. It could fulfill this responsibility by using its own sales force, con-

tracting with the custom meatpacker to perform that added service, or using a broker. If the custom meatpacker performed the selling function and moved the cooperative's lambs into established wholesale market channels, producers would also gain valuable market access.

Many firms have entered meatpacking on their own and have failed, because they lacked sufficient market development for meat products, did not employ competent management, incurred a variety of operating problems, or became financially overextended. Custom meatpacking would be a way of minimizing these barriers to success. The reduced likelihood of failure and the reduced amount of capital outlay make it one of the least risky approaches to cooperative meatpacking.

Other advantages should also be considered. Custom meatpacking could be implemented quickly, because less time would be required to make an agreement with a packer than to buy a plant and take it over or to build a new plant and put it into full operation. Custom meatpacking could be operated at several different output levels, whereas a plant owned by a cooperative must be operated at a given level of capacity to minimize operating cost. Custom meatpacking also could be accomplished by using several different plants for slaughtering and cutting. These plants could be chosen to cover the various centers of production, yet a common sales force could achieve economies of merchandising and distribution in the major eastern wholesale markets. A cooperatively owned plant might be limited to facilities at only one location.

While there are many advantages to custom meatpacking, several disadvantages also must be faced. The cooperative could have some problems coordinating the flow of lambs to the plant with inplant operations and sales because it would not control the plant itself and may not have direct control over sales. Decisions to make changes in plant operations would likely occur more slowly than if the cooperative operated the plant. In fact, some things might be unchangeable, because plant owners or managers have different interests from those of the cooperative.

Custom meatpacking could create many conflicts of interest for the packer. Problems of priorities could develop if lambs are processed for the packer's own account at the same time they are processed for the cooperative. Problems of keeping the cooperative's lambs separated from the packer's own lambs could also arise. Furthermore, if the packer sells lamb products for the cooperative while selling for the packer's own account, there could be some additional conflicts. For example, the meatpacking firm may choose to process or sell its own lambs first to minimize shrink, maximize freshness,

and skim off the best market prices. The cooperative's lambs could be in second place and move at distressed meat prices. These conflicts of interest must be worked out in the agreement between the cooperative and the packer. Careful attention should be given to housekeeping and bookkeeping rules and means of enforcing them.

Some other disadvantages of custom slaughtering could result from using existing plant(s) rather than a new one. The existing plants are not technologically up-to-date to minimize inplant operating costs, and many are not in the best location to minimize transportation costs.

There are some meatpackers in the Northeast that could perform custom services for a cooperative. A discussion of individual plants, including estimated custom slaughtering fees, is included in the section, Survey of Packing Plants in the Northeast.

Joint Venture

A joint venture would be like a partnership arrangement between the producer's cooperative and one (or more) existing meatpackers. The exact nature of the partnership would depend on the mutual agreements made by the partners, but generally the cooperative would be responsible for delivering lambs to the packing plant according to an agreed upon schedule; and the meatpacker would be responsible for slaughtering, cutting, and selling the lambs. Gross receipts would be allocated between the partners to cover their expenses, and the net profits or losses would be shared according to some predetermined plan.

The advantages of a joint venture would be very much the same as in a custom arrangement: little capital outlay for facilities, equipment, and working capital; experienced meatpacking management and labor; an ongoing operation without the startup costs and problems of a new facility; access to wholesale markets; varying levels of output; and the possibility of slaughtering at more than one location by contracting with more than one meatpacker.

A joint venture would have an additional advantage of reduced risk because losses (as well as profits) would be shared with the packer. There also would be an added incentive for the packer to do a good job in the plant and in selling the products because it would share in the added net profits.

However, a joint venture would require a more complicated agreement than custom meatpacking. Under the custom arrangement, the cooperative

would simply pay a fee for services performed and would have little interest in how efficiently the services were performed. In a joint venture, both partners would need assurances that each operation was being done as efficiently and effectively as possible. They must also agree on an accounting system, a method of determining profits and losses, how to share them, and how to deal with various contingencies. Each partner must also have a means of assuring that agreed upon accounting procedures are being followed.

