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**FARMER ATTITUDES AND BELIEFS TOWARD A BULL BEEF SUPPLY  
CONTRACT**

**A thesis submitted in partial fulfilment of the requirements for the degree Master of  
Agricultural Science in Farm Management.**

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## ABSTRACT

The objective of this research was to establish the reasons why past-users (1990-92) of a Riverlands weaner bull supply contract (RWBC) had entered and exited the contract, and what aspects of the current RWBC prevented them from re-signing. A mail survey of past RWBC users in the central North Island who were still farming bull beef was conducted. Useful responses were obtained from 22 of the 35 eligible farmers. The survey design incorporated the Ajzen-Fishbein Theory of Reasoned Action to establish how past-user's subjective beliefs and evaluative attitudes towards aspects of the current contract influenced their overall attitude towards re-signing a RWBC. Information about RWBC entry and exit reasons, and farmer requirements of future meat supply contracts was also obtained.

The results suggest that respondents originally entered a RWBC to obtain the equivalent of 100% funding for cattle at low interest rates, and to increase cattle numbers (which at that stage were more profitable than sheep) by access to such funding. Farmers exited the contract because slaughter prices in the RWBC had become uncompetitive, and because of inflexibility associated with the range of dates available to slaughter cattle. Low belief strengths that a RWBC provides competitive prices compared to the free market, flexible dates for killing cattle, and improved farm profitability compared to non-contract weaner bull systems, are acting against farmers re-entering a RWBC. A future meat supply contract therefore, needs to incorporate price premiums, flexible killing dates, low interest rates, and competitive pricing before respondents, such as those involved in this study, would be prepared to sign. The Ajzen-Fishbein Theory of Reasoned Action provided an effective methodology to identify key aspects of an individual's belief structure which influenced their decision to not sign a 1993 RWBC.

Future research in the area of meat supply contracts should examine more closely, using techniques such as COPE (e.g. Hurley & Valentine, 1993), the cognitive structures farmers hold towards issues such as competitive pricing, farm profitability under contract, and killing date flexibility.

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## ABBREVIATIONS

- A:** Overall attitude.
- ADG:** Average daily gain
- AFFCO:** Auckland Farmers Freezing Co-operative.
- b<sub>i</sub>:** Subjective belief.
- BI:** Behavioural intention.
- BSC:** Beef supply contract.
- CA:** Correspondence Analysis.
- CWT:** Carcase weight.
- e<sub>i</sub>:** Evaluative attitude.
- ha:** Hectare.
- IPM:** Integrated pest management.
- JRAC:** John Read Agricultural Consultancy Limited.
- kg:** Kilograms.
- LWT:** Liveweight.
- m:** Months.
- MSC:** Meat supply contract.
- MSWT:** Mean slaughter weight.
- NI:** North Island.
- NZ:** New Zealand.
- OOS:** Out-of-season.
- Riverlands:** Riverlands Foods Limited.
- RR:** Re-entry requirement.
- RWBC:** Riverlands weaner bull contract.
- SN:** Subjective norm.
- SST:** Supersonic transport.
- SV:** Slaughter value.
- SWT:** Slaughter weight.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Introduction**

Meat supply contracts in the lower North Island have been developed over the last three to six years. The most widely known of these, the Riverlands Weaner Bull Contract (RWBC) was established in 1988. This meat supply contract is operated by Riverlands Foods Limited (hereafter referred to as Riverlands), a subsidiary of the Huttons Kiwi Group Limited. John Read Agricultural Consultancy (JRAC) have managed the contract on behalf of Riverlands since its inception. Nationally, 55-000 head of cattle were contracted to Riverlands by 300 farmers (on average 180 head per farmer) in the 1991-92 killing season. Contract cattle accounted for 36% of Riverlands throughput, and represent an investment of more than \$25 million by the company (Huttons Kiwi Ltd, Annual Report 1993).

This study aimed to establish the reasons why farmers entered and exited a RWBC, and identify issues that need to be addressed in order for these farmers to return to a RWBC.

Background information about beef supply contracts and the major issues of contracting for farmers in the North Island are discussed in this Chapter. The major changes in the meat industry and the implications for vertical coordination are outlined. Within this context the Riverlands meat supply contracts, and in particular the RWBC, are presented. Finally, the purpose and scope of this investigation is described.

### **1.2 The New Zealand Beef Industry**

Beef has historically been an important contributor to export earnings for New Zealand. In 1991, for example, beef contributed 38% to export meat production and 50% to export meat value (NZWBES, 1991). Overall meat production contributed 17.2% (\$2611.3 million) to produce exported from New Zealand (The

1992 New Zealand Year Book). The Manawatu-Taranaki-Wanganui regions are the second largest export beef meat producers in New Zealand, with an output of 323 000 tonnes (21% of national production, NZWBES, 1991).

The deregulation of the meat industry in 1981, the removal of farm subsidies in 1984, and the transport and labour reforms throughout the 1980's, have led to a massive restructuring of the New Zealand meat industry (Maughan & Wright, 1993). Restructuring has taken three forms (Maughan & Wright, 1993). First, UK owned meat processing companies have left the industry, second, out-dated meat plants have closed and more productive plants have opened, in concurrence with an effort to reduce surplus capacity. Third, the industry is trying to orientate itself into a wider variety of differentiated products and markets, particularly in north-east Asia. Maughan and Wright also note that these industry changes have facilitated the use of meat supply contracts, but with limited success.

Vertical coordination is the alignment of direction and control across segments of a production/marketing system or chain (King, 1992). For example, in a beef production chain, the farmer, processor, marketer, retailer, and consumer can all be considered segments in the chain. A contract between a farmer and processor, is a form of vertical coordination that is aimed at improving beef supply between these two segments of the meat supply chain. In the food industry, where differentiated products or markets are the focus of the production chain, some form of vertical coordination is considered to be more suitable than open marketing between segments, for addressing the specific communication needs and special risks associated with food production (Barkema et al., 1991).

To explain the degree of vertical co-ordination, in terms of supply contracts in the New Zealand meat industry, Maughan and Wright applied the economic 'theory of transactions costs' developed by Coase (1937). Three points are of particular interest. First, because of the emergence of markets for differentiated products, New Zealand processing companies have strong incentives to establish contracts with meat producers. According to Maughan and Wright:

"as a general rule, the more a firm differentiates its products and the greater the investment it makes in that differentiation, the higher will be the costs of non-supply of the product. Thus the differentiating firm will seek to reduce the uncertainty of supply by some kind of vertical co-ordination"

A further factor encouraging the establishment of supply contracts is that quality is becoming increasingly important to consumers. Second, although processors have incentives to use contracts, overcapacity in the industry and problems in defining and measuring of meat quality have limited the uptake of contracts by producers. Finally, Maughan and Wright note that little is understood about the short- and long-term profitability of vertical co-ordination and differentiated products for individual companies and the New Zealand meat industry as a whole. Of the numerous areas they highlight which require more research attention, establishing the attitudes and beliefs of economic agents, such as New Zealand meat producers, to contracting, is of importance.

Beef processing companies have offered a range of contracts to farmers over the past five years. The logic (in economic terms) for contracting from a processor point of view is reasonably well documented (King, 1992). However, less information is available about the advantages and disadvantages of contracts to beef farmers. The relatively low level of uptake of these contracts by farmers indicates that a greater understanding of issues associated with supply agreements from a farmer view point is required. Past and present issues for contract beef farmers in the central North Island are discussed in the following section.

### **1.3 Beef Supply Contracts in the North Island**

The Concise Oxford Dictionary (1984) defines a contract as:

" a business agreement between two parties for the supply of goods, or performance of work, at a specified price"

Price may also mean pricing mechanism. In the case of a beef supply contract, the two parties are normally the producer (farmer), and the processor (e.g. freezing works), with the goods as a specified type (e.g. steer, heifer, or bull), and number, of beef animals, supplied at a specific weight and age, and often for a specified slaughter period. Generally these beef contracts are written agreements. Some contracts (e.g. RWBC) include a third business or group to act as intermediary and administrator of the contractual arrangements for the two main parties.

Another common feature of beef supply contracts is incentives for the producer to enter into a contract. Incentives include bonus payment systems, and provision of 50 to 100% of the funding for the purchase of beef animals at competitive interest rates.

Against this background a beef supply contract can be defined as:

" A mutually beneficial written business agreement between a meat producer and meat processor, that may be administrated by a third party or group, for the supply of a number of beef animals at a certain age and weight within a specified time period".

### **1.3.1 Examples of Beef Contracts in the Central North Island**

In the central-western North Island, the meat processing companies AFFCO (Auckland Farmers Freezing Co-operative), Richmonds, Riverlands, and to a lesser extent Weddel-Crown, offer a range of beef contracts to producers (Table 1.1). Payment to beef contractors involves two components. First, the payment system adopted under contract, and second, the pricing mechanism underlying the payment system.

In a "free market" situation (i.e. non-contract), farmers growing beef animals for processing receive a price (cents per kilogram carcass weight) based on the appropriate beef schedule for that week. Weekly beef schedules announced by

individual companies are based on their respective overseas market demand and requirements for throughput (i.e. the number of animals they need to kill for the week). In contrast, contract payments are based on a modified version of the free market payment system, and are essentially the same for all contract types. The

**Table 1.1:** Details of beef supply contracts offered by AFFCO, Richmonds, and Riverlands. MSWT = minimum slaughter carcass weight (kg), SV = Slaughter value of the animal, NI = North Island.

Name	Type	Supply Period	MSWT	Pricing System
<b>AFFCO</b>				
PrimePlan	Prime Steer or Heifer	Jul-Jun	none <sup>1</sup>	SV = AFFCOs operating price <sup>2</sup>
#1 Bull Pool	Bull Beef	Nov-Sep	none <sup>1</sup>	SV = average of premiums and schedules of main NI meat companies <sup>3</sup>
DBAP	Bull Beef	bulls @ 16-24m	none <sup>1</sup>	SV = formula reflecting NI meat schedules and store values <sup>3</sup>
Cooperative Cow Pool	Dairy Cows	Jul-Dec Jan-Jun	none	SV = AFFCO operating price <sup>4</sup>
Cow Grazing Pool	Dairy Cows	17 May-7 Aug	none	SV = AFFCO pool operating price <sup>5</sup>
<b>Richmonds</b>				
Use one contract system which applies to all beef animals				SV = Richmond operating price
<b>Riverlands</b>				
Weaner Bull Contract		15 Nov-30 Jun	230kg	
Out-of-Season Bull Contract		1 Jun-30 Nov	240kg	
<b>Steer and Heifer Contracts</b>				SV for all Riverlands contracts based on the farmer operating price
Export steer		1 Jul-30 Jun	290kg	
¼ beef steer/heifer		1 Jul-30 Jun	270kg	
Local trade steer/heifer		1 Jul-30 Jun	200kg	

Incentives apply for producing in the carcass weight range over 250kg + .

<sup>1</sup> Also out-of-season (OOS) production incentives, pool payments, and advance/progress payments.

<sup>2</sup> Also pool payments and advance/progress payments.

<sup>3</sup> Also pool payments.

<sup>4</sup> Also OOS production incentives, and pool payments.

contract system is typically designed to take account of the funding necessary to purchase animals and to incorporate the bonus payments used by various contracts. At the commencement of the contract the company usually provides 50 to 100% of the buy-in cost of the animals. The farmer grows the animal to the specified slaughter date and/or weight. As with the free market, the slaughter value of the animal is established by its carcass weight and the contracted price in operation at this time. Contract fees (including interest on borrowed money), and any advance (progress) payments are deducted from this value, and the remainder is paid to the farmer. The contract payment system may incorporate additional bonus payments during and/or after the contract period, depending on the other pricing mechanisms specified for the contract.

Advance or progress payments made on contracted animals are based on the animals' worth as indicated by export and store markets at the time the farmer requests the payment. As previously mentioned, these payments, and the interest accrued against them, are deducted from the slaughter value of the animal(s) when killed.

The pricing mechanisms for the range of contracts described in Table 1.1 include an operating price, a bonus payment system (incorporating in some cases out-of-season production incentives), and a pool payment system.

While all contract pricing mechanisms incorporate an operating price, their definition and application varies between processing companies. Generally the operating price is based on the weekly published schedule plus a premium. However, in the past three years industry overcapacity and subsequent procurement wars to enable processing companies to meet their market requirements, has led to companies either not publishing premium or schedule prices, or offering unpublished premiums. This resulted in beef contractors receiving prices below those of the free market for their animals. To address this imbalance companies either altered their pricing formulas to reflect free market prices (for example Riverlands), or included additional payment systems such as

bonus payments or pools.

Bonus payments may be additional weekly grazing payments for slaughtering out-of-season, or alternatively additional cents per kilogram of carcass weight for meeting certain supply criteria. Examples of supply criteria are: supplying animals on a regular basis throughout the year; contracting a large number of animals, or providing animals at heavy carcass weights. Out-of-season production incentives, as in AFFCO's PrimePlan and Cow Grazing Pool, are bonus payments to farmers for supplying beef during off-peak periods. These payments are separate to those received for the slaughter value of the animal.

Pools, such as those operated by AFFCO, provide a mechanism to return extra earnings made when the processor 'sells' the animals to the end-user. Animals are 'pooled' over a specified period of time and the value of the animals at their sale in the market place is calculated. Any further payout above the slaughter schedule value is made to farmers for the number of cattle killed. Pool payments therefore align animal slaughter values with final market prices. In comparison to returns received from contracts, where a predefined operating price is used, pool payment systems appear to offer farmers a higher return. However, this may be misleading when contracts offering a pool system do not incorporate unpublished premiums farmers would otherwise receive.

### **1.3.2 Issues for Farmers Using Beef Contracts**

The producer's perspective in supplying beef under contract has not received much attention in the New Zealand literature, and that which has been presented does not address contracts in their present form (e.g. field day notes, NZSFM 1993). Contracting implications for farmers can be examined under six headings; financial, management advice, contract complexity, pricing, killing flexibility, and stock management. These are discussed individually in the following sub-sections.

## **Financial**

Contracts offer 50% to 100% of the capital value for the purchase of beef animals. For farmers with limited capital, reducing the capital outlay for beef purchases allows the establishment of beef cattle policies. For farmers with established beef policies (i.e. no initial capital constraint for cattle purchases), contract funding effectively releases capital for other purposes. Anecdotal evidence suggests funding was the main reason for farmer adoption of beef contracts in the late 1980's, early 1990's, when farmers wanted to move from sheep policies to more profitable but more expensive beef policies (John Read 1993, pers. comm.). At this time interest rates were high and land values had declined from their early 1980's peak. Many farmers therefore had few options for borrowing capital to undertake management or policy changes. However since 1991, as farmer profitability and financial positions have improved, and sheep policies have become relatively more profitable (NZMWBES 1992), the need to borrow money by contracting, and the desire to move to cattle policies, has decreased. This has lessened the incentive to sign a beef contract for access to capital funding.

Aside from funding of purchased animals, contracts which offer progress or bonus payments on a weekly basis allows a farmer to spread income from processed beef animals over a larger period of the year, rather than receiving a single lump payment when animals are slaughtered. This produces a more even cashflow for the farmer. Again the advantages of this contract facility are greatest when interest rates on seasonal overdraft finances are high (e.g. 1985 to 1990).

## **Management Advice**

While most beef contracts offer funding incentives to allow a farmer to improve his or her financial situation, another possible advantage of contracts (such as that offered by Riverlands) is the provision of management advice to producers to improve beef performance. This aspect of Riverlands contracts is discussed in section 1.4.

### **Contract Complexity**

The complexity of contract agreements varies between companies. Riverlands, and to a lesser extent Richmonds, offer the most detailed contracts to farmers. These contracts, while appearing less flexible due to their content, offer an advantage by clearly defining the contractual obligations of both parties from the beginning. Other contracts, which initially may appear to offer flexibility, may have a greater chance for misunderstandings between parties in relation to contractual obligations, and this in turn may hinder the efficiency of administration.

### **Pricing**

Previously, contract pricing mechanisms operating below the free market price, were a major disincentive to farmers signing a beef contract. However, pricing mechanisms have been modified to match beef prices received by producers operating on the free market. Pricing differences between contracts now reflect the market worth of each beef type.

### **Killing Flexibility**

Inflexibility in cattle slaughter dates and the weights farmers were required to grow animals to, were disincentives for farmers to adopt beef contracts. More recent beef contracts (1993) offer a much greater range of kill dates and weights. In general inflexibility now arises through the restriction on contract users to utilise store markets. Farmers who use store markets as a buffer for feed fluctuations, particularly for selling finishing animals early in periods of feed shortage, are restricted due to contractual obligations to sell cattle at a specified weight/date to the processor. Farmers who may wish to trade bulls in order to obtain high prices which may arise in a store market situation are also restricted from doing so in beef contracts.

### **Farm Management**

Stock type (heifer, steer, or bull), and whether the contract is designed for seasonal or non-seasonal production, appear to be two aspects of contracts that have the greatest influence on farm management.

The type of beef animal finished has the same pasture management implications whether a contract or non-contract system is adopted. Generally bulls are considered to have higher stock management requirements because: the more intensive animal health practices (drenching etc) carried out during the months of November to February in comparison to traditional beef weaners; the aggressive nature of bulls requires smaller mob sizes and hence greater subdivision in comparison to steers and heifers; and maintenance costs may be greater due to increased damage to fences, pastures and yards. A farmer's management preferences will influence which type of beef system is adopted. For example some farmers simply do not like farming bulls.

A contract requirement for out-of-season beef production influences farm management decisions through the need to modify stock and pasture management. This also has implications for profitability of the system. Out-of-season production may result in a poor match between feed supply (pasture growth) and feed demand (animal requirements), meaning more careful pasture management may be required (Sheath et al., 1987). There is also more risk associated with achieving target liveweights gains with out-of-season production systems when animals must achieve high average daily gains (ADGs) during periods of highly variable pasture growth, such as late summer to early winter. Furthermore, farming heavy animals during winter may increase pasture damage through pugging which in turn, may reduce spring growth. Maintaining pasture quality is critical in any finishing system (Ringers Stand #2 January 1990, McCall, 1993), and conservation to maintain quality may be a greater component of an out-of-season system than for a seasonal system. For example, McCall (1993) estimated by simulation modelling, that an out-of-season system for a farm with high soil fertility and selling 25% of bulls at two years of age in September and the remainder at three years of age from June to August, must carry 30% less livestock, but make 30% more silage (for feeding during late summer, early autumn), and top 10% of the farm by the end of November.

If pasture management must be modified to some degree for out-of-season

production, the associated extra costs must be outweighed by improved financial returns. McCall (1993) reported, for the previously described example, that out-of-season schedules would need to be 20% higher than schedule prices received during December to March. However, some forms of out-of-season production do appear to be profitable. For example, a recent analysis by JRAC (Ringers Stand #170, February 1994) showed that a yearling bull system where bulls are purchased in August at 370kg liveweight (LWT) and slaughtered at a carcass weight of 330kg the following June-July (i.e. ADG is 1.1 kg/d), was more profitable than a traditional weaner bull system. The proposed yearling bull system also has the advantage that heavy bulls are replaced by lighter animals during periods of lowest pasture growth, thereby reducing both feed demand and pasture damage at these times.

As mentioned previously, the major management implication for contracts which focus on seasonal production is the restriction on store marketing. Not being able to use store markets to buffer against pasture growth variation, which may occur mid-summer, means that stock and pasture management must be geared to finish animals before the time when pasture variability is greatest.

To successfully market steers and bulls at a carcass weight of 250 to 270 kg prior to January, JRAC recommended that: replacement animals be bought as early as possible at liveweights of at least 100 kg; adoption of a preventative rather than reactive animal health program; regular weighing of animals to allow progress to be compared with specified target weights (and dates); priority be given to finishing animals (with target ADG > 0.7 kg/day); known grazing management principles be applied to achieve high pasture production and quality.

