

THE RURAL  
COMMUNITY RESPONDS TO  
CHANGE - THE ESTABLISHMENT  
OF A CO-OPERATIVE  
VENTURE

A Report  
Prepared as a Project for the  
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THE ESTABLISHMENT OF THE NORTH CANTERBURY PASTORAL  
PRODUCERS' CO-OPERATIVE LIMITED

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Background

The end of the 1984/85 meat processing season saw the withdrawal of Supplementary Minimum Price payments, while at the same time sheep farmers faced increased killing charges and steadily increasing farm working costs and overhead expenses.

The pastoral farmers had responded magnificently to the various Government incentives to increase production, but the meat exporting companies had been unable to find sufficient markets to absorb the extra mutton production at a price which would return a profit to the producer within the cost structure of the domestic processing and transport industries. The situation was compounded by the workings of the Meat Export Prices Act and, in both the 1983/84 and 1984/85 seasons, over 30,000 tonnes of unsold mutton was rendered down into meat meal, bone meal, and tallow worth about 6.5% of its value as meat.

Although there was still an unsatisfied export demand for some cuts of mutton, particularly rolled boneless shoulders, the opening schedule of prices for 1985/86 gave very little return to producers for a good export quality carcass after they had paid transport charges from areas more distant from the meat processing works. The less attractive grades of stock, those being too lean or excessively fat, incurred a net charge to the supplier because the return was less than the processing and transport costs.

Although some processors were offering incentives in order to increase their plants' throughput, farmers believed this would cease when demand for space to kill lambs increased. They did not believe the situation would improve markedly in future seasons because of continuing rises in processing and transport costs and there being little likelihood of an increase in the market returns for mutton.

The widespread concern about the likely consequences of such depressed returns for mutton resulted in a series of public meetings being called in October 1985, under the auspices of the Amberley, Amuri, Cheviot, Hawarden, Omihi and Sefton branches of North Canterbury Federated Farmers.

## The Proposal

At the public meetings, Mr Andrew Anderson, a farmer with engineering training and a background associated with meat processing technology, proposed that the farmers should establish their own slaughtering and rendering facility in order to dispose of their surplus sheep, especially those ewes which would not bring a positive return from the existing meat processing works.

Mr Anderson had identified some of the products which could be obtained from a sheep and their respective values, thus -

Dried blood	\$600 per tonne
Gelatine from trotters	\$18 per tonne
Tallow	\$550 per tonne
High protein meat meal	\$370 per tonne
Green pelts	\$12 per Kg.
Wool	\$6 per Kg.

He had calculated that there was \$14.75 in value to be won from a 20 Kg ewe carcass, and compared that with the special offers from some meat processors of payment for the skin less transport costs, which would amount to \$3.84 for a ewe with 1 Kg of wool which had cost \$2.00 to truck to the works.

After allowing for all the costs involved in running the type of facility he envisaged, which would process up to 1,000 sheep per day, and allowing 20% for contingencies, Mr Anderson had calculated that a 20 Kg ewe would return \$8.43 to the supplier.

He proposed the building of a mobile rendering plant which would travel to strategic locations in the area between the Ashley and Conway rivers and to which farmers would drive their surplus sheep, and he described the way in which such a plant might work. An alternative would be to build a fixed central rendering plant which would be supplied with already broken-down material from a mobile slaughtering facility, but that would involve problems with effluent and district planning, whereas his investigations had shown that the only official concern about a fully mobile plant was held by the Ministry of Agriculture and Fisheries who would require certain standards in the preparation of meat meal and that the control of hydatids was ensured.

The farmers attending the meetings demonstrated considerable support for the establishment of a company to provide competitive alternative slaughtering and rendering facilities. Eighteen representatives were nominated to a Steering Committee which was charged with investigating the feasibility of establishing such a company.

## The Investigations

At their initial meeting on 5th November 1985, the Steering Committee thoroughly checked Mr Anderson's figures and modified them to allow a greater margin for possible changes in operating conditions and in case the prices for tallow and meat meal should fall still further.

At that time Federated Farmers of New Zealand were calling for a minimum payment to farmers of \$5 per ewe. Using their conservative figures, the Committee were confident of returning at least \$2.40 for a 20 Kg carcass plus the value of the skin, which was \$3.60 for a skin with the minimum wool-pull of 200 gms., giving suppliers \$6.00 per ewe.

The capital required for the plant itself was still based on earlier estimates and taken to be \$82,500. The Committee recognised that there was some doubt about the actual numbers of stock which would be available for processing, and about the quality of the tallow that the proposed plant would produce.

Two other practical matters arose. Firstly, the need to make the skinning process as easy as possible, which could be achieved using compressed air, and secondly, the need to ensure that the killing was done in a thoroughly humane manner which might involve some form of stunning.

Having satisfied themselves that the proposal was practically possible and economically feasible, the Committee considered what form of organisation was needed to make it a reality. They decided that a limited liability co-operative company in which suppliers, workers, and supporters had equal rights, would be most appropriate. There should be no opportunity for anyone to accumulate large blocks of shares and so take over the company, and the directors would retain complete control over any allotment of shares.

Because the intricacies of Company Law were beyond the range of expertise available within the Committee, a firm of solicitors in Christchurch was asked to prepare draft Articles of Association for the proposed company. These were based on the structure of the successful Primary Producers Co-Operative Society, and were presented to the Committee when they met on 19th November.

It was accepted that it would be difficult to maintain equity between worker shareholders and supplier shareholders of the same company, so two co-operatives were suggested, one being a supply company and the other a service company.

Members of the supply company might or might not be suppliers of stock, and there would be a minimum shareholding of 250 \$1.00 shares; each member would have only one vote; and all share transfers would be at face value and have to be accepted by the Board of Directors.

Payments from the company would firstly be aimed at offering an attractive monthly schedule to attract stock, and any surpluses would then be applied as rebates to suppliers or share dividends. The supply company would contract the manning of its facilities to a subsidiary service company. This would remove the employment of labour from the activities of the supply company.

