DEVELOPING THE AUSTRALIAN LAMB INDUSTRY USING ACTION RESEARCH

by

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A thesis submitted in fulfilment of the requirements for the degree of Master of Science (Honours)

FACULTY OF AGRICULTURE AND RURAL DEVELOPMENT

UNIVERSITY OF WESTERN SYDNEY HAWKESBURY

July 1993
PLEASE NOTE

The greatest amount of care has been taken while scanning this thesis,

and the best possible result has been obtained.
DECLARATION

I Elwin Donald Turnbull, hereby certify that the material contained in this document, and the research from which it is derived has not been submitted for a Higher Degree at any other institution. Further I certify that this document contains the work of others, only where that work has been referenced as such. The core action research from which this document is derived, was carried out within a research team. However the material presented in this document remains the original work of the author.

E.D. TURNBULL

KEY WORDS AND PHRASES

Thesis: Action research is an appropriate way of helping an industry to develop.
Thematic concern: Industry development.
Perspective: The industry as a human system.
Contexts: Australian lamb industry (1989), adoption of new technology, AMLRDC Prime Lamb program.
Activity: Creation of an environment for a rich social discourse between industry people.
Methods: Action research, focus groups, network creation.
(ii)

**ABSTRACT**

This document reports on the rationale for and results of using action research in order to facilitate development of the Australian lamb industry. The contexts of this research were firstly, a lamb industry that had declining consumption in its domestic and overseas markets over recent decades. Secondly, producers were slow to change to the production of new styles of lamb which more closely aligned with trends in consumer diets towards cuts with lower fat and convenience foods. Thirdly, there had been major changes in research funding criteria, towards projects with measurable impacts upon industries and away from those more focused on science and technology alone.

A motivation for this research was a desire to improve the lamb industry. It was funded as a component of an overall Australian Meat and Livestock Research and Development Corporation (AMLRDC) initiative, the "Prime Lamb Program". The perspective taken in this research was that the production and marketing of lamb is essentially a human activity. Action research was effective in providing a methodology for working with extension and research officers using Focus Group meetings with lamb producers in South Eastern Australia. The research was not merely a data gathering exercise on farmer attitudes, rather the key activity was the creation of an environment for a rich social discourse between industry people (ie. farmers, extension and research officers).

The innovative aspect of this project was the focus on establishing suitable processes and relationships within the industry. The AMLRDC objective of producing 25,000 tonnes of Elite Lamb per year by 1994 provided a context for the project. As a result of the methodology, valuable resources consisting of current industry skills, knowledge and institutions were utilised through this project for the benefit of the industry.
The thesis being explored through this work was that **action research is an appropriate way of helping an industry to develop.**

This project illustrated a role for action research as an effective way of facilitating learning and communication in the lamb industry. Action research therefore helped to sustain and develop the working relationships between the people and organisations involved. A difficulty identified with taking the approach in an industry funded research context was the expense and uncertainty of the ongoing review process. The impact of the project was limited because the activities were confined to the production end of the marketing channel.

These findings are pertinent to the activities of the Australian Meat and Livestock Corporation (AMLC) and the Meat Research Corporation (MRC). Both organisations have a responsibility for development and sustainability of the Australian lamb industry. The approach also has potential for guiding the activities of State Department Product Development Officers.

The research helped the author to develop a deeper understanding of participatory action research and the close linkage between learning and self image. The experience of conducting the core action research project validated the importance of the group dynamic in action research and the difficulty that individuals and groups have in matching actions with espoused theory.
(iv)

ACKNOWLEDGEMENTS

I would like to thank my supervisors Professor Roger Packham and Dr Bob Fisher for their valuable counsel, encouragement and support especially through the times of assimilation.

The patience, enthusiasm and creativity of the action research team of Stephen Blunden, Dennis Gamble, Dr David Hall and Dr Peter Holst is gratefully acknowledged. The process of documenting this project has heightened my sense of the debt of gratitude I owe them all.

The field research was funded through a consulting contract with the Australian Meat and Livestock Development Corporation in the lamb industry, and the personal contact with Dr Jim McLaughlin and Dr Ian Johnsson is appreciated. Hawkaid provided significant administrative assistance with the field work of this project. I am also grateful to my colleagues in the Faculty of Agriculture and Rural Development for the wealth of ideas and support they continue to create.

The undergraduate students involved in the project Andrew Owen, Richard Watt and Denise Turnbull are thanked for the level of commitment and the professionalism they exhibited in the various activities.

The willing participation by industry people such as the extension and research officers is gratefully acknowledged as is the open manner of participation by lamb producers. Their valuable contribution was central to the conduct of and the resultant learning from this project.
This thesis is dedicated to my best friend Denise who has challenged, cajoled and encouraged me through the whole project.

Also it would not have been possible without the love, understanding and sacrifice made by Robert, Jillian and Gabrielle.
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LIST OF SPECIAL NAMES AND ABBREVIATIONS

ABARE  Australian Bureau of Agricultural and Resource Economics.

ABS    Australian Bureau of Statistics.

AMLC   Australian Meat and Livestock Corporation.

AMLRDC Australian Meat and Livestock Research and Development Corporation.

ELITE LAMB has a carcase weight of at least 22 kg. and a fat score of 2 or 3 [a GR measurement of between 6 and 15 mm] (Simpson et.al. 1991:2).

FARL   Fresh Australian Range Lamb.

TECHNICISM the implicit, even unconscious, belief that the humanly possible is synonymous with the technologically available (Harmon, 1989:1).

MRC    Meat Research Corporation this was originally the AMLRDC.

ESPoused THEORY The world view and values a person believes she follows in her behaviour (Dick and Dalman 1991:6).

THEORY IN USE The world view and values implied by her (a persons) actual behaviour (Dick and Dalman 1991:6).
CHAPTER ONE

INTRODUCTION

This is an investigation of a new way of facilitating development of the Australian lamb industry guided by an approach termed 'action research'. The working definition of action research (Perry and Zuber-Skerritt 1990:6) emphasises three key aspects:

". a group of people at work together.
. involved in the cycle of planning, acting, observing and reflected(ing) on their work more deliberately and systematically than usual, and
. a public report of that experience (such as a thesis)"  (Perry and Zuber-Skerritt 1990:7)

This chapter describes the situation in the lamb industry in 1989 and the background on the formation of a core research team and project. Finally action research is introduced as a promising and innovative approach to intervention.

1.1 STRUCTURE OF THE DOCUMENT

The chapters of this document have been arranged in the following order.

Chapters 1 and 2  Introductory and Planning the Thesis
Chapter 3  The Core Action Research Project
Chapter 4  Observations on the Actions
Chapter 5  Reflections and Conceptualising
Chapter 6  Summary and Conclusions
This structure is based on the concept shown by Perry and Zuber-Skerritt (1990:14) (figure 1) of related Core Action Research cycles and a Thesis Action Research cycle.

**Figure 1**  **Thesis and Core Action Research**  
(After Perry and Zuber-Skerritt 1990:14)
The core action research was conducted with a research team and an ever widening group of participants in the situation. This document was written alone with advice from supervisors and the necessary validation from others involved in the core action research project. This is consistent with the ideas of Perry and Zuber-Skerritt (1990:12-13).

"In contrast to the core action research project, this thesis action research concerns a work group akin to an action learning 'set of associates' and includes workshops of fellow candidates and supervisors aiming at fulfilling the conventional requirements of Masters and PhD Thesis.... our Masters and PhD candidates also recognise that they are primarily responsible for the thesis itself".

1.2 PRESSURES FOR CHANGE IN THE LAMB INDUSTRY IN 1989

The research context for this project (described in Appendices 1 and 2) was one of considerable support for the notion that the lamb industry must change to sustain its existence or develop. During the 1980’s there had been a change in consumer attitudes. The trend was toward low fat meats presented in a form suitable for the ‘new household’. This new household had two incomes, little time for meal preparation also take away food consumption and eating out was more common than previously. The type of lamb carcass sold by farmers had changed little in response to changes in consumer attitudes and behaviour.
Department of Agriculture research workers considered the industry was missing an opportunity because a larger leaner carcase offered potential for more lean meat and a range of new boneless cuts suitable for convenience criteria (Thatcher 1991 and AMLC 1990a). Further impetus was added to this pressure for a new carcase from the success of the Fresh Australian Range Lamb (FARL) project in USA (AMLC 1990b). The FARL project was pointing towards a potential high priced export market for Australian lamb but larger leaner carcases were preferred by this market. Appendix 2 includes further argument and evidence on this point.

Scientific researchers had a sense that scientific discoveries and technological advances were slow to be adopted by farmers. Scientific researchers were becoming increasingly concerned as to why new technology was not adopted. The rate of technology adoption was becoming increasingly important to both research and extension workers because of the changed climate of research funding in agriculture and in the lamb industry. Further argument on this point is provided in Appendix 1.

There was also increased community pressure for direct benefits from funds spent on research. This had led to new ways of research fund management, with increased emphasis on cost effectiveness and measurable goals (see Appendix 1). An example of the new approach to research funding was the Prime Lamb Program adopted by the
Australian Meat and Livestock Research and Development Corporation (AMLRDC). This was an integrated project with specific and measurable goals as shown in the following quote.

"To increase the volume of production consumed in higher value markets to about 25000 tonnes a year by 1994 by encouraging production of large lean lambs which are high quality and consistently available." (MRC 1991:90)

These pressures for change combined to create a **change imperative** if the industry was to halt the decline and have some measure of confidence in its sustainability.

### 1.3 CHANGING THE LAMB INDUSTRY

Formal structures are a normal characteristic of corporate or cooperative organisations which produce and market products such as Plumrose canned tomatoes or Batlow apples. By way of contrast the lamb industry in 1989 was a collection of loosely linked organisations and individuals. They were dependant on one another, but did not have permanent contractual arrangements or a hierarchy of management control. The major mechanism for communication in the lamb industry was simply the market price exchange mechanism through "one on one" business dealings. This explains the industry's tardiness in responding to changes in its market environment. Production lags and natural environmental fluctuations
also would tend to lessen the industry’s ability to respond to market trends. Appendix 2 provides further detail on these points. The conclusion drawn by the author was that the industry needed to find better ways of changing to capitalise on market opportunities.

The national bodies - the Australian Meat and Livestock Corporation (AMLC) and AMLRDC - both received funds generated from levies from lamb producers in order to provide services to the industry. The services they provided included increasing communication, building trust between industry members, advertising, consumer public relations, basic and applied research, dealing with foreign governments, and, facilitating strategic planning.

1.4 THE PROBLEMATICAL SITUATION

Given the above context, national organisations such as the AMLRDC and AMLC were suitable organisations to take on a co-ordinating role to facilitate industry development. The problematical situation facing these organisations was to find new cost effective ways of ensuring that the lamb industry could develop given its diverse structure and the lack of a hierarchy of management. New ways were worth exploring as the old structures and activities had left the industry facing many difficulties.
1.5 HISTORY OF THE CORE PROJECT

The initial impetus for the research was a dissatisfaction with the rate of adoption of technology in the lamb industry by officers of the New South Wales Department of Agriculture. Dr Peter Holst the Director of Cowra Research Station recognised that the Faculty of Agriculture and Rural Development at UWS, Hawkesbury had a genuine interest in the contribution of research to agriculture and he approached the author for assistance with market and social science research input.

Our common bond was the idea of improving the contribution of agricultural research to the lamb industry. We had different perspectives on the situation because of our backgrounds and roles in agriculture. Dr. Holst had the perspective that he needed to know more about why farmers were reluctant to adopt technology alternatives. His view was that once he found the reason for the lack of adoption he could develop ways of coping to improve the adoption of technology by the lamb industry. The author’s initial view was that the technology being developed was probably not appropriate for farmers and more interaction between farmers and research scientists would ensure that appropriate technology was being developed. Coming from the University of Western Sydney, Hawkesbury the author was also driven by the need to work with rather than detached from the industry. The opportunity to work with the
manager of a research station provided potential for significant learning projects. David Harris the Principal Livestock Officer responsible for the extension function in the New South Wales lamb industry was also involved in the discussion and he had a vital interest in improving the extension function in the lamb industry.

Our consensus was to attempt to get funding to work on the issue of why farmers appear reluctant to adopt technology. During this formative stage of the project alternatives considered were from an inexpensive undergraduate learning project through to a fully recompened consultancy. The economic context of both the Department of Agriculture and UWS Hawkesbury was tight so it was necessary to apply for a research grant.

In looking at technical change in French agriculture, Bonny (1992) used an approach of a mail survey with follow up discussions to produce an extensive description of trends. Antony and Anderson (1991) and Polson and Spencer (1991) took similar detached perspectives in evaluating the impact of technical change through modelling exercises ex-ante and ex-post.

In looking at ways of improving extension publications on pesticides and pest control in California, Grieshop et al. (1990) developed a way of being more involved with industry in looking at the issue of technology adoption. They (Grieshop et al. 1990) pointed out the significant
potential from conducting focus groups with extension clients prior to any mail surveys and they worked with the users rather than studied them from a detached position.

Our joint research application to AMLRDC in July 1989 was in the style of the work of the Californian's (Griesshop et al. 1990). The application incorporated many of the same steps as used with the Operation Quality Wheat project in Northern NSW (Woog et al. 1989). Focus group interviews were to be used with farmers to find out their perceptions of the needs for research and the way they gathered and valued information. The plan was to involve extension and research officers in the focus groups as observers as a way of communicating findings and facilitating adoption of any ideas flowing from the focus group sessions. The budget provided sufficient funds for a consultant to be involved and allowed for student expenses. The research team was named as Peter Holst, David Harris, David Hall and Elwin Turnbull for the reasons mentioned on pages 6 and 7. During the planning period Dr David Hall had returned to a research role with Dr Holst at Cowra from his studies at Melbourne University. He was chosen as the person with the time and commitment to manage the project for the Department of Agriculture.

There was a coincidence between our research interest and the AMLRDC Prime Lamb Program. The AMLRDC were supportive
of the general concept of the NSW Department conducting a project on the adoption of research. However, they had in mind a specific context for research on technology adoption. It was within their Prime Lamb Program, a research and development initiative to produce 25000 tonnes of large lean lamb by 1994 (this was a goal of approximately 10% of Australian lamb production). The AMLRDC wanted to fund a national rather than a state project and they were also very open to taking a novel approach as shown by their rationale for the project.

"R&D needs to be directed at overcoming constraints as perceived by producers rather than those identified by researchers. Techniques such as Rapid Rural Appraisal (RRA) offer the means to efficiently identify the constraints and to broaden the understanding of researchers participating in the process." (Thatcher and Hayes 1989:7)

The AMLRDC needed a baseline study of the way farmers perceived the Elite Lamb concept in terms of the opportunities it offered and the blockages to adoption within the farmers production systems. The AMLRDC saw sufficient common ground to invite us to apply for funding to investigate the "Commercial Constraints and Opportunities in the Production of Elite Lamb", the project was named Project DAN 055.

The following "rich picture" is an attempt to capture the key issues and relationships within the research context at the commencement of the core action research project.
in November 1989. The concept of using a "rich picture" to convey the issues is taken from the second step of Checkland's Soft Systems Methodology (Checkland, 1981:163).

Figure 2  A Rich Picture Depicting The Research Context in 1989

Encouraged by the openness of the AMLRDC and guided by the perspective that farming, and for that matter extension and agricultural research, can be conceived as human systems (in the Vickers (1983) sense) it was considered new ways of interacting with people in the industry would be warranted and supported. It seemed that this was a time for "emergence" of a new way of
institutional operation in research paradigms in the sense described by Phase III of the model of institutional change proposed by Schoorl and Holt (1991: 399).

Given the expansion of the project and the emerging importance of the process we included two more Hawkesbury academics (Stephen Blunden and Dennis Gamble) in the group. The groups assessment was to continue with the AMLRDC as a potential source of funds within the context of the Prime Lamb Program. This was the starting point for the project described as the core action research which provided the data for investigating the thesis presented in this document.

1.6 ACTION RESEARCH

Action research is a cyclical process of planning, acting, observing and reflecting which can have a very significant impact. For example, Bawden (1989:16) describes the expected impact (on the people involved in the situation and on the situation) from taking an action research approach as being:

"(1) Improving the practice of the practitioner researcher."

(ie. helping you to do what you do better)

"(2) Improving the understanding of the practice by the practitioner."
(ie. helping you to recognise more clearly what it is you are doing)

"(3) Improving the situation in which the practice is practiced."

(ie. improving the outcomes in the work-place)

"(4) Improving the practitioners understanding of the situation in which the practice is practiced."

(ie. helping you and others to understand more clearly what is happening in the work-place)

"and

(5) The result of the action research is subjected to critique from, public knowledge."

(ie by sharing your understandings and outcomes with others you are able to validate your observations and perceptions)

Such improved understandings and practices means that action research has great potential for improving the effectiveness of people in any situation. Properly used, action research has be described as an effective way to manage change (Bennett and Oliver 1988 a). The above five characteristics were a sound reason for the core team considering action research when becoming involved with the AMLRDC project DAN 055.

1.7 PROJECT DAN 055 THE CORE ACTION RESEARCH

The project DAN 055 was the core project which was the focus of the action research. It was conducted with
people and organisations in the lamb industry to help them to respond to the change imperative which was necessary for industry sustainability and development.

In the terms used by Perry and Zuber-Skerritt (1990:13), this core action research project was conducted with research and extension officers around the thematic concern of improving the Australian lamb industry. The project was funded by the Australian Meat and Livestock Research and Development Corporation (AMLRDC). It was conducted within the resources of time and money which were available with a core team of three academics and two research scientists. The way in which farmers, students, other State Department of Agriculture research scientists and extension officers became involved in the project is described in Chapter 3.
CHAPTER TWO

RESEARCH RATIONALE AND DESIGN

This chapter presents in some depth the argument for the research approach used, which is then expressed in the thesis as stated in section 2.6. In addition a case is made for the major techniques used during the field work.

2.1 AN ETHICAL BASIS

The ethical framework for action by the research team was one of taking a stance to empower people to take control in their own situations, rather than manipulation of the individual for the sake of the system. The ethical basis for acting in the situation was therefore an ideal of engendering social action rather than an attempt at social manipulation.