#### **1.4 Riverlands Beef Supply Contracts**

##### **1.4.1 The Intermediary Role**

Riverlands contracts employ an intermediary, a private agricultural consultancy firm

based in the Manawatu (JRAC), to provide beef management advice and guidelines to assist farmers in meeting their contractual obligations. The rationale for offering this service was that improved farm management techniques would result in higher animal performance and hence more animals meeting contract specifications. JRAC are involved in the daily management of the contract. A management fee of \$8 to \$9 per animal is deducted from the slaughter price of contracted animals. The fee covers: ear tag costs; livestock insurance (against natural disaster and theft); re-contracting; property visits; field days; price setting; organisation of drafting schedules and adjustments; newsletters, coordination of livestock buying; liaison between the company and the contractor; review of contract performance and payment situations; and on-going development of the contract.

Liaising with contract users involves a series of farm visits. A JRAC consultant makes an initial visit to a farmer who has expressed interest in a Riverlands contract. The visit enables the consultant to establish the physical suitability of the property for a contract, assess the financial viability of the business, and inform the farmer of contractual requirements. If conditions are suitable for both parties, the consultant will approve the contract on Riverlands' behalf.

During the contract period, the consultant revisits the farm in March-April, July-August, and November-December. The farmer is required to weigh all Riverlands' stock prior to the visit. All contract stock are sighted during the consultant's visit(s). Numbers and weights are then recorded in a stock inventory (implemented February 1993). The inventory is designed to monitor the condition of the cattle and whether they will be likely to reach slaughter targets. During each visit pasture conditions on the property are assessed, and farm management issues related to the contractor's beef finishing policy and Riverlands are discussed. Consultants are also available at any other time, at the farmer's request, to discuss issues related to the contracts. After each visit, the consultant makes appropriate management recommendations to the farmer about pasture management and animal health to ensure that contract animals reach specified slaughter weights and dates.

Other communication between farmers and JRAC/Riverlands involves newsletters and field days. Newsletters are sent to contractors on an irregular basis (about every six to eight weeks), and outline target liveweights for contract beef and other issues relevant to Riverlands contractors. Field days occur twice a year, in both the Manawatu and King Country regions. The objectives of the field days are to discuss current animal health and grazing management issues, and other contracting issues, for example pricing mechanisms or contract administration difficulties.

#### 1.4.2 Types of Contract

The range of contracts currently available through Riverlands are shown in Table 1.2.

**Table 1.2:** The range of beef supply contracts offered by Riverlands, as from the 1994 slaughter season.

Contract Type	Slaughter Period	Minimum Slaughter Weight	Target Slaughter Weight
Weaner Bull Contract	15 Nov-30 Jun	230kg	245kg
Out of Season Bull Contract	1 Jun-30 Nov	240kg	270kg
Steer and Heifer Contracts			
export steer	1 Jul-30 Jun	260kg	300kg
¼ beef steer/heifer	1 Jul-30 Jun	180kg	270kg

#### Livestock Purchasing

In July 1992 JRAC began to coordinate the purchase of livestock for weaner bull and out-of-season contracts. This was to first, reduce direct competition between contractors which had previously resulted in increased buy-in prices for some contractors; second, to allow a degree of control over the price and quality of livestock under contract and their early-life animal health treatments; and third, to take advantage of large cattle numbers in negotiating the cost of freight and animal health products (the latter has been decreased to as low as 30% below retail prices). Under this system all weaner bulls prior to trucking to contractors must

have been: electronically weighed; injected with Ivomec; vaccinated for pink-eye; vaccinated with a 5 in 1 product to protect against clostridial diseases; and injected with a long-acting antibiotic.

Other beef animals, such as yearling bulls, are weighed prior to arrival at the contractor's property.

### **Slaughter and Freight Requirements**

For the Riverlands weaner bull contracts, booking forms are sent to each contractor in September or October. The contractor specifies the number of animals which will be killed and in which weeks. These details are then returned to JRAC. For all other Riverlands contracts slaughter dates are confirmed when the contract is signed, as killing periods vary between contract types. Killing space is allocated on a "first in" basis. Trucking dates are confirmed two weeks before animals are due for slaughter. All stock must arrive at the processing plant by 4pm prior to the day of slaughter. Since April 1993 all freight charges have been paid by Riverlands. If a farmer cannot fulfil a scheduled slaughter date, JRAC must be notified at least two weeks before the slaughter date.

Conditions for slaughtering weaner bulls are as follows:

- (a) a minimum of 20 animals must be slaughtered at a time in the contracting year;
- (b) all bulls are slaughtered by the end of June in the contract year.

These conditions may change subject to climatic conditions. For example slaughtering dates for the 92-93 season were extended due to weather conditions causing low pasture growth rates and hence reducing bull growth rates.

### **Bonus Payments**

Bonus payments were introduced in July 1991, and were discontinued in April 1993. To be eligible for bonus payments (Table 1.3) under any Riverlands contract, the following conditions had to be met:

- (a) 90% of cattle killed were above the minimum specified weight for the appropriate stock class;
- (b) 90% of cattle were killed in the week/period specified for the appropriate stock class;
- (c) requested information was supplied to JRAC (for e.g. stock reconciliations, TB status reports, and livestock security information).

**Table 1.3:** The range of minimum and target carcase weights and performance bonuses for Riverlands beef contracts.

	Minimum Contract CWT requirement	Target CWT	Performance bonus (c/kg CWT)
Weaner Bull Contracts	230kg	240kg	10c/kg
Steer Contracts	260kg	290kg	10-20c/kg
Out of Season Bull Contracts	230-240kg	240-270kg	10-20c/kg

Over this period, weights and prices varied during the year. From December 1992 through to April 1993, additional payments were made to lift contract payments up to a level that was competitive with free market prices for beef. In April 1993 all bonus systems were replaced with a new contract pricing mechanism.

### **Contract Pricing Mechanism**

Until August 17 1992, contract slaughter prices were based on the average of the basket of schedules and published premiums of Riverlands, AFFCO, Richmonds, and Weddel Crown. Contractors would then receive the higher of (a) the Riverlands published schedule plus published premiums, or (b) the average schedule plus published premium total of the four companies.

However, with meat companies such as AFFCO no longer publishing premium information, the contract price formula was altered to incorporate unpublished premiums, to reflect the 'true' market price. Pricing for the "Riverlands Contract Schedule" calculated at the beginning of each week, is now more subjective, with prices offered by other companies and Riverlands throughput requirements being the major determinants of the prices set.

## **Interest Rates**

Interest rates for Riverlands contracts, have ranged from 6% to 10%. Charges, effective from August 1993, are at 8%. Rates are reviewed on a quarterly basis, from the first day of January. Interest is charged in arrears and deducted from the slaughter price of animals.

In summary, past Riverlands contractors may have experienced; high weaner purchase prices, time consuming recording requirements, freight charges, less flexibility with killing dates, pricing mechanisms unaligned with the free market, and bonus payment systems.

### **1.4.3 Riverlands Weaner Bull Contract**

The weaner bull contract involves growing bulls from 3 months (October to December) and slaughtering at 16 to 22 months (November to June) of age. Minimum weight at slaughter is 230 kilograms carcass weight, with an average contract target of 245 kilograms (Table 1.2). Features of the 1993-94 Riverlands weaner bull contract (RWBC) are as follows:

- (a) contractor is signed-up the year preceding a specified slaughter season.  
For example a 1993-94 contractor would be signed up during 1992.
- (b) animals are purchased by Riverlands for the contractor with JRAC coordinating purchases and deliveries.
- (c) consultant visits in March-April, July-August, and November-December, to take a stock inventory, and make management recommendations.
- (d) contractor receives newsletters every six to eight weeks, and has the option to attend twice-yearly field days organised for Riverlands contractors.
- (e) forward (progress) payments can be made during the time the bulls are on the farmer's property.
- (f) booking sheets for kill dates are completed in September-October.
- (g) trucking dates confirmed two weeks before animals are due for

slaughter; Riverlands pays freight charges.

(h) slaughter value is calculated from animal carcass weight and Riverlands contract schedule.

(i) contractor receives slaughter value less management fee, interest, and any progress payments.

## **1.5 Objectives and Outline of Research**

This study focused on Riverlands contracts, particularly the weaner bull contract, for several reasons. The RWBCs have been available to farmers of beef cattle for the longest period of time, and this meant that three types of contractors were readily identifiable; farmers who had contracted in past years but who were no longer involved, farmers who have remained in the contract for a number of seasons, and new contractors. The intermediary role of JRAC meant information about Riverlands contracts was reasonably accessible where farmers (and Riverlands) provided consent to access the database. This was an especially important feature given the limited literature available on beef contracts in the central North Island.

Originally the aim of the study was to compare and contrast the three groups of farmers who had experienced RWBCs to establish the main factors influencing their decision to sign (or not sign) a contract. However, during 1993 Riverlands conducted their own survey of current contract users, which meant it was more pertinent to focus on past contract users. The results of Riverlands survey were made available for the present study, but due to their commercial sensitivity, these have not been presented.

No formal data was available from past contract users to establish contract entry and exit issues (although some anecdotal evidence was available as discussed in Sections 1.3.2 and 1.4.2). Furthermore, when considering the reasons for previous contractors not re-signing a current RWBC, past-users may have no, or limited, knowledge of current RWBCs (described in Section 1.4.2). The reasons that were

important for signing a RWBC in the past therefore, may not be the same as those which are preventing uptake now.

With these points in mind, the objectives of the study were to:

**(a)** establish the main reasons for farmers entering a RWBC;

**(b)** establish the main reasons for farmers exiting a RWBC;

**(c)** ascertain, relative to the current RWBC, the important aspects of the RWBC for past users; and in particular those aspects having the greatest influence on the decision not to continue with a RWBC.

## **CHAPTER TWO: METHODOLOGY**

### **2.1 Introduction**

In this Chapter the applications of psychological and sociological measures in agricultural research are described. The components of attitude and attitude measurement are discussed. The Ajzen-Fishbein theory of reasoned action, as it applies to the measurement of overall attitude and its components, is presented for the current study. The development and administration of a mail survey of farmers who had discontinued using RWBCs is described.

### **2.2 Psychological and Sociological Variables**

Psychological variables are characteristics relating to the nature, function or phenomena of the human mind, and include variables which relate to an individual's beliefs, opinions, attitudes, motivations and behaviours (Kerlinger, 1986).

Psychological variables add an important dimension to understanding or predicting individual or group behaviour. For example, Howard (1991) highlighted the importance of measuring or recording a farm manager's attitude toward risk, returns and longer-term planning in understanding the success of a farm operation. However, he also acknowledged the practical difficulty in measuring such variables.

Sociological variables, on the other hand, are those characteristic qualities of individuals which arise due to their membership in social groups. For example, a person's income, gender, occupation or age. Sociological variables are often called demographics.

Social surveys provide a mechanism to obtain the information necessary to understand the relationship between psychological and sociological variables (Kerlinger, 1986). A survey can be used to determine information such as the

incidence, distribution, and interrelation among sociological and psychological variables.

Understanding the relationship between and within sociological and psychological variables is important because it provides the basis for a greater understanding of a targeted population (or individual) dynamics with their (or his/her) environment. This in turn allows more effective planning, extension or management for their situation. For example, Funk and Shaw (1990) surveyed Canadian farmers in order to help them improve their understanding of the different marketing approaches required to more effectively meet their needs as buyers of products. Funk and Shaw (1990) used a cluster-based segmentation methodology in preference to another commonly used approach called market segmentation, because the former incorporated a number of psychometric variables, attitudes, needs, and buying behaviour as well as the collection of demographic data. The cluster-based method offered a greater ability to formulate and implement marketing and communication programmes because it incorporated psychometric variables (attitudes, opinions and preferences), which are highly related to buying behaviour.

### **2.3 Attitudes in Psychometrics**

The measurement of attitudes, one of a numerous array of psychological variables, has received widespread attention in research (Ajzen and Fishbein, 1975). The most widely accepted definition of an attitude was given by Allport (1935) who stated:

"An attitude is a mental or neural state of readiness, organised through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related"

or more simply stated by Ajzen and Fishbein (1975):

"An attitude is a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object"

This definition suggests that establishing the attitudes of a target group or population towards a given object or situation will provide an indication of the

future behaviour of that group to the specified situation.

Attitudinal measurement has been incorporated to some degree in many types of research. For example, organisational behaviour studies are particularly interested in attitudes which relate to employee satisfaction within their jobs and to their organisation (Reeves & Harper, 1981, Luthans, 1989, Baron & Greenberg, 1990). In an agricultural setting, research studies into adoption-practices, motivational factors, and farmers management styles, have incorporated attitude measurement. In New Zealand, Kampanellas (1981) investigated the possible relationships between North Canterbury farmers attitudes towards the Ministry of Agriculture and Fisheries extension service, farmers communication patterns, and the adoption rate of innovations by these farmers. Greer (1982) took a slightly different approach and examined possible links between Oxford county farmers level of motivation (as measured by orientation to work), and adoption of new practices. Attitudes were incorporated as a possible variable to aid explanation. A pre-adoption survey was used by Spelman (1990) to record the attitudes of lower Central-North Island sheep and beef cattle farmers towards the adoption of a "once-bred heifer" beef production system. In their research, Fairweather and Keating (1990), adopted a methodology that incorporated attitudinal statements to establish what goals farmers in the Canterbury area had, and how they viewed success, in order to more fully understand the management styles used by these farmers.

However, attitudinal measurements have not always correlated well to behaviour. Erlich (1969, cited by Journeaux, 1985) concluded "studies on the relationship of attitude and behaviour have almost consistently resulted in the conclusion that attitudes are poor predictors of behaviour". Triandis (1971) stated "attitudes are neither necessary nor sufficient causes of behaviour. They are facilitative causes." Oskamp (1977) concluded: "empirical evidence on the relationship between attitudes and behaviour have sometimes shown inconsistency", while Miller (1987) noted "verbal indicators of attitude typically correlate minimally with other attitudinally consistent behaviours".

It seems apparent that the inconclusive evidence on attitude-behaviour relationships can at least be partly attributed to conceptual and methodological problems associated with this type of research. As with all psychological variables, attitudes and behavioural intentions are conceptual by nature. Secord and Backman (1964: cited in Zikmund, 1991) term these variables "hypothetical constructs", or "variables which are not directly observable, but are measured by indirect means, such as verbal expression or overt behaviour."

Given the inferential nature of attitude and behavioural intention (Luthans, 1989), it is not surprising then that the correlation between the two variables is often low (Miller, 1987). However, the assumption that attitude is directly linked to behaviour has hindered the development of attitudinal research (Cushman & McPhee, 1980, Saunders, 1987). Behavioural scientists have also noted that other factors may prevent an attitude influencing behaviour. Krech et al. (1962) suggest action (i.e. behaviour) is determined by more than a single attitude, e.g. wants and situational conditions are also important. Triandis (1971) also noted that social norms, habits and expected consequences of behaviour may influence whether attitudes determine behaviour. Oskamp (1977) also suggested various outside factors such as social norms, unavailability of alternative behaviours, and other competing attitudes, motives or values, may act to modify the attitudes of an individual or group. Ajzen and Fishbein (1975, 1980) however, argued that if underlying components of attitude are examined, more reliable prediction, and a greater understanding of behaviour is gained. One mechanism to achieve this is to investigate components of attitude. This is discussed in Section 2.4.

Variable outcomes from attitudinal research have also resulted from the different methods used to measure attitudes and behavioural intention. While the inferential nature of such variables can be expected to contribute to variation in the results, attitudinal measures must be consistent and appropriate for the type of behaviour being measured or predicted, and at the same level of generality to prevent further variation (Kampanellas, 1981). Researchers must also be aware that attitudes tend to change over time, and the greater the time lag between the associated behaviour and measured attitude, the greater the chance of inconsistency between

the two variables (Journeaux, 1985). Studies incorporating only one component of attitude or measuring only overall attitude are also likely to have less consistency in attitude-behaviour findings (Fishbein & Ajzen, 1975, Ajzen & Fishbein, 1980).

While conceptual and methodological problems have hindered the establishment of links between attitude and behaviour, these problems have also led to diversity in the results from similar study areas. The research by Coughenour and Swanson (1988) into job satisfaction levels of Kentucky farmers in the United States, a variable commonly regarded as a generalised attitude, highlights this. In establishing their research approach they noted the degree of variation that existed between literature reports on the measurement of job satisfaction, both in terms of the theoretical models and the findings recorded in field studies. It was apparent that the range of definitions and methodologies used in job satisfaction research was one of the main reasons for this variation.

However, recent advances in attitude-behaviour conceptualisation and methodology has improved the positive correlation between attitude and behaviour variables (Ajzen & Fishbein, 1980; Woelfel, 1980). In particular, the decomposition of attitudes into behavioural determinants, an increased specificity for behavioural criterion, and more precise measurement techniques have improved the usefulness of attitude-behaviour research (Saunders, 1987).

#### **2.4 The Components of Attitude**

There is general agreement that attitudes consist of an evaluative, cognitive, and behavioural component (Krech et al., 1962; Triandis, 1971; Fishbein & Ajzen, 1975; Kampanellas, 1981; Luthans, 1989; Baron & Greenberg, 1990; Zikmund, 1991). The evaluative component, also called emotional, affective or feeling, reflects an individual's degree of feeling towards an object, be they negative, positive, or neutral. The cognitive, informational, or perceptual component refers to beliefs, information, ideas, and perception about an object. The behavioural, or

action, component consists of an individual's intentions or tendencies to behave in a particular way toward an object.

However, Ajzen and Fishbein (1980) and Miller (1987) point out that while behavioural scientists agree on such component definitions, few have applied them to research practices, and this has hindered behavioural research. Ajzen and Fishbein (1980) incorporated, and refined these definitions in relation to the vast amount of behavioural psychology literature into "A Theory of Reasoned Action" which states when appropriate measures of attitude are taken, strong relationships with behaviour can be established. This theory is described in the next section.

## 2.5 Ajzen-Fishbein Theory of Reasoned Action

Ajzen and Fishbein's theory of reasoned action rests on two important assumptions. First, human beings are usually quite rational, and make systematic use of the information available to them. Second, it is possible to clearly distinguish between beliefs, attitudes, behavioural intentions, and behaviour. Definitions for these and related model variables are as follows:

**Behavioural Intention (BI):** In the Ajzen-Fishbein theory of reasoned action, BI is an index of the individual's intention to perform the act in question. The Ajzen-Fishbein theory hypothesises that BI will be positively and strongly related to the probability that an individual will perform the act. BI is defined as the weighted sum of two components: overall attitude towards the act (A), and the subjective norm (SN). In considering overall attitude, the model assumes that an individual associates a number of attributes (objects<sup>1</sup>) with the act. Attributes may be any trait, property, characteristic, outcome or input the individual associates with the act.

**Evaluative Attitude:** the evaluative (or affective<sup>1</sup>) aspect an individual has

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<sup>1</sup> Attribute/object and affective/evaluative are pairs of terms used synonymously in this thesis.

towards an attribute associated with the act. Fishbein and Ajzen (1975) state that evaluative attitude should be measured by a procedure which locates the subject on a bipolar affect/evaluative dimension.

**Subjective Belief:** represents the information a person has about the degree of association between an attribute and the act in question. Ajzen and Fishbein state beliefs should be measured by a procedure which allows the subject to express his/her information about the degree of association between the attribute and the act, along a dimension of subjective probability.