The operators of the killing and rendering plants would be members of the service company and hold 75% of its shares, while the remaining 25% were retained by the supply company. Payment to the operators would be based on throughput, with bonuses for productivity, and they would employ any additional labour that was required. The two companies would operate under a "Heads of Agreement" which established mutual guidelines for their respective activities.

The Committee thoroughly perused the draft Articles of Association for the supply company, amended them where necessary, to suit the circumstances, and instructed the attendant solicitors to prepare the Articles for incorporation. Six directors were appointed from among the Committee members, each one representing the area of a Federated Farmers branch, and their appointments were to be ratified at the first meeting of the Company.

At this time, a small group of private individuals were also trying to establish a stationary rendering plant at Waipara. They found that the planning approvals required were too much of a hurdle, and they were unable to raise sufficient capital, so their venture lapsed. The Committee had been considering a fixed rendering plant supplied by a mobile slaughterboard, but this experience persuaded them to opt for a fully mobile plant.

A commercial engineering firm had expressed an interest in selling the Company a new type of rendering plant which could be easily transported. It would be a prototype and was expected to cost \$110,000, so Mr Anderson was asked to continue negotiations and try to obtain favourable financial terms. The Committee also believed that if they built a mobile slaughterboard as soon as possible, it would encourage potential suppliers to join the Company. Mr Anderson estimated this facility could be built for about \$12,000 and the Committee agreed to raise sufficient funds from among themselves to build it, with the expectation of being repaid by the Company.

With returns for their surplus stock so low, farmers were now prepared to slaughter and bury old ewes on their farms, or retain them for another clip of wool. In order to improve their throughput, some of the existing meat processors had raised their payments for old ewes and had bought considerable numbers of stock. Doubts about the Committee's venture had arisen when they met on 3rd December. The number of available stock, the prices being offered by meat processors, and the prices of the venture's possible

products were changing week by week. The Committee had already made commitments nearing \$4,000, and if they were unable to raise the \$9,500 needed to proceed with the slaughterboard by 25th December, they were prepared to consider selling the steel already purchased and winding up the whole venture.

However, they confirmed that their prime aim was to increase leverage on the prices paid for surplus stock. Even if the plant had the capacity to process only 500 sheep per day, or half the original proposal, it would still fulfill this aim. They agreed that the size of the plant would be determined by the amount of capital subscribed to a public share issue and decided to recommend a float to raise \$180,000 for -

- i) The construction of the mobile slaughterboard.
- ii) The purchase of a commercial rendering plant with a capacity of 500 sheep per day.
- iii) The construction of a mobile platform for the rendering plant.

Since none of the professional people who had been approached had been suitable for the position, Mr Harry Pawsey agreed to be the Company Secretary. The Committee decided that the service company should have a capital of \$100, 25% of that capital being held by the supply company which would also appoint one of the four directors. It was suggested that the "Heads of Agreement" between the service company and the supply co-operative should stipulate -

- i) That each month the companies should meet to work out the operating circuit, with the co-operative retaining ultimate responsibility for where the plant should be and when.
- ii) That operational decisions should reflect the most cost efficient method.
- iii) That the service company give guarantees to maintain the co-operative's assets and to keep the plant in working order.
- iv) That the service company leave the operating sites in tidy order.

Construction of the slaughterboard was no further ahead when the Committee met next on 14th January 1986. However, they agreed it would be precipitate to wind up the venture because of the delays caused by the Christmas holidays. A draft prospectus for the issue of shares in the supply company, to be called the North Canterbury Pastoral Producers Co-Operative Limited, had been prepared by the solicitors. Some amendments were immediately suggested but the Committee decided to study the prospectus further and confirm its format at the next meeting.

The Secretary, Mr Pawsey, promoted two principles which he believed should be fundamental to the Company's operation, namely -

- i) That the Company should operate on credit working capital and should never be in the position where it was forced to operate in order to gain revenue to pay off debts.
- ii) That the Prospectus should clearly state that the Company would not operate the rendering plant if the meat processors offered a schedule for stock greater than the Company's rendering schedule.

Mr Pawsey also suggested that the minimum capital which should be raised be \$155,000. This would be sufficient to meet the costs of plant purchase as estimated by Mr Anderson, preliminary expenses, consultancy fees, and still provide credit working capital.

The Committee were still optimistic of being able to operate the plant before the end of the 1985/86 season, but they now realised that there might be no more than 12,000 sheep available to them then. However, this number would provide a good test for the plant and ensure that it was ready for full operation at the start of the 1986/87 season.

Mr Anderson reported that the commercial firm which wanted to supply a rendering plant had raised their verbal estimate to \$170,000, and finally presented a written quote for \$240,000. Mr Anderson had ceased negotiations with them and, having exhausted all avenues of research available to him, had approached an engineer who was establishing himself in this particular field. He recommended that the Committee engage Mr Allan Curtis as consulting engineer to design a mobile meat rendering plant, to investigate the availability of equipment, and to discuss the concept with the Meat Research Institute. Since the sale of tallow would provide the majority of the Company's income, it was important that the proposed plant should produce tallow of high quality which would attract a good price.

Mr Curtis had already given advice and prepared some drawings, and the Committee agreed that he be invited to -

- i) Provide the next meeting with a feasibility study of the proposed plant to confirm the basic layout and capacities of the separate items of equipment.
- ii) Should the Committee decide to continue, draw the final plans and supervise the commissioning of the plant.

With the approaching float of the Company's prospectus, the Committee decided they needed professional advice on how to promote the sale of the shares and decided to ask a publicity firm in Christchurch for advice and an estimate of costs.

When the Committee met on 23rd January 1986, the main lines of investigation were coming together and some major decisions would be required.

#### The Rendering Plant:-

Mr Curtis presented layout drawings for the rendering plant and was closely questioned about the operation. He explained that all the component machinery for the plant was well tried and used in other processes. The unique character of this plant was the way in which the components were matched together. There would be very little waste heat, and even the exhaust system of the 300 KVA alternator would have a water-heating jacket fitted.