Such an ethic was consistent with the important need for organisational learning of the lamb industry. For example Argyris and Schon (1978: 133) use Batesons' (1972) concept of single and double loop learning to suggest that the only organisations which exhibit organisational learning are those with double loop learn. Argyris and Schon 1978:134 go on to make the point that organisations which have only single loop learning set priorities on the basis of prevailing power according to defined organisational norms. They point out that a social action
ethic which respects individuals as the agents of organisational action and also accepts individuals as the agents for organisational learning (Argyris and Schon 1978:133) double loop learning is possible. The distinguishing feature of organisations which continue to learn (i.e. display double loop learning) is that they have ways of 

"... restructuring of organisational norms, and very likely a restructuring of strategies and assumptions associated with those norms, which must then be embedded in the images and maps which encode organisational theory in use" (Argyris and Schon 1978:134)

It is evident that there is a need to develop an approach to improving situations which incorporates the necessity to consider multiple perspectives. This is apparent even in the literature on organisations with strong formal structures such as within individual businesses. For example the following quotes from Colins & Chippendale (1991) indicate a need to change the way people involved in businesses think about their situation, as individuals and corporately, if the organisation is to change.

"Many say they are implementing new organisational structures and processes, but if they are not addressing the values of the organisation at the same time, no real change in organisational culture will occur." (Colins & Chippendale 1991:1)
On the basis of the assumption that you only change what you do if first you change the way you think, Colins and Chippendale (1991) extrapolate the view to the need to change the way groups think before there will be a change in group behaviour.

"Real change can only occur when the structure of systematic thought is changed: ... Shared meaning is the basis of culture. Creating culture is a process of building shared meaning. Cultural change is synonymous with changing the shared meaning." (Colins & Chippendale 1991:7)

Once situations are created where meanings start being shared the foundations of peoples understandings and relationships comes to the fore as does the reality of the need for social action. Colins & Chippendale (1991) view the issue of oppression of individuals and groups is 'part and parcel' of all cultures as illustrated by the following quote which is set in the context of western economies.

"Because of the internalisation of myths, oppressed employees fail to recognise the concrete reality of their lives. The myths are only a particular perspective of reality - a perspective that it is in management’s (or Government’s) interest to foster. Such domesticated employees are blind to other
realities; alternatives are unthinkable." (Colins & Chippendale 1991:3)

The concept of the need for a change in the social order in order to facilitate community development has also been recognised in the community health field.

"Community development is about social change; changing the outside world, changing ourselves and changing ourselves in relation to the outside world." (Dixon 1989:82)

An alternative approach to a social action ethic for the core team would have been to have taken an overt means of social manipulation. This could have involved an analysis the power relationships and selection of appropriate implementation approaches using the power relationships which were most likely to be effective. Nutt (1983) developed a model which categorises the environments of human organisations and proposes the most effective power base to use for each category. He suggests techniques which are appropriate to each situation (Nutt 1983:607). Such approaches are clearly at odds with the ethic of acting in the situation with an ideal of engendering social action. Another reason for not using Nutts’ (1983) ideas was that they had been validated in organisations with rigid relationships between the parties involved, such as the employer/employee relationship. Rigid relationships did not exist in the lamb industry in 1989,
therefore even if the approach of Nutt (1983) was ethically compatible there was considerable doubt it would be effective without a coercive element such as compulsory acquisition of lambs through a structure such as a Marketing Board. The trend in both State and Federal Legislation in 1989 was one of repealing coercive marketing legislation, as shown by the "deregulation" of industries such as the NSW egg industry and the national wheat industry. It follows that there would be little chance of introducing coercive marketing legislation in the lamb industry in 1989, even should one want to.

In the context of the apparent paradox individuals face when demanding individual freedom but expecting others to not cause harm even if they would benefit by doing so, Vickers (1983) calls for:

"...a concept of universal responsibility such as no Utopian since Plato ever hoped to get..." (Vickers 1983:177)

as the way forward for the world community. This clearly shows that social action demands more responsibility from all individuals than is the case in more hierarchical systems. In the lamb industry this may well mean farmers and research and extension officers having a heightened sense of responsibility for lambs and the resultant consumer products past their normal point of exchange at the market.
2.2 INVOLVING PEOPLE

In addition to ethical compatibility for the research team an approach which engenders social action can have significant benefits through the inescapable need to involve the people in the situation. For example Thompson (1991) concludes his analysis of alternative situation improvement approaches by making the point that feasible approaches must include the people involved.

"The practical argument from all of this is that, since each actor's myth captures some essence of experience and wisdom (otherwise it would have died out long ago), all of them must have something to contribute." (Thompson 1991:24)

Thompson (1991:1) is confident in his scepticism for the traditional model of policy research:

"Description then prescription" is a non starter."

Thompson (1991) draws these conclusions from an analysis of alternative approaches to developing ecological sustainability policies for the Himalaya/Ganges region. The challenge facing the policy makers in the Himalaya/Ganges region had some parallels with the situation facing the core action research team who were interested in the development and sustainability of the Australian lamb industry development. For example, there were those with a "doomsday view" who had said that the
systems will be completely annihilated, but this rhetoric had been obvious for decades in both situations. Another similarity was that each situation had interest groups, with weak connections between the groups and there was apparent inappropriate behaviour:

In the Himalaya’s it was farmers, foresters and fuel wood users continuing to clear forests in the face of environmental degradation, and in the lamb industry it was farmers processors and wholesalers continuing to produce small fat lambs in the face of a consumer swing against lamb and fat on all meats.

In the Himalaya’s policy scientists were attempting to develop ways of halting degradation and in the lamb industry it was the AMLC, MRC and government research and extension bodies who were seeking ways of ensuring industry sustainability. Thompson’s (1991:24) conclusion indicates that a sound approach to both situations should involve people from the many groups involved.

The lamb industry in 1989 was a grouping of people with relatively few formal relationships therefore an approach which recognized the need to articulate a range of perspectives was likely to be of more benefit than approaches which were from only one perspective. This was because there was more relevant information that could be accessed. Also there was a greater likelihood of support for a particular direction, if the people involved in
making the decision had to be involved in implementation. In responding to a call for a more measured and systemic approach to effective government social policy (Carter 1979), Vickers (1979:12) expresses the above notion in the following way.

"Clearly the more widely a population shares its common fears and aspirations and the more realistically it appreciates its situation the more hope there is for agreement on policies which will be capable of being realised individually and which will also be mutually consistent in their demands both for resources and for renunciations..."

Authors in the literature on community development such as Chambers (1983) and Salmen (1989) have written books with the theme of involving the people as the most effective approach to development. These books use examples from both rural and urban environments where the people affected have been involved in both planning and monitoring of community development projects. Articles in recent journals also call for increased involvement of farmers in research and extension activities in the developing world (Doorman 1991, Fujisaka 1991 and Holden and Joseph 1991).

A similar conclusion is drawn by Dixon (1989) when reviewing the success of a range of approaches to community development through health and welfare services.
"... planned social change as a result of a partnership between elements of the community and the bureaucracy can become a reality if history is any guide." (Dixon 1989:90)

2.3 LEARNING

Change for the lamb industry will emerge from changing activities of the individuals involved and/or changing the way individuals and groups work together. De Zeeuw (1992) uses the term competence to refer to an organisation's ability to bring skills to bear to perform activities. He makes it clear that competence of the organisation is dependent on individuals and the their "collective competence". Collective competence reflects the effect of individual contributions and the result of the relationships between individuals (de Zeeuw 1992:200). The notion of collective competence is similar to the concept of systemic learning recommended by Keleher and Cole (1989), Vickers (1981) and West (1990). Collective competence in terms of the lamb industry in 1989 could be aligned to the industries ability to produce and competitively sell lamb in an environment of changing consumer tastes and preferences both in Australia and overseas.

This section puts the case for adopting a learning approach with the individuals and groups in the lamb industry as a way of facilitating industry development or
competence in the de Zeeuw sense of collective competence (de Zeeuw 1992).

2.3.1 Individual Learning

Agryris and Schon (1978) argue that all deliberate action has a cognitive basis and they define learning for individuals as being:

"... the construction, testing and restructuring of a certain kind of knowledge." (Agryris and Schon 1978:129)

They go on to make the point that:

"Human action and learning could be placed in the larger context of knowing" (Agryris and Schon 1978:129)

They use a term "theory in action" which is:

"a theory of deliberate human behavior which is for the agent a theory of control but which, when attributed to the agent, also serves to explain or predict his behavior" (Agryris and Schon 1974:6)

Austen (1980) defined a theory as:

"a rational, possible, explanation for given phenomenon, which are thought to be related" Austen (1980:83)

The basis of theory formation is the notion of people changing and forming personal constructs. Von Glaserfeld (1987) in his book "The Construction of Knowledge" makes reference to the concept of personal constructs as the
common theme of development psychology. He evidences the writing of researchers such as Kelly, Piaget, Gange and Ceccato. He describes the overarching concept of knowing as Bridgeman’s concept of Operational Definition:

"... the objects we 'perceive' or 'know', and that is the objects and events we refer to when we communicate linguistically, are CONSTRUCTS or, in other words, are results of mental operations." (von Glaserfeld 1987:4)

Maturana and Varela (1988) argue that humans individually and when structurally coupled are constantly reconstruing their situations. They use the term ontogeny which is:

"... the history of structural change in a unity without loss of organisation in that unity."

Maturana and Varela’s (1988) concept of ontogeny is more dynamic than the notion of personal constructs in that it is described as being constantly reviewed and it is more systemic to the person rather than a mere cognitive action. These differences aside, a common theme to all of the above concepts from the literature is that perceiving and reconstruing situations with other people (social discourse) is germane to learning.

Maturana and Varela (1988) use the notion of structural coupling between people as a very important source of learning for individuals. Further evidence for this view that humans learn by relating to others comes from the
nursing field. Mitchell (1990) conducted research looking at how individuals cope with decisions in day to day life. She was working with Parse's theory of nursing which has a tenet that

"...human beings, together with the environment, co-create distinguishable patterns of relating"

(Mitchell 1990:29)

A major conclusion from the research was:

"The extracted concept of affirming self through interrelationships was disclosed by participants as they spoke of relating with others" (Mitchell 1990:32)

The notion of affirming self is integral to the model of learning proposed by Lacan (1966). Boxer and Kenny (1990:212) show the link between the act of social discourse, out of which learning arises, and the tension we have as humans between knowing ourselves (by our "Differences from Others") and our desire to belong to the group (hence hold the views of others). Lacan’s (1966) model highlights importance psychologically to individuals of protecting their personal existence ("My Being as Some One") if they are to perceive and reconstrue their situations.

There is considerable support for the notion that it is crucial for humans to protect their perceptions, as perceptions come to represent their personal existence,
as articulated in the books by the psychologist Rowe (1981 and 1987).

"Yet even those of us who reject all beliefs in immortality have to agree with Freud that the total annihilation of one's own identity is unimaginable." (Rowe 1981:35)

"... - most of all, we fear annihilation of the self" (Rowe 1987:11)

Individuals in the lamb industry in 1989 were under pressure to adapt to change as described in Appendix 2. The previous discussion indicates that it was important for them to perceive and reconstrue their personal and professional roles in the changing industry if they were to be effective in coping with the changes needed. The close link between learning and self identity, indicates learning in the lamb industry would be enabled by approaches which were non threatening for the individuals involved.

2.3.2 Group Learning


A common theme in these writings is that organisational learning is the result of social discourse or
communication. For example Agryris and Schon (1978) state that:

"Organisational theory in use, continually constructed through individual enquiry, is encoded in private images and in public maps. These are the media of organisational learning." (Agryris and Schon 1978:132)

Boxer and Kenny (1990) maintain that humans make sense of the world they live in through a dynamic process of discussion and idea generation and modification referred to as languaging. This is akin to the L* which is used by de Zeeuw (1992:205). Boxer and Kenny (1990) assert that 'languaging' is the means by which culture of groups and organisations is formed. This notion is akin to the 'building of shared meaning' described by Colins and Chippendale (1991:7) when referring to creating culture in organisations.

In conclusion, the literature above makes it clear that approaches leading to learning for the lamb industry, as an organisation, need to incorporate a significant component of social discourse.
2.4 FACILITATING LEARNING THROUGH ACTION RESEARCH

2.4.1 Philosophical Background

In commenting on the detrimental effects of the interaction of technology on community views, Harmon (1989) states that as a predominant attribute of modern consciousness "technicism" has led to:

"...the loss of a sense of common human community in the West and also the moral possibility of a common, transcedent good" (Harmon 1989: 145).

His discussion goes on to show how decisions are confounded in our culture to appear as socially neutral judgements when really they are statements of values which go unquestioned. Harmon (1991) proposes an "Action Perspective" instead of the "Decision Perspective" as a means of accepting the reality that individual and group decisions are morally determined. The action perspective accepts that,

"Activity always does more than embody purpose, it evolves it." (Harmon, 1989:149)

Meredith et al. (1989) describe action research as a suitable research approach where there is a need to resolve issues of alternative perspectives on a situation. This is because it is an approach which by its nature is interpretive rather than being a positivist or empirical approach typical of traditional field experiments and agricultural surveys. In their article on
research paradigms in operations management Meredith et al. (1989) described action research as an approach based on direct observation rather than on artificial reconstruction and being interpretive rather than rational. The implication is that an action research approach is not necessary if one holds the view (of a positivist) that a situation can be viewed and measured in isolation from the perspective, attitudes and values of the person or group viewing the situation.

Kurt Lewin an experimental social psychologist was an early proponent of action research and a paper of his in 1919 on farm and factory labour methods

"...contained the seeds of action research. He proposed the then preposterous idea that researchers could better solve practical problems by getting out of the lab and into the fields....Eventually the project idea solidified into what he summed up in the axiom, 'No action without research and no research without action'." (anon 1990:86)

2.4.2 Applying Action Research

Action research has been used in a wide range of situations. For example, it has been reported in the literature on education (Grundy 1982, McTaggart 1989, Bawden 1990, Kemmis and McTaggart 1988 & 1990). It has also been reported in the literature on organisational development (Reason 1988, Clarke 1972), management
training (anon 1990, Bennett and Oliver 1988a) and in general social research (Winter 1987).

Kemmis and McTaggart (1988:21-25) highlight the collaborating and participating nature of action research. They also describe four attributes which are the antithesis of action research. They state that **action research is not:**

"1 ...the usual thing teachers do when they think about their jobs.
2 ...simply problem solving.
3 ...research done on other people.
4 ...‘the scientific method’ applied to teaching."

(Kemmis and McTaggart 1988:21-22)

In contrast they describe the following extensive list of the attributes of action research in education as:

"1 ...improving education by changing it
2 ...participatory: it is research through which people work towards improvement of their own practices
3 ...develops through a self reflective spiral:
4 ...collaborative
5 ...establishes self-critical communities
6 ...systematic learning process
7 ...involves people in theorising about their practices"
8 ...put practices, ideas and assumptions about
institutions to the test by gathering compelling
evidence
9 ...open minded about what counts as evidence
10 ...records learning
11 ...a political process because it involves us in
making changes that will affect others
12 ...involves people in making critical analyses of
the situations ...in which they work
13 ...starts small ...and works towards extensive
changes
14 ...those involved can define more powerful
questions for themselves as their work progresses
15 ...widens the community of participating action
researchers
16 ...allows us to build records of our improvements
17 ...allows us to give a reasoned justification for
our educational research "

(Kemmis and McTaggart 1988:24-25)

In the context of industry development initiatives in the
lamb industry a desirable attribute of action research is
its participatory nature. Other authors have noted the
utility of action research in involving a number of
different people in a participatory approach to improving
situations. For example Whyte (1988) states:

"Participatory action research (PAR) is a strategy
designed to maximise the opportunities for
practitioners and professors to learn from each
other as they learn from the research process itself" (Whyte 1988:28)

The range of views and roles represented by the various groups in the lamb industry shown in the rich picture of the research context (figure 2) means that the participatory nature of action research offered potential for the core project. A predicted outcome of taking an action research approach would be learning for all of those people involved and it would open up the possibility of joint learning.

Meredith *et al.* (1989) classified action research as an interpretive natural enquiry although they made the point that introspective reflection falls in the critical theory paradigm and

"...properly used it can be highly productive, especially when used in conjunction with action research or some other real world involvement by the researcher" (Meredith *et al.* 1989:314).

Warmington (1980:26) points out that a result of working together in close collaboration results in goal dilemmas, ethical (value) dilemmas and problems of role definition and role ambiguity. The resolution of such dilemmas and ambiguity is the province of critical theory (Mingers 1980) and is consistent with the core research team ideal of engendering social action. This notion of a critiquing process, where actions are critically analysed, was
therefore an important consideration for the core research team to consider in looking at ways of creating a productive social discourse to facilitate learning in the lamb industry.

One of the major strengths of action research is that it is not a positivist approach to situations (Meredith et al. 1989:325). This was also a potential threat to the recognition of the work as non positivist approaches were thought to be an anathema to most conventional research scientists and to the common culture of Australian rural communities at the time of the project. Checkland (1982) makes the following observation in support of the above assertion.

"This is the normal view held by scientists and engineers in our culture, they being products of an education system which - without their noticing it - turns them unthinkingly into positivists" (Checkland 1982: 135)

Sound arguments needed to be considered to support the use of action research, given that it is contrary to the normal paradigm of the lamb industry and the research and extension officers who work in it. The two major arguments for not taking a positivist approach were:

(a) That it was expected to be more effective in real world situation improving contexts.
(b) That it was justifiable through critical analysis.

An action research approach is consistent with Vickers’ (1983) views on effectiveness. Vickers contends that thoughts determine the measurement criteria of the effectiveness of actions. Vickers also believes the criteria are dynamic rather than static.

"Criteria of success are structures of the human mind and change with time. They may emerge - or even disappear with time. And it is they alone which define what shall be regarded as success..." (Vickers 1983:171).

White (1989) claimed that an action research approach was effective because the eventual actors are the ones which need to conceptualise new ways, not some detached person. His view is founded on the premise that actions are predated by thoughts.

"Action theorists help actors define their own situations and initiate their own ways of changing them, while mainstream theorists define situations and make changes for the actors" (White 1989:150)

White’s view of situation improvement is consistent with the earlier criticism of the describe/prescribe model of taking action in situations (Thompson 1991). Therefore such an approach was consistent with our ideal of
engendering social action rather than social manipulation
(see section 2.1).

Commenting on the benefits of participatory action
research in a Company/Union industrial situation
Whyte (1988) stated.