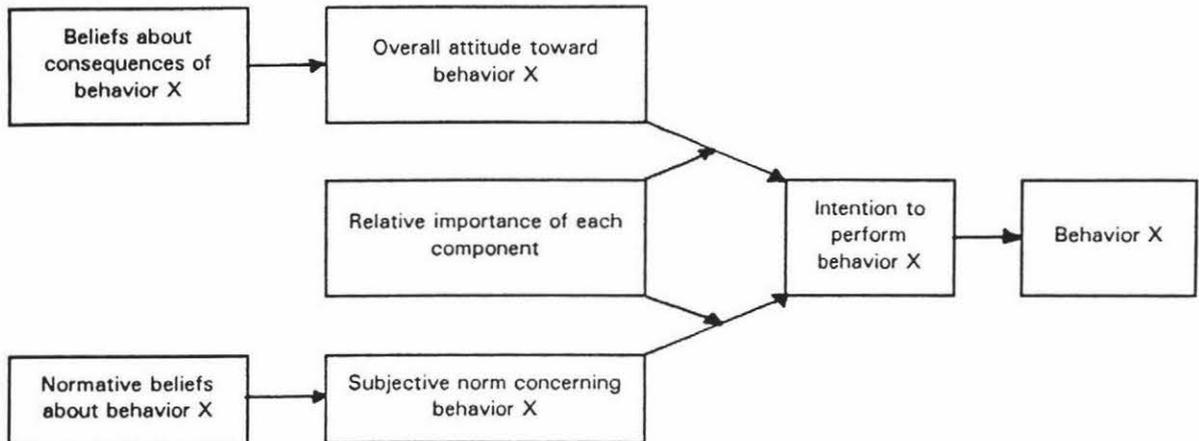
In the statement: "a RWBC provides useful whole farm management advice", the act is having (signing) a RWBC. In this example, provision of useful whole farm management advice is the attribute associated with the act. Evaluative attitude enables the subject to specify his/her utility from obtaining useful whole farm management advice. Subjective belief enables the subject to express his/her subjective probability that useful whole farm management advice is an outcome of having a RWBC. The product of evaluative attitude and subjective belief is an index of subjective expected utility from having a RWBC with regard to the attribute: useful whole farm management advice.

**Overall Attitude towards the act:** Subjective beliefs and evaluative attitudes are combined for each attribute, and then summed across all attributes associated with the act, to obtain an overall index of subjective expected utility from performing the act.

**Subjective Norm:** a measure of the subject's perceptions of the social pressures he/she feels to perform (or not perform) the act. In the SN context, beliefs are labelled as normative beliefs.

**Behaviour:** is the observed performance, of non performance, of the act or interest. Unlike a behavioural intention, behaviour can obviously be observed directly.

Figure 2.1 illustrates the Ajzen-Fishbein model of reasoned action relationships.



**Figure 2.1:** The relationship between beliefs, overall attitude, subjective norm, behavioural intention, and behaviour. Arrows indicate direction of influence. Adapted from Ajzen and Fishbein (1975, 1980).

From Figure 2.1, and the above discussion, the Ajzen-Fishbein model of reasoned action can be written:

$$BI = \beta_A A + \beta_S SN$$

where:

BI = behavioural intention towards the act.

A = overall attitude towards the act.

SN = subjective norm associated with the act.

$\beta_A$  and  $\beta_S$  = weights given to A and SN, which can be determined empirically.

$$A = \sum^n b_i e_i$$

where there are n attributes associated with the act;

$b_i$  = the subjective probability that the  $i$ th attribute is associated with the act; and

$e_i$  = the evaluative attitude the subject has towards the  $i$ th attribute of the act.

As stated above, overall attitude (A) can be viewed as an index of the subjective expected utility the individual would derive from performing the act.

As an example, Fishbein and Ajzen (1975) consider a person's overall attitude toward supersonic transport (SST). It is assumed the person associates the following attributes with SST:

- (a) an aeroplane;
- (b) noisy;
- (c) not economical;
- (d) pollutant.

Table 2.1 shows the strengths of beliefs (subjective probabilities) and evaluative attitudes (unfavourable/favourable) of each attribute associated with SST.

**Table 2.1:** Hypothetical beliefs and evaluative attitudes about attributes associated with SST.

Belief	b	e	be
Aeroplane	.90	+2	1.80
Noisy	.80	-2	-1.60
Not Economical	.60	-1	-0.60
Pollutant	.50	-3	-1.50
$A = \sum b_i e_i$			-1.90

In this example, the individual strongly believes an aeroplane is associated with

SST and has a favourable attitude towards aeroplanes, but a weaker belief that pollution is associated with SST and an unfavourable attitude towards pollution. The derived index for this individual's overall attitude to SST is relatively unfavourable (A is negative). To change this individual's overall attitude towards SST, in a favourable direction, primarily requires changes in beliefs and/or evaluative attitudes about the associations between SST and the attributes noise and pollution.

Examining underlying belief structures to gain a fuller understanding of behaviour, has been demonstrated as being worthwhile in understanding farmer behaviour and hence has provided the basis for more effective communication with these individuals to change or modify certain behaviours. For example Musser et al. (1986) examined adoption practices of Georgian peanut farmers in relation to a new technology, integrated pest management (IPM). They investigated attitudes and underlying beliefs of these farmers toward IPM, to obtain an understanding of the forms of economic information relevant in planning research and extension programs to increase the adoption rate of IPM. Along similar lines, Saunders (1987) investigated the evaluative attitudes and beliefs held by western Dannevirke farmers toward various aspects of high fecundity sheep systems to gain a better understanding of what aspects were important in shaping their overall attitude towards such systems. Paine (1991) applied similar techniques to elicit attitudes and underlying beliefs of Bay of Plenty kiwifruit growers towards profitable kiwifruit management. The aim of this research was to more fully understand growers needs when they employ a management consultant for assistance with kiwifruit orchard management.

Edwards et al. (1993) established the beliefs underlying the overall attitudes and social norms of Western Australia farmers to identify those which were barriers to the adoption of a testing program for anthelmintic resistance. A media approach was developed and evaluated by Edwards et al. for its usefulness in overcoming barriers to resistance testing, through an assessment of change in pertinent beliefs and attitudes. The approach was as successful as other social marketing

campaigns in terms of changing farmer practices. In a similar approach Nash (1993) ran a four year project aimed at increasing the uptake of minimum tillage cropping programs by Avon Valley wheat farmers in Western Australia. Factors limiting practice adoption rate were first identified, and this was followed by on-farm practical demonstrations designed to target established areas of concern. During the third stage, farmers exposed to the practice were surveyed to establish their attitudes and underlying beliefs toward minimum tillage, and further extension messages were developed from the findings of this survey. Finally, at the end of the four year project, farmers were re-surveyed to measure how attitudes towards minimum tillage had changed, and hence a measure of the overall effectiveness of the extension program was obtained.

Part of the present study focuses on the determinants of overall attitude of past Riverlands weaner bull contract users toward the act of re-signing a RWBC, using the Ajzen-Fishbein model of reasoned action. Like Saunders (1987), the subjective norm component of behavioural intention is ignored. While some researchers have shown its worth in determining behavioural intention (e.g. Gibbs), others (eg Warsaw, 1980) have claimed that the normative component adds little to the predictive power of the model because the two components are highly related. While Saunders (1987) considered an understanding of the normative component to be important, for extension purposes the focus is on influencing overall attitudes to behavioural acts. Not obtaining quantitative information about past contract users' subjective norms for signing a RWBC was also considered appropriate due to the preliminary nature of the research, time constraints, and because initial interviews with farmers who had been involved with RWBC in the past indicated that salient attributes were mostly related to overall attitude rather than the subjective norm component of behavioural intention. Exclusion of the subjective norm means that behavioural intention and overall attitude are considered to be synonymous in this study.

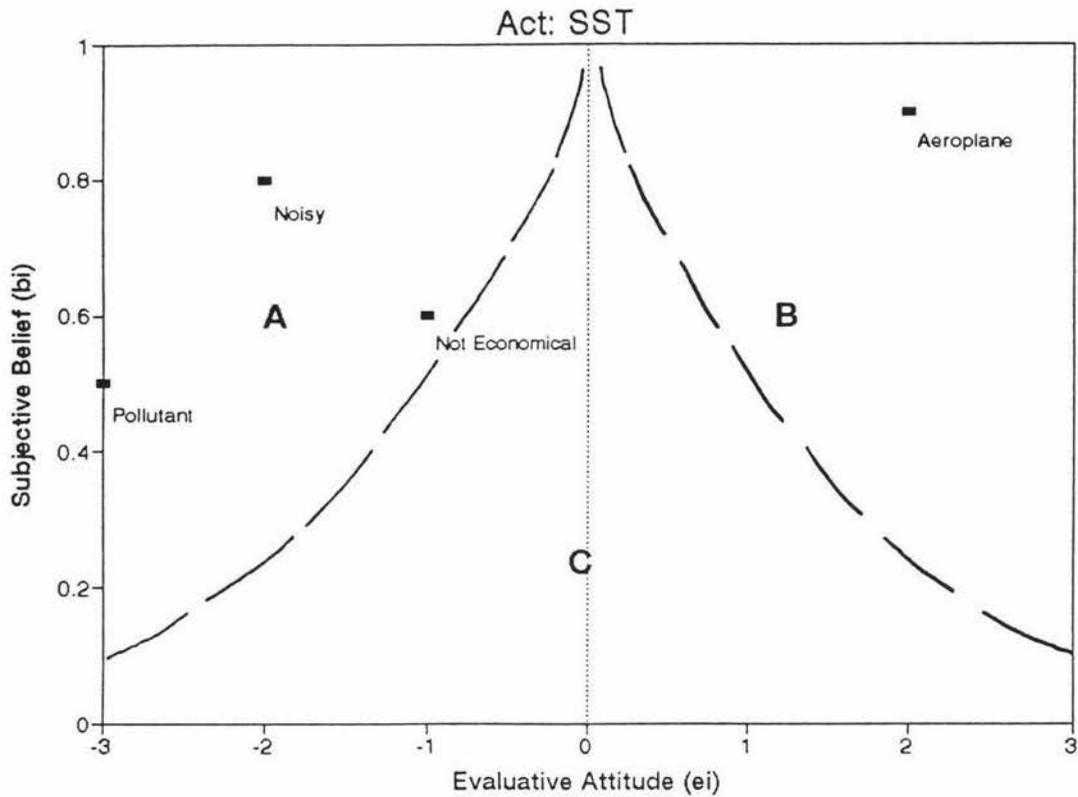
Two farmers, who were past RWBC users, were personally interviewed to establish attributes associated with the RWBC. The farmers were asked to discuss the

points that came to mind when considering a RWBC. Interview notes were then used to identify salient attributes. Two interviews were considered appropriate because farmer information about RWBC attributes showed close agreement with the expert information available from JRAC.

Salient attributes were incorporated into belief and evaluative attitude statements for the questionnaire. Respondents were asked to indicate belief strengths about various statements along a seven point scale from very unlikely, to a 50:50 chance (mid-point), to very likely. Belief statements were designed to link the attribute to a RWBC, for example "A RWBC gives you flexibility in killing dates for your bulls". Evaluative attitude statements were concerned with how the respondent evaluated the attribute. For example, "Flexibility in dates for killing your stock is..". Respondents were asked to indicate the degree of desirability along a seven point scale from very undesirable, to indifferent (mid-point), to very desirable.

Once the evaluative attitude ( $e_i$ ) and subjective belief ( $b_i$ ) values have been measured for the ( $n$ ) attributes associated with the act (signing a RWBC), these points can be plotted to provide a "cognitive map" for the individual, (or the average cognitive map can be obtained for a group of individuals). Figure 2.2 presents the cognitive map for the SST example in Table 2.1.

The map consists of points in three basic areas. Attributes whose ( $e_i, b_i$ ) values fall in area A make a negative contribution to the subject's overall attitude towards the act. Attributes whose ( $e_i, b_i$ ) values fall in area B make a positive contribution towards overall attitude, while those attributes whose ( $e_i, b_i$ ) values fall in area C have a relatively neutral impact on overall attitude.



**Figure 2.2:** The cognitive map illustrating an individual's hypothetical beliefs and evaluative attitudes towards supersonic transport.

Where the objective is to increase a subject's overall attitude towards an act, the cognitive map can be used to target changes in attitudes and beliefs about selected attributes. For the SST example, the objective would be to get the message across to the subject that SST was not noisy and non-pollutant (i.e. reduce the level of current beliefs held in these regards) or, perhaps a considerably more difficult task, convince the subject that he/she should have a more positive (or neutral) evaluative attitude towards noise and pollution. A strengthening of the belief held by the subject that SST was economical, would not affect overall attitude towards the act, unless accompanied by change towards a more positive evaluative attitude about the economics of transport.

Where information is obtained from a group of subjects, their (e<sub>i</sub>,b<sub>i</sub>) points can be plotted for each attribute associated with the act of interest. These maps can be used to identify target groups of subjects for extension (education) purposes, again with a view to increasing overall attitude towards the act by these subjects, i.e. making the subject view the act more favourably. It may, in some situations, be possible to identify target groups in terms of socio-economic or demographic characteristics, though due to the small sample size this was not attempted in this study.

## **2.6 Methodology used for the Current Study**

Due to the preliminary nature of the research, a mail survey was considered appropriate for collecting the information necessary to meet the study objectives. Four areas were targeted in questionnaire design: descriptive information, contract entry reasons, contract exit reasons, and contract re-entry requirements. A covering letter was used to explain the purpose of the survey, and an additional supporting statement was obtained from JRAC to encourage farmer participation (see Appendix I).

### **2.6.1 Descriptive Information**

Some information about the farmer and farming property was desirable. A respondent profile was ascertained from questions which related to property size, major stock classes, bull performance, farmer age and experience with bull beef, the number of cattle contracted through a RWBC, and the use of other meat supply contracts (see Appendix II).

### **2.6.2 Contract Entry Reasons**

Based on anecdotal evidence from JRAC, statements concerning reasons for RWBC entry were generated (see questionnaire Section Five, Appendix II). Respondents were then asked to rate the importance of each statement on a scale from one (very unimportant) to seven (very important), with a mid-point rating indicating indifference to that statement. Allowance was made for the respondent to include other important entry reasons not covered by the statements presented.

### **2.6.3 RWBC Exit Reasons**

An open-ended question format was used to obtain information on why RWBCs were exited. Although this limited the statistical analysis of responses, it allowed a full range of farmer views to be obtained, and this was considered to be more relevant for this preliminary research.

### **2.6.4 Contract Re-entry Requirements**

Objective (c) involved establishing past contractors' attitudes towards a range of attributes associated with the current RWBC. Pilot interviews established the important attributes for these farmers. A statement about the current RWBC, and attitude questions, were then developed using the Ajzen and Fishbein (1975) approach to attitudinal measurement as described in Section 2.5 (see Section One and Two, Appendix II). Respondents were asked to rate their overall attitude towards RWBCs, weaner bulls, other beef policies, and dairy cattle contracts, on a scale from zero (very unfavourable), to 100 (very favourable), with the mid-point indicating indifference.

In addition to the questions for objective (c), which were designed specifically in relation to the current RWBC, an open-ended question regarding farmers' requirements for a future meat supply contract was included in the survey. This question was concerned with contract re-design, and was incorporated to act as

a contrast to results from the attitude questions.

### **2.6.5 Data Analysis**

Questionnaire responses were coded into a numerical format and analyzed using SPSS/PC+, SAS, and Quattro Pro. Contract entry reasons were examined using a multivariate statistical method called Correspondence Analysis (CA). This technique was used for assessing the interdependence of rows (statements) and columns (importance ratings) in a data matrix, such as a frequency table or two-way contingency table. The analysis also produced a graphical display with categories presented as points in two dimensional space. The proximity between points on the graph, indicates the level of association between/among row and/or column categories.

Cognitive maps, as described in Section 2.5, were generated from evaluative attitude and belief data. Correlations between these data and overall attitude scales were examined. Other survey data were analysed by frequency tables and graphical presentations.

## CHAPTER THREE: RESULTS

### 3.1 Introduction

Survey results are presented in this Chapter. Descriptive data is presented first, followed by an analysis of RWBC entry and exit reasons, and contract re-entry requirements. Major findings are then summarised.

### 3.2 Respondent Profile

The 1989-1993 RWBC users in the central-North Island region, who were not contracting for the 1993-94 season were investigated. Only farmers who were still farming were considered, which narrowed the sample down to 35 eligible respondents. Survey questionnaires were sent to each of these farmers, and from these 24 responses were obtained. However, only 22 provided data suitable for analysis.

Of the 22 respondents<sup>1</sup>, eight (36%) had initially heard about RWBCs through JRAC, five (22%) had heard through their stock agent, and the remaining nine (41%) had learnt of RWBC through sources ranging from newspaper advertisements to word of mouth.

The breakdown of bulls killed under contract for the three consecutive seasons from 1990-91 is shown in Table 3.1. Respondents grew most bulls under a RWBC in 1990-91 and 1991-92. On average 58%, 51%, and 29% of bulls farmed were contracted for the 1990-91, 1991-92, and 1992-93 seasons respectively.

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<sup>1</sup> farmers surveyed did not necessarily provide complete responses, hence tables and figures in this Chapter may not include all survey respondents.

**Table 3.1:** Number of farmers, and the proportion of bulls grown for a RWBC for the 1990-91, 1991-92, and 1992-93 seasons. Percentages are shown in brackets.

Proportion of Contract Bulls	Contract Season					
	1990-91		1991-92		1992-93	
None <sup>1</sup>	4	(18)	4	(18)	10	(46)
Less than 1/3	0	(0)	1	(5)	1	(5)
1/3 to 2/3	4	(18)	8	(36)	2	(9)
Greater than 2/3	11	(50)	7	(32)	6	(27)
No Answer	3	(14)	2	(9)	3	(14)

On the basis of telephone directory areas, ten (45%) respondents were in the Manawatu-Wanganui region, seven (32%) in Wairarapa-Hawkes Bay, and five (22%) in the King Country-Taranaki region. Respondents and their farming partner were, on average 43 and 42 years old, respectively. Ages ranged from 22 to 60 years. Bull beef farming experience was on average nine and seven years for the respondent and partner respectively, with a range from one year to 30 years.

The small population examined precluded generalisations about property features. Table 3.2 shows the range of farm size, and area cropped for the contracting period and for 1993. Average farm size was 332 hectares during the contract period, and 361 hectares in winter 1993. Individual properties ranged from 50 to 920 ha in area for 1990-92, with a slight increase in the largest property to 1010 ha in 1993. Cropping (fodder or cash) was a relatively minor enterprise, with the majority of farmers not growing crops during the contract or 1993 period.

<sup>1</sup> respondents in this category may have farmed under a RWBC for less than three full seasons which are encompassed by the 1990-1992 period.

**Table 3.2:** Number of farmers and the range of farm size and cropping area for the contracting period (1990-1992) and 1993. Percentages are shown in brackets.

	Farm Area (ha)				Cropping Area (ha)				
	1990-92		1993		1990-92		1993		
less than 200ha	7	(32)	7	(32)					
201 to 400ha	4	(18)	6	(27)	No cropping	14	(64)	13	(59)
401 to 600ha	3	(14)	3	(14)	less than 15ha	5	(23)	6	(27)
greater than 600ha	7	(32)	4	(18)	15 to 30ha	1	(5)	1	(5)
No response	1	(5)	2	(9)	No response	2	(9)	2	(9)

To gain an understanding of the range and importance of various stock classes, respondents were asked to supply the number of livestock wintered during the contract period and for 1993. Tables 3.3 and 3.4 provide an indication of the range of stock classes and the number of animals in each class. Where respondents indicated that they had contracted for more than one season, beginning numbers and classes have been used. The 'other stock' category included rams and/or horses. Sheep and bulls were the most important stock classes, however, some respondents farmed a significant number of dairy grazers. In general more breeding cows, steers and heifers were present on farms in 1993, than from 1990-92. To accommodate this change bull, and to a lesser extent sheep, numbers had been decreased.