The original proposal had envisioned removing the gut from the carcase. This would have caused problems with the disposal of the gut contents and the breaking down of the gut tissues. Mr Curtis said that if the stock were yarded for twelve hours prior to slaughter, the complete ungutted carcase could be fed into the hogger, which broke the carcase down into material of a suitable size for cooking. The advantages of this system were that the soft offals would be more easily broken down and the bacterial infection which could spoil the tallow would be minimised.

Tallow from the plant could be transported away in bulk or in drums. Bulk handling might reduce costs, but until the plant was fully commissioned it would be prudent to use drums so that if a poor quality batch was produced it would be limited in quantity, and could be isolated from better material.

Any site used for operating the plant would require a loading ramp, sufficient room for the two semi-trailers, a burial pit for small amounts of solid waste, and a 1,000 litres per hour water supply. Mr Curtis identified three areas which could cause problems -

- i) The quality of the water supply
- ii) The disposal of liquid and solid waste
- iii) The adequate sterilisation of the meat meal

- but he assured the Committee that, provided the necessary equipment was acquired, the proposed plant would work. Although a completely new plant would cost \$1.2 million, it should be possible to successfully assemble second-hand equipment for a cost of \$125,500.

Mr Pawsey presented a list of the items required for the plant and their estimated cost at 20th January 1986 (see Table I).

TABLE IEquipment Estimates for Mobile Rendering Plant

	<u>Item</u>	<u>Materials</u> \$	<u>Labour</u> \$
1.	300 KVA diesel alternator	25,000	
2.	Air heater	3,500	4,000
3.	Hot water boiler (for tallow lines)	1,000	1,500
4.	Continuous melter	3,000	2,500
5.	Decanter	12,000	
6.	Separator	5,000	
7.	Forced draft fan	6,000	
8.	Dryer	1,500	1,200
9.	Cyclone	800	1,200
10.	Hogger	3,000	
11.	Melter screw conveyor	2,000	
12.	Digital scales	3,000	
13.	Tallow pump	500	
14.	Hot water pump	500	
15.	Tallow tank	1,000	
16.	Buffer tank	1,000	
17.	Three rotary valves	3,000	
18.	Screw feeders (to hammer mill)	10,000	
19.	Insulation	3,000	2,000
20.	Control gear for full automation	6,000	
21.	Hammer mill and motor	5,000	
22.	Two trailers	10,000	
23.	Miscellaneous and spares	7,200	100
		<u>113,000</u>	<u>12,500</u>
	Rendering Plant	\$125,500	
	Slaughterboard	\$12,000	
	Total plant	<u>\$137,500</u>	

Mr Curtis made the following recommendations:-

- i) Since the Committee proposed using second-hand equipment, it would be prudent to budget for annual repairs and maintenance at a rate of 3% of the value of a new plant, i.e. \$36,000.
- ii) Since the decanter, which separates the tallow from the meat meal, would be the vital part of the plant, it should be serviced annually to minimise the chance of failure during a season.
- iii) Sufficient spares, including a scroll and gearbox for the decanter, should be carried.

- iv) The Committee intended to buy a used decanter for \$12,000 instead of paying \$120,000 for a new one. If there were sufficient funds they should consider securing two decanters at \$12,000 each.

#### Skin Removal:-

The results of some initial trials had convinced Mr Peter Turnbull that the use of compressed air was a feasible means of separating the skin from the carcass. Further work would be needed to determine the best injection site. A report of investigations into compressed air skinning by the CSIRO should be obtained as their experience might be very helpful.

#### Skin Disposal:-

After discussions with a fellmongery representative, Mr Bob Hewett had concluded that there were no real problems with transporting skins. It was important that they arrive at the fellmongery in good order because a large part of the initial payment to suppliers would come from the sale of high quality skins.

Provided the temperature of the skin was reduced quickly after separation and it was folded skin to skin, no further treatment would be necessary before a quick delivery to the fellmongery. Where sites were further away, it might be necessary to apply salt to the fresh skin before it was folded, at minimal extra cost.

#### Method of Slaughter:-

The Committee had envisioned using a captive bolt system for slaughtering the stock. However, this might merely stun the animal and it was possible it could revive later. It seemed that the spinal cord would have to be severed before the animal could be considered dead and skinning could proceed. This had implications for the design of the slaughterboard because cutting the skin at the throat might affect the compressed air skinning.

#### Financial Forecasts:-

The Secretary, Mr Pawsey, presented a projected cashflow based on processing 750 sheep per day, with an average liveweight of 45 Kg, or carcass weight of 20 Kg. After some modification the Committee were satisfied that a forecast as shown in Table II was realistic.

TABLE II

CASHFLOW FORECASTBASED ON AVERAGE KILL OF 750 SHEEP PER DAY

For a 45 Kg liveweight ewe yielding 6.6 Kg tallow @ 55 cents/Kg

7.5 Kg meal @ 40 cents/Kg

Staff - Manager, \$2,100 per month

Contractors, 7 @ \$10 per hour base rate.