"Xerox estimates that the first four joint study
team projects resulted in cost savings of 25 to 40
percent and the saving of approximately 900 jobs"
(Whyte 1988:28)

Whyte (1988) also laid claim to improved scientific
research outcomes from action research because of the
ideas, information and debates posed by the industry
having an effect of:

"Jolting the professional researcher out of academic
ruts that may turn out to be dead ends
scientifically" (Whyte 1988:32)

In addition to the effectiveness argument, confidence in
taking a non positivist approach was gained through
applying critical theory to the concept of taking a
positivist approach. An example of this was the argument
for a non positivist stance mounted by Taylor (1979) in
responding to the positivist view of science. He said
that conventional science was effective for testing out
hypotheses but that the notion of

"'pure' objectivity doesn't exist" (Taylor 1979:51).
Taylor’s critique was set in the context of the policy debate which surrounds the economics of re-processing uranium and plutonium in the USA. He concluded with the following recommendation.

"I have no desire to deny that my views of the world influence my work. You term this "subjectivity" and denounce it soundly. I term it "wisdom" and recommend it highly" (Taylor 1979:51)

A similar critique by Hardiman recommended action research on the bases of **authenticity, validity, action and immersion** (Hardiman 1990:5).

Hardiman (1990) argued that **authenticity** was holistic and interrelated, not a simple combination of reduced separate entities. His concept of authenticity was an equivalent concept to the way conventional science uses the term validity.

**Validity** gives the researcher confidence when extrapolating and interpolating results of experiments. Hardiman’s (1990) argument on the term validity asked:

"Are your actions congruent with examined stated beliefs?"

Rather than the question from conventional science:

"Does your data match objective reality?"

Hardiman’s notion of **action** being the monitoring of ongoing process recognised a:
"fundamentally interconnected universe"

Rather than happenings in isolated:
"simple cause - and - effect dyads".

Hardiman’s (1990) argument on **immersion** (*the desirability of becoming involved with the system under study*) relies on his holistic perspective as he stated:

"...detachment is not seen as a virtue of the inquirer, but as a basic ontological mistake"
(Hardiman 1990:5)

The above stance on authenticity and immersion is supported by other authors such as Whyte(1988).

"PAR (Participatory Action Research) forces researchers to go through a rigorous process of having the facts checked by those with first hand knowledge of those facts before any reports are written" (Whyte 1988:32)

Arguments such as those above need to be appreciated for there to be communication about the effectiveness of an action research approach and for it to be embraced by the research community in Australian agriculture. The lack of such appreciation was a threat to the choice of action research, as a means of intervening in the lamb industry via project DAN 055, but one which was being encouraged by the AMLRDC desire to:

"broaden the understanding of the researchers involved." (Thatcher and Hayes 1989:7)
The documentation of this research will be part of an ongoing process of change in the culture of the lamb industry in Australia. Hopefully it will lead to the industry embracing a non positivist view on the selection, conduct and assessment of more research and development activities. The degree of entrenchment of the positivist in agricultural extension and research organisations is shown clearly by the recent work of Holt and Schoorl (1993).

2.5 PREVIOUS RESEARCH

Over recent years there had been a significant amount of energy and thought invested by people from the School of Agriculture and Rural Development at University of Western Sydney, Hawkesbury into conducting action research in agricultural situations. Papers have been published by Woog et al. (1989 and 1990), Russell and Ison (1991), Martin (1991), Martin and Lockie (1991) and Martin et al. (1992).

Woog et al. (1989) worked with extension and research officers funded by a fertiliser company in the wheat areas of northern New South Wales. This work applied a number of action research cycles around the thematic concern of increasing the amount of quality wheat grown in the region. Farmer focus groups (Templeton 1989) were used as a technique to obtain information about farmers
views which was presented to the departmental officers by a core research team of academics and students. This work is ongoing and a further project (Woog et al. 1990) in the Australian dairy industry is exploring the notion of appreciative systems as conceived by Vickers (Checkland and Casar 1986). An overall theme of this work was that the core action research is conducted with advisory and research workers studying farmers whilst the process of extension is the focus for research publications.

An alternative context for action research was being used by Russell and Ison (1991) who were involved in working directly with farmers with the concept that farmers can be their own researchers. They accepted:

"Pastoralists (all involved family members) as competent researchers in their own right" (Russell and Ison 1991:21).

They took on the view of working to create a scientific discourse which gave a

"continuing evolution of how we understand our surroundings and ourselves" (Russell and Ison 1991:2)

This notion is based on similar concepts to that of Boxer and Kenny (1990) in the organisational development literature. The search for new ways in the work of Russell and Ison (1991) appears to pay little attention to maintenance of existing traditional structures for
industry research and development. This contrasts with the approach of Woog et al. (1989 and 1990) in that they work within the current structures for industry development as typified by the involvement with extension and research officers.

Action research in the Hunter Valley (Martin 1991) with a range of groups in the community from landholder groups through local and state government institutions led a third group from UWS Hawkesbury to a different means of intervention. This group was involved in initiatives to enhance information exchange between individuals and groups in the region (Martin 1991) towards more explicit recognition of the ideological impacts of public policies on individuals (Martin et al. 1992). The core action research project within this research (DAN 055) incorporated the notions of participation and social action inherent in the work of Russell and Ison (1991). However, it remained highly involved with current regional groupings of people as the work of Woog et al. (1989 and 1990) did with Department of Agriculture officers.

Mills-Packo et al. (1991) used the process of a formal soft systems methodology (Checkland 1981), for developing the tree cropping industries in the region of Kona (Hawaii), within a participatory action research approach. This project appeared to have very significant short and long term benefits to the region, to
individuals, farmer organisations and government services (Mills-Packo et al. 1991:418-424). Checkland's Soft Systems Methodology had been applied in other contexts in Australia (Watson and Smith 1988) and Schoorl et al. (1990) had suggested that soft systems thinking would a valuable approach to use in meeting the challenge they saw in horticultural marketing in Australia.

"The challenge to the professional manager is that technology, and with it scientific knowledge, has to be woven into the human fabric of society." Schoorl et al. (1990:140)

The author's view is that such a notion was problematical in the lamb industry in Australia in 1989 because there was no person or group of people who could be considered as the industry professional manager. Therefore at an industry level an approach using Checkland's (1981) Soft Systems Methodology was considered inappropriate. Checkland's methodology requires regular meetings with many of the people involved to consider the results during the steps of the methodology. The geographical spread of the lamb industry over South Eastern Australia was a constraint to the number of meetings possible between the parties so the concept of using a soft systems methodology was considered inappropriate. Mingers (1980) and Jackson (1982) question the use of Checkland's (1981) Soft Systems Methodology because it does not explicitly challenge social norms, hence it does not meet the criteria for an approach with communicative
competence (Mingers 1980:41). Therefore Checkland's Soft Systems Methodology would be inappropriate given the espoused theory of an ideal of engendering social action through the project.

2.6 THE THESIS

The concepts reported from the literature provide support for the following fundamental argument leading to the thesis presented in this document.

Industry development is achieved through individual and cooperative learning of industry personnel.

and

Individual and group (organisational) learning occurs given the circumstances of a rich languaging environment, i.e. where the members of a group are party to a social discourse.

and

Action research is an established way of facilitating a social discourse.

Therefore the thesis was

That action research is an appropriate way of helping an industry to develop.
In Perry and Zuber-Skerritt's (1990) terms the thematic concern of the thesis action research cycle is that action research is an appropriate concept for application in the development of agricultural industries in Australia. In such a context the core action research project described in chapter 3 can be conceived of as a case study of using action research as a paradigm for people and organisations with the role of facilitating industry development.

In November 1989 the core action research team was formed of two research scientists from the NSW Department of Agriculture (Holst and Hall), two Hawkesbury academics (Gamble and Blunden) and the author. The group's thematic concern was improving the lamb industry through the conduct of the AMLRDC funded Project DAN 055.

A desired outcome of this thesis is to provide insights for wider application, including similar situations within the lamb industry (at different levels of the marketing channel) and similar situations in other industries.
CHAPTER THREE

THE CORE ACTION RESEARCH PROJECT

This chapter describes the core project (DAN 055) as six action research cycles. It's thematic concern was a desire to improve the situation in the Australian lamb industry, that is to make a contribution to lamb industry development. The project ran from January until November 1990. As it unfolded the people involved, the content and its context changed from that first envisaged.

In terms of the thesis explored in this document, this chapter represents the action step of the thesis action research cycle as shown in Figure 3 (adapted from Perry and Zuber-Skerritt 1990:4).

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<thead>
<tr>
<th>CORE ACTION RESEARCH PROJECT</th>
<th>THESIS ACTION RESEARCH PROJECT</th>
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<tbody>
<tr>
<td>Planning of the thesis</td>
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<td>Planning of the thesis</td>
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<td>Action</td>
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<td>Working with work groups thematic concern through planning / acting / observing / reflecting on management practices. Report verified by participants.</td>
<td>Working with work groups thematic concern through planning / acting / observing / reflecting on management practices. Report verified by participants.</td>
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<td>Reflection in the thesis</td>
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Figure 3 The Action Step of the Thesis

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Within this chapter the core action research has been described in terms of the resources used (time, the people and institutions involved) and in terms of the action research steps of Plan, Action, Observation and Reflection.

3.1 CYCLE 1  PLANNING THE PROJECT

Resources Used

Time  
January 1990 - February 1990

People  
(5 core team) Peter Holst, David Hall, Elwin Turnbull, Dennis Gamble and Stephen Blunden.
(4 with close contact) David Harris, Laurie Thatcher, Ron Harris, Simon Ellis.

Institutions  
(8) Hawkesbury, NSW, Victorian and South Australian Departments' Extension and Research, AMLRDC.

Action Research Steps

Plan  
To develop a research proposal consistent with the needs of the AMLRDC to improve the knowledge available on the constraints to adoption of specialist prime lamb production systems and to broaden the understanding of researchers participating in the process (Thatcher 1989:7).

Action  
The new core team held two working meetings to develop guide-lines for the new submission to AMLRDC.
The proposal involved two related activities. The first activity planned was a Rapid Rural Appraisal (RRA) (Conway 1986). The team envisioned a study of the type used in developing countries, where a team of specialists work together intensively over a week in a region. Social scientists from other Universities were to be employed working in a team with Gamble and Blunden together with some extension and research officers. Gamble's previous experience with the approach in the Forbes, Orange city and Tottenham areas (Gamble pers. Comm.) and Blunden's experience on the South Coast of NSW and at Tottenham (Blunden pers. com.) gave them considerable skill and knowledge in the use of Rapid Rural Appraisal. The aim was to conduct a multi perspective analysis of the issues in one region incorporating different disciplinary perspectives in the research team and ensuring differing regional perspectives. Diverse regional perspectives were to be gained through interviews with people representing a diversity of interests in the region (i.e. farmers, town's people, bankers, accountants etc.). The region chosen was Glenn Innes on the New England Tablelands because of its high annual lamb production. The outcome was to be a report on the key issues in the region with reference to the opportunities and constraints of the Elite lamb concept.

The second activity planned was to follow up the issues identified from the RRA in the Glenn Innes region in the other major lamb producing areas in South Eastern
Australia. The plan proposed incorporated many of the same steps as used with the Operation Quality Wheat project in Northern NSW (Woog et al 1989). That is focus group interviews with farmers to find out their perceptions of the needs for research and the way they gathered and valued information.

The research proposal was presented to a Post Graduate workshop at UWS, Hawkesbury to seek validation of the process to be used.

Observations

The AMLRDC rejected the proposal on the basis of cost and asked for a less expensive proposal.

The feedback from the Post Graduate workshop was that the approach was a valid consulting approach to take for the industry but there was not a clear research question.

The Cowra research scientists declared a fascination for the modus operandi of the Hawkesbury people in relating within a group project and they were particularly interested in the way the Hawkesbury members of the team were explicit about working relationships. The roots of this awareness were the team approaches which were used in the Faculty of Agriculture. Also both Blunden and Gamble had been involved in a collaborative action research project in the Faculty of Agriculture, out of which the major finding was the importance of the core group dynamic in any action research projects Williams (1989). This observation is further confirmed by Stuth et al. (1991) in their analysis of the pitfalls of
attempting to work collectively in interdisciplinary research projects. The nature of the group dynamic continued to be an important element of the core action research project (DAN 055) but in writing this thesis its status was not a focus. Suffice to say the group dynamic was an important aspect of this project and it was managed in the light of the findings from Williams (1989) and Stuth et. al.(1991).

Reflections If the AMLRDC had accepted a full RRA (Conway 1986) a difficulty the core team would have faced was that it would have required a great deal of time from all members and we all had other priorities. So there was some relief in the core team that we didn’t have to commit such a large proportion of our time.

It seemed that the practicality of RRA in the context of a national industry in Australia was beyond the resources available to the core team, even if there had been generous consulting fees available. This raises the question ‘can the concept of RRA (Conway 1986) be cost effective in industry development work in Australia?’ It is feasible in the Developing World context (given foreign aid) or when using free labour in Australia in the research context. Examples of the use of free labour are the RRA projects conducted in the Forbes, Orange city, Tottenham and South coast areas. They all involved teams of volunteers (Gamble pers. com.). It is more likely that the approach would be cost effective on a
regional rather than a national industry context because of lower travelling costs and a likelihood of obtaining volunteer experts. This explains why the research proposal was to work in a relatively small geographical area, the Glenn Innes region.

The research group had sufficient commitment to continue with the project even though the initial research proposal to AMLRDC had been rejected.

The notion of working to broaden the perception of the researchers was an important component of the continued interest in the research especially for the Hawkesbury academics.

3.2 CYCLE 2 DEVELOPING A COST EFFECTIVE APPROACH

Resources Used

Time March 1990 - May 1990

People Same as for cycle 1 (i.e. the core team of 5 and the same close support group).

Institutions Same 8 institutions as for cycle 1.

Action Research Steps

Plan To develop a new research proposal which improved the likelihood of funding. The core team wished to continue to involve extension workers, research workers and farmers.
The strategy was to continue to consider the project as a combination of a paid consultancy and as a learning opportunity for Hawkesbury students.

Action The core team jointly prepared a proposal which included farmers being involved in focus groups but involved extension and research people in the organisation and operation of the groups. The proposal included aspects of the themes from other UWS Hawkesbury approaches, such as Martin (1991), Woog et al. (1989) and Williams (1991).

The approach was akin to the work in the Hunter Valley (Martin 1991) in terms of the key importance of enhancing the social discourse between the research and extension officers in all of the South Eastern states. The proposal operated within the current structure for industry development (the Department of Agriculture research and extension groups) as did Woog et al. (1989).

The submission was presented in person to the newly appointed Prime Lamb Project Co-ordinator Dr Jim McLaughlin. The proposal was modelled on participatory action research [Grundy (1982), McTaggart (1989) and Whyte (1988)] in the way it incorporated the notions of flexible planning and review. It incorporated shared roles with the players (extension officers, research officers) in the light of the experience of Williams (1991).
Observations  The AMLRDC was prepared to fund the project but they were particular about the need for an itemised list of what we planned to do before commencing the project (Project Milestones). The 'theory of action' (Argyris and Schon 1974:6) illustrated by this response of the AMLRDC in managing their research funds is clearly the antithesis of the ideas expressed by action research proponents such as Harmon (1989), Vickers (1983) and Thompson (1991).

The budget in its reduced form was very tight in terms of the amount of paid consultancy time available.

Reflections  There were concerns about the budget compromises and the imposed rigid structure. One concern with the rigid structure was its potential to destroy the action research nature of the approach. Another was whether the new direction of the project would preclude the action research outcomes of improving the situation in the industry? This sentiment was more strongly held by the Hawkesbury members of the core team, illustrating the differing appreciations of action research within the team.

The core team decided to accept the funds and proceed to do a pilot study.
3.3 CYCLE 3  THE PILOT STUDY

Resources Used

Time       June 1990 - July 1990
People     The same core team of 5 was expanded to include
            2 students (Andrew Owen and Richard Watt). The
            same close support group as in cycle 2 plus:
            Two groups of students
            A group of farmers, and
            Barry Trimmer an extension officer in the
            Blayney district.
            Hawkaid was approached to provide a an
            administration structure at UWS Hawkesbury.
Institutions The 8 institutions as for cycle 2 plus
              students, one group of farmers and the
              university consulting firm, Hawkaid.

Action Research Steps

Plan       To implement the proposed research approach in
            order to improve its chances of being successful when
            applied fully in the lamb industry.

Action    The core team included two senior agriculture
          students in the team and met at Oberon to draw up a flow
          sheet for the focus groups. The flow sheet was tested
          with two student groups at Hawkesbury and one farmer
          group at Blayney. Numerous texts and articles describe
the focus group technique such as Byers and Wilcox (1991), Folk-Lyon and Trost (1981), Goldman and McDonald (1987), Hardi Das (1983), Templeton (1987), Walker (1988), and Wheatley and Flexner (1988). A focus groups is a group discussion which is recorded and analysed by researchers attempting to understand human attitudes, behaviours and knowledge on particular issues, or about consumer products. The methodology of group conduct described by Folch-Lyon and Trost (1981:446-449) and Templeton (1987) was adhered to in setting up and conducting the group sessions. In accordance with the discussion of Boxer and Kenny (1990) and Rowe (1981 and 1986) in Chapter 2.3.1, care was taken to ensure a safe environment for discussions. This was achieved through both the criteria of selection (Turnbull et al. 1990) and the way the groups were blended at the sessions. The criteria for inclusion in focus group discussions were as shown in Table 1.
As far as possible the criteria for inclusion on the list to be invited to the focus group sessions were as follows:

Farmers must be:

1. A prime lamb producer.
2. In control of resources to produce commercial quantities of Elite Lamb - lamb producing ewe flock to be in the top 40% of the District.
3. Resident on the property.
5. Not an identifiable agri-politician.
6. Not a participant in the production system studies workshops (AMLRDC Project DAN 050).
7. Eloquent enough so as to make an oral contribution.
8. Within 1 hours drive from the venue.
9. Attempt to include some husband and wife teams and/or female farmers who meet the above criteria.

Table 1  Focus Group Participant Eligibility  
Source: Turnbull et al. 1990: Appendix 2

The focus group discussions were held between farmers with no discussion input being made by Department of Agriculture people. The sequence of events and roles of various groups involved in the field work is described in Table 2.
Table 2  Field Work Methods

Anonymity of employment was considered important when
Department of Agriculture officers were observing focus
group discussions. Care in this aspect followed from the
source of the research technique.