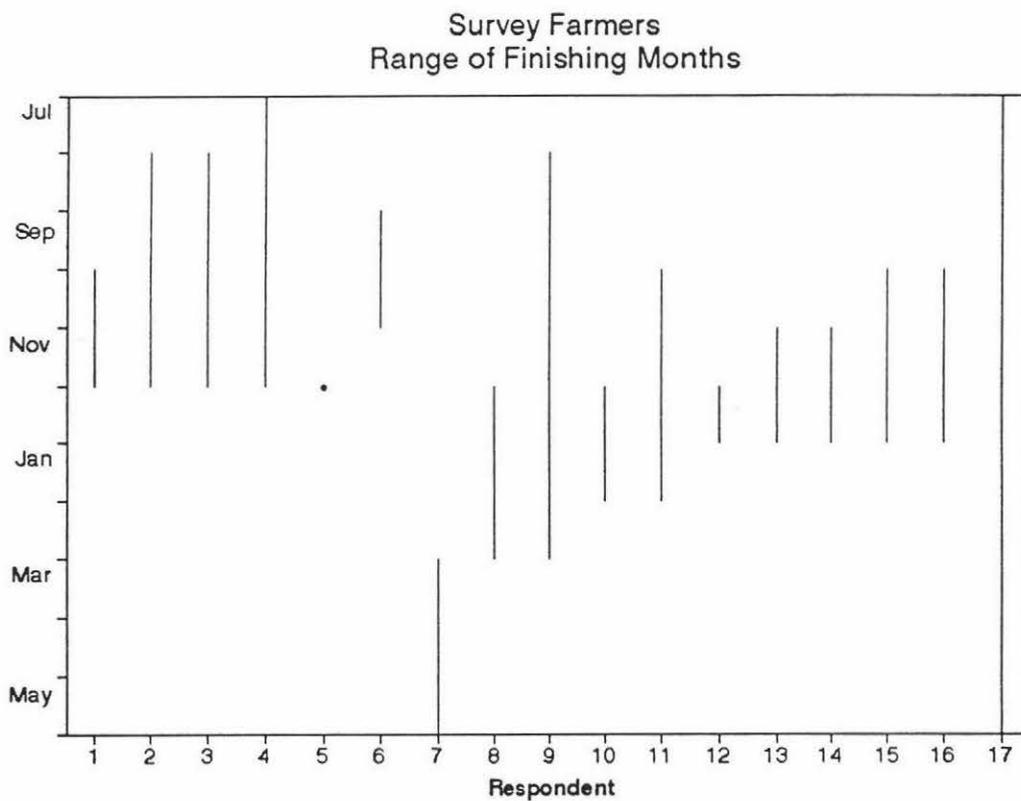
**Table 3.3:** Stock number and classes for survey respondents, for contracting period. Bewes = breeding ewes, Bcows = breeding cows.

Farm	Bewes	Bcows	Hinds	Stags	Bulls	Steers	Heifers	Grazers	Hoggets	Other
1	0	200	0	0	920	0	0	1000	0	0
2	220	3	0	0	197	0	0	0	0	4
3	1200	0	0	0	600	50	0	700	0	0
4	3300	0	0	140	150	0	0	0	1000	0
5	1400	0	0	0	100	20	0	0	0	0
6	1500	0	0	0	200	0	0	0	0	0
7	3157	0	0	0	306	12	34	0	836	0
8	250	0	0	0	50	0	0	0	0	0
9	314	0	0	0	98	0	0	0	0	0
10	0	0	0	0	60	0	0	250	0	0
11	1900	110	0	0	160	0	0	0	0	0
12	1500	300	0	0	150	300	0	0	0	0
13	0	0	0	0	250	5	0	160	0	0
14	300	0	0	0	180	0	0	0	0	3
15	800	0	0	0	360	0	0	0	0	0
16	600	50	0	0	900	0	0	0	0	0

**Table 3.4:** Stock number and classes for survey respondents for winter 1993. Bewes = breeding ewes, Bcows = breeding cows.

Farm	Bewes	Bcows	Hinds	Stags	Bulls	Steers	Heifers	Grazers	Hoggets	Other
1	0	200	0	0	650	90	0	1280	0	0
2	3384	71	0	0	361	26	28	0	0	34
3	800	0	0	0	350	50	0	1700	0	0
4	3300	30	70	30	100	0	60	0	1700	0
5	1400	0	0	0	100	20	0	0	0	0
6	1200	80	0	0	0	135	65	0	0	0
7	3010	62	0	0	225	93	46	0	1276	0
8	0	0	0	0	132	0	0	0	0	0
9	750	0	0	0	480	0	0	0	0	0
10	260	20	0	0	81	2	0	0	0	0
11	1550	0	0	0	180	0	0	0	600	0
12	100	0	0	0	0	0	0	350	0	0
13	0	125	0	0	64	60	60	0	2000	0
14	860	0	0	0	91	62	0	0	0	0
15	1350	160	0	0	100	400	0	0	380	0
16	600	60	20	0	30	0	200	0	0	0
17	0	200	20	0	270	5	0	0	0	0
18	0	0	0	0	320	20	0	0	0	10
19	1125	66	0	0	65	12	32	0	0	0
20	400	90	0	0	820	50	0	0	0	0

Bull performance data for 1993 indicated the average kill month was mid-December to mid-January. Figure 3.1 shows the range of finishing months for each farm. Respondents were asked for the average finishing liveweight of their bulls. Where two bull beef policies were run, weights from the policy closest to a 16 to 22 month system were used. Another problem arising with these data was that some respondents had indicated carcass weights rather than liveweights. Expert advice from JRAC was used to generate all values into a carcass weight basis. On average, the finishing carcass weight was 273 kg, with weights ranging from 239 to 315 kg. This wide range reflects the range of finishing months adopted by respondents.



**Figure 3.1:** Range in finishing months for bulls on each survey property. The top of a line indicates the start month and the bottom the last month of the slaughter period.

### 3.3 Contract Entry Reasons

A breakdown of the importance ratings associated with each statement given as contract entry reasons is shown in Table 3.5. When asked to list any other important reasons for contract entry, two farmers stated "to take highs and lows out of the beef market" and "to get started in lease farming".

Correspondence analysis (CA) was used to examine which ratings or statements contributed most to the differences displayed in Table 3.5. Due to the small number of respondents, and interest in variation between the three types of statements used in the rating scale, rating values were collapsed into three categories; unimportant, indifferent, and indifferent. Table 3.6 shows the frequency table used in the procedure.

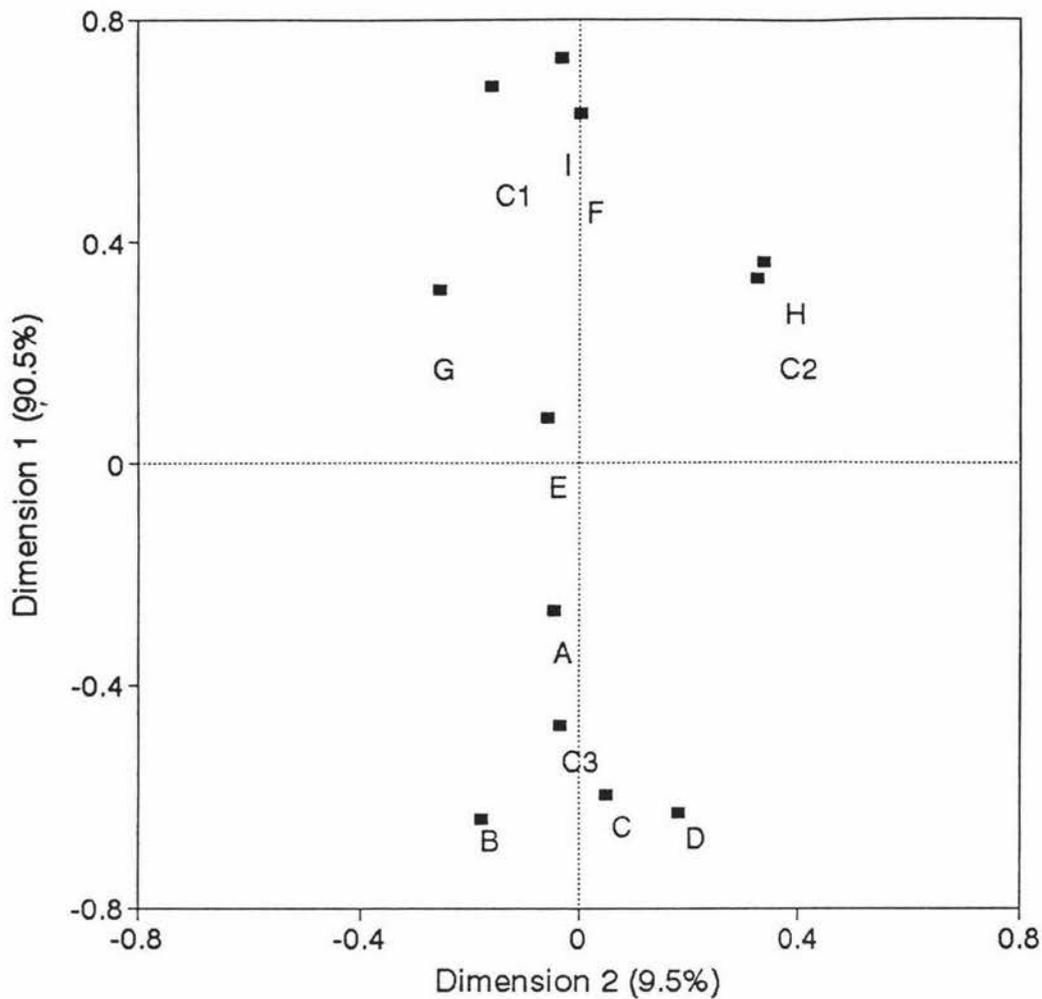
**Table 3.5:** Contract entry reasons: importance ratings for previous RWBC users. (1 = very unimportant, 4 = indifferent, 7 = very important. Med. = median, sd = standard deviation.)

Statement	Importance Rating							Med.	Mean	sd
	1	2	3	4	5	6	7			
A To obtain a market price for 16 to 22 month old bulls	3	1	0	3	2	5	7	6.0	5.048	2.156
B To obtain the equivalent of 100% funding for livestock purchases at a low interest rate	2	0	0	1	2	5	12	7.0	5.909	1.797
C To obtain such funding at a low interest rate	1	0	0	3	0	3	15	7.0	6.182	1.563
D To increase cattle numbers through access to capital	0	0	0	4	4	3	11	6.5	5.955	1.241
E To restructure debt through access to funding	5	1	1	4	3	2	6	4.5	4.318	2.317
F To further farm development through access to funding	7	3	1	6	2	0	3	3.5	3.227	2.092
G To expand farm size through access to funding for cattle purchases	8	2	0	3	0	2	7	4.0	3.864	2.678
H To obtain independent management advice about farming bulls	5	1	1	8	2	1	4	4.0	3.909	2.091
I To secure killing space for animals to be slaughtered	9	2	1	6	3	0	1	2.5	2.818	1.842

**Table 3.6:** Collapsed importance rating scales derived for correspondence analysis. Values represent the number of respondents describing each statement as unimportant (C1), indifferent (C2), or important (C3).

Statement for "contract entry"		Rating		
		C1	C2	C3
A	To obtain a market price for 16 to 22 month old bulls	4	3	14
B	To obtain the equivalent of 100% funding for livestock purchases at a low interest rate	2	1	19
C	To obtain such funding at a low interest rate	1	3	18
D	To increase cattle numbers through access to capital	0	4	18
E	To restructure debt through access to funding	7	4	11
F	To further farm development through access to funding	11	6	5
G	To expand farm size through access to funding for cattle purchases	10	3	9
H	To obtain independent management advice about farming bulls	7	8	7
I	To secure killing space for animals to be slaughtered	12	6	4

The CA indicated a high degree of interdependence between entry reason statement and importance rating (total Chi-square statistic = 58.1354,  $P < 0.0001$ ). Figure 3.2 displays the association between row (statement) and column (rating) categories. Almost all (90.5%) of the variation is accounted for by the first dimension. This indicates that the association between entry reason statements and importance ratings was essentially one-dimensional, and that dimension 2 may be ignored.



**Figure 3.2:** Correspondence analysis plot for respondent entry reasons in a RWBC. Points A to I refer to entry statements, C1 to C3 refer to importance ratings.

The greater the distance of the category from the origin indicates a greater contribution by that category to the given dimension. Dimension 1 (y-axis) shows the contrast between importance ratings, and associations between statement and importance ratings. Category E contributes little towards the associations. Examining the influence of columns on variation, importance ratings along dimension 1 progress in numerical order, with important (C3) and unimportant (C1) ratings contributing most to the variation in an opposing manner, while C2 (indifferent) makes little contribution.

The influence from row categories comes mostly from statement I, F, C, D, and B. Statements A, G, and H contribute less to the variation along dimension 1.

Examining associations and their influence on variation, I and F are closely associated with C1, while B, C, and D are closely associated with C3. Some association between A and C3 exists. Ignoring A, the previous two groupings had the most influence on the variation exhibited by dimension 1. On a smaller scale, G and H are associated with C2.

In summary, there is a statistical indication that the average differences between entry reasons are due to the statements "to obtain the equivalent of 100% funding for livestock purchases at a low interest rate", and "to obtain such funding at a low interest rate", "to increase cattle numbers through access to capital" being considered most important by the respondents. The statements "to secure killing space for animals to be slaughtered" and "to further farm development through access to funding for cattle purchases" were generally considered unimportant by the respondents. Farmers were indifferent to the statements "to expand farm size through access to funding for cattle purchases" and "to obtain independent management advice about farming bulls".

### **3.4 Contract Exit Reasons**

Respondents were asked to list the reasons for exiting a RWBC. The open-ended responses were grouped into the following categories:

**(1) Farming objectives through the use of a RWBC were met. Comments in this category included:**

"No longer needed to farm contract cattle, own numbers rebuilt"

"Our equity level improved to a point where we could farm without a contract"

**(2) Respondent wanted the ability to purchase his own weaner bulls.**

**(3) Respondents in this category felt they were receiving below market prices for their bulls. Comments included:**

"... wanted more competitive pricing at slaughter..."

"Riverlands paid well below market price for 92/93 contract bulls..."

"Uncompetitive returns"

"Unfair system of payment through not paying unpublished premiums."

**(4)** Wanted more selling flexibility. Comments in this category were concerned with the restriction placed on marketing bulls either to processors or store markets when premiums were high, or selling when pasture levels were diminishing. For example:

"Since we have left the contract, the flexibility of killing bulls when and where we like has greatly increased our farming profitability... we can sell them early if the schedule and premiums are high, or we can farm them through if there is plenty of grass or the schedule is low."

**(5)** Comments here were concerned with having to pay bull cartage costs to processing plants.

**(6)** Respondent felt contract target weights were unrealistic.

**(7)** Disliked farming weaner bulls. Comments included:

"Weaner bull policy compromises other production areas of farm."

"Bulls started to give me pain, where I should have pleasure."

**(8)** Included a range of miscellaneous comments, for example:

"I have no complaints about the RWBCs except the quality of some of the weaners."

"... also became too dependent on one source of income."

"I wanted to provide myself with monthly cashflow by way of heifer grazing."

Respondents listed from one to three of the above categories as reasons for exiting the RWBC. Table 3.7 shows the breakdown of replies given.

Of the total responses, uncompetitive pricing (Category 3) was mentioned most

often (46% of all responses), followed by contract killing inflexibility (category 4, 15% of all responses).

**Table 3.7:** Reasons for exiting a RWBC. Reasons are grouped into categories. Some respondents listed more than one exit reason.

Category	Reason			Total Response
	1*	2	3	
(1) Objectives met	2	1	0	3
(2) Purchase own animals	0	0	1	1
(3) Below market pricing	11	6	1	18
(4) Selling inflexibility	4	2	0	6
(5) Cartage costs	1	1	0	2
(6) Unrealistic target weights	0	1	0	1
(7) Dislike weaner bulls	1	0	3	4
(8) Other comment	2	1	1	4

When asked about participation in other meat supply contracts, 73% of the farmers had never undertaken another contract. Of the 27% (6) farmers who had, three had taken contracts with Richmonds, two had undertaken lamb contracts, and one had undertaken a livestock agreement with Wrightson's.

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\* 1,2,3 = Order in which reasons were provided.

### **3.5 Beef Contract Re-entry**

The Ajzen-Fishbein model of reasoned action was used to establish cognitive maps reflecting how the components (evaluative attitude and subjective belief) of survey respondents influenced overall attitude to re-signing a RWBC. The survey also incorporated an index (0 to 100) of overall attitude towards aspects of beef farming, and an open-ended question to obtain alternative responses about contract re-entry issues.

#### **3.5.1 Cognitive Maps**

Pilot interviews established the following attributes were associated with RWBC:

- (1) killing space availability.
- (2) killing date flexibility.
- (3) competitive pricing compared to free market prices.
- (4) competitive pricing compared to other bull beef contracts.
- (5) bull management advice to improve bull slaughter weights.
- (6) farm management advice.
- (7) heavier workload in farming bulls.
- (8) 100% capital funding for bull purchases.
- (9) competitive interest rate for funding.
- (10) compromise of stock ownership.
- (11) longer-term stability and profitability of the NZ beef industry.
- (12) improved farm profitability from farming a RWBC.
- (13) improved farm profitability from farming weaner bulls under contract.
- (14) improved farm profitability from weaner bulls.
- (15) obtaining quality weaner bulls.
- (16) purchase price of weaner bulls.

Evaluative attitudes and beliefs towards each attribute were obtained from survey respondents and collated into cognitive maps. Cognitive maps differed for each respondent. However, individuals could be grouped, on a visual basis, into four

map "types" (Figures 3.3 to 3.6). Overall map "type 3" and "type 4" accounted for the majority of respondents.

### **Individual Maps**

Maps of "type 1", showed individuals with mainly positive evaluative attitudes towards the attributes associated with a RWBC, but who tended to have lower belief strengths about the associated attributes (i.e. they believed, to some degree, it was unlikely that attribute statements were true). For example, Figure 3.3 presents the cognitive map for respondent 8. Attribute 7 (workload) made no contribution to this respondents overall attitude. Killing date flexibility (2), 100% funding (8), and stock ownership (10), also had little impact. Weaner bull purchase price (16) made a negative contribution to overall attitude, due to a negative evaluative attitude toward this attribute, and a relatively strong belief that the purchase price of contract weaner bulls is higher. Killing space availability (1), competitive pricing compared to average free market prices (3) and other bull beef contracts (4), bull management advice (5), valuable farm management advice (6), competitive interest rates (9), longer-term stability and profitability (11), improved farm profitability from farming weaner bulls (14), from contracting weaner bulls (13), and from farming a RWBC (12), and obtaining quality weaner bulls (15), were all evaluated positively by respondent 8. However, these attributes did not make a strong contribution to overall attitude due to the low or moderate strengths of belief held by this respondent that these attributes were associated with a RWBC.