Most joint ventures entered by cooperatives have not been successful. In fact, many have been disastrous. Other firms with more sophisticated management and legal talent have taken advantage of cooperatives by not fairly sharing responsibilities, costs, and net profits and losses. Cooperatives considering such an approach must proceed very cautiously and with expert counsel.

A joint venture would have most of the disadvantages of custom slaughtering. The cooperative would still have to contend with a second party in making decisions. Also, many existing plants are inefficient, because they do not employ the latest technology and are not located in production centers.

A joint venture might make it impossible for a packer to slaughter and sell lambs on its own account along with cooperative joint venture lambs because of problems in keeping the operations clearly separated for accounting and profit-sharing purposes. If the meatpacking firm could not handle its own lambs, the cooperative would have to take the added responsibility of keeping the plant supplied with enough lambs to operate at a given level of capacity. In so doing, the cooperative would lose some of the flexibility it might otherwise have with custom meatpacking.

The same firms considered for custom meatpacking could also be considered for a joint venture.

Leasing

Leasing an existing plant would be another method for a cooperative in the Northeast to enter meatpacking. In this approach, the producers' cooperative would gain exclusive use of a plant, with full responsibility for scheduling lambs, operating the plant, and selling the lamb products. There would be no second party involved in the operation, as in custom meatpacking or a joint venture, and all net profits and losses would clearly belong to the cooperative.

Leasing would be a method of acquiring the use of meatpacking facilities without the heavy capital outlay required to buy an existing plant or to build a new one. However, the cooperative may have to obligate itself to pay the lease for a number of years. This obligation would continue regardless of the level of plant utilization, even during shutdowns. Hence, the cooperative would assume a greater risk when leasing than when using the custom meatpacking or joint venture approach.

Leasing would enable the cooperative to acquire an ongoing operation. Much of the labor and management might also be acquired if the plant were not shut down very long before operating as a cooperative. An established market also might be acquired if downtime has been short. These acquisitions would result in less risk of failure than if the cooperative had to hire new labor and management and develop new markets.

The cooperative may have the disadvantages of operating an obsolete plant in a less than optimum location. While the current owners might want to get out of the business for personal reasons, the more likely reason would be financial loss. Financial records and other sources of information should be carefully checked, and new budgets should be constructed to determine if the plant could be leased successfully.

Ownership of Existing Plant

The cooperative might find it more advantageous to own rather than lease an existing plant. Owning would give greater control over the operation but would result in greater capital outlay to acquire the plant and greater risk to keep it operating successfully.

As in the previous approaches, the cooperative would have the advantage of acquiring an ongoing operation. The retention of management, labor, and wholesale markets would greatly reduce startup costs and risk.

Any cooperative considering this approach should be willing to hire a competent engineering firm to thoroughly assess the value of the plant, make recommendations for renovation, and estimate the cost of those improvements.

Ownership of a New Plant

Building a new plant would give the cooperative maximum control over the meatpacking function, not only in owning and operating the plant, but also in deciding where to locate it, how large to build it, and what technologies to employ. A new plant could be very efficient.

This approach would require the largest capital outlay and greatest risk. Acquiring a new plant and equipment is expensive. Competent management must be found, labor hired and trained, the plant operation debugged, the sales force hired, and markets developed and serviced.

Estimates of the total capital requirements for such a project range from \$5 to \$22 a head.⁵ There is little disagreement on the cost of physical facilities (land, site development, plant and equipment, and access to utilities). This cost ranges from \$4.50 to \$6.50 a head. However, the estimated cost of other items, such as operating capital, startup costs, and market development costs are more variable. Some studies minimize or ignore most of these costs when in reality they exceed the cost of physical facilities.