"this technique grew out of the group therapy method
used by psychiatrists and is based on the assumption
that individuals who share a problem will be more
willing to provide their responses (on the problem)
amidst the security of others similar to themselves"
(Hardi Das 1983:308)

The questions posed and activities undertaken during the
discussion looked at how and why farmers would be
involved in lamb production and particularly Elite lamb
production. The farmer group members were given time and opportunities to form and articulate the concepts behind their farming practices. The discussion flow sheet for the focus groups was tested with two groups of Hawkesbury students who role played being farmers. The discussions were moderated, with the goal of being open to everyone's views. Care was taken to articulate ideas using terms normally used by farmers. The moderator attempted to set a tone so that discussions were not loaded with technical jargon from scientifically literate extension and research workers.

A trial with the process was implemented with a group of farmers at Blayney. Dr Holst organised snacks, based around the notion of lamb products, for the informal get together after the Blayney trial focus group. The debriefing session planned for the evening had to wait for the morning after the focus group because most participants were too tired to concentrate.

Co-ordinators in NSW, VIC and SA were asked to comment on the approach and arrange the lists of farmers, venues and cooperating research and extension people for their areas.

The introduction of the university consulting company (Hawkaid) into the business relationship resulted in a
15% administrative fee, which was an unplanned cost. This further influenced the tightness of the budget.

**Observations**

The focus group flow sheet and aids worked as planned although there was a need for some refinement. Unsolicited comments by farmers about the learning value of the issues discussed that arose during the wheat project in Northern New South Wales (Woog *et al.*, 1989) were validated by a similar sentiment from the participants in the trial focus group run at Blayney. Walker (1988) describes the learning potential of focus groups in the following terms.

"Talking together with other people is stimulating....This often helps people to analyse their own attitudes ideas beliefs and behaviours...because groups can stimulate their members they can also be used to creatively generate ideas." (Walker 1988:73)

Potential learning outcomes through interrelationships (Mitchell 1990:32) were clearly possible through structuring and moderating focus group discussions. The sharing of lamb snacks was a good way to continue discussion on the Elite Lamb concept and a means of creating a joint experience for the farmers and Department staff once they officially came together.

There was a low attendance of farmers at the Blayney focus group relative to accepted phone invitations.
illustrating a need for a better system of ensuring attendance in future field work.

It was impossible to do the planned debrief analysis of the focus group at night as there were other relationship forming activities which took precedence. These were with farmers at the snacks session and between Departmental and Hawkesbury people at dinner. Also fatigue had set in for many of the core team members, meaning the likelihood of an effective debrief was low.

On the following day the core team conducted a debriefing session to analyse the tape from the focus group. The debriefing session was taped for later reference. This ensured clarity of the context of comments made during the analysis.

The core team also had group dynamics issues which required energy as would have been expected from Williams’s (1991) work.

Reflections
Farmers appreciated being asked their opinion.
The approach planned looked like it would work.
There was a very strong perception held by farmers that lamb saleyard price was the dominant factor in deciding how and what to produce.
The debriefing sessions with the Department of Agriculture were a rich experience for all involved.
In the earlier operation quality wheat project (Woog et al., 1989) Spencer's (1989) approach was used. Extension and research workers were asked to articulate their views on wheat production using a brain-storming and mind mapping technique to build a common view. The debriefing sessions at Blayney were a different means of facilitating an open extension-research debate. The focus for the extension-research debate at Blayney was through the ideas and perceptions of the farmers recorded at the previous focus group session. This was a situation where all people were handling new data. That is, data which no one person in the group (extension or research officer) had to defend in order to maintain their professional, and possibly their personal, entity. The conclusion drawn by the core team was that the technique used of listening to the tape and preparing a report back to the farmer group was a safe and productive environment in which extension and research peers could work together to contextualise the importance of the Elite Lamb concept in the marketing channel. This social discourse was by inference an effective way to allow each of the players to reconstrue their views on the relationships within the marketing channel, and to consider their role in the development of the industry.

The need to validate data within action research was met through the production of reports (Turnbull et al., 1990: Appendix 4) following the session. Comments on the focus group reports were sought from all participants. The reports gave both farmer and departmental participants
the opportunity to respond and they also provided a mechanism for each person to consolidate views formed and affirmed through the earlier facilitated discussions. The order of each of these steps is shown in Table 2.

3.4 CYCLE 4  THE NSW FIELD WORK

Resources Used

Time  August 1990

People Core team including Simon Ellis (SA) Glen Innes and Griffith farmers and extension and research people incorporated.

Institutions Same groups as before but significant input from the individual office level at Glen Innes and Griffith.

Action Research Steps

Plan To apply the action research approach in NSW to improve the understanding of farmers, extension officers and research officers about the constraints and opportunities in producing large lean lamb. Also the objective was to create an environment of co-learning between the people involved in the roles of research, extension and farming.
Action       In accordance with Table 1 lists of farmers
were prepared by extension officers using the criteria
listed in Table 1.

Extension officers organised venues and worked with local
people on the lamb catering arrangements.

Hawkesbury academics selected farmers randomly from the
complete list. They were invited through an initial phone
call, confirming letter and a reminder call two days
before the focus group.

Hawkesbury team members moderated focus groups and the
following debriefing sessions with extension and research
officers at Glen Innes and Griffith.

Newsletters were sent to farmers and the departmental
officers involved. The newsletters were written to
validate the conclusions drawn and to formalise the
invitation to be a part of a formal network on ideas and
questions about the project with local Department of
Agriculture people (Turnbull et al. 1990: Appendix 4).

The core team then had a meeting at Cowra to review the
project and to confirm the next steps in the project.

Observations   The pressure on the core team because
of the size and complexity of the task was straining
group relationships and behaviour.

Very similar perceptions on the opportunities and
constraints of the Elite lamb concept were being
expressed by farmers in all focus groups.
The budget was being used up in holding the planning meetings essential to the maintenance of the action research methodology.

All members of the team were familiar enough with the process and content to be able to moderate the focus groups.

The core team discovered if all planned focus groups were not conducted, the AMLRDC grant would be cut back accordingly.

There appeared to be significant questions about Elite Lamb marketing that could only be answered by people involved further along the marketing channel.

Reflections

The core team felt they needed the opinions of people with roles further up the marketing channel (such as livestock agents and meat processors, exporters and retailers) in order to get a more complete picture of the Elite lamb concept as a possible venture for the lamb industry.

The core team decided to cut back the number of focus groups to be run in South Australia (from two to one) and Victoria (from four to three). This was done because of the absolute work load on the core team, but there was also consensus within the team that the farmers opinions on the elite lamb concept were consistent or authentic to use the concept defined by Hardiman (1990:5). This was a point where the notion of studying the farmers as a group rather than being involved with facilitating all farmers’
learning became part of the core research teams theory in action (Argyris and Schon, 1974).
The core team considered that budget savings should be made and agreed that recommendations would be made to AMLRDC to invest in projects working with people further along the marketing channel.

3.5 CYCLE 5 VICTORIAN AND SOUTH AUSTRALIAN FIELD WORK

Resources Used

Time
September 1990

People
Ron Harris (Victorian Department of Agriculture) and Denise Turnbull (student) joined the core team. Andrew Owen and Richard Watt (students) left the team to work on a related project concerned with consumers preparedness to pay for leanness in lamb. Total involvement in the focus groups and debriefing was 80 people from three states, including farmers, extension officers, researchers, academics and students.

Institutions
Same institutions as for cycle 4 but significant effects at the individual office level at Ballarat, Echuca, Heywood and Naracoorte.
Action Research Steps

Plan To conduct farmer focus group meetings in Victoria and South Australia to broaden the groups knowledge about the opportunities of and constraints to the production of large lean lamb. There was a need to validate the consistency of views on Elite lamb across states, also there was a desire to continue the process of facilitating learning of and enhancing communication between the people involved regarding the roles of research, extension and farming.

Action Organised and ran group meetings and debriefing sessions at Echuca, Ballarat, Heywood in Victoria and Naracoorte in South Australia. The Victorian Department used the focus groups as a training exercise for several inexperienced extension officers. Back up recordings of all discussions were made for security and some extra copies were made for retention by the state co-ordinators (Ron Harris in Victoria and Simon Ellis in South Australia). There was an airline strike which meant Stephen Blunden could not travel to Victoria and South Australia, so the Department of Agriculture provided some assistance in recording group discussions (in the written form). Meeting reports were sent out to all involved to validate data and to help in forming local networks (Turnbull et al. 1990:Appendix 4).
Observations  

Good interaction by Department staff in both States and a very high attendance from Department staff.

Many basic issues about the Elite lamb concept were raised and openly debated between extension and research people.

The "reminder call" to farmers two days before focus groups helped to get "satisfactory" attendance at all meetings. Satisfactory attendance was considered to be between 6 and 10 people from an acceptance list on the first phone invitation of 10 to 14 people.

The lamb meals after the focus group encouraged creativity in local caterers and provided a mutual relaxed atmosphere for discussion and to introduce Department officers to the farmer groups.

There were regional differences in some production aspects, but the overall issues for lamb production were common throughout South Eastern Australia.

Budget difficulties were heightened, as cutting back the number of focus groups conducted could not compensate for the high overhead cost of planning meetings.

It was quite possible for one Hawkesbury academic to be a moderator with some recording back up from local people not trained in the process.

The Victorian Department Product Development Officers were accepted by farmers and they were working effectively in their regions to facilitate a flow of
product and ideas in the lamb industry particularly at the farmer level.

Reflections The combination of farmer focus group followed by a debrief as shown in Table 2 proved to be effective in tapping into the energy of the people involved. It led to open communication in Victoria and South Australia about the Elite Lamb concept.
The Victorian initiative of Product Development Officers clearly had potential for other states.
The airline strike had positive and negative effects on the core team experience. A positive effect was that some funds were saved and the model of one moderator running a focus group was tested and found to be satisfactory. A negative effect was a feeling of separation and disappointment by the team member who was stranded in Sydney by the strike; this is another example of the importance of the group dynamic aspect of action research (Williams 1991).
There was enthusiasm for the action research process used from the Victorian departmental officers.

3.6 CYCLE 6 THE WRITE UP

Resources Used

Time October 1990 - November 1990
People Core team of 5 plus comment on drafts by South Australian and Victorian co-ordinators.
Institutions   (4) Hawkesbury, Departments of Agriculture (NSW, Vic. and SA) through their co-ordinators for the Prime Lamb Program.

Action Research Steps

Plan        To produce a report which drew out the major findings from the project. Use the insights from the core team and inputs from State Co-ordinators to improve the impact of the farmer and Departmental officer views on the way AMLRDC funds are allocated.

Action   Ensured time for feedback on district focus group reports.

Each core team member was given tapes and written material from a regional focus group and subsequent debriefing to prepare for a "writing the report workshop".

A half day workshop was used to develop the general structure and content of the report.

A small celebration was held to wind up the core teams existence, recognizing the importance of a close from a group dynamic perspective (Williams 1991).

The author wrote the draft of the document and all team members plus the State Co-ordinators participated in drafting suggestions.

Copies were sent to AMLRDC and a final celebration was held between the Hawkesbury academics of the core team to acknowledge the end of the project.
Observations  AMLRDC were pleased that the milestones had been adhered to.
Other interest in the process of obtaining farmers perspectives and departmental officer involvement with farmers was forthcoming (Gamble pers. comm. and McKinlay pers. comm.).
There was an interest expressed by AMLRDC in expanding the work to include Tasmania.
Also there was interest in using the process in other contexts, such as investigating the role of lucerne in the pasture rotation in areas of northern Victoria with salinity problems.
The Victorian Department had formalised some communication with interested farmers by preparing a quarterly newsletter called Elite Lamb News (DAV 1991(a), 1991(b)).

Reflections  On reflection a suggestion was made to publish the process elements of the project by the research scientists in the core team. This thesis is one response to the suggestion.
The core team recommended that there was a need for additional work further up the marketing channel. This view was held because it was not clear why market trends were not flowing to farmers in the form of better prices for a more desirable carcass.
Group development and maintenance issues as described by Williams (1991) and Stuth et al. (1991) occur in action research teams, so they should be managed. Action research is a difficult process to seek funding for in the structures which exist to service normal scientific projects. This is mainly because of the need for flexibility of activities and the cost of planning reviews which are an ongoing expense rather than just being a development cost at the beginning. Respect for one another's strengths and constraints was developed during this project both within the core team and our institutions.

The written focus group reports were shared by participating farmers and all Department of Agriculture staff involved in the lamb industry in South Eastern Australia. Communication between department officers and farmers was improved through the reports and the social discourse set up and managed through this project.
CHAPTER FOUR

OBSERVATIONS ON THE ACTIONS

The previous section has given a glimpse of some of the results which were instrumental in the ongoing decisions about the processes used in project DAN 055. Sections 3 to 6 of the main report to the AMLRDC (Turnbull et al. 1990) give more detail about the views held within the industry on the Elite lamb concept. The objective in this chapter is to emphasise the aspects of the project which highlight the observations (figure 4) in terms of the thesis that action research is an appropriate way of helping an industry to develop.

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<th>Core Action Research Project</th>
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<td>Action</td>
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<td></td>
<td>V Observation in the thesis</td>
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<td></td>
<td>Description of research process and procedure. Analysis of evaluation of results of action (content and process) in the light of literature survey.</td>
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<td></td>
<td>V Reflection in the thesis</td>
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Figure 4 Observation in the Thesis
(After Perry and Zuber-Skerritt (1990:14)
The structure of this chapter was based on the five outcomes expected from action research described by Bawden (1989:16) as quoted in section 1.5 of this document.

The nature of action research is that it leads to a widening of the influence of the work as it progresses.

"Action research starts with small groups of collaborators at the start, but widens the community of participating action researchers so that it gradually includes more and more of those involved and affected by the practices in question" (Kemmis and McTaggart 1988:25)

The core research project DAN 055 went through an ever widening series of cycles involving more people in the lamb industry.

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FROM
|
V

ONE ACADEMIC, ONE EXTENSION OFFICER AND TWO RESEARCH SCIENTISTS IN NSW

TO
|
V

ACADEMICS, RESEARCH SCIENTISTS AND EXTENSION OFFICERS IN THREE STATES

TO
|
V

ACADEMICS, SOME FARMERS, ALL LAMB INDUSTRY EXTENSION OFFICERS, and RESEARCH SCIENTISTS IN THREE STATES
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Figure 5 Broadening of the Participants in the Project
Broadening of the participants in the project increased the complexity of the project as it encompassed the professional areas of farming, extension, agricultural research and academy. The over-riding integrating factor of the core project was the action research thematic concern, lamb industry development. It provided a common frame of reference for and boundary for interdependence between all groups involved.

Farmer participation during the core action research cycles 3, 4 and, 5) was as subjects of the research rather than as full action researchers, as they were not involved in planning. However learning outcomes for the participating farmers have been included in this chapter as learning is an important component of action research.

4.1 PRACTICE OF PRACTITIONERS

4.1.1 Farming

The impact of the project on farming practice would mainly have come from any information farmers gained during the focus groups and via the expansion of their information networks.

At each focus group there was detailed discussion about suitable lamb sires, feed production, cryptorchids and fat and weight characteristics of lambs. The degree to which this discussion would have improved farmers
practices was not measured. However, at the conclusion of focus groups there was both solicited and unsolicited comments by farmers that they had learned from the discussions: Some of these comments are recorded on audio tape. (All tapes are held by the author should readers be interested).

Given that information networks are an essential part of farmer practice, the activities in the core project which expanded farmer networks should be considered as activities which made a contribution to industry development. Examples are the introduction of participant farmers to each other and to department staff. Also an initiative was taken by the NSW Department to include participating farmers on a mailing list for specialist information on lamb production issues. This was a project outcome which will provide participants with information on an ongoing basis.

4.1.2 Extension

The project had an impact on the extension practices of extension officers in a number of ways. Firstly, it was used in Victoria explicitly as an opportunity to expose recently employed extension officers to the lamb industry. In these cases there was a marked impact in terms of the contacts made and exposure to a paradigm which was learning, rather than teaching, in nature. This outcome was most marked in the reflective discussions
after the debriefing sessions. Secondly, experienced extension officers were given the opportunity of learning in detail about the perspectives of a number of individual farmers, particularly during debriefing sessions. The debriefing sessions were used by extension officers to resolve and further discuss some technical issues in a co-operative environment with research scientists. During the debriefing sessions some decisions were made about joint activities extension and research officers would pursue.

4.1.3 Research

During debriefing sessions research officers exhibited enthusiasm for the holistic and social data. They also reached agreement on some joint initiatives with extension officers. These are evidence of improving the practice of researchers.

The experience of being involved in the collection and analysis of holistic qualitative information during the debriefing meetings was a clear contrast to the normal research activities of Department of Agriculture research officers. Usually their research projects deal with quantitative information set in reduced and mainly biological contexts. This experience facilitated a broadening of research experiences for the people involved as it gave them an opportunity to develop skills and confidence in handling holistic and social data which would normally be considered as being unreliable because
of characteristics such as "non-representative, not statistically sound, subjective, soft and wooly". This is in marked contrast to the data research scientists are familiar with from the scientific literature which is reduced, "hard", measured, statistically based and therefore seen as being "reliable".

4.1.4 Academy

The project gave the Hawkesbury academics an opportunity to improve their professional practice through working closely with many new people. This expanded their networks. There were opportunities taken to improve facilitation skills in the contexts of focus group moderation and the following debriefing sessions. The funding allowed students to be involved in an industry and led to further projects for the individual students involved and for other students. The money earned helped all the academics fund their subsequent sabbatical leave activities.

4.2 UNDERSTANDING OF THE PRACTITIONERS OF THEIR PRACTICE.

4.2.1 Farmers

The detailed and in some instances controversial debates on technical or marketing issues during the focus groups was of benefit to several of the farmers attending the
focus group interviews. Farmer feedback after the focus group sessions was positive that the experience had been worthwhile and that they had learned. That is, improved their understanding of farming. Often this feedback was unsolicited. The theory of the type of focus group discussion moderated predicts such an outcome.

"When focus groups are conducted in anticipation of gaining qualitative exploratory knowledge they facilitate the construct-generation process" (Calder 1977:361)

The probing on lambing, feeding, breeding and other management strategies in question 6 of the focus group discussion guide (Turnbull et al. 1990) constantly challenged the farmers to answer the question:

Why do they do, what they do?