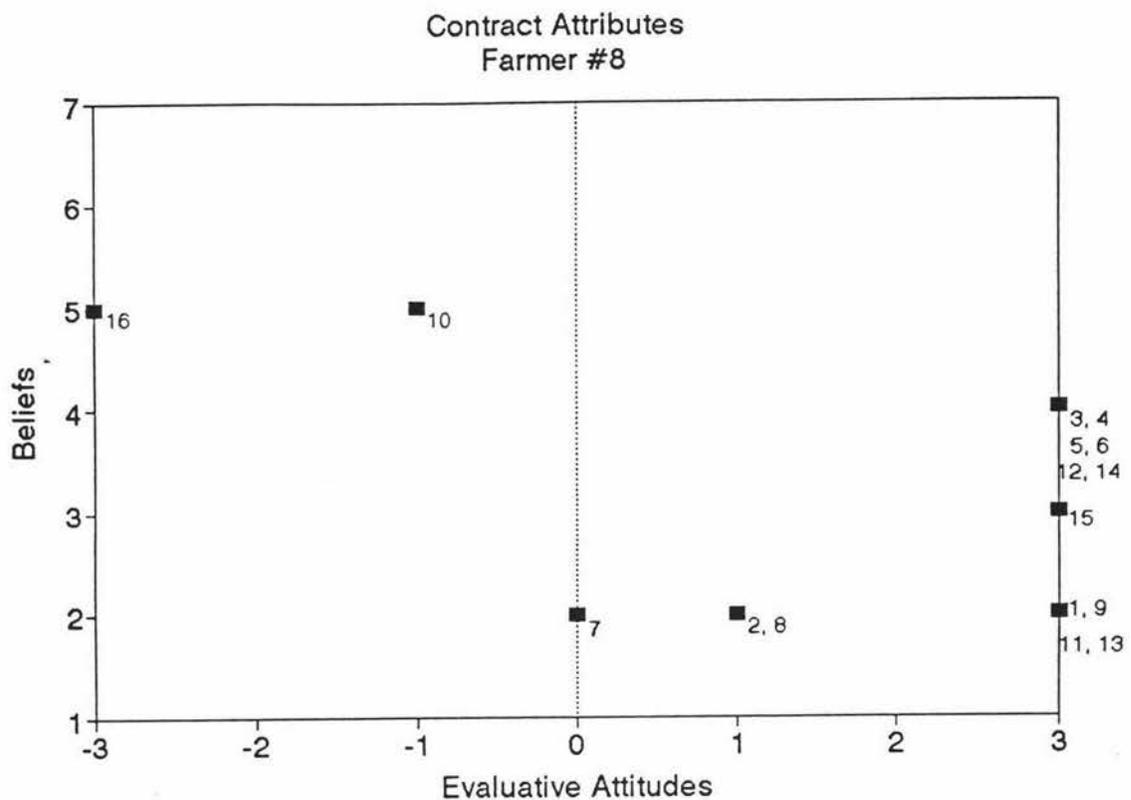
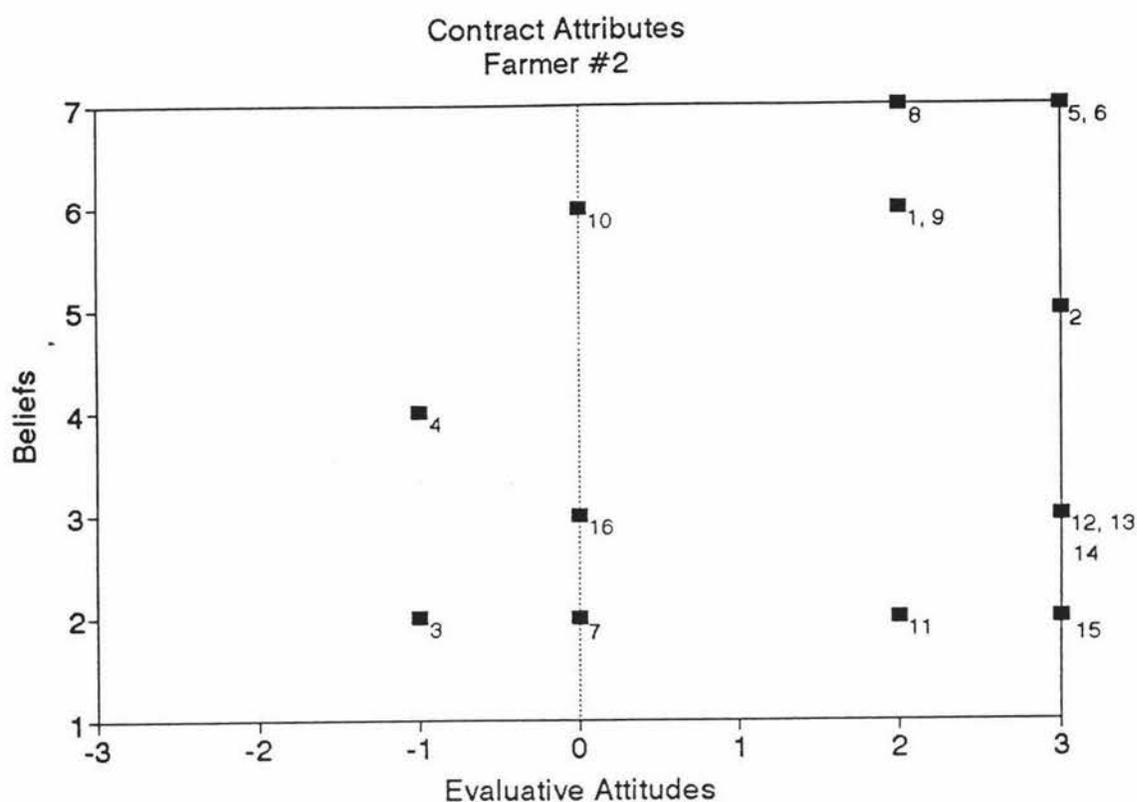


Figure 3.3: The cognitive map for respondent 8. Numbers indicate attributes associated with a RWBC.

Maps of "type 2" showed individuals with a range of evaluative attitudes and belief strengths towards attributes associated with a RWBC. Figure 3.4 presents the cognitive map for respondent 2 as an example. The workload from farming bulls (7), stock ownership (10), and weaner bull purchase price (16), made no contribution to the respondent's overall attitude. Competitive pricing compared to average free market prices (3), and other bull beef contacts (4) had a slight negative influence on overall attitude. The remaining attributes made a positive, but varying, contribution towards the overall attitude of respondent 2, due to varying belief strengths. For example attributes related to strength of belief about longer-term stability and profitability (11), farm profitability (12, 13, 14), and obtaining quality weaner bulls (15), contributed less (in a positive manner) to overall attitude than attributes related to killing space availability (1), bull management advice (5), farm management advice (6), 100% capital funding (8), and competitive funding rates (9).



**Figure 3.4:** The cognitive map for respondent 2. Numbers indicate attributes associated with a RWBC.

"Type 3" maps showed individuals who held mainly positive evaluative attitudes and had high belief strengths. The cognitive map for respondent 10 (Figure 3.5) is presented as an example of this "type". The attributes of stock ownership (10), and the workload from farming bulls (7), made no contribution to overall attitude. Weaner bull purchase price (16) contributed negatively. The remaining attributes made a moderate to strong, positive contribution towards overall attitude. Belief strengths for killing date flexibility (2), competitive pricing compared to average free market prices (3), longer-term stability and profitability (11), improved farm profitability from farming weaner bulls (14), farming under contract (13), and from farming a RWBC (12), and obtaining quality weaner bulls (15), were all held moderately. Belief strengths about killing space availability (1), competitive pricing compared to other bull beef contracts (4), bull management advice (5), farm management advice (6), 100% capital funding (8), and competitive interest rates

(9), were all strongly held.

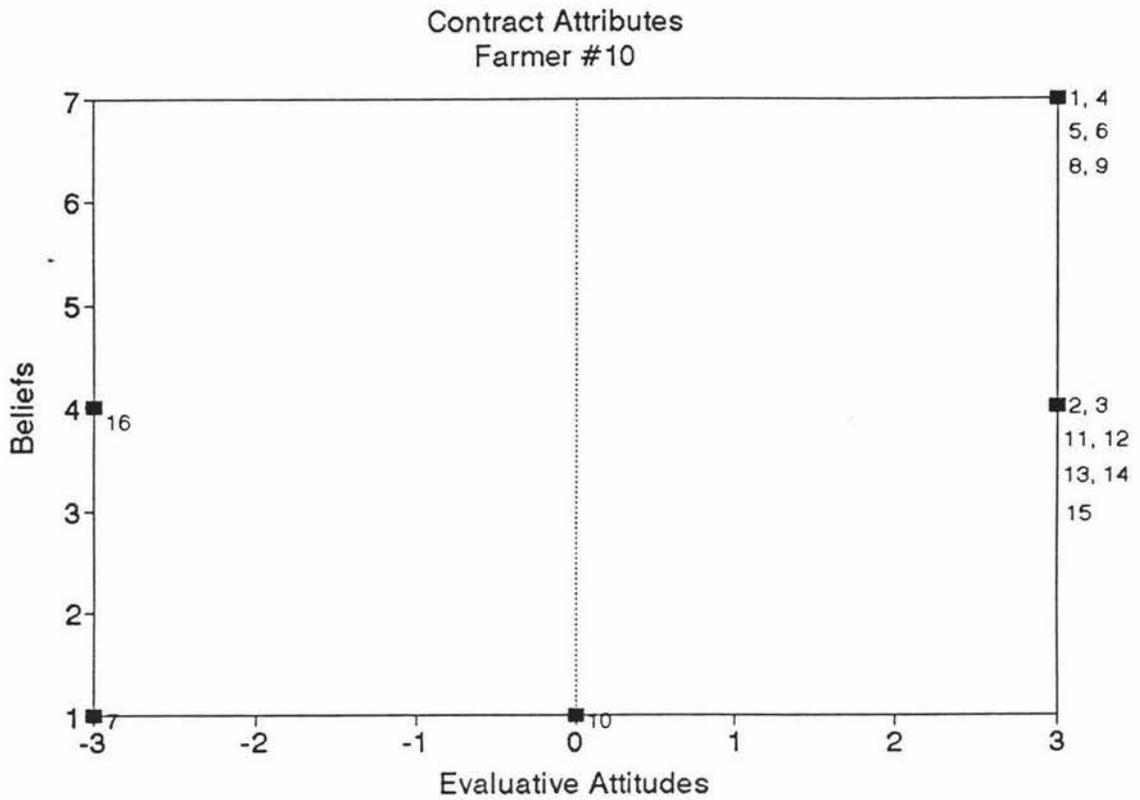


Figure 3.5: The cognitive map for respondent 10. Numbers indicate attributes associated with a RWBC.

"Type 4" maps showed individuals who had mainly positive evaluative attitudes, but beliefs which tended to range in strength. The cognitive map for respondent 16 (Figure 3.6) is presented as an example. Killing space availability (1), killing space flexibility (2), the workload in farming bulls (7), and 100% capital funding, made no contribution to overall attitude. The compromise of stock ownership (10), and weaner bull purchase price (16) made a moderately negative contribution. The remaining attributes contributed in a positive manner to the overall attitude of respondent 16, but with varying belief strengths. The respondent held strong beliefs about competitive pricing compared to other bull beef contracts (4), bull management advice (5), and farm management advice (6), and moderate beliefs about improved farm profitability from farming weaner bulls (14), and profitability from farming a RWBC (12), and obtaining quality weaner bulls (15). Belief

strengths about the attributes related to competitive pricing compared to average free market prices (3), competitive interest rates (9), longer-term stability and profitability (11), and improved profitability from contracting weaner bulls (13), were weakly held.

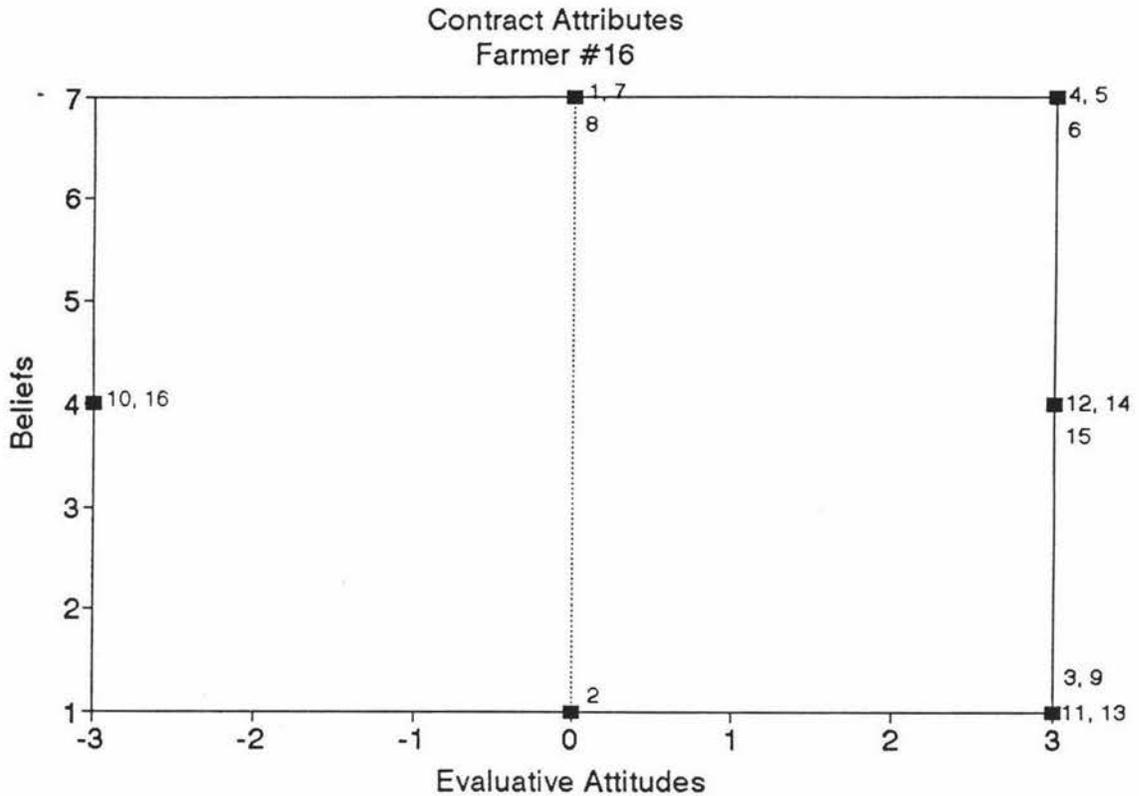


Figure 3.6: The cognitive map for respondent 16. Numbers indicate attributes associated with a RWBC.

### Attribute Maps

Responses to evaluative attitude and strength of belief questions, were also collated into "average" cognitive maps for each of the 16 attributes (Appendix III).

**(1) Killing Space Availability:** Most respondents strongly believed a RWBC provided access to killing space. About 70% positively evaluated this attribute, while the remainder were indifferent to killing space availability.

**(2) Killing Date Flexibility:** The majority of respondents were positive about killing date flexibility. Beliefs that a RWBC provided this flexibility ranged relatively uniformly from strong to weak.

**(3), (4) Competitive Pricing:** Most respondents viewed this attribute in a positive manner. Strength of belief that prices in a RWBC were competitive with the free market (3) ranged from strong to weak, with the majority of respondents having moderate or weak beliefs that RWBC were competitive. Respondent belief strength that prices in a RWBC were competitive with other bull beef contracts (4) tended to be moderate to strong.

**(5) Bull Management Advice:** Most respondents were positive about obtaining bull management advice to improve slaughter weights. The belief that this was provided by a RWBC ranged from moderate to strong, with the majority of respondents believing this to be the case.

**(6) Farm Management Advice:** Response trends were similar to those for attribute 5.

**(7) Heavier Workload in Farming Weaner Bulls:** Respondents were either indifferent or negative towards this attribute. The strength of belief that contract bulls required more work than non-contract bulls, ranged from strong to weak with respondents distributed evenly between these categories.

**(8) 100% Capital Funding:** Respondents were mainly positive or indifferent to obtaining 100% funding. The majority of respondents strongly believed a RWBC provided 100% capital funding.

**(9) Competitive Funding Rates:** All respondents were positive towards competitive interest rates for funding bull purchases. The majority of farmers held moderate to strong beliefs that a RWBC provided competitive funding rates.

**(10) Compromise of Stock Ownership:** Respondents were either indifferent or negative towards not being able to own stock. About half of the respondents moderately or strongly believed a RWBC compromised the ability to own stock, the remainder were indifferent or held weak beliefs that this was the case.

**(11) Longer-term stability and profitability:** Respondents positively evaluated this attribute. The majority of farmers held a moderate to strong belief that a contract provided for longer-term stability and profitability in the NZ beef industry.

**(12), (13), (14) Improved Farm Profitability:** Respondents were mainly positive towards improved profitability. Strength of belief trends were similar to those for a RWBC improving profitability (12) and farming weaner bulls to improve profitability (14). For these two categories respondents beliefs tended toward moderate to weak. Beliefs that a weaner bull contract improved profitability compared to farming weaner bulls non-contract (13), were much weaker, i.e. respondents believed non-contract farming was more profitable.

**(15) Obtaining Quality Weaner Bulls:** Respondents positively evaluated this attribute. Beliefs that a RWBC provided better quality bulls tended towards moderate to weak, i.e. respondents saw no advantage in the quality of bulls obtained through a RWBC.

**(16) Purchase Price of Weaner Bulls:** Respondents were negative towards paying higher than the market price for weaner bulls, and held weak to moderate beliefs a RWBC had higher-priced weaner calves, i.e. they saw no purchase price disadvantage with a RWBC.

### **3.5.2 Overall Attitude Responses**

Respondents were asked to describe how favourably or otherwise they rated aspects of beef farming (Table 3.8).

**Table 3.8:** Responses to overall attitude questions about types of beef farming. Responses were given on a 100 point scale where: 0 = very unfavourable, 50 = indifferent, and 100 = very favourable.

Farming Type	Attitude Rating			Mean	Range
	< 50	50	> 50		
Farming weaner bulls	5	6	11	59	10-100
Farming other beef policies	2	6	12	67	40-100
Farming under a dairy cattle contract	6	10	6	49	0-100
Farming under a RWBC	13	5	4	33	0-100

Respondents were most favourable about farming beef systems excluding weaner bulls (rating = 67), and did not favour farming under a RWBC (rating = 33). Farmers were mainly indifferent to farming a dairy cattle contract (rating = 49), and were somewhat favourable towards farming weaner bulls (rating = 59).

The correlation between overall attitude to a RWBC and the sum of the evaluative attitude and subjective belief responses (i.e. A, see Section 2.5) was significant and positive ( $P < 0.001$ ,  $r = 0.6824$ ). This indicated, in this case, that the sum of attitude components (i.e.  $e_i$  and  $b_i$ ) was a good predictor of the overall attitude elicited from a single statement.

### 3.5.3 Open-ended Responses

Beef supply contract re-entry requirements were analysed in a similar fashion to RWBC exit reasons. However, respondents listed up to five re-entry requirements. Comments for this question were grouped into the following categories:

**(1)** Farmers were in agreement with changes made to the RWBC, as stated at the beginning of the mail questionnaire, for example:

"Along with the changes for the 1993 contract, which are all good..."

**(2)** Respondents wanted a price premium to re-enter a beef supply contract.

Comments included:

"10% above market returns."

"Premium paid for quality stock delivered for slaughter."

"A premium for producing bulls meeting all contract requirements."

**(3)** Respondents required competitive prices in a beef contract. Unlike category (2), comments here were concerned with receiving a price for slaughtered animals equivalent to the free market system, for example:

"Confidence of competitive pricing at sale."

"True market value for stock including unpublished premiums."

"Must be able to achieve a fair market return..."

**(4)** Flexibility with killing dates.

**(5)** Low interest rates.

**(6)** Lower contract management fees. Comments included:

"Advisory fees drop by 25%."

"Management fee to be negotiable - too high in past."

**(7)** Less input in terms of time required to weigh animals and consultants visits.

**(8)** Other comments. For example:

"Ability to do own purchasing."

"Honesty and integrity."

"Quality supply of stock."

"... but I would take a contract out with 0% interest rate tomorrow, because if they own the stock why should I pay interest on someone else's stock (e.g. dairy heifer contracts)."

Table 3.9 shows the range of responses given for each category. The most

mentioned re-entry requirement was flexible killing dates in a beef supply contract (21% of responses). This was followed by price premiums and low interest rates, each with a 17% response. Requirement categories agreeing with RWBC changes and competitive prices in a beef supply contract 11% and 13% times, respectively.

**Table 3.9:** Requirements for past contract users to re-enter a beef supply contract. Reasons are grouped into categories. Respondents may have listed up to five re-entry requirements (RR).

Category	Re-entry Requirement					Total RR
	1	2	3	4	5	
(1) Agree with RWBC changes	4	0	0	0	1	5
(2) Price premium for a BSC	2	4	1	1	0	8
(3) Competitive prices in a BSC	4	1	1	0	0	6
(4) Flexibility with Killing Dates	2	4	2	2	0	10
(5) Low Interest Rates	4	2	2	0	0	8
(6) Lower Management Fees	1	1	0	0	0	2
(7) Less Management Input	0	2	0	0	1	3
(8) Other Comment	3	0	2	0	0	5

### 3.6 Summary

In this Chapter the results from a survey of farmers who used a RWBC during the 1990-92 period, but were not currently using the contract, have been presented. Of the 35 respondents still farming bulls, 22 useful replies were obtained. The majority of farmers had heard about RWBC through JRAC or their stock agent, and were from the Manawatu-Wanganui and Wairarapa-Hawkes Bay regions. Most bulls were grown under contract in 1990-91. The average age of respondent and farming partner was 43 and 42 years, with nine and seven years bull beef farming experience, respectively. Farm size had increased slightly over the last four years, with the main stock enterprises being sheep and beef cattle. Breeding cow, steer, and heifer numbers had increased over this period, and this was compensated by a decrease in bull numbers, and to a lesser degree, sheep numbers. Those

respondents still farming a 16 to 24 month bull finishing policy, obtained an average CWT of 273 kg (range 239-315 kg). Killing months ranged from October to June.