<u>Item</u>	<u>Per Sheep</u>	<u>Total</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>
<u>Income -</u>										
Tallow	3.630	297660	36300	54450	43560	54450	54450	54450	0	0
Meal	3.000	246000	30000	45000	36000	45000	45000	45000	0	0
<u>Interest</u>		853		12	61	89	140	167	220	162
<u>Total Income</u>	<u>6.630</u>	<u>544513</u>	<u>66300</u>	<u>99462</u>	<u>79621</u>	<u>99539</u>	<u>99590</u>	<u>99617</u>	<u>220</u>	<u>162</u>
<u>Expenses -</u>										
Contracting	1.400	114800	14000	21000	16800	21000	21000	21000	0	0
Diesel fuel	0.800	65600	8000	12000	9600	12000	12000	12000	0	0
Drums & bags	0.350	28700	3500	5250	4200	5250	5250	5250	0	0
Transport	1.010	82820	10100	15150	12120	15150	15150	15150	0	0
Plant replacement	0.100	8200	1000	1500	1200	1500	1500	1500	0	0
R. & M.	0.200	16400	2000	3000	2400	3000	3000	3000	0	0
Members payment	2.400	196800	24000	36000	28800	36000	36000	36000	0	0
<u>Total direct expenses</u>	<u>6.260</u>	<u>513320</u>	<u>62600</u>	<u>93900</u>	<u>75120</u>	<u>93900</u>	<u>93900</u>	<u>93900</u>	<u>0</u>	<u>0</u>
Management		16800	2100	2100	2100	2100	2100	2100	2100	2100
Insurance		1200					1200			
Administration		8000	1000	1000	1000	1000	1000	1000	1000	1000
Interest										
<u>Total expenses</u>	<u>6.577</u>	<u>539320</u>	<u>65700</u>	<u>97000</u>	<u>78220</u>	<u>97000</u>	<u>98200</u>	<u>97000</u>	<u>3100</u>	<u>3100</u>
Surplus Deficit			600	2462	1401	2539	1390	2617	-2879	-2937
Accumulated funds			600	3062	4463	7002	8392	11010	8130	5193
Stock killed		82000	10000	15000	12000	15000	15000	15000	0	0

Stock would probably be available for rendering from mid-October to the end of March in any season, and after allowing for a five day working week, public holidays, downtime for maintenance, and shifting between sites, it seemed prudent to budget on a total kill of 82,000 sheep. After allowing an initial payment to suppliers of 12 cents/Kg, or an average of \$2.40 per sheep which would be in addition to the value of the skin, there should be a surplus of 5 cents per sheep at current prices for tallow and meat meal. The forecast also indicated that the plant would have to process over 500 sheep per day to be viable.

Although the margins were narrow enough, the Committee were satisfied that the operation would be viable and two members proposed that the Steering Committee strongly recommend the proposed mobile slaughtering and rendering plant as a viable alternative to farmers for the profitable disposal of surplus stock and that the Steering Committee float a prospectus for the North Canterbury Pastoral Producers Co-Operative Limited for the issue of 177,500 shares of \$1.00 each, with a minimum requirement of 170,000 shares. Ten members of the Committee had already subscribed \$250 each for shares in the proposed company.

It was important that the Committee be fully in accord, so the Chairman asked each member for their own individual opinions. It transpired that there was still concern about the amount of capital required because the proposed minimum could leave the Company with insufficient capital should the cost of equipment be greater than forecast or should there be a major breakdown during the initial shakedown operation. When the figures had been amended to 197,500 shares, with a minimum of \$180,000, the Committee were unanimous in their support.

After coming to this important decision, the Committee considered how the sale of the shares should be promoted. Mr Ian Armstrong agreed to arrange a series of public meetings for early March in the six districts where the Company would operate, and a commercial quote for the design and printing of 2,000 "To The Farmer" brochures, as shown below, to publicise the meetings was accepted.

Design of Mailed Brochure

## A PROPOSAL TO ACHIEVE FULL VALUE FOR YOUR SURPLUS STOCK

A group of North Canterbury farmers has formed a steering committee to take action about the plummeting value of their surplus sheep. This committee has come up with a proposal worthy of your urgent consideration.

### THE CONCEPT:

To operate a modern mobile slaughter board and rendering plant on suitable properties between the Ashley and Conway Rivers, processing all available sheep in the locality of each stop. Keen competition is anticipated for the output — high quality pelts, meal and tallow.

### PROGRESS SO FAR:

The steering committee has sought expert advice and spent many hours in research. Its firm conclusion is that the scheme is technically feasible and financially sound.

### THE BENEFITS TO YOU, THE FARMER:

- \* Profits returned to you, the supplier.
- \* Reduced costs and maximised returns for your stock.
- \* An alternative for marketing your cull ewes.
- \* More control over the marketing of your own produce.

**The proposed  
North Canterbury Pastoral Producers' Co-operative  
needs your support!**

NB: This brochure is in no way a prospectus.

At the meeting on 13th February the Secretary was asked to prepare a press statement outlining the aims and objectives of the Company. Together with newspaper advertisements, the mailed brochure, radio comments, and reports at Federated Farmers meetings, this would provide publicity for the Company float.

There was still doubt about the best method of killing the sheep. It would be preferable if the animal did not bleed so that the blood did not have to be channelled into the process separately. Further, simply cutting the throat and spinal cord could interfere with the compressed air skinning, so some form of tourniquet might be needed. After considering various suggestions, the Committee agreed that veterinary advice should be sought.

### MEETINGS TO DISCUSS THE PROPOSAL IN FULL WILL BE HELD AT:

OMIHI: Omihi Hall  
Monday 3rd March  
SEFTON: Loburn Domain Pavilion  
Tuesday 4th March  
HAWARDEN: Hawarden Trust Tavern  
Thursday 6th March  
CHEVIOT: Cheviot Trust Hotel  
Monday 10th March  
AMURI: Rotherham Hall  
Tuesday 11th March  
AMBERLEY: RSA Hall  
Wednesday 12th March

### FOR ANY FURTHER INFORMATION, CONTACT:

SCARGILL — John Andrew  
Ph (0504) 43-498  
SEFTON — Arthur Wylie  
Ph (0502) 5724  
HAWARDEN — Harry Pawsey  
Ph (0504) 44-169  
CHEVIOT — Ian Armstrong  
Ph (05138) 368  
AMURI — Oliver Grigg  
Ph (0515) 8035  
AMBERLEY — Andrew Anderson  
Ph (0504) 48-461

ALL MEETINGS START AT 8.00 PM

## INSIDE: A fair price for your cull ewes...

To:

THE NORTH CANTERBURY FARMER

**LET'S SET A FLOOR PRICE  
FOR OUR SURPLUS STOCK!**

Providing transport for skins to the fellmongery was still an unresolved problem. In order to keep the operation as simple as possible and because various forms of transport were available to farmers, it was decided that in the first year of operation the skins would remain the responsibility of the suppliers. A large part of the return would come from the skins and it would be in suppliers' interests to ensure that they arrived in good order. The Company could investigate the provision of transport later on.