The level of learning through the action research approach could be determined by the degree of the response of the farmers involved in the groups. In all groups there was active participation and debate on the issues discussed and the moderators encouraged all participants to be involved. Therefore the focus group discourse would have led to learning for all farmer participants.

The sampling technique led farmers to meet new farmers and Department staff, and in most cases there was
considerable discussion during the informal snacks time. This discussion would have led to learning in the way described in the literature (Mitchell 1990, Von Glaserfeld 1987, Boxer and Kenny 1990, Maturana and Varela 1988) through the discourse.

4.2.2 Extension Officers

Extension officers were able to improve their understanding of extension in the following ways through this project:

To some extension officers, the experience of viewing the focus group moderator at work and the model of group facilitation used at the debriefing session was novel. Comment was made by several of the younger extension officers that they did not realise the learning potential for the participants in a facilitated discussion such as that during the focus group interviews. They made the link to their personal extension activities and follow up phone calls about other projects shows some of the officers are attempting to apply the new concepts in their extension practice (Gamble pers. comm. and McKinlay pers. comm.).

The project gave extension and research officers access to a number of case studies of lamb producers. Each of the farmers involved in the focus groups was effectively a case study, giving a particular perspective on lamb
production in the region. The debriefing sessions enabled research and extension people to draw out some of the important principles of lamb production. This approach is modelled on the case study approach used by anthropologists when constructing a multifaceted model of societies to assist in the abstraction of organisational principles.

"While seeking to uncover the internal logic of the social system, the anthropologist is constantly concerned to show how organisational principles have been arrived at and the researcher has frequently to validate deductions by reference to special social episodes using case studies. The use of case material not only adds richness to an otherwise abstract analysis but also facilitates the presentation of different kinds of data.

Case material is particularly useful where the anthropologist is dealing with change over time" (Bastin 1985:99)

The task of analysing the focus group discussions in order to determine the socio-economic and physical principles underlying lamb production was in many senses equivalent to the task referred to above when anthropologists are studying social situations. The statements by farmers in the focus group discussions effectively provided the groups of extension and research people with a series of case studies. The extension
officers response to the debriefing sessions was a co-operative open debate about production issues and scientific principles in the context of the elite lamb production opportunity.

This extension/research debate during the debriefing sessions led to areas where it was clear there was a need for intensified action such as the seven major options described in the project report (Turnbull et al. 1990:16) on feed management, cryptorchids, Lamb Plan, lean meat cooking qualities, controlling fat deposition in larger animals, developing carcase knowledge and using abattoirs as a means of learning more about farmers lambs. Although extension officers were aware of the need for programs in these areas before the debriefing, the sessions provided a context and data for setting priorities.

The above indicates that the discussions created an opportunity for the parties involved (farmers, academics, extension and research officers) to review and articulate the principles of lamb production.

4.2.3 Researchers

The novel research approach of this project compared to the day to day research methodologies and techniques used by research scientists provided an opportunity for insights by research scientists on research methodology.
The discussions during the debriefing sessions gave the research scientists the opportunity to place their own research in the context of the needs of the industry, in the same way as described earlier for extension officers. This led to clarity and conviction by the research scientists in setting priorities for research in the lamb industry as shown in the final report (Turnbull et al. 1990:24-25)

4.2.4 Academics

The project was a mechanism for improving academics understanding of their profession in the following ways.

The process of applying for a research grant was a new experience for the academics, so the project provided learning about the needs, effort and networking involved in setting up a national project. The outcome of Vari et al. (1986) of rejection did not eventuate for our group because of the expertise of the Cowra research scientists. However our experience validates the model of identification, exploration and discussion proposed by Vari et al. (1986:117).

There was considerable learning about the role of the group dynamic (Williams 1991) in doing an action research project as referred to throughout this document.
The project forced the academics to access the literature in action research and to debate the approach with people only aware of reductionist approaches to research. The literature accessed and the attempts to apply and critique the theoretical concepts, led to significant learning for the academics involved. It helped the author to understand the role of critical theory in creating an environment for social action (Warmington 1980, Mingers 1980 and Jackson 1982). The differing philosophical positions of positivist and the need and effectiveness of post positivist approaches in human systems was explored (Meredith et al. 1989, Vickers 1983). The linkage between language and developing a group culture in the work of Maturana and Varela (1988), Boxer and Kenny (1990) and Vickers (1983) was particularly enlightening, as was the linkage between this and basic psychological well being (Rowe 1981 and 1986) and learning. The experience of conducting the thesis action research (in the Perry and Zuber-Skerritt (1990) sense) provided the opportunity to consider more critically individual and group development. Also the author looks forward to using the concept of espoused theory and theory in action (Argyris and Schon 1974 and 1978) with both individuals and groups in his future career as a learning facilitator and action researcher.
4.3 IMPROVING THE SITUATION

The project had a direct impact on the industry through the report but the long term impact was through the social discourse facilitated as described herein.

The field work (Table 2) during the core action research was planned with extension and research officers. Focus groups of farmers were organised and moderated by Hawkesbury academics. These sessions were immediately followed by an informal meeting with lamb snacks, between farmers, local extension officers and research officers. In the evenings department staff and the Hawkesbury people usually interacted in a relaxed social setting by staying in the same motel and sharing a meal. On the following day extension and research officers listened to and analysed the tape recording of the focus groups. Hawkesbury academics facilitated and recorded the debriefing meetings and prepared written reports. The reports helped to validate the interpretation of the discussions and to formalise names for an ongoing support network of farmers and Departmental staff.

The approach of having a blend of focused formal and informal opportunities for communication enriched the relationships and discourse between the people involved. From a farmer perspective the formal communication was from farmer to farmer during the focus groups with a moderator guiding the discussion and ensuring a safe
environment to express views and share experiences. The social event after the focus group allowed for introductions and relationship enrichment with local extension and research officers. As mentioned earlier the lamb snacks gave a common new experience for both groups to share and acted as a basis for further social discourse about lamb production and marketing.

An issue that arose was whether it was professionally ethical to allow Department Officers to listen to the recordings made of the focus groups, at the debriefing sessions. When each focus group discussion ended this issue was broached by the moderator making it clear that the AMLRDC was the client and the Department was interested in acting on any outcomes. The groups were supportive of their views being the basis of the report and in one case (at Heywood) discussing this issue led to a request that some strong opinions about the performance of the AMLC be conveyed to the AMLC.

The combination of activities used (see Table 2) allowed farmers to feel free to express their views without the detrimental effects of perceived "experts". However Department officers were, and were seen to be, fully involved in the project. The following quote provides a rationale for avoiding the detrimental effects of "experts" on group performance.
"Due to the possibility of intimidation, another type of "expert" should be eliminated: those who because of their background, would be considered by other participants to be "professionals" or "authorities". (Folch-Lyon and Trost 1981:446)

The focus group reports which included the names of local contact people for the elite lamb project enabled ongoing contact to be made between farmers and the Department staff with an interest in the project, hence establishing networks for ongoing discourse and development.

The process used in the project gave extension officers, research officers and farmers the opportunity of listening to each others views about lamb production and marketing without the need for people to guard particular positions or views, as is often the case at a Field Day or other formal event. The co-operative tone established through the project was created through the emphasis on enquiry. This avoided fixation on the holding of stated positions, setting up a WIN - LOSE dichotomy, when negotiating (Fisher and Ury 1981:9).

When writing on effectively communicating with an audience, McKay (1981) makes the point about ensuring the parties in any communication situation need to be in a state which is prepared to accept new ideas.

"The dominant factor in the response of the audience is the state of the audience"
Beware of the "boomerang effect": if you attack the audience’s existing prejudices this will create ‘cognitive dissonance’. This dissonance (or conflict) will have to be resolved - generally by rejection of the new material. Mild dissonance resulting from a mild attack may result in an almost imperceptible, gradual shift in attitudes." (McKay 1981:18)

Therefore to give the opportunity for clarity of communication it is essential to find ways of avoiding situations where people are closed to new ideas because their prejudices have been aroused. In the focus groups the following had to be managed carefully to limit the amount of prejudice influencing the discourse:

- the flow of discussion from broad issues to more narrow ones
- the moderator role of ensuring people were asked what they did and why
- the process of seeking consensus about possible new ways.

The balance required was to allow sufficient dissonance to cause interest and contemplation of the issues, whilst attempting to decrease the communication blockages caused by conflict and prejudice.

The overall outcome of this series of events was an improvement in the information flow within the lamb
industry. Information about farmer knowledge levels from the focus groups influenced the Victorian initiative to publish a quarterly newsletter for the farmer participants and other potential elite lamb producers.

A New South Wales Department response from the project was to appoint two Product Development Officers to be involved in ongoing facilitation within the lamb industry and ongoing monitoring of any opportunities, blockages or general issues as they arise. This is further evidence of an ongoing improvement in the situation in the lamb industry as a result of the project DAN 055.

4.4 PRACTITIONERS UNDERSTANDING OF THE SITUATION

4.4.1 Farmers

Farmers were able to improve their understanding of farming in the following ways through this project.

The discussion about issues during the focus groups started with general issues in terms of the problems and opportunities in the lamb industry. This was then directed by the moderator to specific questions about elite lamb production opportunities and constraints. These discussions raised many farmer to farmer questions which were answered through the supportive group discussions. The open sharing of experiences provided
some participants with new production and marketing ideas.

The strategy used in the discussions was to move from broad issues through to specific management practices such as feed management, lambing times and marketing strategies and the reasons for each of these. The moderator guided discussion to look at the possibilities for the new option of elite lamb, as described in the discussion flow sheet (Turnbull et al. 1990: Appendix 2). This sequence of discussion ensured farming technology was discussed in the context of the farmers production systems, now and in the future, and in the context of wider economic and community issues. The following statements by Folch-Lyon and Trust (1981) make the point that group discussions can help people to think through issues, get in contact with feelings they have not previously identified and see links they normally don’t.

"Personal revelations are facilitated by other group members, who support, comment, or disagree, as well as by the relative homogeneity of the group, which acts as encouragement for all to express strong opinions or ideas. The lively dialogue activates memories, feelings, and experiences in a manner similar to the process of free association. ...Even though such a permissive atmosphere may seem to distort the information obtained, group pressure acts as a deterrent to possible exaggeration."
...During the process, participants experience the situation as a welcome opportunity to express their actual feelings, conflicts, and impulses among "kindred souls". A lively and successful session creates such a high degree of interest and cooperation that often participants are reluctant to leave once the interview is over." (Folch-Lyon and Trost 1981:445)

Following the moderated discussions farmers were very willing to stay on and keep discussing the issues and the elite lamb concept in informal discussions. This is evidence of effective operation of the focus group sessions in Folch-Lyon and Trost (1981) terms.

A favourable response to the focus group discussions is consistent with earlier experiences in the wheat industry (Woog et al. 1989). Part of this response can be explained by the farm family nature of farming businesses. Farmers get few opportunities for discussion with peers, therefore any they do get are instrumental in broadening their views and knowledge. Such groups also give farmers the opportunity to express ideas they have developed, and to test them with their peers. Therefore as well as being a therapeutic event, this was a valuable means of learning more about the context of farming for those farmers involved in the focus group discussions. The selection method for focus groups was guided by the goal of choosing participants who were instrumental in
decision making on farming enterprises. The groups included mainly males although wives and female managers were included in all groups. The balance of sexes in the groups reflected the core team judgement of the influence of each sex in decision making about the lamb enterprise.

The discussions about different selling methods were a good opportunity for farmers to hear about other farmers experiences and to question each other on the detail of the selling alternatives. This was an aspect of the discussions where farmers held strong and differing opinions. Many questions were required from the focus group moderator to ensure clarity about the group consensus on the strengths and weaknesses of the various selling alternatives. The discussion on selling methods was a means of facilitating farmers to conceptualise and articulate their understanding of the lamb industry.

The last element of the flow of discussion used in the focus groups was a "False Finish". Discussion was formally closed, but the tape recorder continued to record the issues which farmers considered inappropriate within the context of the moderated discussion. This time allowed for reflection on the process and energy levels were usually very high for 5 to 10 minutes after the "False Finish". It was used by participants for making important final points to the group and it was the start of sharing on reflections on the discussion a one to one basis. By the time farmers were enjoying lamb snacks with
Departmental officers (immediately after the focus group) they were generally well prepared to make a comment on how they would react as individuals to the elite lamb concept. To be able to focus on personal plans was evidence of farmers developing an understanding of the situation in which they practise their farming operations, thus confirming the effectiveness of the focus group activities in action research terms.

4.4.2 Extension Officers

Extension officers had the opportunity to develop an improved understanding of the situation in which lamb industry extension was practiced in the following ways. Extension officers and research officers listened to a tape recording of the farmer discussions during debriefing sessions. The sessions took about three hours for each one hour focus group. These debriefing sessions opened many topics for debate on issues to do with production systems, the attitudes of farmers and the roles of extension officers and research scientists. This was a very rich learning environment for the new extension officers because of the opportunity to hear and express views on the situation in the lamb industry as well as on the contribution they and others could make in the role of extension.
The debriefing sessions;
- provided an opportunity for extension workers to ask questions and interpret data in a co-operative and analytical context, and;
- included several debates on matters of disagreement between departmental officers about production and marketing systems for elite lamb production.

Both of the above attributes of the debriefing sessions allowed extension officers to articulate their insights and led to recommendations for research and some clear opportunities for co-ordination and educationally based programs as shown in Section 5 of the project report (Turnbull et al. 1990:23-25). These recommendations were possible because the people involved had been able to express their views in the context of the situation in the lamb industry and the situation with respect to the constraints and opportunities for extension activities. I have no data which shows the change of understanding because of the involvement in the project other than relying on the theory that group discussions can lead to cognitive development (Calder 1977:361). This theory that discussion can lead to cognitive development indicates the potential of this project to improve extension officers understanding of the situation in which they are employed in the lamb industry. The setting of extension and research priorities is evidence of the extension officers commitment to the insights developed.
4.4.3 Research Officers

The contrast between being involved in this work and the normal working environment of research officers meant this project provided opportunities for research officers to improve their understanding of the situation in which lamb industry research was practiced. Research scientists spend most of their time involved with activities on their research stations. The opportunity provided by this project to hear the views and situations of several farmers gave information on the socio-economic, production and marketing context of their research activities in the lamb industry. The energy input of both the research and extension officers at the debriefing showed that they were committed to the analysis of the situation and therefore likely to benefit from the session in terms of improving their understanding.

Involvement in a project which mainly deals with qualitative information and concentrates on the quality of the interaction between the researchers was a new experience for the research officers involved. The two research officers on the core team Dr Peter Holst and Dr David Hall shared fully in the analysis and documentation of the project report. This report included many recommendations on the needs to manage interactions in the industry and talked about the need for a new paradigm to be adopted by extension and research people. Specific
recommendations such as the need for Product Development Officers in NSW, strong support for national meetings and the new position in the AMLC occupied by John Wooten are significant evidence of the way these two officers came to take a holistic approach in understanding the role of research in the lamb industry through this project. The willingness to make such recommendations is a shift from the opinion expressed at the start of the project "that we want to work with Hawkesbury because of their expertise in the social sciences" and by inference "we are only confident in the physical sciences at the production end of the industry".

Other research scientists involved in the project had a less intense experience in terms of coming to grips with the action research elements of the project, but their energetic participation in the debriefing sessions indicated a significant level of interest. They were able to analyse holistic qualitative data on the lamb industry which is in marked contrast to their usual duties and normal research approach of dealing in a reductionist manner with quantitative physical data.

Subsequent discussions with Dr Ian Johnsson (AMLRDC Executive Officer for the Prime Lamb Project) highlighted what he considered was a significant shift in the way research scientists viewed the project after being through the experience created by the debriefing
sessions. His views are on the record in the form of my letter to him following our meeting:

"... DAN.055 seemed somehow to have "set the scene" for the rest of your research program, in that it had helped to get commitment from research workers to the importance of concentrating on the development and marketing end of the program. That is DAN.055 had been instrumental in creating an awareness and acceptance of the marketing issues facing the lamb industry."

4.4.4 Academics

Working in the lamb industry, a relatively new environment for all of the academics, meant there was considerable learning for the academics in understanding the situation in which the research was practiced. Aspects such as the current technology of lamb production, trends in markets, lamb processing and marketing structures for the Australian lamb industry were essential for credibility with the AMLRDC and departmental officers.

There was also a significant opportunity to look at extension theory and practice. This was often the focus for discourse during the evening sessions with research and extension officers. The project was also an
opportunity to learn about the current funding situation and other trends in government services to agriculture.

The students in the group took the opportunity to learn about their career opportunities and the competencies of professionals in farming, extension and research. They also took the opportunity to learn about market research theory in preparation for their next projects.

4.5 INFORMED CRITIQUE

The result of this action research project was subjected to critique from informed public knowledge in the form of the funding organisation the AMLRDC.

Feedback on the report was initially a thank you for your work and an invitation to submit a quote to conduct further work of the same type in Tasmania. The author was in England on leave when this proposal was submitted.

The author questioned the AMLRDC perception of the project through Dr Johnsson. He believed the report confirmed the views he and his colleagues held on the issues in the lamb industry. Dr Johnsson mentioned that the project had set the scene for the rest of the Prime Lamb Project. Much of the discussion with Dr Johnsson was about events since the project. He mentioned his surprise at the willingness of research scientists to support the appointment of Product Development Officers in the NSW
Department of Agriculture at a time when so much of their work was under tight budget control. It was evidence to Dr Johnsson of the importance that the research community was giving to the role of ongoing industry facilitation. A summary of the discussion with Dr Johnsson is shown in Appendix 3.

The process of defending a thesis through writing this document and other publications which will be published from the research is another way the project will be subjected to critique from informed public knowledge.
CHAPTER FIVE

REFLECTIONS AND CONCEPTUALISING

5.1 VALIDATION

Validation of process and content is necessary when evaluating the thesis that action research is an appropriate way of helping an industry to develop. Therefore it is necessary to validate that an action research approach was taken and to show it was applied in a situation which can be logically extrapolated to other industry facilitation roles of Australian industries. This Chapter is the reflection in the thesis (figure 4) in the Perry and Zuber-Skerritt sense (1990).

| CORE ACTION RESEARCH PROJECT | THESIS ACTION RESEARCH PROJECT |
| Action | Planning of the thesis |
| | Observation in the thesis |
| | Reflection in the thesis |

Analysis of reflections by the practitioners. Reflection by the candidate. Propositional conclusions from the research (for example a new theoretical model). Knowledge claims and limitations. Suggestions for further research.