Respondents originally entered a RWBC to obtain the equivalent of 100% funding for cattle at low interest rates, and to increase cattle numbers by access to such funding. The most common contract exit reasons were because slaughter prices in the RWBC became uncompetitive, and because the contract, at this time, was inflexible in the range of times available to slaughter cattle. The majority of farmers had never used another meat supply contract.

The following attributes were associated with a RWBC:

- (1) killing space availability.
- (2) killing date flexibility.
- (3) competitive pricing compared to free market prices.
- (4) competitive pricing compared to other bull beef contracts.
- (5) bull management advice to improve bull slaughter weights.
- (6) farm management advice.
- (7) heavier workload in farming bulls.
- (8) 100% capital funding for bull purchases.
- (9) competitive interest rate for funding.
- (10) compromise of stock ownership.
- (11) longer-term stability and profitability of the NZ beef industry.
- (12) improved farm profitability farming a RWBC.
- (13) improved farm profitability farming weaner bulls under contract.
- (14) improved farm profitability from weaner bulls.
- (15) obtaining quality weaner bulls.
- (16) purchase price of weaner bulls.

Visual assessment, by cognitive maps, of how these attributes affected overall farmer attitude towards a RWBC revealed four "farmer types". "Type 1" farmers had positive evaluations of attributes, but low beliefs that attributes were

associated with a RWBC. "Type 2" farmers had a range of positive and negative evaluations, and held weak to strong belief strengths about attributes associated with a RWBC. "Type 3" and "Type 4" farmers had positive evaluations of attributes. "Type 3" farmers believed strongly that the listed attributes were associated with a RWBC. In contrast, "Type 4" however, had an even range of belief strengths. The majority of farmers in the survey were "Type 3" or "Type 4".

Generally, farmers strongly believed that a RWBC provided: access to 100% funding at low interest rates, access to farm management and bull beef advice which led to improved animal performance, and guaranteed killing space to slaughter animals. Contracting was also viewed as a mechanism to help improve the longer-term stability and profitability of the NZ beef industry. Respondents saw no advantage in undertaking a RWBC to purchase higher quality weaner bulls, they also believed that animals were no more expensive under a RWBC. Farmers were either negative or indifferent to the workload associated with weaner bulls, those who were negative about this attribute tended to believe a contract increased the workload. Half of the respondents were indifferent to owning stock, the remainder believed, to some degree, that a contract compromised stock ownership. All respondents were positive about having killing date flexibility, competitive beef pricing, and improved farm profitability. However, respondents tended to have low belief strengths that a RWBC provided killing flexibility. Moderate to low beliefs were held that prices received under a RWBC were competitive with those offered in the free market for bull beef, while beliefs were slightly stronger that a RWBC was more competitively priced than other bull beef contracts. Farmers held moderate to low beliefs that a RWBC improved profitability more than other weaner bull contracts, and the majority held low beliefs that a weaner bull contract improved profitability more than a non-contract weaner bull system. There were stronger beliefs that weaner bulls did improve farm profitability.

Overall, respondents were most favourable towards farming "non weaner bull" beef policies and less favourable towards farming weaner bulls. Farmers therefore generally viewed RWBC unfavourably, and were generally indifferent towards

farming under a dairy cattle contract. Overall attitude to a RWBC correlated well with the sum of evaluative attitude and subjective belief about the associated attributes, and was consistent with their decision to not re-enter a RWBC.

When respondents were asked what features would be required for them to re-enter a meat supply contract, the major points were: price premiums, flexible killing dates, low interest rates, and competitive pricing. Farmers also commented that they agreed with the changes made to the 1993 RWBC.

In conclusion, the methodology was effective in identifying the key aspects that prevented past users from re-signing a RWBC. This analytical approach also highlighted that there were groups of farmers who held different beliefs and evaluative attitudes about aspects of the RWBC.

## **CHAPTER FOUR: CONCLUSIONS**

### **4.1 Introduction**

In this Chapter results from the survey are discussed. Study limitations and areas for further research are then presented.

### **4.2 Discussion of Results**

This study was concerned with past, present, and future issues confronted by farmers who had used a RWBC during the 1990-92 period. The mail survey encompassed each of these areas, but placed most emphasis on establishing which aspects of the current contract were preventing past-users from resigning a RWBC.

The survey findings were in agreement with anecdotal evidence that farmers had entered a RWBC to obtain the equivalent of 100% funding at low interest rates in order to move into a cattle policy by the use of such funding. Reasons such as obtaining independent management advice, and undertaking farm development through the access to funding, were relatively unimportant entry factors for these respondents.

Anecdotal information prior to the survey suggested that one or a combination of factors including: uncompetitive pricing, inflexible killing dates, paying freight charges, time consuming recording requirements, high weaner purchase prices, a dislike of farming weaner bulls, and not requiring the funding offered by a RWBC, were reasons why users had discontinued their RWBC. While all of these reasons were mentioned by respondents, the survey results suggested contract exit was largely due to two factors. First, slaughter prices offered by the RWBC were below those of the free market, and second slaughter dates for bulls were inflexible.

The Ajzen-Fishbein Theory of Reasoned Action methodology allowed a structured investigation into how aspects (i.e. attributes) of the RWBC had influenced a past

user's decision to not re-sign a contract. Two pieces of information were gathered from the respondent about each attribute associated with a RWBC. The evaluative attitude indicated how valuable that attribute was to the individual, and the subjective belief indicated how strongly they believed that attribute was related to a RWBC.

If the aim of Riverlands/JRAC was to improve a respondents overall attitude to farming (i.e. signing) a RWBC then targeting the belief structures held by farmers would be appropriate. Most attributes of the RWBC were evaluated positively, and those which were not could be explained by logical reasons, i.e. most farmers would be negative to having heavier workloads or paying higher purchase prices for bulls. Therefore, strengthening beliefs held by farmers about positively evaluated attributes, but which are currently considered to be only weakly related to a RWBC would be appropriate. Thus, competitive pricing of the RWBC compared to the free market, improved farm profitability from farming (a) weaner bulls, (b) weaner bull contracts, (c) and under a RWBC, and killing date flexibility in a RWBC, are all attributes which would be targeted to improve the overall attitude of farmers towards a RWBC. It is assumed that strengthening farmers beliefs about these attributes is in fact a logical approach, i.e. Riverlands and/or JRAC believe that the current RWBC has the competitive pricing, ability to improve farm profitability, and killing date flexibility required by farmers.

Findings indicate, in terms of meat supply contract (MSC) re-design, flexible killing dates, and low interest rates are features that need to be incorporated. Respondents however, have two different views about pricing systems for MSCs. One group believes that contract prices must be competitive with free market meat prices, while the other group believes MSC prices should reflect premiums above meat prices offered by the free market. Although not discernable from this study, these findings may suggest that respondents who require premiums for a MSC, believe that there are trade-offs (for example possibly the loss of store-marketing of animals) which need to be compensated for by other aspects of the contract. Conversely, farmers who require competitive pricing rather than premiums may

believe there are no trade-offs involved in farming under a MSC.

In terms of meat supply contract re-design, killing flexibility, and contract pricing compared to the free market, were the two main issues of concern to respondents. The relative consistency of this issue in the different sections of the survey highlights their importance to the survey farmers.

While the study did not aim to establish the importance of JRAC's role as an intermediary in the contract, results suggest that the use of an intermediary to improve bull performance or general farm management advice, were not reasons for respondents entering or exiting a RWBC. However, past-users were very positive towards this aspect of the contract, and generally believed that they gained advice which improved their bull finishing weights under a RWBC. Several respondents were supportive of future meat supply contracts being developed with the structure used by the RWBC.

#### **4.3 Limitations of the Study**

The Ajzen-Fishbein Theory of Reasoned Action provided an effective and well-rounded methodology to identify aspects of an individual's belief structure which influenced their decision to not sign a 1993 RWBC. This methodology was simple to use, provided results which were easy to interpret, and gave a "holistic" view. i.e. both evaluative attitudes and subjective beliefs were obtained, to provide a "full" picture about the manner in which belief structures influenced past-users' overall attitude toward the current RWBC. However, the method was not designed for studying aspects of a situation in an in-depth manner, or for studies where product re-design (i.e. changing the attributes of a product) is of interest. The small number of respondents in this study and their non-representation of all contract users, means generalisations to the wider farming community should be made with caution.

#### **4.4 Wider Implications of the Study and Further Research**

The findings from this study suggest that farmers view the longer-term stability and profitability of the NZ beef industry as very important. However, past contract users believe current contracts do not offer farmers the killing date flexibility they desire, or prices that are competitive with (or above) the free market. For future contracts to be successful (i.e. for farmers to sign) these issues need to be addressed.

Future research in the area of meat supply contracts should establish by more structured means, the cognitive structures of farmers towards meat supply contracts. In the current research pilot interviews to establish attributes was only a small part of the study. However, methods such as COPE (e.g. Hurley & Valentine, 1993) would provide a fuller understanding of farmer belief structures. This technique could be applied before targeting specific aspects of meat supply contracts. For example, in this study, competitive pricing, farm profitability under contract, and killing date flexibility all appear to be major issues preventing RWBC uptake. Using COPE mapping to establish the issues directly related to these attributes (i.e identifying "sub-attributes") would be beneficial. With this information, hypotheses could be formed and tested with regards to which aspects of pricing, profitability and killing flexibility are most important in limiting contract uptake.

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## APPENDICES

## APPENDIX I: Covering Letters

13 January 1994

Dear

The New Zealand meat industry has undergone significant change in the last ten years. One change has been the introduction of beef contracts.

Prior to the 1993 season you completed a Riverlands weaner bull contract. As a past contract user, your experience and views on Riverlands weaner bull contracts are valuable information sources to help design future beef contracts, which will better meet the needs of farmers. We are particularly interested in finding out what you believe are the important attributes of a contract. Your participation in the survey is therefore very important, and we would appreciate you filling out this questionnaire and returning it in the postage-paid, addressed envelope provided by January 26.

Information obtained from this survey will be presented in summary form, and your individual responses will be held in the strictest confidence at all times. The questionnaire will take about 20 minutes to complete. Please answer each question quickly - most responses should take a minute or less. No detailed financial information is sought. However, if you do not wish to participate, please return the questionnaire in the envelope enclosed.

This research is part of Vanessa Blanchard's Masterate of Agricultural research programme. If you have any queries please do not hesitate to contact her at Massey University, 06 356 9099, extension 8057, or at home, 06 353 6367.

Thank you for your co-operation.

Yours sincerely

Vanessa Blanchard  
Masterate Student  
Massey University

Professor Warren Parker  
Ag/Hort Systems Management Dept  
Massey University

13 January 1994

Dear

John Read Agricultural Consultancy Ltd fully supports the research work being undertaken by Vanessa Blanchard in completion of her Masterate of Agricultural Science Degree at Massey University.

We would appreciate your assistance by completing the enclosed questionnaire.

It is through your participation in this research that a more thorough understanding of farmer needs in relation to beef supply contracts will be obtained.

This will ensure that the needs of farmers are adequately accounted for in the future development and design of beef supply contracts.

Thank you for your co-operation.

Yours sincerely

JOHN READ, B Agr Sc (Hons)  
**MANAGING DIRECTOR**



**SURVEY ON RIVERLAND WEANER  
BULL CONTRACT USERS  
1990 TO 1992**

**Department of Agricultural & Horticultural Systems Management  
Massey University**

**January 1994**

During the 1993 contracting season several changes have been made to the operation of Riverlands weaner bull contracts. They are:

1. A change in the contract pricing structure: Slaughter prices for contract bulls are now based on the FARMER OPERATING PRICE. This means the contractor is paid the average schedule price for southern North Island bull beef, INCLUDING unpublished premium information, for the week animals are slaughtered.
2. Removal of cartage fees: The cost of transporting bulls for slaughter is covered by the meat works.
3. The equivalent of 100% funding is provided at a competitive interest rate: The current interest rate for 100% funding of stock is eight percent.
4. A change in bull weighing requirements: Contractors are now only required to weigh contracted weaner bulls prior to each consultant visit, which occur three times annually.
5. More flexible slaughter dates.

It is important to answer the questions in Section one, two and three of this survey, taking into account these changes to the Riverlands weaner bull contract AND your past experience.

## SECTION ONE

In this section, I would like you to indicate your personal beliefs about a number of statements relating to the present weaner bull contract.

For each statement, please tick (✓) the box which best indicates how likely or unlikely you believe the statement is to be true.

- (a) A Riverlands weaner bull contract ensures killing space is available for slaughter of your bulls.

very unlikely			50:50 chance				very likely

- (b) A Riverlands weaner bull contract gives you flexibility in killing dates for your bulls.

very unlikely			50:50 chance				very likely

- (c) Compared to the average prices gained under a free market system the Riverlands weaner bull contract pricing system provides you with competitive prices for bull beef

very unlikely			50:50 chance				very likely

- (d) Compared to other bull beef contracts the Riverlands weaner bull contract pricing system provides you with competitive prices for bull beef

very unlikely			50:50 chance				very likely

- (e) A Riverlands weaner bull contract provides independent bull management advice which enables you to achieve higher slaughter weights for your bulls.

very unlikely			50:50 chance				very likely

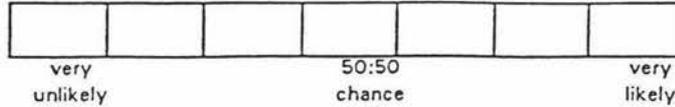
- (f) A Riverlands weaner bull contract provides you access to valuable farm management advice.

very unlikely			50:50 chance				very likely

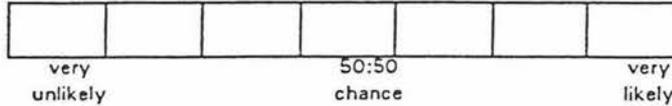
- (g) Farming bulls on contract requires more work, compared to a non-contract system.

very unlikely			50:50 chance				very likely

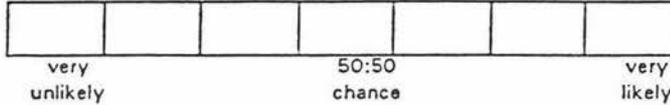
- (h) A Riverlands weaner bull contract provides you with 100% capital funding for bull purchases.



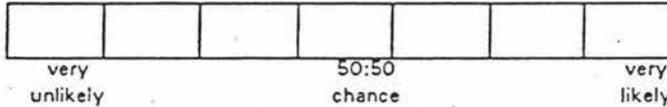
- (i) A Riverlands weaner bull contract provides you with a competitive interest rate for funding bull purchases.



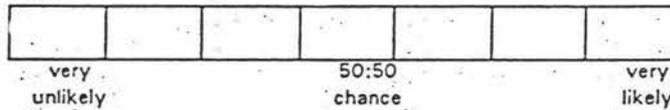
- (j) The ability to own stock is compromised when farming weaner bulls under contract.



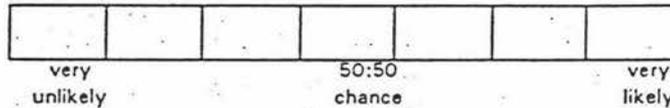
- (k) Farming beef under contract to processors/marketers improves the longer-term stability and profitability of the New Zealand beef industry.



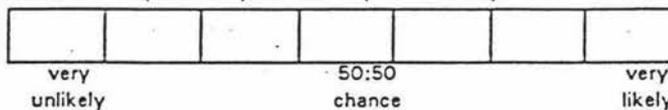
- (l) Compared to other weaner bull contracts a Riverlands weaner bull contract improves your farm profitability.



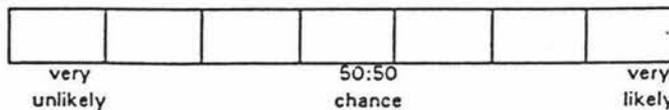
- (m) Farming weaner bulls under contract compared to not contracting weaner bulls improves your farm profitability.



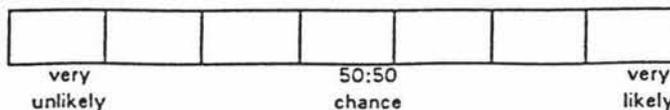
- (n) Farming weaner bulls improves your farm profitability.



- (o) Farming bulls under a Riverlands weaner bull contract allows you to obtain better quality weaner bulls.



- (p) Farming bulls under a Riverlands weaner bull contract means you pay a higher than market price for weaner bulls.



## SECTION TWO

In this section, I would like you to indicate your personal attitudes towards various aspects of farming. For each aspect, please tick (✓) the box which best indicates how desirable or undesirable that aspect of farming is to you.

- (a) Knowing that killing space is available to slaughter your stock is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (b) Flexibility in dates for killing your stock is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (c) Gaining competitive prices for contract bull beef compared to the average prices gained under a free market system is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (d) Obtaining independent bull management advice which enables you to achieve higher bull performance and average killing weights is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (e) Access to more general, independent farm management advice is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (f) A heavier than normal workload associated with farming weaner bulls is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (g) Access to 100% capital funding for beef cattle is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

- (h) Obtaining a competitive interest rate for funding beef cattle is

<input type="checkbox"/>						
highly undesirable			indifferent			highly desirable

(i) Owning your stock is

highly undesirable			indifferent			highly desirable

(j) Long term stability of the New Zealand beef industry is

highly undesirable			indifferent			highly desirable

(k) Improving your farm profitability is

highly undesirable			indifferent			highly desirable

(l) Obtaining quality weaner bulls is

highly undesirable			indifferent			highly desirable

(m) Obtaining competitively priced weaner bulls is

highly undesirable			indifferent			highly desirable

### SECTION THREE

In this section I would like you to indicate your overall attitudes towards a number of aspects of cattle farming.

Please indicate the strength of your feelings by writing in a number between 0 and 100 on the scale provided to indicate how favourable or unfavourable each aspect is.

(a) Farming weaner bulls

0	50	100
Small	indifferent	very favourable

(b) Farming other beef systems (e.g. steers, heifer beef, or out-of-season bull beef)

0	50	100
Very unfavourable	indifferent	very favourable

(c) Farming dairy cattle under contract

0	50	100
Very unfavourable	indifferent	very favourable

(d) Farming under a Riverlands weaner bull contract

0	50	100
Very unfavourable	indifferent	very favourable

## SECTION FOUR - RE-ENTERING A CONTRACT

If you were to enter into a beef supply contract again, what would that contract have to provide you with to sign?

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## SECTION FIVE - PAST EXPERIENCE

1. Through what source did you first learn about Riverlands weaner bull contracts?

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2. For the seasons you completed a Riverlands weaner bull contract, please fill out the following table, for your situation:

Slaughter season	Proportion of bulls killed non-contract	Proportion of bulls killed under contract
1990/91		
1991/92		
1992/93		

8. AT THE TIME YOU FIRST DECIDED TO SIGN A RIVERLANDS WEANER BULL CONTRACT we would like you to indicate the importance, or otherwise, of each statement by ticking (✓) the box which best describes the importance of that statement to you.

- (a) to obtain a market price for 16 to 22 month old bulls

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
very unimportant			indifferent			very important

X

(b) to obtain the equivalent of 100% funding for livestock purchases at a low interest rate

very unimportant			indifferent			very important

(c) to obtain such funding at a low interest rate

very unimportant			indifferent			very important

(d) to increase cattle numbers through access to capital

very unimportant			indifferent			very important

(e) to restructure debt through access to funding

very unimportant			indifferent			very important

(f) to further farm development through access to funding

very unimportant			indifferent			very important

(g) to expand farm size through access to funding for cattle purchases

very unimportant			indifferent			very important

(h) to obtain independent management advice about farming bulls

very unimportant			indifferent			very important

(i) to secure killing space for animals to be slaughtered

very unimportant			indifferent			very important

Other(s) (Please list and specify their importance)

(j)

very unimportant			indifferent			very important

(k)

very unimportant			indifferent			very important

(l)

very unimportant			indifferent			very important

4. You later decided not to continue with Riverlands weaner bull contracts, please list the reasons for this decision:

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5. (a) Have you used any other meat supply contracts?

YES/NO

- (b) If yes, please provide details.

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## SECTION SIX

This section seeks to obtain information about recent changes in your farming situation.