Mr Hewett had been asked to investigate the feasibility of using electric power supplied by the North Canterbury Electric Power Board to drive the plant. He reported that it would certainly be feasible, but 300 KW capacity was restricted to certain areas and the capital cost of providing twelve outlets and a mobile transformer with switchboard would be excessive. Linesmen would be required to make the connections each time the plant was set up, and the choices of operating sites would be greatly reduced. The Committee agreed that a 300 KVA diesel alternator was still the preferred power source, but mains power remained an option.

Mr Pawsey presented an updated report on the viability of the rendering plant. The initial financial study was based on the following yields and prices -

A 20 Kg carcase yielding 6.6 Kg tallow @ 55 cents/Kg  
and 7.5 Kg meal @ 40 cents/Kg.

Tallow prices fluctuated according to the supply of other substitutes used as raw materials for the toiletry trade such as vegetable oils, and in particular palm oil, of which there was currently an international over-supply which was not likely to improve in the near future. Tallow prices, for 0.5 red grade, had varied from a high of \$1020/tonne in December 1984 to the current low of \$450/tonne, but had usually been around \$600 to \$700/tonne. It had been predicted that the price could fall below \$400/tonne before levelling out.

Meal prices were more steady and hovered around \$400/tonne, although they were expected to drop below that level because of tight international liquidity and fluctuating exchange rates.

The viability of the plant was not sensitive to varying yields, provided accurate measurements were made of the carcase weight and the output of tallow and meal, but the viability would be determined by the total kill and the gross returns from tallow and meal.

The return per sheep would have to fall below \$4.20 before there was no return to the supplier from the sale of tallow and meal and the Company had to charge for the skinning of the sheep. For example, a 20 Kg ewe yielding 6 Kg tallow at \$300/tonne and 7 Kg meal at \$350/tonne would return \$4.20 and leave the skin free to the supplier.

On checking the draft prospectus, the Committee realised that they were offering an entitlement to killing space of 250 sheep for the minimum subscription of 250 shares. If the float raised the full \$200,000, members would hold entitlements to killing 200,000 sheep through a plant which was designed to process only 100,000. It was agreed that members would have to hold 2 shares for each sheep that they wished to put through the plant.

Mr Allan Curtis had accepted his appointment as the Company's consulting engineer, but at the meeting on 27th February the Committee were concerned about who would hold the proprietorship of the design and plans for the rendering plant. Although Mr Curtis had stated that in keeping with accepted engineering practice, he would retain ownership of the plans, the Committee believed that the Company should share in any benefits to be gained if other parties used Mr Curtis' design to build rendering plants. Without the Committee's efforts there would have been no call for Mr Curtis to design the plant. They had initiated the venture and as a result of their experience would be able to save anyone else considerable time and expense. The precedents established by the Committee and any help given to establish similar ventures in other areas should be worth some recompense.

In view of the fact that both Mr Curtis and the Company had made contributions to the development of a prototype plant, it was agreed at a subsequent meeting with the Company's solicitors that both parties would keep each other informed immediately any enquiries were made concerning the plant and would not make arrangements to build further plants without consulting the other. The Company would have the opportunity to recover a royalty and recover some of its development expenditure and Mr Curtis' copyright would be protected.

Several Committee members, together with a fellmongery representative, had taken part in further trials of compressed air skinning. The pelts had inflated easily and the skinning process was greatly facilitated, with much less knife-work required. Those present had been very satisfied with the quality of the skins produced.

#### Statutory Approvals:-

Although the Company's plant would be operating on-farm, on private property, it would still have to satisfy the requirements of the Clean Air Act 1972 and would need a licence from the Ministry of Agriculture and Fisheries (MAF) to operate as a by-products operation. The Regional Water Board would be interested to ensure there was no contamination of surface or ground-water supplies, and the Company's products would have to be certified by the MAF. In order to obtain the necessary MAF licence, the Company would have to receive permission to operate from the local authorities covering the districts between the Ashley and Conway rivers.

Therefore, the Secretary had prepared the necessary application for permission to operate a mobile abattoir facility. In it he gave the background to the formation of the Company, the area in which it would operate, and a description of the plant which would be moved from site to site by hired prime-movers. There would be other smaller vehicles such as private cars and fuel tanks servicing the plant, and transport contractors would make regular calls to remove the products.

Mr Pawsey described the working of the plant. The semi-trailers carrying the plant would be backed up to a sheep-loading ramp. Stock would enter the slaughterboard from the top level and be killed. Compressed air would be injected between the pelt and carcass in the neck region to separate the pelt from the carcass, and the four legs then cleared before the carcass was hung on the rail. The carcass would proceed down to the next stations where the pelt would be removed, dropped down a chute, folded skin to skin, and stacked on to a pallet resting on a cover on the ground ready for transport to the fellmongery.

The skinned carcass, complete with gut content, head, and trotters, would be weighed and dropped into the hogger on the rendering semi-trailer. The resultant slurry would then be augered into the continuous cooker which would be surrounded by a direct-fired jacket maintained at 500°C by burning furnace oil. The material would be heated to the point where the molecular structures were broken down into a sludge which would be augered into a screw type decanter where the liquids would be separated from the solids.

The solids, consisting mostly of meat and bone products, would pass to a direct fired oil burning dryer, be dried to around 4% moisture, and then be reduced in size to a meal in a hammermill before being bagged off in 50 Kg bags.

The liquids would pass from the decanter to a separator where the tallow would be removed from the stickwater and piped into 200 litre drums.

The stickwater is the non-fat liquid produced by the breakdown of the animal tissue together with water added at start-up to heat the tallow lines and cooker. Water may be added during the process to facilitate the movement of sludges. Conventional dry rendering plants used in freezing works vent such excess liquid off as steam to the atmosphere. In the planned low temperature process some of the stickwater would be recycled into the decanter and the excess piped off into storage tanks for later disposal in approved offal pits. A total day's kill of 1,000 sheep would generate about 4,000 litres of stickwater.

Although the plant was designed to handle 1,000 sheep per day, the Company expected to process an average of 750 sheep in a normal eight-hour day.