Figure 6 Reflection in the Thesis
(after Perry and Zuber-Skerritt 1990:14)
5.1.1 Was It An Action Research Approach?

Chapter 3 on the core project (DAN 055) described a six cycle action research process initiated around the thematic concern of improving the contribution of agricultural research to the lamb industry. As the project proceeded it was broadened, through the process of action research, to be a national project with farmers, extension workers and research scientists around the thematic concern of improving the lamb industry.

The action research nature of the project is demonstrated by conforming to the cyclical nature of the project as a series of events in accordance with the approach applied in educational contexts (Kemmis and McTaggart 1988:11-13), ie. Plan --> Act --> Observe --> Reflect. The Project also includes elements of the other general attributes of an action research as described by Kemmis and McTaggart (1988:22-23) in that the project involved:

* improving research planning by changing it and learning from the consequences of changes.
* it was participatory in that people were working to improve their own practices.
* it was collaborative in that it involved many of those most directly involved with agricultural research and extension.
* it was a systematic learning process.
* it involved people theorising about their practice.
* it involved putting ideas, practices and assumptions to the test through the collection of evidence.
* it was political in that it involved changes that affect others.
* it involved people making critical analyses of their own work and institutions.
* it started small and worked towards extensive changes.

Kemmis and McTaggart (1988:22-23) also describe activities which do not fit their criteria of action research (see chapter 2.4.2). The core project (DAN 055) aligned well with these criteria, as follows:

* it was not research done on other people. It was research by research and extension people on their own work to improve what they do, including how they work with and for others.
* it was not the usual way extension and research people go about planning their work.
* it was not simply a survey as it was motivated by a quest to improve the development of the lamb industry through taking actions and learning from those actions.
* the project also included elements where the researcher was improved through the process, it included elements which could be described as "systematically evolving, a living process changing both the researcher and the situations in which he or she acts" (Kemmis and McTaggart 1988:22). Of particular
note in this regard was the reading in the area of group learning and personal identity. The author also found the discipline of reflecting on, and critiquing a situation with rigour, a challenge.

5.1.2 Development Of The Lamb Industry

For the thesis to be supported by the case study of the core project a question requiring affirmative validation is.

"Was the project conducted in the context of a development activity in the lamb industry?"

The shaded area in Figure 7 conveys the scope of involvement in the lamb industry achieved in this project. The context of the project was restricted to one end of the lamb marketing channel. That is, the producers and departmental officers who service the production end of the marketing channel. However, industry involvement was geographically extensive as there was almost total involvement throughout South Eastern Australia (ie. Vic, NSW and SA) of all the Department of Agriculture people involved in extension and research. Figure 7 metaphorically represents the involvement from the AMLRDC, through its funding and overseeing of the activities, as a supply of water keeping the project lubricated.
The project was an integral part of current lamb industry development initiatives. The funding of the project by the AMLRDC and the high input of research and extension staff are clear illustrations. The Prime Lamb Program, of which this was a component, was designed to have an action output aside from the research information (ie. the production of 25,000 tonnes per year of large lean
lamb in Australia by 1994) (MRC 1991). The concept guiding the AMLRDC in setting this objective is an attempt to maintain lamb's share of the "consumers plate" on the domestic market and a desire to build up exports to the USA and Japan (Thatcher and Hayes 1989).

The core research project was titled "Commercial Constraints and Opportunities in the Production of Elite Lamb" but when the rationale of the project was examined a major emphasis was to ensure that this baseline industry study took account of the situations and views of producers. This focus was proposed as the basis for planning industry development rather than using the idealised views of researchers.

"R&D needs to be directed at overcoming constraints as perceived by producers rather than those identified by researchers." (Thatcher and Hayes 1989:7)

The above quote shows the intention of AMLRDC to direct its funding in a new way which is more relevant to industry needs RATHER THAN the old way where researchers, in some isolation from the industry, were identifying opportunities and constraints. The direct statement of an emphasis on,

"broadening the understanding of researchers"

(Thatcher and Hayes 1989).
as an element of planning in this project makes the action research approach a valid development initiative in the lamb industry because of the learning aspects of the approach. Table 1 summarises the purposes of conducting the core research project in terms of setting research priorities.

<table>
<thead>
<tr>
<th>CURRENT STATE</th>
<th>IMPROVED STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research priorities set by research scientists.</td>
<td>Research priorities set on the basis of problems and opportunities perceived by farmers, researchers and extension officers.</td>
</tr>
<tr>
<td>Research scientists have a research / detached view of the industry.</td>
<td>Research scientists view of industry will be broadened and based on a view which considers industry views and commercial constraints.</td>
</tr>
</tbody>
</table>

Table 3  Objectives of the Field Work

The outcomes of the project described in the earlier chapters show that the above objectives were achieved mainly through the debriefing sessions and the setting up of networks with farmers. The appointment by the NSW Department of Product Development Officers is further evidence of achieving these objectives.

A difficulty of an organisation (the MRC) matching it's espoused theory (Argyris and Schon 1974) was experienced. The MRC administrative structures meant the core action
research project had to be managed through the same administrative steps as traditional scientific research. This reduced the effectiveness of the project as it contained the scope to the production end of the marketing chain and yet the espoused theory of the MRC is that new ways are appropriate. Therefore potential exists for developing new ways of administering research monies when adopting new ways of conducting research.

The adoption of action research in the core project meant that the concepts used were dynamic and outcomes were to be considered for debate rather than being static and mindlessly accepted. This is illustrated by the proposal for a total shift in the way extension and research were perceived as development activities within the lamb industry. The conceptual shift is seen by comparing the following Figure 8 where research and development was a concept conducted on behalf of lamb producers to Figure 9 where research and development was conceived as a process conducted with the people affected. The new "approach is less of a step-wise partitioned problem solving approach. It is more an approach of collaborative planning, implementing and reviewing" (Turnbull et al., 1990:5) which is essentially dynamic.
Figure 8 The Traditional Approach to Lamb Production
Research and Development

(after Turnbull et al., 1990)

Figure 9 A New Approach to Lamb Industry Research and Development at the Producer Level

(after Turnbull et al., 1990)
In order to implement such a change in the way industry development is achieved it is essential to have good relationships between the groups of people involved. Therefore, for the new model to operate it was necessary for the core team to be conscious of the need for good working relationships, and when it was possible, to create situations where there was an improved possibility of a co-operating ethic existing. As facilitators, the core action research team attempted to create an environment where there was mutual respect built between the farmers, extension and research officers. Several of the strategies in the field work (see Table 2) were adopted to ensure openness, effective communication and to avoid predictable communication blockages. It was hoped that through creating a healthy discourse during the project, working relationships between the major people involved would be built to a point where they became self sustaining. The ideal being sought was an industry which would continually adapt and develop based on the personal development of, and co-operation between, the participants.

5.1.3 Achieving Desired Improvements.

This project achieved action research outcomes in all of the areas expected from reading the literature on action research. A more detailed description of the actual outcomes from the core action research cycles was described in Chapter 4. A summary follows:
<table>
<thead>
<tr>
<th>FARMERS</th>
<th>EXTENSION OFFICERS</th>
<th>RESEARCH OFFICERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRACTICE OF PRACTITIONERS</strong></td>
<td>Training for new extension officers.</td>
<td>Experience of analysing quantitative data.</td>
</tr>
<tr>
<td>Fat scoring.</td>
<td>Learned about individual case study farmers.</td>
<td></td>
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<tr>
<td>Cryptorchids.</td>
<td></td>
<td></td>
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<tr>
<td>Feed production.</td>
<td></td>
<td></td>
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<tr>
<td>Breed &amp; genetic information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>UNDERSTANDING OF PRACTICE BY PRACTITIONERS</strong></td>
<td>Principles of group facilitation.</td>
<td>Contrasting research approach.</td>
</tr>
<tr>
<td>Discussions on the rationale for feed planning, lambing and lamb growth helped understanding.</td>
<td>Principles of production distilled.</td>
<td>Placing research in context.</td>
</tr>
<tr>
<td><strong>IMPROVED SITUATION IN WHICH THE PRACTICE IS PRACTISED</strong></td>
<td>Placing extension in context.</td>
<td></td>
</tr>
<tr>
<td>Networks formed between all the groups involved in the project.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationships were formed and enriched by the common experience.</td>
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<tr>
<td>Victorian Department of Agriculture publish a newsletter to follow up.</td>
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<tr>
<td>NSW Department subsequent appointments. Product Development Officers.</td>
<td></td>
<td></td>
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<tr>
<td>Farmers feeling of involvement was enhanced through being listened to.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IMPROVING PRACTITIONERS UNDERSTANDING OF THE SITUATION IN WHICH THE PRACTICE IS PRACTICED</strong></td>
<td>Debates between research and extension clarified several issues.</td>
<td>Enthusiasm and appreciation of the holistic approach.</td>
</tr>
<tr>
<td>Conceptualization's of the whole marketing channel and issues at all levels.</td>
<td></td>
<td>Appreciating the need to write up process &amp; learning aspects of the project.</td>
</tr>
</tbody>
</table>

Table 4  Summary of Core Action Research Outcomes

There was also significant learning for the students and other academics through the project some of which has been mentioned in Chapter 4. Some of the author’s learning has also been mentioned and a further illustration of such being the breadth and depth of argument presented in this document.

A further level of critique is to consider the outcomes in an holistic context with respect to the thesis action research cycle (Figure 1). Given that the thesis is:

"That action research is an appropriate way of helping an industry to develop".
The following table summarises the overall results of the core project from an holistic perspective of the thesis being argued in the context of the lamb industry.

<table>
<thead>
<tr>
<th>ACTION RESEARCH OUTCOMES IN THE LAMB INDUSTRY</th>
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<tbody>
<tr>
<td>PRACTICE OF PRACTITIONERS</td>
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<tr>
<td>UNDERSTANDING OF PRACTICE BY PRACTITIONERS</td>
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<tr>
<td>IMPROVED SITUATION IN WHICH THE PRACTICE IS PRACTISED</td>
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<tr>
<td>IMPROVING PRACTITIONERS UNDERSTANDING OF THE SITUATION IN WHICH THE PRACTICE IS PRACTICED</td>
</tr>
<tr>
<td>RESULTS SUBJECTED TO OVERALL CRITIQUE.</td>
</tr>
</tbody>
</table>

Table 5  Holistic Outcomes of Industry Action Research

5.1.4 Limitations and Problems

Limitations

The context of the project was limited to the producer end of the marketing channel. Any extrapolation of results to other sections of the marketing channel would therefore be speculative.

A question arises as to the extrapolation of the findings from this project to industry development roles, such as the new position in the AMLC of National Lamb Development
Officer or the role of state-wide industry officers in the Departments of Agriculture. Conceptually the activities of the core action research team (as facilitators of process) could be conceived of as an integral part of the role of these industry development officers. Therefore, there is potential for such people to use action research in industry development situations. Such an approach would also help in improving their personal effectiveness because of the ongoing learning emerging from being involved in action research teams. The AMLC and Department of Agriculture people would be expected to have some difficulties in applying the approach in their duties. The funding problems encountered in this project would not arise for AMLC and Department of Agriculture officers because planning meetings are an accepted part of the role of such officers. However officers in such roles would have to deal with different prejudices than was the case in this project because they would be closely aligned to other activities of their institutions. Therefore, if the current public perception of their institution was unfavourable for other reasons they would have that barrier to overcome when applying action research.

The major limitation of this work, and the ideas herein, is that a positivists view is deeply entrenched in the scientific community. Recent work in Queensland by Holt and Schoorl (1993) confirms that officers of the Department of Primary Industries fit the classical view
of scientists articulated by Checkland (1982:135). This means their preferred way of intervening in the world is guided by "technicism" (Harmon 1989:1). This entrenched culture within the scientific community also provides an opportunity for this action research project to make an impact in the lamb industry. If this cultural view of the scientific community can be modified, the argument put in section 2.4.2 contends that, a contribution will have been made to the sustainability of the Australian lamb industry.

Problems

As a group of people working together on a project we had the normal issues one would expect. For example:

- each team member had to manage themselves and their time effectively.
- there were positive and negative personality interactions.
- there was the complication of the team being scattered geographically.
- there was a challenge of working in a team with institutional prejudices.
- there was a challenge for the core team of working with some industry people who held a cynical view about the action research paradigm.

Many of the issues arising in team management areas have been referred to in the literature. In this project some
were handled according to literature while others were ignored due to their low priority or time pressures at meetings. The action research process provides opportunities to manage team processes effectively (Williams 1991), because of the built in regular reviews. Action research teams need to consider the group dynamic when planning the thematic concern and when reviewing plans.

The application of action research in a consulting relationship was difficult because of the need for fund managers (the MRC) to be accountable for the funds under their control. This impacted on the action research approach in two ways, the first being the cost of meetings to review and plan throughout the project. The second was that changes in direction or scope of the project during its life was administratively cumbersome.

5.2 INTERPRETING PROJECT OUTCOMES

The major themes from using action research in a facilitator role in a lamb industry development situation identified in this research were:
The Group Dynamic

When working with a core action research team it is essential to attend to group issues throughout the project because the group dynamic can override group cohesion factors and desire by group members for the group task. Williams (1991) wrote his thesis on this particular point. Within this project there were times when conflict was explicitly faced on issues such as group leadership, and it was clear that a part of an effective working relationship was maintaining personal relationships. The importance of this depends on factors such as the personalities of the individuals involved and their levels of personal confidence within the situation.

Group dynamic issues were also important in group activities outside the core action research team. For example during focus group interviews it was important to show farmers respect and encourage all members to become involved. It was also important to recognise the therapeutic value of the informal discussions between extension officers and research officers on the evenings between the focus groups and the debriefing sessions.

Facilitator

The role taken by the action research team was one of a "facilitator" rather than one of "manager" of change. The
role of facilitator was appropriate in the project because of:

- the short term nature of the relationship (18 months)
- the detached nature of UWS Hawkesbury from the mainstream of industry operations (such as research production, manufacturing and marketing), and
- because of the limited resources of time and money available.

A facilitator achieves change in an industry through the action of others, that is, a change agent. The appropriate behaviour for a change agent depends on the issues being dealt with and the way the community recognises such issues (Warren 1969:5).

There is currently a challenge to the dominant view in society that "the idea of decision has come to be uncritically accepted as a morally neutral and empirically self-evident point for organisational analysis." (Harmon 1989:144) The alternative view is posed by action theorists.

"action theorists interpret intentional action rather than explain caused behaviour. They explicate the meaning of norms, values, rules, practices and other social artifacts from the actors point of view, while mainstream theorists ignore these variables because of their presumed subjectivity. Action theorists help actors define their own
situations and initiate their own ways of changing them whilst mainstream theorists define the situations and make the changes for the actors". (White 1989:150)

The objectives of a facilitator in a development situation will be determined by which of the above ontologies is informing the practice. In action theory the objectives of a facilitator are informed by an analysis performed in the following manner.

"... the beginning point for sociological - and by extension organisational - analysis is not the question of how or why people go about the question of how or why people go about getting what they want (ie, normative questions about ends), but how it is that they know what they know about the empirical world". (Harmon 1989:147)

The role of a facilitator in an action science approach (Harmon 1989) becomes one of creating situations which are directed towards a greater self awareness and effective actions by the people in the situation.

"Ends should be assessed in terms of their role in sustaining social relations that enable a vital public, as well as organisational discourse. Such discourse is to be valued for its own sake, not as a means to a higher purpose or end." (Harmon 1989:149)
In this project the discourse was created through the focus groups, the informal meetings, the debriefing sessions, the reports and the subsequent activities of networks which were built. The outcome of these interactions was a rich flow of communication between the people involved. This contrasts with an instrumental approach ("manager of" role), directed towards manipulation of individuals, to give their commitment to a particular activity. For example, to produce "X" larger lean lambs for the next year. The approach used was to work with groups enabling a discourse on the issue of producing large lean lamb and the future actions of the various people involved at the production end of the marketing channel. The basis of an instrumental approach to the situation is a specific view on power relationships, as follows:

"Instrumentalism conceives of power as a fixed commodity unevenly distributed among people that is used to achieve ones ends in a decisionistic way" (White 1989:151)

The tenor of facilitation in this project was based on creating a more co-operative climate aligned to Arendt’s (1970) view of power:

"power as the capacity to agree on some community action through unchurched communication" (White 1989:151).

This view is that:
"Power is not the ability to impose one's will on another person in order to achieve one's own end, but rather the formation of a common will through mutual persuasion, deliberation and debate". (White 1989:151)

The basis of Arendt's (1970) view of power:
"corresponds to the human ability to not just act but to act in concert" (Arendt 1970:41).

Focus Groups

A number of aspects of focus groups were important in this project.

- Care was taken to avoid "experts" including both professionals and recognised Agri-politicians. The Hawkesbury discussion moderators aimed to portray the role of listeners, not a role of industry experts.
- A careful flow of discussion (Turnbull et al. 1990 Appendix 3) was prepared to ensure that discussion of the Elite lamb proposal was clearly set in a context of the important issues perceived by farmers.
- Challenge was offered to look at the co-incidence between farmers opinions on the qualities of their carcasses and their skills in identifying carcasses
from photographs. These photographs provided a learning experience for most of the farmers.

- The technique of using a "false finish" was successful in stimulating people to be reflective on the experience of the focus group. It helped in creating a smooth transition to one-on-one discussions with other farmers and department officers at the following social event when lamb snacks were shared.

Focus Group Moderation

The moderator of the focus group has to be very sensitive to the content of the discussions and the mood of the group and each individual in the group. To be effective the moderator has to be very clear on what is being asked and for what purposes.

When a focus group is viewed as a technique for promoting social discourse, the moderator must be aware of the impact of his/her actions on the group. Some of the impact can be planned by creating the flow of discussion but each question may elicit a range of responses from the group. If the moderator is aware of the impact of questions through careful observations she/he can continue to interact in an appropriate way. The model proposed by Warren (1969) of three types of issues a change agent has to deal with, provides one means of categorising the situations faced by the moderators in
focus group discussion. He describes the issues under consideration in three categories (Warren 1969:3-4):

1. Issue Consensus - where there is basic agreement as to the way an issue should be resolved or there is the likely-hood of reaching such agreement once the issue is fully considered.