6. What is your effective farm area  
for winter 1993: \_\_\_\_\_ ha / \_\_\_\_\_ ac  
during contract period: \_\_\_\_\_ ha / \_\_\_\_\_ ac

7. If applicable, what farm area did you crop  
for 1993 season \_\_\_\_\_ ha / \_\_\_\_\_ ac  
during the contract period \_\_\_\_\_ ha / \_\_\_\_\_ ac

8. For your major stock classes, please list wintered numbers:

Class	Winter numbers for contract period	1993 winter numbers
Breeding ewes		
Breeding cows		
Hinds		
Stags		
Bulls		
Steers		
Other (please specify)		

9. For your bull beef system, what currently is your:
- (a) average liveweight at slaughter? \_\_\_\_\_ kg
- (b) normal killing months? \_\_\_\_\_ to \_\_\_\_\_

10. In what year were you and, if applicable, your partner born?

you \_\_\_\_\_  
your partner \_\_\_\_\_

11. How many years experience have you had finishing/growing bull beef?

you \_\_\_\_\_ years  
your partner \_\_\_\_\_ years

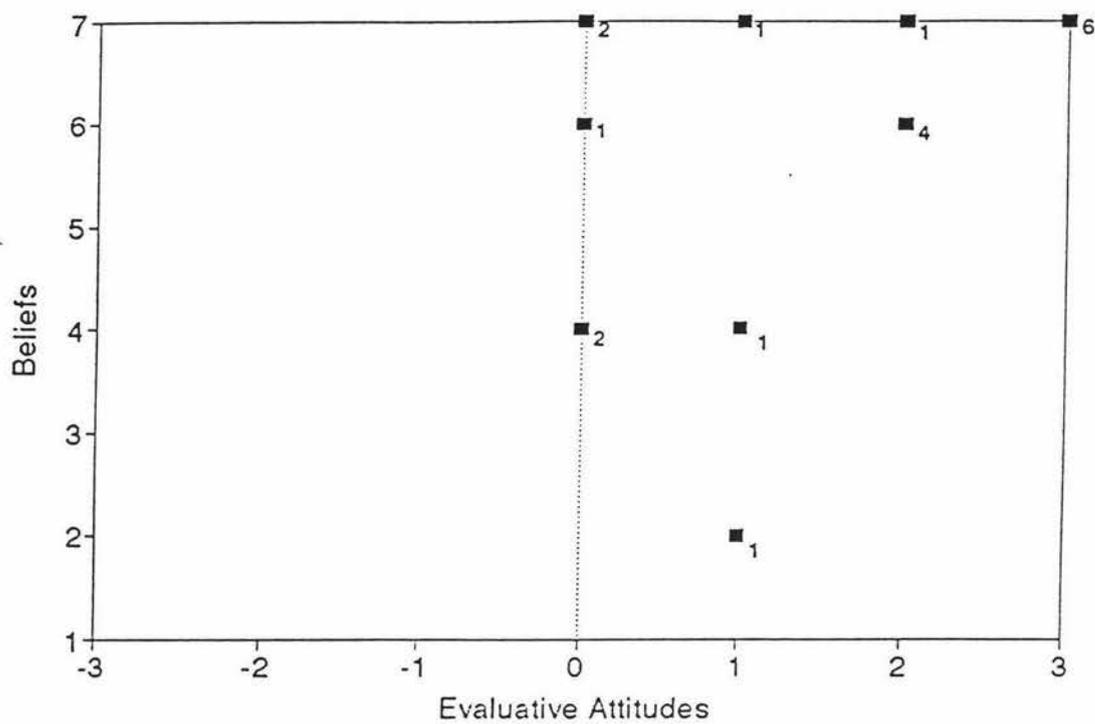
Thank you for your cooperation. Please return this questionnaire in the envelope provided. Do you wish to obtain a copy of the results?

Yes / No  
XIII

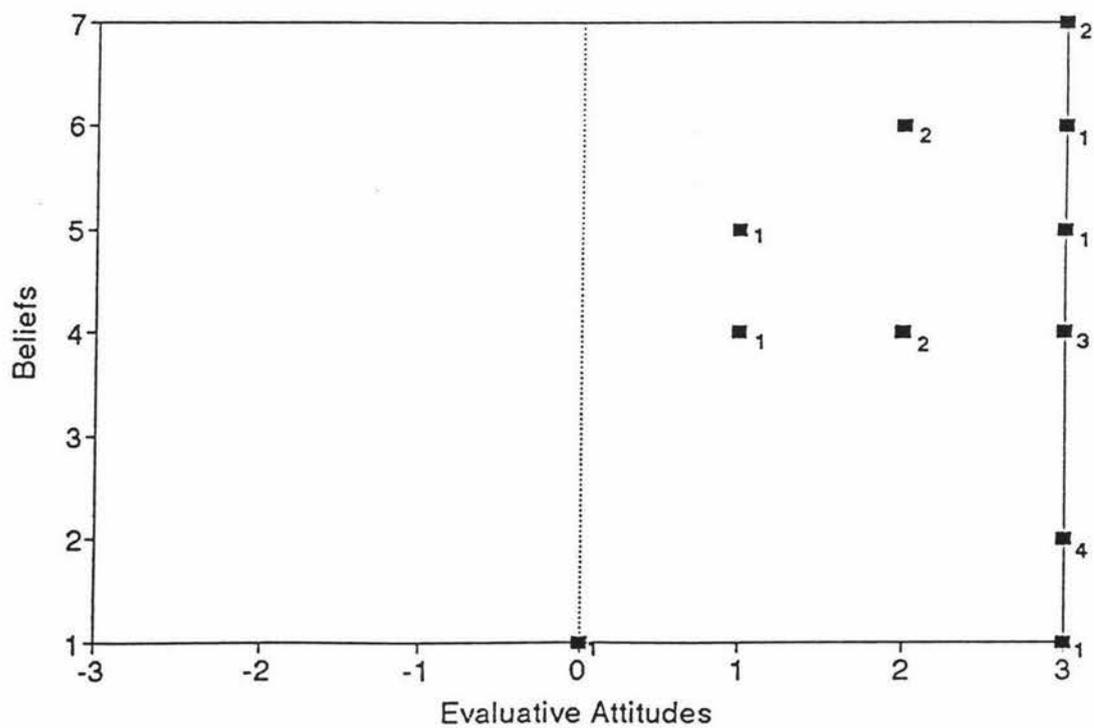
\_\_\_\_\_

APPENDIX III: Cognitive Maps for Attributes (1) to (16)

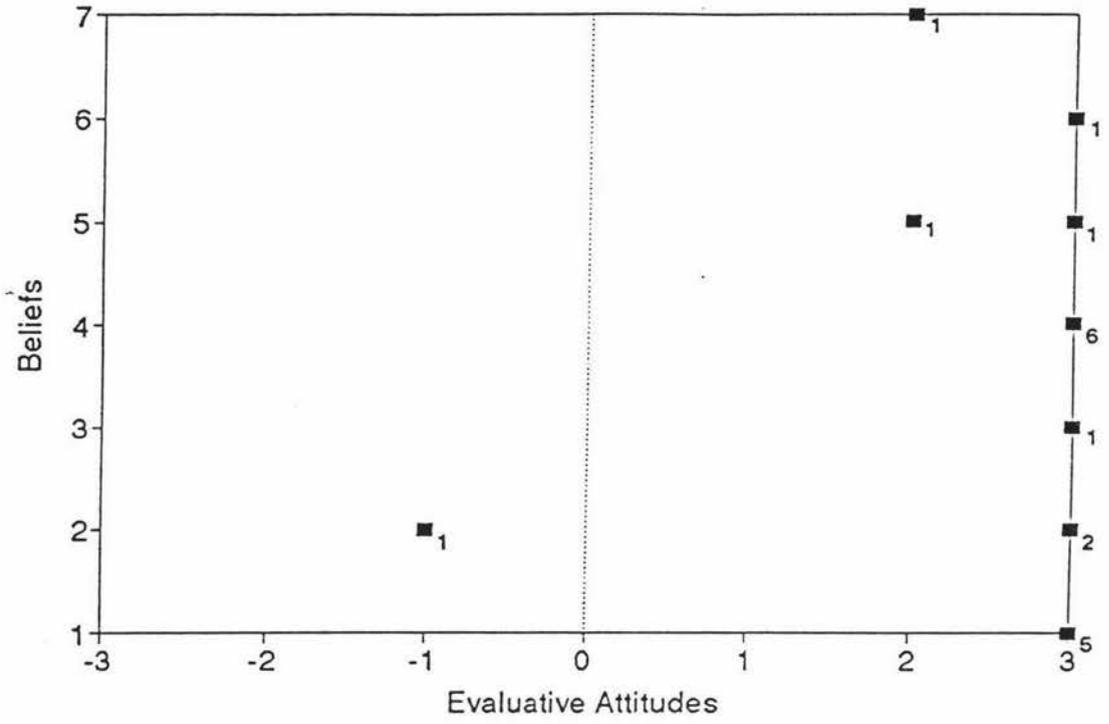
(1) Killing Space Availability  
All Farmers



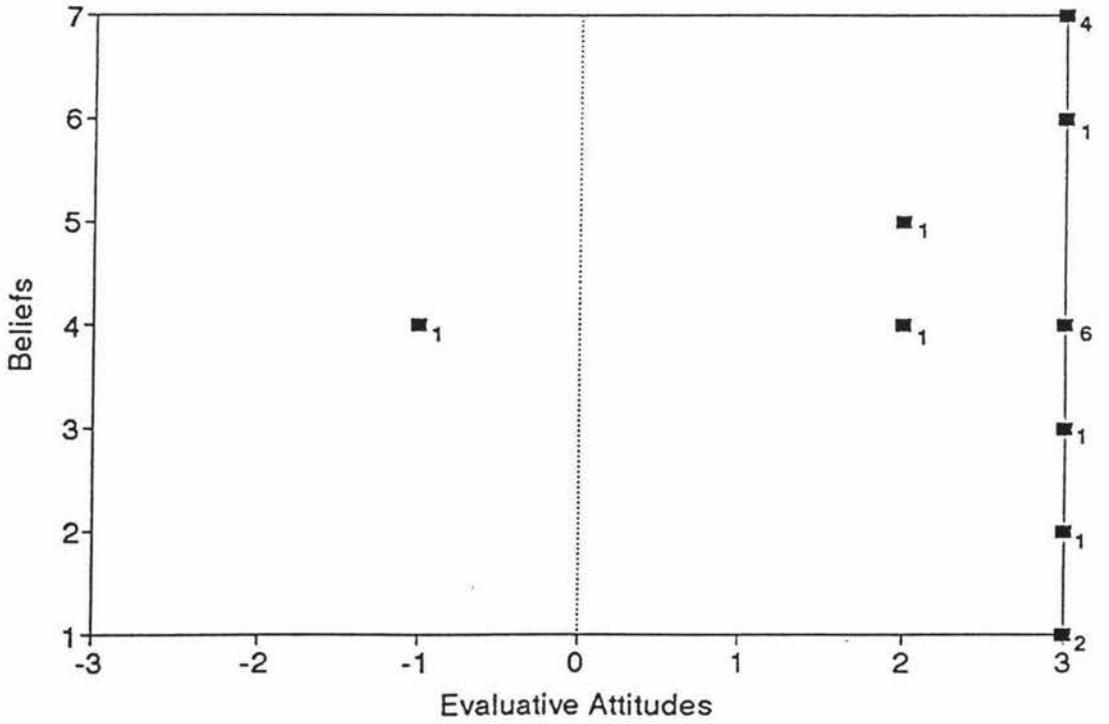
(2) Killing Dates Flexibility  
All Farmers



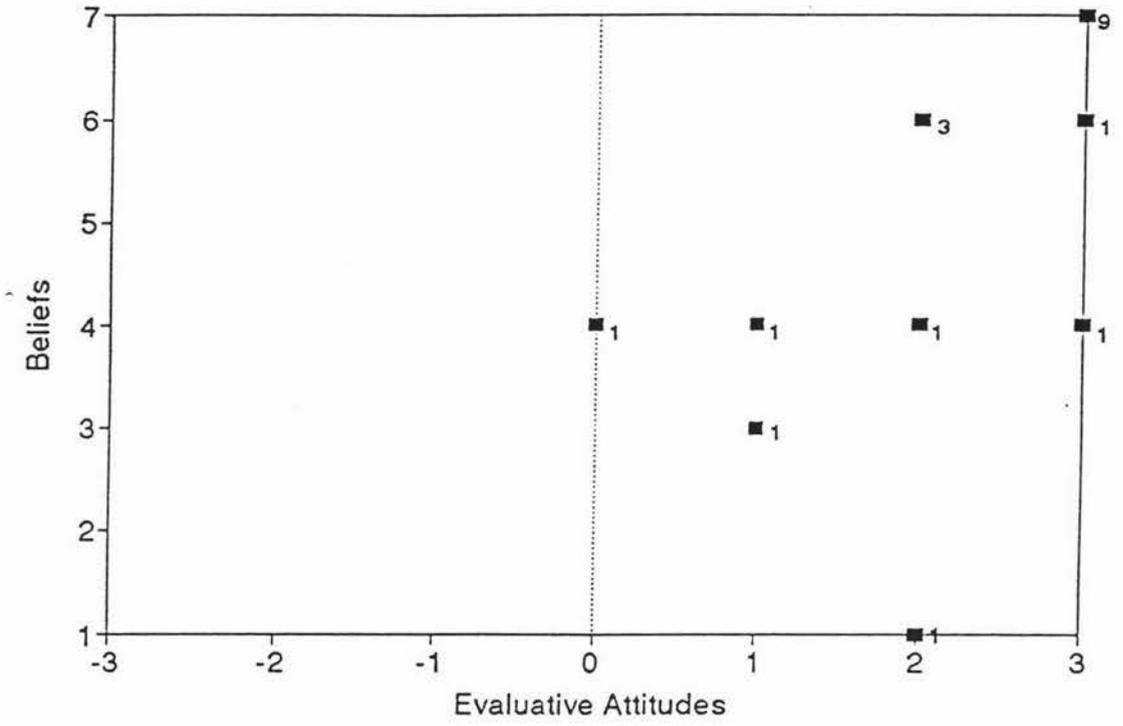
(3) Pricing RWBC v FMS  
All Farmers



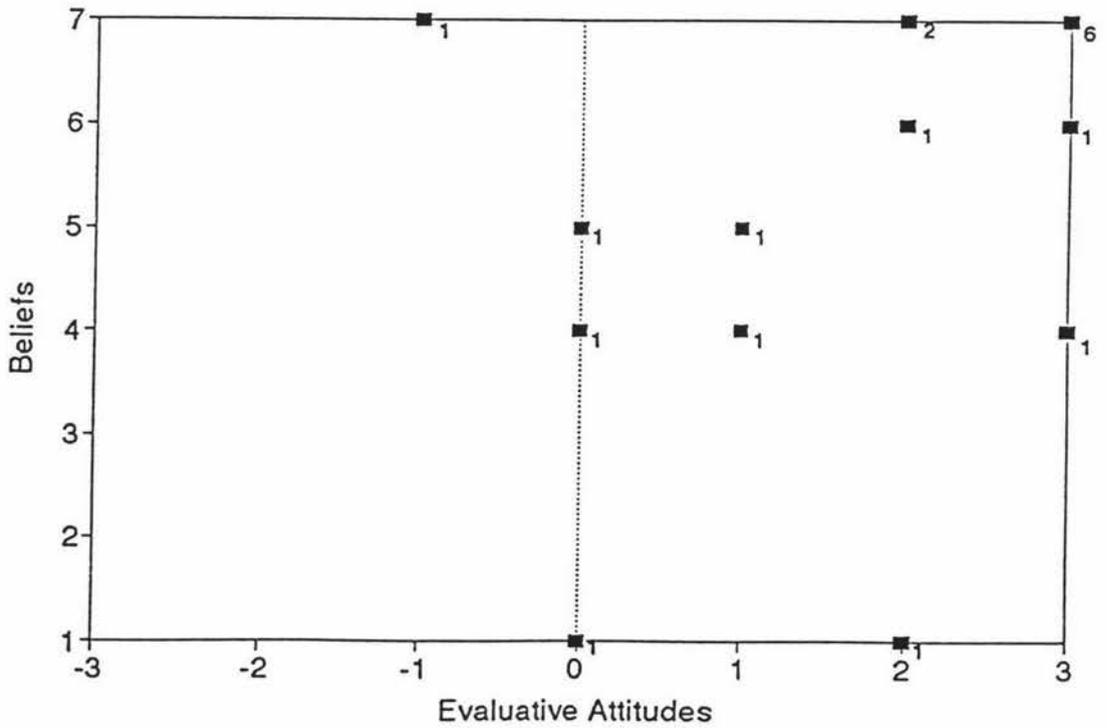
(4) Pricing RWBC v OBBfCTs  
All Farmers



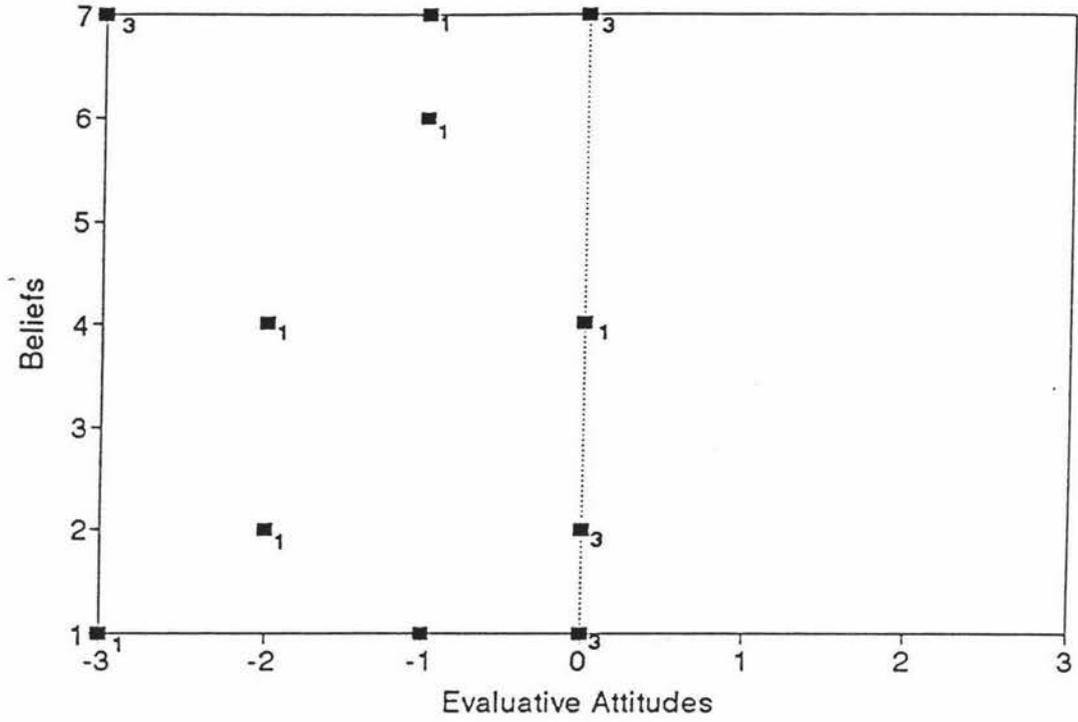
(5) Bull Advice-performance  
All Farmers