Approximately 500 litres of water per hour would be required from the water supply at each operating site.

The planned 300 KVA diesel powered alternator would be sufficient to power all moving parts and to heat water. The cooker and dryer would be fired with furnace oil burning about 190 litres per hour.

The plant was designed so that all wash-down water would be contained within the plant and thence pumped into storage. Up to 500 litres of liquid effluent would be produced each day and this would be disposed of either into soak holes or spread over pasture.

The separator would sieve out fine solids which had escaped the decanter. A normal day's kill would produce about half a wheelbarrow load of such solids which could be disposed of in an approved offal pit.

Minimal noxious odours would be emitted because the plant would not vent off animal liquids to the atmosphere.

The plant would be manned by seven contractors, five on the slaughterboard and two on the rendering plant, who would be under the control of a manager. Farmers would be assisting in the loading of stock and collection of skins. There could be up to ten people directly involved with the operation of the plant at any time.

The Committee decided to ask their legal advisers to approach the local authorities involved and seek their approval for the operation of a mobile abattoir facility.

One of the Company's solicitors reported that the Prospectus had been checked and approved by the Auditors, who had been favourably impressed by the work done by the Committee. The Prospectus had been certified by the Registrar of Companies and registered as a public document on 28th February 1986, and was duly signed by the six members of the Steering Committee who had been appointed as Directors.

The solicitors had also completed Articles of Association for the proposed service company and three members of the Committee were appointed as directors of that company.

The Committee then discussed the format for the forthcoming public meetings which had been called to float the issue of shares in the Company.

## The Float

The Steering Committee reported back to farmers and recommended the purchase of shares in the North Canterbury Pastoral Producers' Co-Operative at a series of meetings held under the auspices of the Omihi, Sefton, Hawarden, Cheviot, Amuri, and Amberley branches of Federated Farmers from 3rd to 12th March, 1986.

At each meeting Mr Grigg gave a general background to the work of the Committee and its recommendations. He stressed that the prime aim of the venture was to provide a competitive slaughtering service for cull stock, thereby encouraging the existing meat processors to offer a fair schedule. This would also help to set a floor price for all surplus sheep. Should the meat exporters offer a better return than the rendering plant, the Directors would be happy to lay-up the plant until it was needed again. Mr Grigg underlined the Committee's recommendations that -

- 1) The venture should always operate in credit.
- 2) The Directors should not proceed if farmers did not subscribe a minimum of \$180,000

and then he introduced the following speakers.

Mr Anderson described how the slaughterboard would be constructed and its operation. The design of the rendering plant meant that gutting and head and trotter removal would no longer be required. The compressed air system would greatly facilitate the skinning.

Mr Curtis described how already proven technology had been combined in a new way to produce a rendering plant which would be fully mobile and which he could guarantee would produce quality products.

Mr Hewett told how the quality pelts produced would have to be handled in order to obtain the best return for them from a fellmongery.

Mr Pawsey presented tables which showed how the capital structure of the Company and the processing charges would be made up. (See Tables III and IV).

TABLE III

### CAPITAL STRUCTURE

		\$
Preliminary expenses (legal, accountancy, postage, etc.)		11,500
Slaughterboard	12,000	
Rendering Plant	125,500	
<u>Total Plant</u>		137,500
Consultancy		19,500
Working Capital		<u>31,500</u>
<u>Total Capital</u>		<u>\$200,000</u>

TABLE IV  
PROCESSING CHARGES

	\$ c
Contract labour	1.40 / sheep
Rendering direct costs (fuel, bags & drums, transport)	0.108 /Kg of carcase
Repairs and Maintenance	0.10 / sheep
Plant replacement	0.20 / sheep

<u>For Killing and Rendering</u>	<u>Per Sheep</u>
20 Kg carcase	\$4.127
16 Kg carcase	\$3.745

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Mr Pawsey then showed what returns suppliers could expect from the rendering plant at current product prices compared with the return from the meat exporters' schedule of 10th February. (See Table V).

TABLE V  
RENDERING RETURNS TO SUPPLIERS

Tallow @ \$450/tonne		0.33 Kg / Kg of carcase)		0.375Kg / Kg of carcase)	Yield
	<u>16 Kg carcase</u>		<u>20 Kg carcase</u>		
Pay Out -	80 cents		\$1.50		
	<u>Co-Operative</u>	<u>Exporters</u>	<u>Co-Operative</u>	<u>Exporters</u>	
		<u>Schedule</u>		<u>Schedule</u>	
Plus Pelt (10/2/86 schedule)	\$	\$	\$	\$	
Woolpull					
0.2 Kg	3.30	4.10	-2.50	4.80	0.30
1.0 Kg	5.54	6.34	-0.26	7.04	2.54
2.0 Kg	8.16	8.96	2.36	9.65	5.16
<u>Schedule</u>	Average price Average killing and transport charge		45 cents/Kg  \$12/sheep		
<u>Co-Operative</u>	- Average killing charge		\$4/sheep		

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The Company's average killing charge would be about \$4 per sheep compared with an average transport and killing charge at a meat works of \$12. Suppliers of light sheep with a minimum woolpull would receive \$6.60 more than the charge of \$2.50 that such stock would attract at a meat works. Heavier grades with more wool would return at least \$4.50 more through the rendering plant.

Each meeting was attended by one or other of the Company's solicitors who told the assembled farmers how impressed they were with what the Committee had done, how enthusiastic they were about the venture, and how keen they were to see it succeed.

Reaction to the Committee's proposal was generally supportive, although there was still a little scepticism in some areas. However, compared with the interest shown the previous October, the attendance at the meetings was disappointing. Numbered copies of the Prospectus were handed out, with details of the recipients being carefully recorded. A few cheques were received immediately, but it soon became apparent that a great deal more work would have to be done with personal contact by Committee members to achieve a sufficiently wide circulation of the Prospectus. Less than 300 copies had been taken at the meetings and to achieve the minimum capital would require 600 farmers subscribing for an average of 300 shares each.