2. Issue Difference - where there is a possibility that issue consensus can eventually be reached but where there is as yet, no agreement either on.
   (a) that the change agents proposal constitutes an issue [apathy]
       or
   (b) on the substance of the proposal [disagreement]

3. Issue Dissensus - is a situation where the parties
   (a) refuse to recognise the issue [denial]
       or
   (b) oppose the change agents proposal [defiance].

When acting in a community Warren (1969) suggests strategies based on consensus decision making in the first situation. In the second situation he suggests strategies based on persuasion and in the third situation the recommended strategy is to establish a contest.

The context for Warren’s (1969) insight was a person working in a purposive way to create change in the situation of a community. This is a radically different purpose than the creation a rich discourse within the
situation of a focus group discussion. However in focus group moderation, the ability to be able to categorise the situation into issue types can inform the way the moderator interacts with the group. However, this has to be done on a second by second time-line, whilst moderating. Most decisions, in moderating a focus group, are based on intuitive judgements from interpreting body language and tone of voices, in addition to the words used in the discussion.

Confidentiality

Care needs to be taken to respect the privacy of views shared in the course of a focus group discussion. Taken out of context, open discussion may harm relationships or even be considered slanderous. The strategy of obtaining permission for sharing the groups views, used in this project as discussed in the results section, is essential on the grounds of respecting peoples privacy and applying appropriate research ethics.

Funding

Sufficient funding needs to be included in the budget to allow for review meetings and funding criteria need to be flexible. This can enable the research to follow new directions, increasing the probability of the full benefits of action research being realised. The funding structures set up for administering reductionist
scientific experiments does not suit the effective conduct of action research.

**Summary of Learning**

The major learning themes from this project were:

- In planning and acting, continually recognise the nature of the relationship with the context of the project. In this project the nature of the relationship was as facilitators of change.

- Attend to group dynamics within working groups continually.

- Recognise the need for relationship development for effective operation in wider groups.

- Be aware of the benefits of creating a social discourse in contrast to the creation of a contrived behaviour towards an outwardly set objective.

- Focus groups need to be well conceived and moderated sensitively if they are used as a technique in participatory action research.

- The ethical issue of protecting peoples privacy needs to be considered and established with the people who are participating in focus groups.
- When using an action research mode, consulting fees need to be structured to enable ongoing review meetings and the opportunity for agreed changes in the direction of projects.

5.3 A ROLE FOR ACTION RESEARCH IN DEVELOPMENT

In a review essay of a book about deforestation problems, Fisher (1990) encapsulates a view of the activities necessary to effectively influence a development situation.

"The main features of an appropriate developmental response are that it should be holistic, utilise local skills, knowledge and institutions, and be learning and process orientated rather than being based on a grand scheme. (Fisher 1990:71)

This project conducted in the lamb industry in Australia conforms with these criteria of an appropriate development activity in the following ways.

Holism (Fisher 1990:71)

Holism was promoted through the focus group discussions moving from very broad issues to specific issues. This approach ensured the context of the proposal to produce 25,000 tonnes of large lean lambs was not lost. Evidence
of an holistic view is shown, in the farmer description of the industry and in the issues identified in the major themes. A summary from the project report to AMLRDC (Turnbull et al. 1980:11-21) follows.

- Farmers are production rather than marketing orientated.
- The industry in general is tough.
- There is unease with the present marketing system.
- Trade and weather conditions have a major impact.
- Elite lamb was seen as a specialist risky enterprise.
- Market security is required if people are to change.
- Blockages to adoption were seen as being the low lamb price, the need for profit, mistrust of the market system and some production reservations.

Utilising Knowledge Skills and Institutions (Fisher 1990:71)

The role taken by the core action research team of facilitating a process of discovery by farmers, extension officers and research scientists is true to the tenet of using local skills, knowledge and institutions. Such an approach is a realistic stance to take when interacting with an industry for a short term consultant, and for people and institutions with limited resources of time, people and funds. If an action research team achieves the
five action research outcomes described by Bawden (1989:16), the industry will be in a better situation as an outcome of the research.

Learning / Process Orientation Rather Than a Grand Scheme (Fisher 1990:71)

The action research approach of the project ensured a learning / process orientation but it was facilitated within a scheme. The emphasis of the prime lamb program with clear production goals to be achieved, fit what would be described in development circles as a development project. The experience from this project was that the objective of a particular end point need not preclude the adoption of a learning approach.

In action science the notion of particular values bearing on particular facts as a basis for actions, "decisionism" is subsumed by a practical discourse. A practical discourse is guided by the theory of "interpretive reasoning" and supported by communicative power. The precursor for practical discourse is that the parties involved "wish to achieve a common understanding in order to act in concert" (White 1989:151)

Interpretive reasoning aligns with "Aristotle’s position that interpretation gives rise to statements of fact and value" (White 1989). It is the logic whereby "differences
of opinion about what is and what ought to be must be settled through practical discourse". Communicative interaction is a particular method of resolving conflict where "the resolution of conflict must be achieved through collaborative debate and mutual persuasion assisted by power engendered communicative interaction. (White 1989:151). Habermas (1971:91-94) described a dichotomy of approaches that humans can adopt between a Purposive - Rational node and a Communicative Action node. At the purposive - rational end differences are resolved through reverting to established rules whereas communicative action may lead to establishing new rules for relating. Applied to the lamb industry the concept means that farmers, extension and research scientists may articulate what it is they want to achieve and why. The outcome of the discourse may well not completely meet the rational goal of any of the individuals but it will be that which is mutually agreed. Such an outcome is achieved by ensuring an effective discourse not by concentrating on the rational goal. Focusing on the rational goal may alienate some of the parties to the detriment of the total group.

Education researchers describe the attributes of action research in a similar vein although they do not use the term social discourse.

"Action research is participatory: it is research through which people work towards improvement..."
Action research is collaborative:...
Action research establishes self critical communities of people participating and collaborating in all phases of the research process:...
Action research is open minded about what counts as evidence (or data) ... Action research is a political process because it involves us in making changes that will affect others - for this reason, it sometimes creates resistance to change, both in ourselves and in others ..." (Kemmis and McTaggart 1988:22-25)

"Over the past few years they [adult education designers in Latin America] have been moving towards the use of participatory action-research methods. This is a 3-fold collective approach of education-apprenticeship, scientific research and social political action. (Haubert 1986:abstract)

The conclusions of Blennerhassett (1988) from applying action research in the context of the UK public service support the view that a social discourse is effective when the precursor condition of willingness referred to by White (1989) is operable:

"in house management learning groups are effective if managers have a real learning need, there is top management support, and the program is work centred" (Blennerhassett 1988:5)
The core action research project (DAN 055) created conditions for a social discourse by the people likely to be involved in realising the Elite Lamb opportunity. In doing so it allowed each of the people to evaluate their perspective and proposed actions within the broad area of improving the industry and specifically the evaluation of the Elite lamb opportunity.

In summary there is significant evidence both from the literature and this project (DAN.055) that an action research approach is an effective means of facilitating industry development. The caution raised by Fisher (1990), about grand plans in a developing nation context, was not a problem in the context of this project. The context set in this project of a definite plan (25,000 tonnes of large lean lamb by 1994) was an integral and positive element of the action research because it gave a controversial focus for mutual consideration.

5.4 IMPLICATIONS FOR THE AUSTRALIAN RED MEAT INDUSTRIES

Australian industries are actively searching for new ways of operating and implementing change, Woog et al. (1989), Russell et al. (1989), Woog et al. (1990) and Russell and Ison (1991) are examples.

In the red meat industries the Meat Research Corporation (MRC 1991) has recently launched a second five year plan
to improve the industries. The espoused theory, in Argyris and Schon terminology (1974), in this plan is very strongly biased towards a facilitating role rather than the role of manager of industry change.

"the corporation sees itself as a "change agent" and will strive hard to bring about the industry changes it believes necessary to achieve the objectives set out in the R&D Plan. In the final analysis these changes will occur only if the industry decides to accept them" (MRC 1991:Preface)

The public face of the MRC has become one of an action researching organisation. That is, the MRC is publicly responsible for each of the steps in its action plans as articulated by Kemmis and McTaggart.

"We intend to do X with a view to improving Y"
(Kemmis and McTaggart 1988:19)

This is shown by the comments of the Chairman Monteith in his foreword to the MRC second five year plan:

"The plan not only spells what we should be doing, but it highlights how we should be doing it." (MRC 1991:Foreword)

The MRC claims to have rejected the purposive - rational views in Habermas’s (1971) terms that were the basis of the "trickle down" models of extension over the past decades.
"The "trickle down" model has been largely discredited and now most observers recognise that the process is much more complex than this, involves more players and is not linear.

.... Coupled with this view is the concept that producers access innovations from their own perspective and decide to adopt only if they judge it relevant to their needs and having the desired attributes. (MRC 1991:34-35)

The Corporation goes on to declare its intentions given this context of a new way of looking at the issue of technology transfer.

"The two basic changes considered necessary to improve the effectiveness of technology transfer through a change in the way research is conducted are: first, involve the users of R&D results and the intermediaries between researchers and users in identifying what R&D is needed right through to developing the technology: and second, devote more effort to validating results in the local situation" (MRC 1991:35)

The above statement is problematical in that it states that it is through developing technology that the industry will move forward. This implies a particular frame of reference which may, or may not be held by the industry. Kingma (1985) Sargent (1985) and Lawrence (1987) have articulated alternative views. It is a
purposive - rational statement in Habermas's (1971) terms which may well not be the result of a communicative action should it occur. Communicative action is the logical extension of the stated espoused theory that the old model of extension is discredited. So there is a tension whereby bottom up planning is called for as long as the result is directed towards achieving the MRC goals.

This new policy of the MRC appears to be in accord with the farmer back to farmer model of adaptive research used in developing countries (Rhoades 1984). Consequently the MRC has decided not to invest producer levies on projects concerned specifically and narrowly with the adoption of technology rather it is taking a broader approach.

"Improving the adoption of R&D in its widest sense is a top priority .... By its very nature it must be integral to each R&D program and project. Considerable R&D on technology transfer itself is being carried out across a range of projects and programs, and lessons learnt will be progressively implemented during the life of this R&D Plan" (MRC 1991:35)

It is encouraging to see that the MRC has identified that it is involved in learning situations. It will be interesting to see if it can match its rhetoric and if it will be prepared to explore new ways of relating to industry. The administration of research funds may need
new systems developed if the MRC is genuine in its endeavour for new ways of operating. The initiative of the MRC setting aside funds for coping with unexpected events in the meat industry as part of its Plan is a promising move in the direction of new administrative arrangements.

"Because these events cannot be predicted the only way to cater for them is to ensure that the industry is capable of responding quickly and efficiently to realise any opportunity presented or minimise any adversity that arises. This means having an industry which is robust, diverse, flexible and adaptable. This is not trite jargon. It is reality and it is important. Indeed, one of the major programs of the R&D detailed later is specifically targeted at ensuring the signals from the market place are transmitted accurately, efficiently and quickly from the market place to producers. This program of work is vital to the industry's long term future and ability to cope with unexpected change." (MRC 1991:21)

The experience from this project (DAN.055) of applying an action research approach was that significant learning occurred for a range of people involved in the lamb industry. Such an outcome augers well for applying the approach and generally adopting the paradigm of action science theory in the meat industry. Its application would direct MRC efforts more towards creating situations
of social discourse and learning as well as efforts to create information for decision making as shown by projects directed towards

"ensuring the signals from the market place are transmitted accurately, efficiently and quickly from the market place to producers." (MRC 1991:21)

Given the benefit of hindsight from this project, the major implication for the five year Plan would be, a recommendation to use MRC funding in creating an appropriate industry discourse. This could be within projects, in a similar way to the project DAN 055, or at a wider industry level.

Will the issue of an effective method of ensuring signals from the market place still be on the industry development agenda 13 years hence, in the year 2004? It is on the industry agenda now, and it was 13 years ago (Todd and Powell 1978). The author is concerned that industry voices will still be calling for a better market signal system in 2004, if industry development projects continue to have a limited component of social discourse in their design.

The AMLC and Departments of Agriculture

The AMLC has recently appointed a lamb industry development officer and the Victorian, New South Wales
and South Australian Departments have lamb industry specialists.

The results of this project suggest that action research is a worthy conceptual framework for informing the actions of the above people. The focus of the core team in DAN 055, acting as facilitators, enabled industry people to more clearly identify their priorities. The project also illustrated the benefits of marshalling industry personnel which if left in isolation could not have the same impact. For example interstate communication and co-operation about projects, and priorities in lamb industry research and extension, eventuated from this project.

In situations where there is rapid change, the therapeutic elements of focus groups allows people to build their own views of the current situation and it enables them to learn more about their enterprise and the industry. Their enhanced awareness helps them to cope better with industry changes as it provides them with new knowledge and a broadened perspective.

Concentration on the traditional approach to R&D by Department of Agriculture officers would lead to the farmer/ officer relationship weakening. The implication being that even with better information in the hands of the researchers, farmers may still not be in a position in terms of knowledge, skills and attitudes to be able to
use the additional accurate. Such an approach clearly avoids the need to face and resolve matters of differing norms and values. The alternative is to seek the common good through Habermas's (Mingers 1980) concept of communicative action.

"Its function is the specification and maintenance of socially valid norms and institutions." (Mingers 1980:41)
CHAPTER SIX

SUMMARY AND CONCLUSIONS

A core action research project was conducted with the thematic concern of improving the lamb industry. The project was funded as part of an AMLRDC program to increase the production of large lean lambs. The thesis proposed in this document is that action research is an appropriate way of helping an industry to develop.

The approach was beneficial in the following ways after Bawden (1989):

1. The practice of lamb production extension and research was improved.

2. The understanding of lamb production by a range of players was directly improved. The players involved included; 55 specialist lamb producers (estimated 5% of all specialist producers); all involved Department of Agriculture research and extension workers in NSW, Victoria and South Australia; and, 10 interested academics.

3. The situation in which lamb production, extension and research is practiced was improved.

4. The understanding, by farmers, extension workers academics and researchers, of the situation in which lamb production was practiced, was improved.

5. The results of the action research were favourably reviewed by the funding body the AMLRDC.
In addition to the above outcomes the following insights into the appropriate approach to take in facilitating the development of an industry were validated through this project.

Firstly, any plan for development of the industry must be holistic in its approach. This was particularly evident in the lamb industry because of the close relationships it has with other industries at all levels from production to consumption. This was true for those involved in the marketing channel and for service organisations associated with the lamb industry such as the marketing, advisory and research bodies. If a plan of development is not holistic its relevance may well be questioned as being partial.

Secondly, proposals for development should utilise the skills, knowledge and institutions which are currently part of the industry. In this project current industry people and institutions were accessed through the approach, and they were well informed about many aspects of the industry. They will remain a rich source of skills within the industry for implementing change. An action research approach working closely with industry people and institutions from the outset. This means any changes found necessary through the process will have a high probability of being owned and implemented. The appointment of two Product Development Officers in NSW as
one result of the core project is a cogent example of the adoption of such a change.

Thirdly, proposals for industry development should have a **learning approach** incorporated, because the environment of, and relationships within industries regularly change. A strategy which does not have learning as its nature, runs the risk of being inflexible and inappropriate to changing situations. In contrast, the approach used in this project was based on the learning paradigm of action research.

Difficulties associated with taking an action research approach with industry research funding was the cost and uncertainty of the ongoing review process so germane to action research. Research administration systems are set up to cater for traditional research projects with their clear plans and milestones at the approval stage.

The importance of managing the group dynamic in conducting action research was validated through the core project.

A major threat to the adoption of such an approach is the technicism of the current scientific community. Changing this culture is a major opportunity for the approach to make a contribution to Australian agriculture.
The conclusion drawn from this work is that action research is an appropriate way of helping an industry to develop. This view is based on the grounds of the social, action and learning theory explored and through the results of the core action research project. The core project was conducted within the production sector of the Australian lamb industry.

The findings from this research are pertinent to future activities of both the AMLC and MRC because they are the organisations with a responsibility for lamb industry development. These organisations need to ensure that their work incorporates the features of being holistic, utilising all resources and being learning and process orientated. This can be done using an action research approach.

In this case the core action research team were consultants to the MRC. An action research approach would be easier to implement by an officer of the AMLC, because they are employed to act as industry development personnel. In their context one difficulty encountered by the core team, of the cost of review meetings, would be alleviated, as such meetings are a part of the normal role of AMLC staff.

It is recommended that the MRC review its procedures to facilitate the possibility of more action research projects. This is needed if the MRC is to be consistent
with its new direction of an industry facilitator not working with a discredited "trickle down" model (MRC 1991). The change in direction of the MRC as stated in the 1991 five year plan is profound in social action terms if it is taken literally. Comparison of the MRC proposed actions and the literal interpretation of their objectives shows up mismatches.

The research helped the author to develop a deeper understanding of participatory action research and the close linkage between learning and self image. The experience of conducting the core action research project validated the importance of the group dynamic in action research and the difficulty that individuals and groups have in matching actions with espoused theory. The author is also now more aware of the philosophical basis of research paradigms.
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This appended paper provides some description of research and development for the Australian lamb industry. The paper explores topical arguments about industry development and activities worthy of industry research monies.

In the context of the thesis, this paper mentions the importance of changing the behaviour of people. The paper gives the background of the specific research project which provided the field work used to explore the thesis and the openness of the AMLRDC as the funding body to an innovative approach.

This paper was prepared so that readers of this document could become familiar with some of the trends in lamb industry research and development at the time of the research. The essence of this Appendix is included in Chapter 1 of the Thesis.
A recent inquiry into the Food Processing and Beverages Industries articulated the notion that protection should be lowered as a major goal of Industries Assistance Commission (IAC) enquiries.

"The terms of reference for this inquiry require the Commission to identify and report on factors that may facilitate or impede growth, or otherwise affect the competitiveness and efficiency of the food processing and beverages industries. Also the policy guide-lines set down in the IAC Act require the Commission to have regard to the desire of the Commonwealth Government to encourage the development and growth of efficient Australian industries in general, and to recognise the interests of consumers." (IAC 1989:5)

....In this inquiry the Commission has attempted to identify where there might be significant gains from the removal or reduction of interventions which detract from economic efficiency."(IAC 1989:6)

This "full on" approach to economic efficiency and economic growth has its critics. They are people who are concerned for equity effects. For example Sargent points out the problems it is creating especially in respect to Developing countries (Sargent 1985) and Lawrence argues articulates concern for the social effects on rural people and their communities (Lawrence 1987). Kingma has also raised the question of the sustainability of ongoing productivity gains especially if there is a breakdown of some of the relationships within agriculture which provide some of the efficiencies the sector currently enjoys.