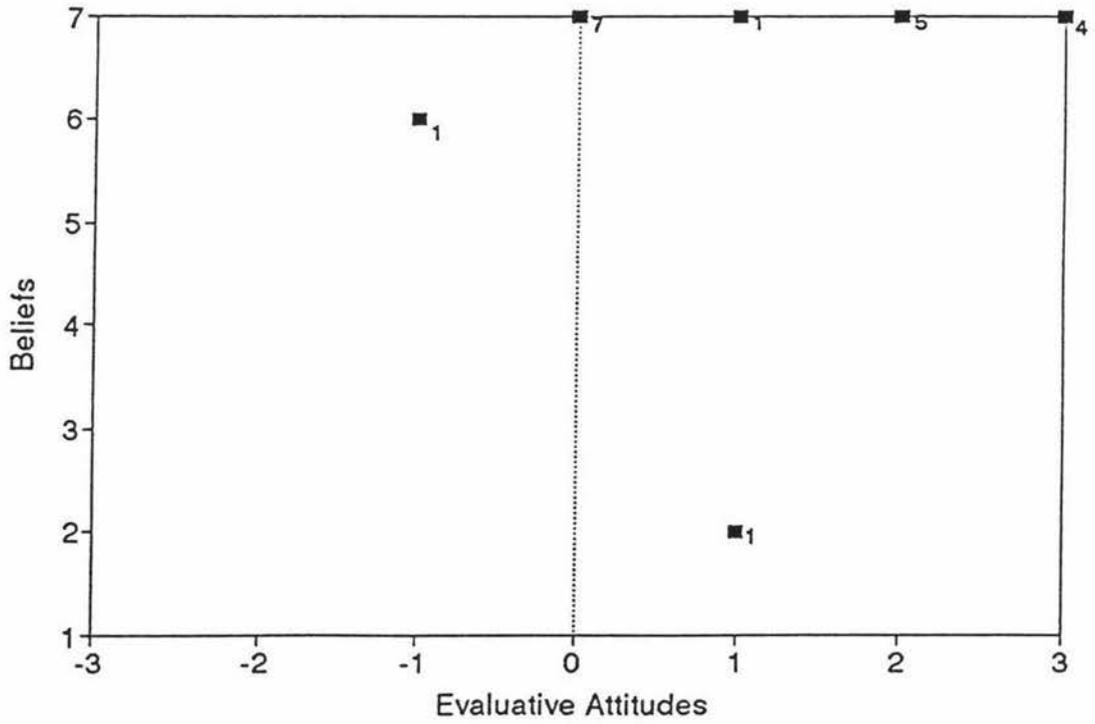
(6) General Fmgmt Advice  
All Farmers



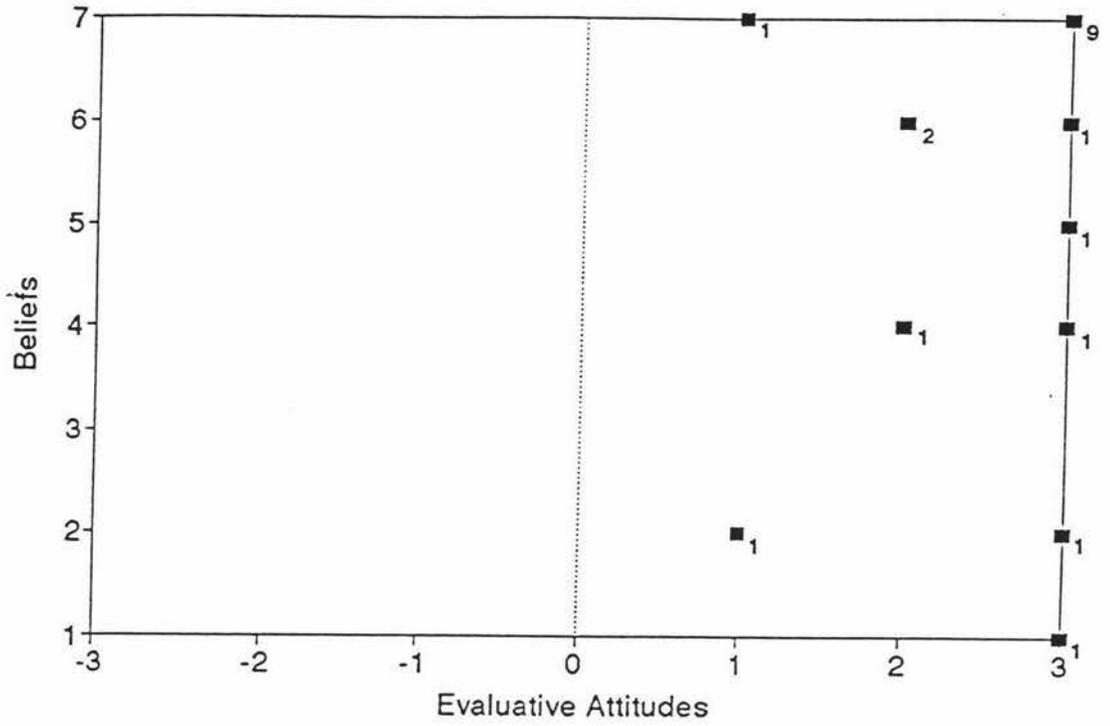
(7) Wkld > er CT v non-CT  
All Farmers



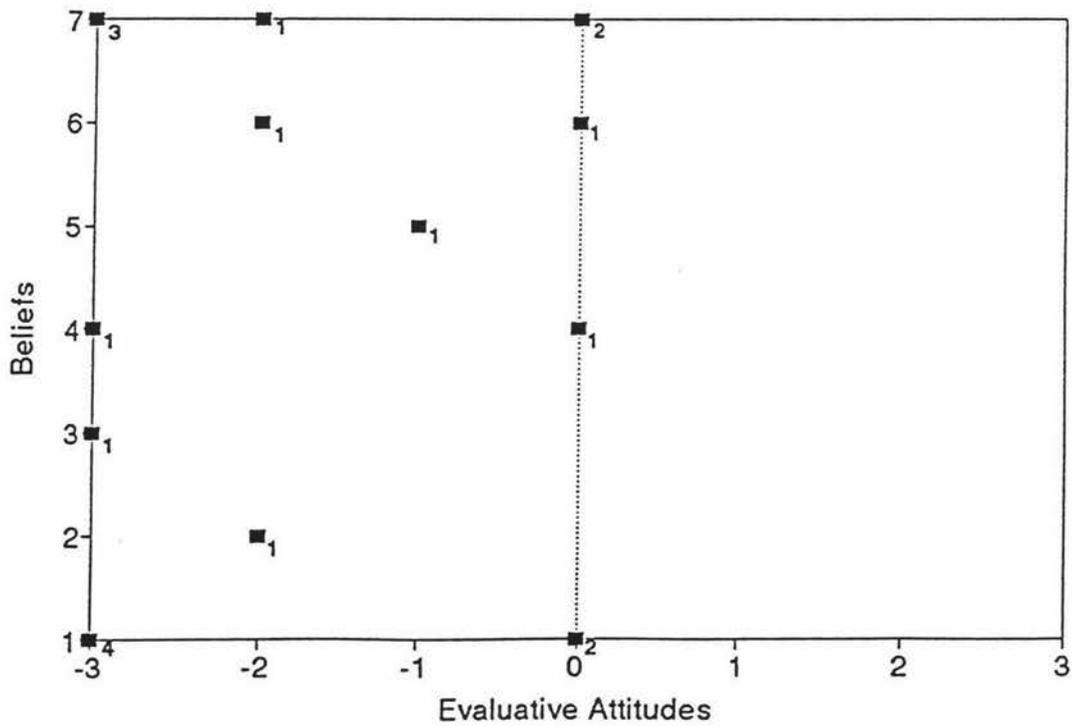
(8) 100% Funding  
All Farmers



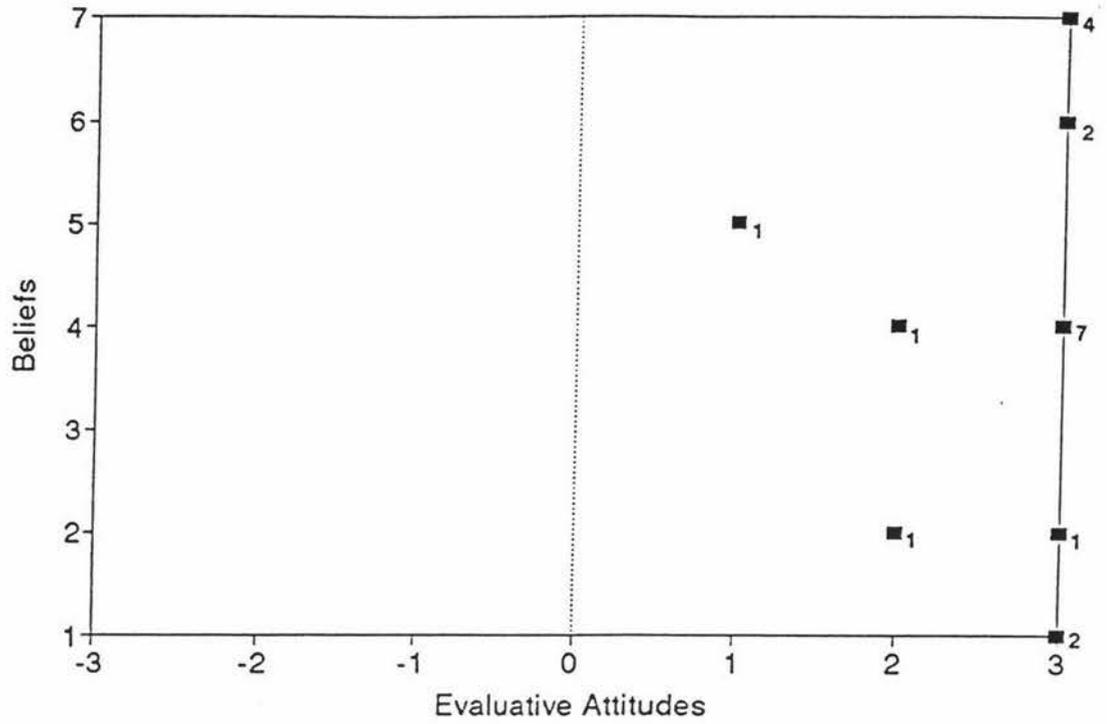
(9) Competitive Interest Rate  
All Farmers



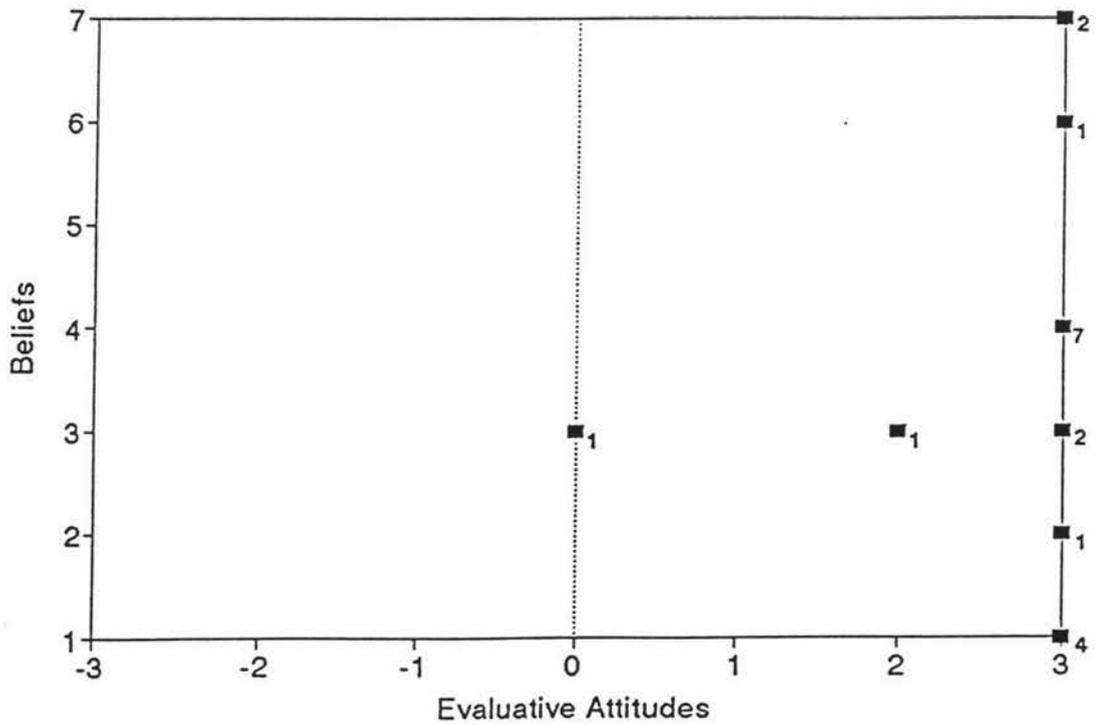
(10) CT Compromises Stock Ownership  
All Farmers



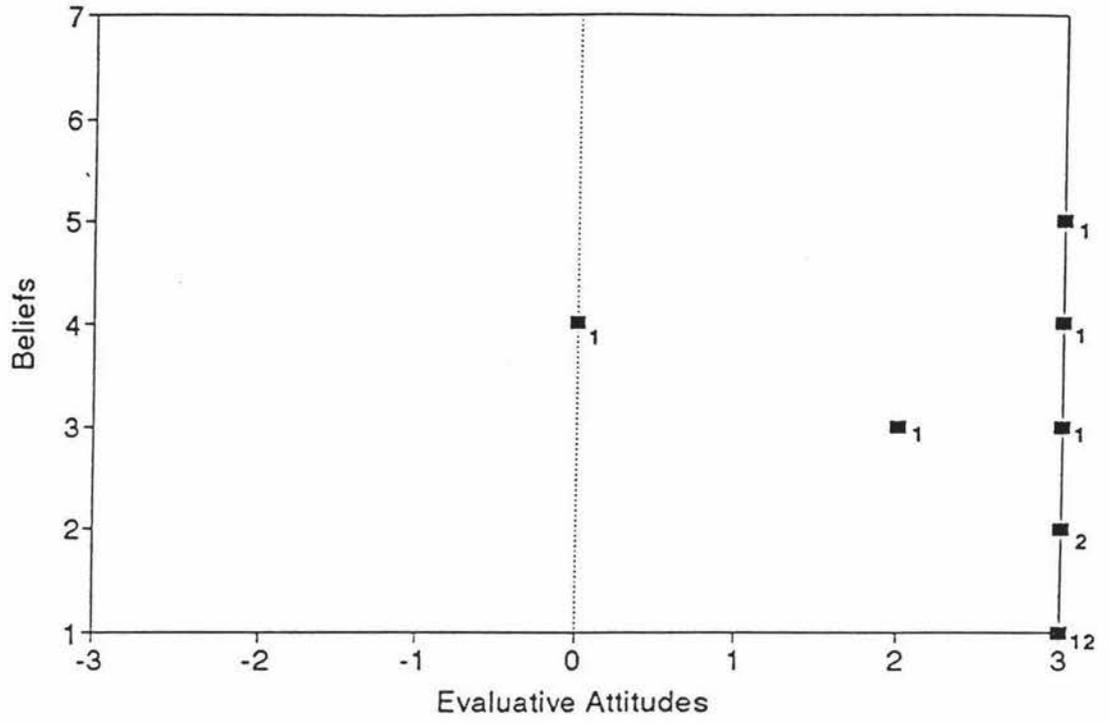
(11) Long Term Stability  
All Farmers



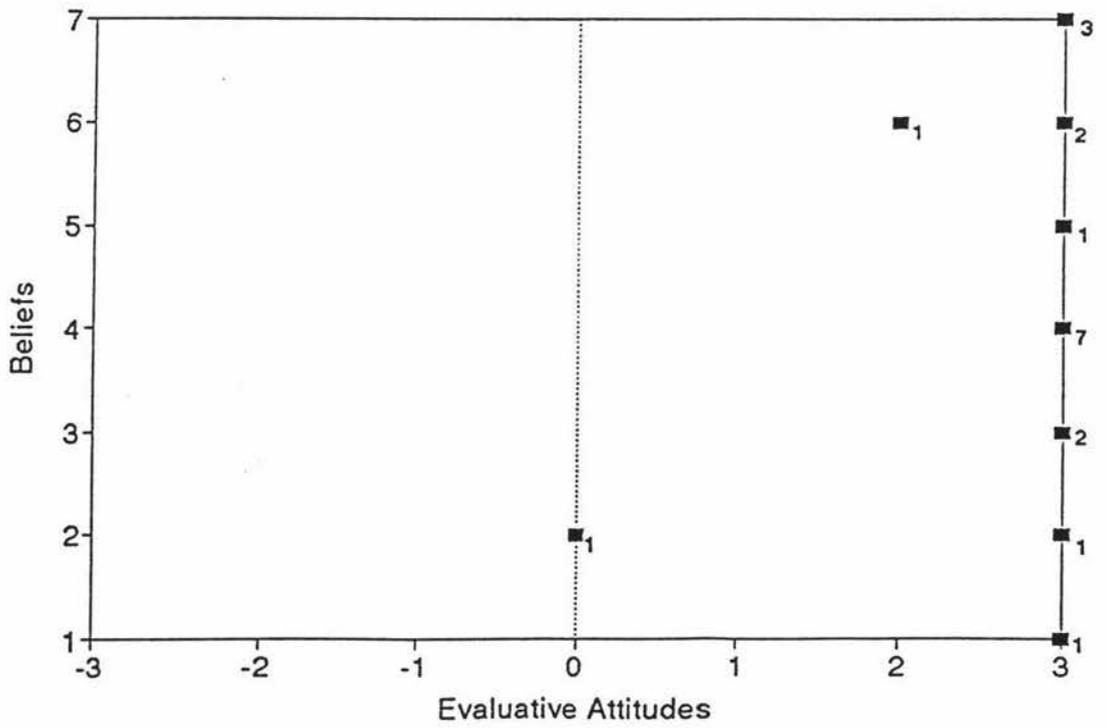
(12) Increased FP RWBC v OWBC  
All Farmers



(13) Increased FP CT v non-CT  
All Farmers

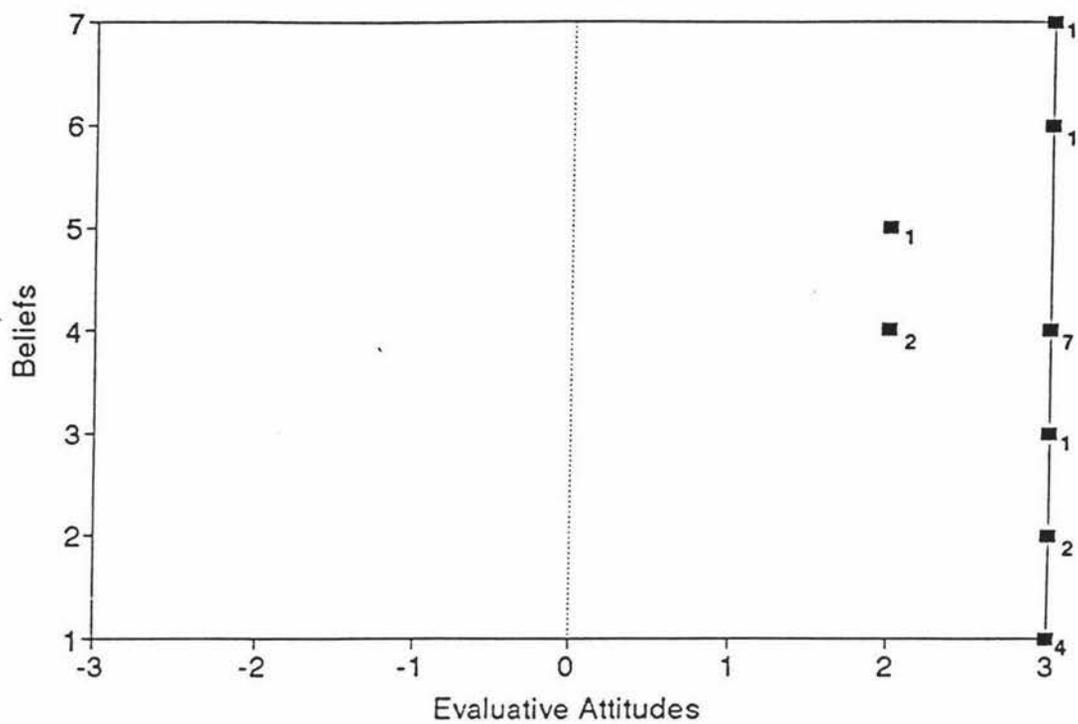


(14) Increased FP Weaner Bulls  
All Farmers



XX

(15)RWBC allows obtg quality WBs  
All Farmers



(16)WBs for RWBC > er FMP  
All Farmers