### The Follow-Up

When the Committee next met on 19th March, they recognised that further publicity was required and decided to send the Prospectus to several national and provincial farming leaders and ask for their support. This was given by way of radio comments and press statements.

The 31st March was set as a target for having all the Prospectuses circulated, and Committee members would follow-up ten days later to determine whether shares had been applied for. The Secretary would keep a master list and liaise with the six districts so as to check on progress.

At the time, the original closing date for the share offer of 9th May seemed to allow plenty of time for the issue to be fully subscribed.

The announcement of the nation-wide meatworkers' strike should have increased farmers' keenness to invest in their own alternative means of disposing of surplus stock. However, any surplus cash left over from the 1984/85 season was being taken up by increased costs and the lack of opportunity to have lambs killed because of the prolonged strike was causing havoc with farmers' cashflows. With the strike dragging on, the Committee believed there was no point in applying pressure to farmers to subscribe. As it turned out, once the meat works began to operate again the returns were so low and farmers' accumulated debts so high that there was still very little surplus cash to invest in a new idea being promoted by an untried team.

The Committee met again on 23rd April to review the situation. Subscriptions were very slow in coming in, and various other ways of raising sufficient capital were canvassed. The Secretary was asked to sound out both the New Zealand Meat Producers' Board and a newly emergent commercial firm to see if they were interested in taking up shares. The Chairman was asked to talk to financiers and stock firm managers and ask them to allow their clients to write cheques for shares in the Company. The Meat Board replied that any such proposal would be considered on the merits of the case, the new firm did not wish to be involved, and the realistic, down-to-earth response of one financier was that if it was a choice between keeping clients on their farms and supporting the rendering plant, the farms would come first.

The Secretary gave a report on a meeting called by the solicitors with representatives of Government departments and local authorities to discuss approvals for the rendering plant.

The representative from the Department of Health had confirmed that under Section 31 of the Clean Air Act 1972 the Department must approve the full plans of the rendering

plant before construction began, and must be advised that the plant and operating sites had approval from those local authorities concerned under the terms of the Town and Country Planning Act. Section 23 of the Clean Air Act required that the Department give approval for the operation of the plant. The Department had some reservations about the proposed heating systems, but these were allayed after further discussions with Mr Curtis. They were also concerned about noxious emissions, but later agreed that there should be no problem if the plant was operated more than one kilometre away from any habitation. The farm habitation associated with the operating site would not be counted because the occupants would be considered willing parties to the operation.

The North Canterbury Catchment Board representative had stated that the Company would be required to make formal applications for water rights for each effluent disposal site. He had suggested that Board officers could advise which areas would be unsuitable. At a subsequent meeting with the Chairman of the Committee, Catchment Board officers said they were concerned about contamination by both run-off and soakage. Approval for spreading effluent on pastures would depend on the degree of contamination and if this was low, a blanket approval with conditions attached might be possible. The Chairman suggested that a trial approval would be of value to both parties because the Company would be able to conduct run-up trials and the Board would be able to assess the effluent quality and thus determine what conditions would be required. The Board officers considered sites around the hills would be more acceptable than out on flat country.

The representative from the Ministry of Agriculture and Fisheries had stated that the Ministry had to approve all products destined for export. Such approval would be dependent upon the plant meeting the requirements of the Department of Health, the local authorities, and the Catchment Board. The Meat Division of the Ministry were concerned that the inclusion of paunch contents in the process might downgrade the quality of the tallow and they advised that meal from low temperature rendering plants was unacceptable in Japan and Scandinavia unless it was sterilised further. The Ministry's prime concern was that the method of slaughter be humane, and they suggested that a captive bolt system would cause sufficient brain damage to ensure death and would do away with the need for bleeding.

Mr Pawsey reported that all the officials he had spoken to had a good grasp of the processes that would be used in the plant. They had been generally sympathetic and willing to make helpful suggestions.

All three county councils had responded favourably to the venture and in due course the Hurunui County Council health inspector drew up a local authority approval which was adopted by the Amuri, Cheviot, and Hurunui County Councils.

By the time of the Committee meeting on 13th May the venture appeared to be stalled. The Secretary's agenda listed three alternative courses of action -

- i) To declare the float of shares a failure and hand the money back to subscribers.

- ii) To extend the closing date of the offer.
- iii) To alter the Prospectus to cover neighbouring districts.

The Secretary advised the meeting that by 9th May 296 farmers had applied for only 105,250 shares. After examining the applications, the Committee concluded that applications could be expected with certainty from another 75 farmers with the possibility of a further 60 being forthcoming. Although the minimum of 180,000 shares still might not be met, the closing date for the offer was extended to 31st May.

Declaring the float a failure was not yet acceptable. Considerable preliminary expenses had been incurred already and the Committee members would be liable for those debts. Extending the area to be covered would complicate the logistics of operating the plant, and could result in demand for killing space exceeding the capacity of the plant.

The Committee recalled that in normal seasons North Canterbury farms had a large number of light old ewes as well as some overfat ewes which were not welcome at the meat works because of the low yield of quality meat cuts. They were also encouraged that the principles behind the venture were sound by the enquiries they had received from Southland, South Canterbury, Central Canterbury, Marlborough, Hawkes Bay, and even the Chatham Islands.

The Secretary was instructed to write to all those who had applied for shares to tell them of the response to date and of the decision to extend the offer. Applicants would be invited to increase their applications and be given notice of a possible further extension of time as well as the possibility of extending the operational area. The farming editor of the Christchurch Press would also be advised of the progress of the float.

A short meeting of the Committee was held during the lunch break at North Canterbury Federated Farmers provincial conference on 28th May to again extend the offer to 28th June, which was the latest date possible.

It had become apparent that most subscribers had applied for the bare minimum of 250 shares without considering whether this would cover all the stock that they intended to put through the Company's plant. Mr Bruce Gardner agreed to compose a strongly worded letter pointing out this matter to the applicants, reminding them of the reasons for the venture, and informing them that the offer would close finally on 28th June and the venture would fail if the minimum capital was not subscribed. The Committee members also redoubled their efforts to contact all those sheep farmers who had not taken up shares.