Producers seriously interested in building a new plant should fund a two-part feasibility study. The first part should be an engineering study that provides accurate decisionmaking data. Such a study would include an analysis of plant and equipment needs to take advantage of modern technology, preliminary plant drawings, manpower and utility requirements, operating costs, and capital investment requirements. This information must be combined with an economic study that estimates other investment requirements and production and market potentials, analyzes costs and returns, and evaluates the overall feasibility of the proposed project.

Lamb Marketing Alternatives

The cooperative would have three basic options for marketing lamb products after the animals have been slaughtered and processed: (1) employ its own sales force, (2) work through a broker, or (3) contract to sell to a single buyer who would resell or distribute the product. The details of each option depend, in part, on the arrangements made for slaughtering the lambs.

The cooperative could use its own sales force in all five slaughtering alternatives except a joint venture, because the meatpacker in that agreement would probably be responsible for marketing. A broker who works for a commission could also be used in all but the joint venture alternative. Brokers might serve cooperatives on a full- or part-time basis. They might

⁵1980 cost estimates based on data from the following three studies: David L. Holder, *Cooperative Marketing Alternatives for Sheep and Lamb Producers*, USDA, Farmer Cooperative Service, Mktg. Res. Rept. 1081, Aug. 1977, pp. 36-37; Intermountain Livestock Packing Association, "Disclosure Statement", June 15, 1978; Berger Associates, *Final Report: Feasibility Study of a Sheep Processing Facility*, prepared for the West Virginia Dept. of Agriculture, Dec. 1980.

even be principals in the packing plant used for custom meatpacking or leasing by the cooperative. The cooperative might also contract to sell all lambs outright to the custom slaughterer or owner of a leased plant or to another party that would be responsible for marketing the cooperative's lamb.

Each marketing channel (or method of distributing lamb) involves different capital requirements, levels of risk, and profit potential. If the cooperative markets through its own sales force, funds must be invested in lamb storage, transportation, and promotion as well as sales force training and support. Using a broker would reduce sales force investment. Using a contract seller could also reduce storage, transportation, and promotion. When viewed in this manner, the choice of a marketing channel becomes an investment decision, and the cost of capital and expected returns become decisive factors. The availability of capital, either from equity or debt sources, must also be considered.

Funds not tied up in a cooperative sales effort may be used to expand processing facilities. The opportunity cost of using funds to finance a sales force then becomes another factor to consider in the choice of a marketing channel. If the estimated rate of return from expansion of processing facilities exceeds that from a cooperative sales force, a channel requiring less investment by the cooperative should be considered. If possible, the channel should be chosen so that the rate of return from the marketing effort will be equal to the rate of return from capital employed in any processing operations or other activities.⁶

The objective of a sales staff hired by the cooperative would be marketing that cooperative's lamb. There would be no conflict of interest with competing activities as in some other alternatives.

Another factor influencing the choice of a marketing channel is the cooperative's desire to control the distribution of its lamb. The cooperative may be influenced by the fact that, in the meatpacking industry, profit increases as distribution moves closer toward the retailer. Long-run considerations are also important. The cooperative may foresee a need to position itself in a market to be able to capitalize later on product or merchandising innovations.

⁶Based on Eugene W. Lambert, Jr., "Financial Considerations in Choosing a Marketing Channel," *MSU Business Topics*, vol. 14, no. 1 (winter 1966), pp. 17-26.

To obtain an effective sales effort, the cooperative must give careful attention to: (1) determining the size of the sales force; (2) recruiting, selecting, and training; (3) motivating and compensating the sales staff; and (4) determining allocation of effort to current and prospective customers.

The cooperative sales staff probably would be working with a variable quantity of lamb products because of seasonal production. The number of lambs marketed each week could fluctuate from none at all, at times, to four or more truckloads during the seasonal peak. Whether hired on a full- or part-time basis, the salesperson(s) would require a salary of several thousand dollars per year, an expense that would continue regardless of the volume of lambs marketed. Furthermore, the variation in lamb kill throughout the year means that a sales force representing only the cooperative will not have as many opportunities to acquire experience and orders as would the established sales force of an existing packer or an independent broker.

The cooperative's sales force would be unable to furnish customers a steady supply throughout the year, unless lambs could be bought from other packers. During some months, and for certain quantities, sales may be easy to make. At other times, the sales force may have difficulty selling all its lambs. Consequently, the time and remuneration accorded the sales staff may need to vary along with the quantity of lamb to be marketed.

If the custom slaughterer acts as broker for the lamb products, it probably would have considerable knowledge of potential purchasers. The cooperative could capitalize on this market knowledge. However, brokering by the slaughterer could create a conflict of interest, if the packer continued to market its own lamb in addition to the cooperative's lamb. Working with lamb from the cooperative would give the packer knowledge that other potential buyers would lack. The packer would know how the lamb graded and other quality attributes. If the lamb were superior, the packer might want to purchase at least some for sale to its own customers. Other potential buyers may then be allowed only limited access to the cooperative's lamb. Alternatively, the packer may choose to supply higher-priced markets with its own lamb, and use the cooperative's lamb to supply less desirable markets. In either case, the packer would have opportunities to take advantage of the brokerage arrangement, and the cooperative might not receive a fair price.

One solution to a potential conflict would be to offer a monetary incentive to the packer, so it would be encouraged to seek the best possible price for

the cooperative's lamb. A fee based on the selling price of the lamb could provide more of an incentive to seek the highest possible price than a flat fee per head. The brokerage fee could be a percentage of the premium obtained over the Yellow Sheet (wholesale) price or based on an increasing scale. Because the incremental income available to the packer from rendering superior brokerage services may be less than the value of alternative uses of its time, the cooperative may not receive the desired level of service. The cooperative must recognize this possibility when the brokerage fee is established. The responsibility for monitoring the value of the lamb and obtaining a fair price for producers belongs to the cooperative's management.

Another solution would be one where the cooperative contracted to sell all lamb to the custom meatpacker or other party. The buyer would assume responsibility for marketing a variable quantity of lamb, storing and transporting it, training and maintaining a sales force, pursuing new orders, and handling all associated bookwork. If a custom meatpacker acted as the buyer, it would incur some added cost but would also make more intensive use of existing facilities and services, possibly making the firm more efficient.

If the cooperative sells all its lamb directly to the custom slaughterer or other party, it avoids the selling cost and many possible conflicts of interest. Consequently, this is the least complicated and least risky alternative available to a newly formed cooperative. However, reduction of risk frequently corresponds to reduction of profit over the long run.

The cooperative may also work through an independent broker. In this case, arrangements for storing and removing the lamb from the packer's facilities should be carefully specified to avoid unforeseen conflicts among the cooperative, packer, and broker. The broker should be able to handle a variable quantity of lamb throughout the year. Given the diversity of interests that a broker may be expected to represent, this task may be easier for the broker than for the cooperative's own sales staff. While few conflicts of interest may be expected to arise if the cooperative contracts with a broker, the fee should be established to provide appropriate incentives.

Survey of Packing Plants in the Northeast

Fourteen packers in the 15-State region were contacted in 1979 to determine their interest in a custom slaughtering arrangement with a producer cooperative. Only packers with Federal inspection were chosen because the proposed cooperative would operate across interstate lines. Seven of the packers were among the 13 largest in the region—they slaughtered at least

3,000 sheep during 1978. These packers are identified as A, D, E, F, H, I, and N in the analysis that follows. Seven other packers, with different backgrounds, provided alternative perspectives. Packers M and L were large-scale veal processors; B, G, and J were small lamb packers catering to a local suburban clientele; and packers K and C were outside the Northeast region but are potential killers for Ohio lambs.

The criteria used to evaluate the packers were: (1) willingness to participate in a custom slaughter arrangement, (2) ability to meet the slaughter requirements of the cooperative, (3) availability of adequate processing facilities, (4) availability of sufficient labor, and (5) willingness to participate in market development activities.

Other issues discussed were: the advantages and disadvantages of participation as expressed by the packers, custom slaughtering fees, and commitment necessary to sustain a custom slaughter arrangement.