Further subscriptions continued to trickle in, among them some sizeable additional applications elicited by Mr Gardner's blunt letter, but by 19th June it was apparent that little more than \$150,000 would be forthcoming. However, nearly 400 farmers had shown their support for the venture and some had made considerable financial commitments to it. In spite of falling tallow prices, the Company's plant would still be able to offer \$4 to \$6 per sheep more to suppliers than the meat processors, and the logic of the venture was as strong as before. The Committee met to consider a proposal from the Secretary, which would recommend to the incoming Directors of the Company that they establish a B Register of shares for members who took up a minimum of 5,000 shares each.

The B Register shares would be transferable before any shares on the main register. Should members present more stock for processing than their shareholding entitled them to, they would be asked to take up shares from the B Register at a premium of 20 cents plus 3 cents a share per calendar month from 28th June. The 3 cents per month would be passed on to the original holder of the B shares as a reward for ensuring the success of the float. In assessing the risk for investors, Mr Pawsey said that Mr Curtis assured the Directors that the project was feasible and had a very high probability of success. On the down side, if the Company failed the salvage value of the plant would be about \$100,000 and would return members no more than 55 cents for each \$1.00 share held.

The Committee adopted the Secretary's proposal and six individuals were found who were prepared to put up \$5,000 each for B Register shares.

The Fulfilment of the Brief

Although there was still a great deal to be done to build a working rendering plant, it was a greatly relieved Committee which met on 3rd July 1986. Subscriptions amounting to \$183,000 had been received by the Share Registrar by due date and the share float for the North Canterbury Pastoral Producers' Co-Operative had succeeded.

The Committee had three final recommendations to make:

- 1) That the Directors close the public offer.
- 2) That two additional Directors be appointed, one each from the Amuri and Cheviot districts, to reflect the support given by those districts.
- 3) That the Steering Committee disband.

Members present thanked the Secretary and Chairman for their efforts in raising the successful public subscription. The Chairman replied that it was a total team effort and every member had contributed. He asked the Committee to perform one final duty by reporting back to the Federated Farmers branches and thanking those who had supported the Company.

Special reference was made to Mr Andrew Anderson, whose imagination and drive had launched the idea of a mobile slaughtering and rendering plant.

## Postscript

By the beginning of November 1986, the ORVCO engineering company at Amberley had constructed the mobile slaughterboard within the Prospectus estimate of \$12,000. The MAF had provided considerable assistance to ensure that the construction met their requirements.

The Co-Operative had run into considerable problems with the purchase of equipment for the rendering plant. Because it had taken so long to raise the capital, they were unable to secure the decanter and separator which had been located earlier in the year for \$12,000 and \$5,000 respectively. New prices for these key items were out of the question with such a limited budget, and even used equipment was being keenly sought for other uses such as oil recovery from fish wastes and the extraction of coagulated blood in both Australia and New Zealand.

The closures of the Shortland and Whakatu meat processing works had been announced, and the Directors had endeavoured to secure equipment from their rendering departments. They had even offered to clear the Shortland rendering equipment in association with a machinery dealer in the expectation of securing what was required for the plant and selling the remainder for little cost, or even a profit. However, the management of both works had still not decided what they would do with their surplus equipment.

In the meantime good feed supplies and greatly increased offers from meat processors for surplus stock had virtually eliminated any demand for the services of the Co-Operative. Nevertheless, with so much rationalisation occurring in the meat industry, the Directors recognised that conditions in the industry would continue to change quickly and remained convinced of the need for a facility to process mutton which was not suitable for cutting. The current situation allowed them to wait for suitable equipment to become available and removed the pressure to buy at prices beyond their budget.

Repayment of the B shares together with their accumulating premium concerned the Directors, but the subscribed capital was earning interest which easily covered that liability.

The Directors had also investigated alternative uses for sheep killed on the slaughterboard. The returns to be gained from producing pet food did not provide sufficient margins, but it might be possible to provide a service killing farmers' own sheep for dog tucker.

At the time of the completion of this project, the Directors were preparing to report to shareholders at the first general meeting of the Co-Operative on 27th November 1986.

APPENDIX AMEMBERS OF THE STEERING COMMITTEE

O.J.T. Grigg Culverden (Chairman)	R.L. Hewett Cheviot
I.P. Armstrong Cheviot (Deputy Chairman)	B.K. Macfarlane Parnassus
H.E. Pawsey Hawarden (Secretary)	R.E. McMillan Amberley
A.A. Anderson Amberley	M.T. Newton Hawarden
J.R. Andrew Greta Valley	R. Page Loburn
J.R.A. Chaffey Waiau	R.G. Palmer Amberley
J.H. Foster Scarqill	I.F. Seyb Culverden
B.S. Gardner Waiau	P. Turnbull Amberley
G.L. Gates Amberley	T.A.W. Wyllie Rangiora

APPENDIX BDIRECTORS OF THE CO-OPERATIVE

O.J.T. Grigg - Chairman  
Amuri

I.P. Armstrong - Deputy Chairman  
Cheviot

H.E. Pawsey - Secretary/Manager  
Hawarden

A.A. Anderson  
Amberley

J.R. Andrew  
Omih

B.S. Gardner  
Amuri

R.L. Hewett  
Cheviot

T.A.W. Wyllie  
Sefton

APPENDIX CTALLOW AND MEAL PRICES

(in \$NZ per tonne)

Month/ Year	<u>Tallow</u>		<u>Meal</u>	
	0.5 Red Grade	1.0 Red Grade	50% Protein	45% Protein
12/83	635	605	407	367
3/84	730	710	465	425
5/84	775	765	430	390
7/84	840	810	405	365
9/84	925	900	430	385
12/84	1050	1020	445	400
3/85	975	950	335	340
6/85	985	965	330	317
9/85	675	630	360	345
12/85	565	555	400	385
3/86	500	470	350	335
6/86	360	330	335	320
9/86	410	390	430	415

(Source - NZ Meat Producer)