Facilities

Each packer gave the minimum and maximum number of lambs it would be willing to slaughter for a producer's cooperative. Packers G and J would only slaughter less than a truckload a week. The remaining packers could slaughter from one to eight truckloads per week. Less than full loads are inefficient and expensive to transport. Consequently, packers G and J appear to be unlikely candidates to work with the proposed cooperative. Packer N, which closed in November 1979, did not wish to participate in a custom arrangement due to limited facilities for separating cooperative's lambs from others.

Among the packers interviewed, slaughtering facilities, holding pens, and processing equipment appeared adequate, except as noted. Cooler capacity presented the only significant area that might require capital expenditure. The cooler capacity available for lamb affects the time at which it must be moved out of the plant. Considerable variation existed among the packers, often reflecting the extent to which plant capacity was underutilized. As table 5 shows, all packers have sufficient cooler space for one truckload of lambs, also sufficient to cover their specified minimum levels of kill. Only packers C, K, and L have sufficient space to accommodate the cooperative's weekly kill of 1,500 to 2,000 lambs at one time. The remaining packers would have to expand cooler capacity or adhere to a careful scheduling plan to coordinate slaughtering with the chosen methods of selling the lamb products. Packers A, B, D, F, H, and M were willing to expand, given a successful ongoing relationship with a cooperative. If capacity is not adequate, methods of resolving contingencies arising from poor

Table 5—Slaughter and cooler capacity of lamb packers, Northeast, 1979

Plant	Minimum slaughter per week	Maximum slaughter per week	Holding cooler capacity
<i>Number of head</i>			
A	350	1,500	400
B	25-50	100	n.a.
C	300	4,500	1,500 +
D	300	2,000 +	1,000
E	50 +	2,000 +	700
F	50 +	1,750	400
G	25	200	300
H	25-200	1,000	6,000
I	50-100	1,625	1,000 +
J	100-150	100-150	300
K	300	2,000	2,000 ¹
L	300	1,000 +	1,000 +
M	350	1,350	1,000 ² +

n.a. = not available.

+ = More than number indicated.

¹But some must be packers' lamb.

²Must be loaded out by the next morning.

scheduling should be clarified between the packer and the cooperative before unexpected strains on cooler space develop.

Another consideration is processing. All packers except packer K would be willing to cut carcasses into primal cuts and box them. Packer K refused to offer this service because of space limitations and difficulties in separating the cooperative's lamb from the packer's own lamb. The company was concerned about competition from the cooperative's lamb, because the packer's trade area appears to be very well supplied, if not saturated. The cooperative's lamb would have to be trucked to other consuming areas, especially New York City, and packaging might be an important variable in influencing sales. Consequently, the reservations expressed by packer K might eliminate it from further consideration.

Packers B, M, J, and E would be unable to vacuum pack lamb cuts; however, they indicated they might acquire or rent a machine in the future. The cooperative may consider financing or renting packaging equipment for the packer. The alternatives to vacuum packaging are freezing or packaging in wax paper and boxes. The loss in quality from freezing lamb and consumer

resistance to a frozen product suggest that freezing is an unacceptable alternative to vacuum packaging at this time. If the markets to which the lamb is directed prefer packaging in wax paper and boxes, an emphasis on vacuum packing may be unnecessary, at least for the short term. However, meat in wax paper packaging has a much shorter shelf life than vacuum packaged meat.

Labor

The labor supply available to the plant is another factor to be considered. If potential labor problems are avoided, the arrangement with the cooperative may have greater stability, and planning would be easier. Plant managers (as with packers I and J) may wish to avoid unionization. However, if additional workers must be hired to support the custom arrangement, management may be unable to continue to discourage a union.

Another obstacle to the success of the custom slaughter arrangement may arise if the packer's staff is currently fully employed, and new workers must be hired and trained or existing staff paid for overtime duty.

Packers with underworked staffs would probably have relatively few labor problems. Packers A, B, C, I, L, and M stated their staffs were presently underutilized. Packer F negotiated a new labor contract in December 1979, so its labor situation was unclear at the time of the interview. However, the packer stated that utilization of employees could be improved. Packer E stated that labor shortages would occur beyond one or two trailerloads. None of the packers interviewed believed that labor would be an insurmountable obstacle to a custom slaughtering arrangement.

Market Development Opportunities

Probably the most frequently mentioned potential sources of new lamb orders were the kosher and Islamic markets. The kosher market is limited by the declining number of persons observing dietary laws; however, the number of suppliers is also declining. Packers A, D, F, L, and M currently kosher some of their products; packers C and E may resume the practice should they decide to enter the New York City market. Packer D suggested that kosher byproducts have their own market potential. For example, lamb intestines can be used for sausage casings.

Kosher products may carry a USDA grade, also allowing the product to be marketed through nonkosher channels. However, Rabbi Black of Washing-

ton, D.C., indicated the dyes used in the grading stamp must be analyzed by a rabbinical board before determining whether the contents are appropriate for a kosher product. This is not an involved decision, merely a technicality.

Islamic kill can be performed in the same plant as kosher kill. The packers spoke of Islamic kill as a potential market, because the Moslem population in this country is increasing. However, only packers C and D specifically mentioned prior experience with Islamic kill. Presumably, many Moslems purchase a lamb or two at a time from a nearby farmer and slaughter it themselves. Also, packer K noted that Arabs preferred mutton to lamb, which may provide an opportunity to merchandise old sheep. Some effort would have to be expended to enter the Islamic market, in terms of contacts, personnel, and/or procedures required for the ritual slaughter. The kosher market probably offers a more assured return for the effort expended.

One of the most favorable markets for kosher products is, of course, New York City. Several packers were reluctant to enter that market because of problems collecting accounts receivable. One packer handled the problem by keeping a current credit check on potential buyers. Then, before a shipment left the plant, the buyer was required to wire or otherwise deposit funds to the packer's account in a New York bank. The alleged unscrupulousness of buyers in the New York market suggests that if the cooperative thinks the market should be penetrated, the packer or other sales agent should have had some experience dealing in New York. Otherwise, a naive seller may lose money.

Edible offal presents another marketing opportunity. Packers D and F have previously exported offal. Packer F has also sold lamb livers to chain stores in New York State and New England. Packer B sells edible offal through its own store. Some packers did not have very good market outlets for edible offal and other byproducts. Such markets are essential for a profitable cooperative operations.

Advantages to Participation

The benefits from a custom arrangement were readily apparent to the packers interviewed. Additional animals to slaughter meant that plant capacity would be more fully utilized. Producer ownership of the lambs would allow packers more financial flexibility. Packers also foresaw opportunities for obtaining a reliable supply of lambs to fill their own orders. In

addition, lambs from the cooperative would not have spent several days in transport from the West, resulting in fresher meat.

The custom arrangement may offer an opportunity to broker lambs from the cooperative. The potential revenue from commissions made the larger packers (A, D, F, L, M) and one smaller one (B) enthusiastic about brokering lambs for the cooperative.

Disadvantages to Participation

Of course, problems were also anticipated. Some packers were not sure that the cooperative could, in fact, guarantee a supply of lambs to their plant. Seasonal variations in the supply of lambs could upset staffing and union arrangements. The quality of the lambs might vary, necessitating financial adjustments. Furthermore, the uncertainty resulting from pricing and quality was expected to carry over into merchandising the lamb products.

Some packers mentioned the difficulty in finding markets for various cuts, especially those from heavy lambs. This issue should be discussed before the slaughter arrangement is made final, because it offers an opportunity for improved coordination between the packer and the cooperative. Producers have some latitude in tailoring feeding programs and breeds to achieve the most marketable product for a given packer.

Probably the most serious problem mentioned by the packers was a perception that the cooperative would be unstable. If the producers could obtain higher prices by going outside the cooperative, the packers believed the custom arrangement would be undermined. The cooperative will have to pay careful attention to this problem and design a program that will minimize its occurrence. The packer may improve its efforts, if there is no doubt that the cooperative will deliver lambs consistently over an extended period.

Grading

Three packers (A, M, and L) did not use USDA graders. This situation may or may not be a problem depending on the requirements of the markets to which the lamb will be directed. Packer A indicated that adding a grader would not be an excessive cost to the plant, so long as the number of lambs was kept fairly constant. The packer must pay the grading fee of \$23.20 per hour and guarantee payment for a 40-hour week in one or more plants. A lead time of 30 to 60 days may be necessary to obtain the services of a grader.

Fees

The fees for custom slaughter, processing, storage, and brokering are presented in table 6. For custom slaughter alone, the fees range from \$9 to \$17 a head, with the cooperative retaining title to the pelt and offal. The average charge was about \$12.

Commitment

Commitment required from the cooperative was one of the last issues discussed. Packers, D, H, L, and M needed only a verbal promise and a handshake. Packers C and E desired a 1-month trial period. Packer F requested a trial period covering 6 months to 1 year for less than a trailer-load. Packer A required several provisions and the number to be killed specified to protect its labor force and arrangements made for seasonality. Provisions for yield adjustments and weighing conditions were desirable, if packer A purchased the lambs. Only packer I requested a written contract.

Competitive Position of the Packers

Most packers interviewed gave an indication of their wholesale prices relative to the Yellow Sheet. This information indicated their relative strength in the marketplace and their closeness to the predominant market, New York. Packer A received the highest amount, 15 to 20 cents, over the Yellow Sheet. Packers H and I received from 10 to 15 cents over the Sheet. Packer E received 14 cents, and J received from 10 to 14 cents. On the low end were Packer K at 11 cents, and F, at a minimum of 4.5 cents per pound over the Sheet.

Cooperative Image

This section has evaluated the operations of the packers in view of several criteria that appear vital to the success of a custom slaughter arrangement. However, the interviews demonstrated that the proposed cooperative was being simultaneously evaluated by the packers. While the cooperative represented an opportunity for the packer to slaughter additional lambs, it was not wholly perceived as a stable business entity. The cooperative must clarify its goals and develop sound ways to structure the custom slaughter arrangement before further discussions with packers to counteract this negative image. This way, the cooperative can project an image of reliability and stability, which may induce greater effort from the packer(s) involved in the arrangement.

Table 6—Fees for custom lamb slaughter and related services, Northeast, 1979

Packer	Customer slaughter fee ¹	Processing	Storage costs	Brokerage fee
<i>Dollars</i>				
A	13	Cutting and boxing fee is 10¢/lb over market price of carcass, 5¢ extra to vacuum pack	No storage charges for 1-2 truck loads	—
B	14-16	—	—	—
C	13-14	Carcass cutting and foxing fee \$1.78/head	Would not keep lambs more than 7-10 days. Charges would be a few cents/lb	Depends on arrangements
D	11.50	—	—	—
E	11.50	—	No charge if slaughter is done	—
F	9 minimum	Boxing and vacuum pack charge \$2.50/head	—	Selling and distribution charges at least \$1.50/head
G	9	—	—	—
H	17	—	—	½ cent/lb if lambs bought by packer
I	—	Carcass cutting and boxing fee \$5/head	—	—
J	9	—	—	Depends on number of lambs brokered and additional bookwork
K	10	Will not process	No charge for first 24 hours. However, no capacity exists beyond this period	—
L	10	—	—	—
M	10.50	—	—	—

¹Fees listed allow the cooperative to keep the pelt and offal. Value of pelt assumed to be \$7, and offal, \$1.

**U.S. Department of Agriculture
Agricultural Cooperative Service**

Agricultural Cooperative Service provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The agency (1) helps farmers and other rural residents obtain supplies and services at lower costs and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.

The agency publishes research and educational materials, and issues *Farmer Cooperatives*. All programs and activities are conducted on a nondiscriminatory basis, without regard to race, creed, color, sex, or national origin.