"The power of large scale organisation and the tendency in this type of production towards centralisation reduces rural communities to 'nodes' in a wider production network. Power to control community development shifts from the locality to these organisations, and community values, employment, activities and production and consumption patterns become determined outside the locality. With this comes loss of identity, self determinacy, self sufficiency and motivation within communities. The impact of this process may be a loss of productivity within rural communities, excessive social change as values are modified, and close linkage of individuals and communities to the material economy with which large scale organisation is identified.

.... Only by adopting broader concepts of productivity and work and fostering economic activity orientated towards community objectives, will the likelihood of decline in the productive capacity of rural communities be averted." (Kingma 1985:3-6)
The problem facing governments is therefore one of selecting activities which are rational in terms of economic efficiency but also keeping a close watch and developing policies which will mitigate any undesirable effects. To move completely away from the economic growth goals of society would be a radical step which would require strong support or consensus from the electorate. At the time of the research there was little pressure to change the basic community ethos with regard to economic growth, although there was strong interest in developing ways of attacking some of the symptoms of growth such as environmental degradation, rural community decline and inappropriate effects on third world people.

(A1) - 2 FOOD INDUSTRY RESEARCH AND DEVELOPMENT

Governments and others can take action to improve the way the industries operate. Firstly, they can create a healthy environment for the industry through appropriate economic policies. Secondly, they can fund research and development or encourage the industry to do likewise with the aim of developing innovative ways of improving industry performance. These are ways of improving an industries competitive position with respect to the competing nations as imported technology is only a means of catching up with competing industries overseas. It is interesting to note that the Australian food industries mainly adopt technology which was previously developed overseas and often technology developed in Australia is more quickly adopted by our competitors.

"Australia has a low expenditure on R&D and food companies in Australia spend less on it than either the average for manufacturing industries or overseas food companies

....there is a general belief in the community that Australian companies have relied too much on obtaining their technology from overseas." (IAC 1989:30)

"In many instances the results of R&D undertaken in Australia have been introduced much faster overseas than locally. Australia also imports much of its technology rather than developing it locally through R&D activity". (IAC 1989:31)

Traditionally the governments are the major sources of funding for Australian public sector rural research as compared to the funds invested by industries and the private sector. The following pie chart shows the results of a survey conducted by the Bureau of Rural Resources on the sources of funding for the year 1987/88. Sources of funding for research activities are shown as a percentage of the total expenditure for the year which was approximately 560 Million Dollars. (Avent 1989:20-21)
Figure 10 Sources of Funds for Public Sector Research (1987-88)

It is unlikely that research funding will increase as articulated in the findings of a recent inquiry into the food processing and beverages industries.

"The use of the latest technology is not an end in itself. Firms choose technology, and a level of innovative activity, on the basis of the expected return compared with the cost of acquisition. In the absence of limitations on firms' access to technology, it can be presumed that firms will make rational choices about the level of technology to use and the degree of innovative activity to undertake.

In those instances where firms in the industries are using 'out of date' technology it would be more useful to ask why they continue to do so rather than to subsidise firms to undertake investment that they have judged to be unprofitable. A more appropriate approach would be to reform areas which hamper industry competitiveness or directly act as an impediment to the introduction of new technology. These include: reform of restrictive work practices; increased flexibility in food standards regulations; and reductions in tariffs in the longer term on imported capital equipment.

There are no signs that the processed food and beverages industries have problems in access to the latest technology, either from their own research and development (should they wish to undertake it) or from overseas technology. The Government already
provides extensive assistance to R&D in Australia, both through tax concessions and direct Government funding. It is difficult to find any food processing industry characteristics which would warrant additional government involvement or assistance in developing technology for use in these industries." (IAC 1989:32-33)

Given the context above the challenge to industry and research organisations is to find ways of improving the effectiveness of the money which is spent on research. Implicit in the above analysis is the theme that more of the same type of research is not what is needed to help the food industry.

There were exceptions to the above general line mentioned during the IAC inquiry.

"There are some areas, however where research would have particular relevance for Australian industry. The Australian Meat and Livestock Research and Development Corporation cited the boning out of cattle and sheep carcasses as an example. Another example is research into adaptation of Australian food products to suit tastes of overseas consumers. CSIRO identified special transport and preservation problems for Australia because of the distances within Australia and from export markets. CSIRO said that northern hemisphere does not always address the kinds of problems that Australia faces" (IAC 1989:31)

If there are going to be advances in the way technology is developed and adapted in Australian industry then there may well have to be innovative ways of conducting the task of industry research and development otherwise there is a chance it will be more of the same which has been shown to be in general to have a lower impact than would be expected.

In looking at the issue of commercialising the results of public sector research Avent describes the systemic nature of research and development for or within an industry and the desirability of involving industry personnel in research planning.

"The appearance of a new product in the market place is never due simply to a single research-based innovation, but requires a variety of technological, business and material inputs and a coherent system to assemble these. In general, private sector (and Public sector) business personnel involved in producing and selling products are more likely to be aware of the complexities than research workers and public officials, because it is the substance of their day to day activities." (Avent 1989:12)

There can be wide ranging implications of the way research funds are collected and deployed. For example Lawrence (1987) questions the social justice of the Minister' of Science view that;
"Government must provide a range of incentives to encourage industry to make full use of [the state's] ... research and manpower base" (Lawrence 1987:231)

Lawrence questions the distorting effect that such a policy can have on what is actually done as well as the distribution of benefits in favour of large companies who are often owned off shore. Onko Kingma also clearly raises the welfare implications of government research policy in its inequitable effects on different types of farmers:

"Within Agriculture, the distribution of power and resources is such that the minority of larger producers tend to dominate and influence the type of technical and economic research undertaken and hence, the type of technologies developed" (Kingma 1985:2)

"While the market is a crucial mechanism for the organisation of production, a strong case can be made for its modification... this is not an argument for large scale planning of agriculture. Instead a decision making environment must be created such that control of essential patterns of production and consumption, resources and activities can be retained by individuals and groups within local communities". (Kingma 1985:5)

(A1) - 3 MEAT INDUSTRY RESEARCH

(A1) - 3.1 Research Trends

Meat industry research is in a state of change in terms of the way it is managed and the emphasis which is being implemented in the projects. Government is questioning priorities and expecting research organisations such as CSIRO to investigate commercialisation opportunities and seek partners in their research.

The last five years has been a time of major change for the rural industry research fund involved in the meat industry (the AMRLDC) in terms of both the management of projects and the type of projects conducted. It has recently changed its name to the Meat Research Corporation and it is becoming economically accountable, pro-active and realistic in its activities rather than being a benevolent administration body as illustrated by the following comments of the Executive Director:

"This is a daring R&D plan. (the five year plan from 1991/92 to 1995/96) It identifies the really big issues facing the meat and livestock industry and challenges the Meat Research Corporation to research develop and demonstrate economically attractive packages to address them.

The Corporation sees itself as a 'change agent' and will strive hard to bring about the industry changes it believes necessary to achieve the objectives set out in the R&D plan." (MRC 1991:Preface)
The general notion of being accountable is now very obvious with a trend towards projects which are part of an overall industry development initiative and towards projects which are more in tune with market requirements. The following budget for Meat Research Corporation (MRC) spending from July 1990 to June 1996 shows that their plan is to direct more funding into planned industry initiatives over the period placing less emphasis relatively on other research and development projects which are funded on their own merit but don't necessarily fit closely with an industry initiative.

![Budget Allocation Chart 1991-1996](chart.png)

**Figure 11 Allocation of Meat Research Corporation Budget (Percent of total budget for years ending 1991 - 96)**

The nominal dollar allocations to traditional research projects shows that the increased funding for industry initiatives will mainly come from additional funds rather than from the budget which is categorised as other R&D. The MRC also makes the point that creative ideas are still well funded because of the transfer of appropriate ongoing research into the industry initiative areas:

"Many of the projects that traditionally would have been 'submitted' are now included in the industry R&D priorities. As such, Corporation expenditure on 'new ideas' will actually increase, not decline in line with the expenditure in table (5)" (MRC 1991:55)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Priorities</td>
<td>9.92</td>
<td>15.02</td>
<td>18.07</td>
<td>20.92</td>
<td>24.01</td>
<td>26.62</td>
</tr>
<tr>
<td>Other R&amp;D Projects on Merit</td>
<td>20.20</td>
<td>21.55</td>
<td>18.96</td>
<td>17.76</td>
<td>16.71</td>
<td>16.11</td>
</tr>
<tr>
<td>Resource Development /Training</td>
<td>1.05</td>
<td>1.54</td>
<td>1.94</td>
<td>2.23</td>
<td>2.34</td>
<td>2.46</td>
</tr>
<tr>
<td>Improving R&amp;D Management</td>
<td>1.32</td>
<td>1.32</td>
<td>1.39</td>
<td>1.45</td>
<td>1.53</td>
<td>1.61</td>
</tr>
<tr>
<td>Consultation and Communication Administration</td>
<td>0.97</td>
<td>1.08</td>
<td>1.13</td>
<td>1.19</td>
<td>1.25</td>
<td>1.31</td>
</tr>
<tr>
<td>Total Budget</td>
<td>35.57</td>
<td>43.31</td>
<td>44.52</td>
<td>46.75</td>
<td>49.18</td>
<td>51.61</td>
</tr>
</tbody>
</table>

Table 6  Meat Research Corporation Budget 1990-1996

The industry priority projects have a heavy emphasis towards marketing activities as shown in the following Figure 12.

![Pie chart showing budget distribution]

**Figure 12**  Meat Research Corporation Budget for Industry Priority Projects  
(Percent of priority budget - for years 1991 - 96)

Forty five percent of the expenditure is planned for research and development in the marketing area. The expenditure is planned in the following areas; Consumers, products and marketing. Market access and trade barriers. Product description and communication.

Thirty percent of the budget is to be allocated to off-farm projects to do with processing efficiency and co-products. There are also a number of projects planned in
the area of efficient and sustainable agricultural production and 15% of the budget has been set aside for this work. An innovation in the budget is that the MRC has explicitly allocated funds "to have a program of R&D and monitoring to reduce risks and lower the costs of unfavourable events" (MRC 1991:52) This priority is to consider the impacts of factors such as climate, animal welfare, ownership and industry structure.

"The key issues concern approaches for minimising risks associated with threats and how best to prepare to handle the consequences of a major unfavourable event.

The R&D priority also considers issues associated with how the industry would handle public perceptions and reactions to unexpected and unfavourable events and how it would coordinate its response." (MRC 1991:51-52)

(A1) - 3.2 Lamb Industry Research

Research in the lamb industry funded by the Meat Research Committee was very much a part of the new scene of being accountable for results. There were R&D programs relevant to the lamb industry which reflected industry priority areas and the marketing flavour of the Corporations research strategy. The Corporation had seven key programs and four were of direct relevance to the lamb industry while a fifth on Rumen Bacteria Manipulation may have led to cost reductions in the longer term, although the current research was being conducted with animals on dry tropical pastures.

The projects of direct relevance to the lamb industry and their goals were as follows (MRC 1991:90-92).

1. **Prime lamb industry key program**
   GOAL To increase the volume of production consumed in higher value markets to about 25000 tonnes a year by 1994 by encouraging production of large lean lambs which are high quality and consistently available.

2. **Objective carcase measurement key program**
   GOAL To improve through the introduction by 1993 of low cost automated carcase measurement technology for yield and quality factors, the communication of market needs to:
   - producers so that they can adjust production and marketing systems to better match the product to the market; and processors so they can optimise the disposal of carcases and cuts.

3. **Sheepskin industry key program**
   GOAL To increase the return per skin to sheep producers by strengthening the demand for Australian sheepskins and increasing the price of raw skins.
4. New product development key program
GOAL To have a systematic approach for developing new products incorporating market research and total quality management control, adopted by three food companies specialising in beef and sheep meat by 1995.

Each of the above programs has a program manager to take a management and coordinating role of the 14 to 22 projects. The five year budgets are from $3.4 to $4.9 million per program.

(A1) - 4 A NOTE OF CAUTION

The new aggressive approach to research management was not without its critics who were sceptical about the idealism which accompanied the general thrust of the changes.

"Recognise that enterprise and innovation, improved technology, and better marketing are motherhood propositions. Nobody should argue against them - they are counsels of perfection." (Lloyd 1988:25)

Lloyd would represent a large proportion of agricultural economists when he expressed a note of caution in the following terms

"In times of crisis it becomes psychologically and politically possible to implement the new ideas and procedures which must accompany restructuring, and which in the past have been held up by plain inertia." (Lloyd 1988:25)

"In recent years, in both Australia and New Zealand some challenging new suggestions have been made as to how to 'put agriculture right'.... The innovation package ... includes the following proposals:

. that we should move rapidly towards processing much more of our farm output (more value added)
. that we must go high-tech and move away from simple commodities towards specialised differentiated products, in tandem with better and more innovative marketing
. that we must give greater emphasis to new industries
. that research funds should be re-allocated to match these changed priorities.

In many ways these initiatives need careful consideration." (Lloyd 1988:25)

In reflecting on current enthusiasm for change in the amount of value adding done in Australia, Lloyd was taking a longer view of the ongoing dynamic role of agriculture in the economy and the requirement for caution in expecting change to be able to be engineered in some way other than through market price signals.
"Some commentators seem greatly impressed by two trends. Firstly, the value added to minerals and farm commodities has been increasing over decades as a proportion of total finished products. Second the degree of product differentiation has also increased ... and this is often linked with the call for improved marketing - specialised, differentiated and usually branded products (more common in manufacturing than in farming), usually subject to stringent quality control and priced accordingly. However, these two gradual trends have ruled since the Industrial Revolution. They provide no basis for expecting a fortuitous explosion of profitable value-adding or product differentiation opportunities for farm products in Australia in the late 1980's, even if Australian governments succeed in their efforts to improve the climate for such entrepreneurial activity."

"We must at least consider the possibility that the non-existence of a particular value-adding activity in Australia in 1988 is the result of its past unprofitability. Why, otherwise, was it not taken up?" (Lloyd 1988:28)

Lloyd showed concern for caution in his scepticism of the real motives behind what he saw as a means of government lowering its contribution to the rural sector of the economy.

"The policy of calling for more innovation, more value-added better marketing, and so on costs governments little money, sounds plausible, and has connotations of dynamic leadership. As things have turned out over recent years' it has also provided a smoke-screen for cutting expenditure on much of the traditional agricultural research and extension. Some of the reasoning behind the above initiatives is simplistic and superficial, and needs more careful analysis than it has been given". (Lloyd 1988:26)

In order to be confident of the best way forward for the lamb industry it is necessary to respond to lloyd’s scepticism and rigourously critique the value of this trend towards a ‘market led’ approach to industry management. Appendix 2 critiques the arguments for improving the marketing of Australian lamb from a number of paradigms for understanding agricultural markets. The conclusion supports the initiative of attempting to develop a market led approach to industry development whilst noting the approach will face significant difficulties.

(A1) - 5 CHANGING BEHAVIOUR

The lamb industry can be viewed as a complex human activity system. That is, it can be thought of as the amalgam of the activities of a number of people with differing roles from farming, through processing and retailing to the final consumers.
The adoption of such a view means that any attempts to improve the industry will involve individuals and or groups of people in changing to their behaviour. This fact was clearly recognised by the architects of the Prime Lamb Proposal:

"Ensuring supply and co-ordinating the market development program will require a consolidated effort focusing on all sections of the marketing chain from producer to retailer." (AMLC 1990a:5)

This indicates it is valid for those interested in industry development to investigate the applicability of social sciences to understand the behaviour of individuals and groups. This does not deny the need to also apply concepts from the physical and biological sciences to investigate the relationships between the variables being managed by the humans in activities such as growing, selling, processing, wholesaling and retailing lamb.

(A1) - 6 THE ELITE LAMB CONCEPT

In the context of the pressures for accountability, innovation and introduction of the market led concept the AMLRDC developed the Elite Lamb Concept which guided the development of the "Prime Lamb Industry Key Program" (MRC 1991:91).

An important element of the Prime Lamb Program was to have a measurable goal set of a national target of 25000 tonnes of lamb consumed in high value markets by the year 1994. This goal was a significant target to aim for as the national lamb production over the 5 years to 1990 was 298,500 tonnes of carcass weight excluding fancy meat consumption (AMLC 1991c:9). 74% of the tonnage produced over the period came from two states Victoria and New South Wales produced meaning issues in these two states were expected to be germane to success. The publishing of such a target is an illustration by the Meat Research Corporation of its intention to be accountable to the community for the manner in which it spends research monies.

Another element of the Prime Lamb Program was to encourage production of large lean lambs which are high quality and consistently available. Such an approach is consistent with the perceived trend of consumer needs for lean meat which can be prepared in ways other than the traditional lamb roast and lamb chop combinations. The publishing of such a target is an illustration by the Meat Research Corporation of its intention to be innovative in attempting to lead the formation of a new marketing situation for lamb products, it is an attempt to influence the marketing channel to adopt a strategy of producing a high priced range of products from some of the lambs grown in Australia.
Independent of the above project the author, Dr Peter Holst Agricultural Research Station Cowra and David Harris Prime Lamb Industry Specialist had developed a proposal to look at farmer attitudes to the adoption of new lamb production systems. The group applied for funding from the AMLRDC and the response was an offer to tender for the task of conducting a baseline investigation of producer attitudes on ways the industry could implement the Elite Lamb initiative. The basic idea the AMLRDC had was that they needed a benchmark of farmer attitudes against which to measure the impact of the Prime Lamb Program. There was also the possibility of the study identifying key blockages or opportunities which could help direct the nature of the Prime Lamb Program during the four years of the project. Discussions with Mr. L.P.Thatcher one of the authors of the Prime Lamb Program indicated a desire to involve extension and research officers in the process of the project. He was searching for something more than a study and a descriptive report which he articulated as being "Rapid Rural Appraisal" (Thatcher Personal Communication). The outcome of the authors perspective of human activity systems and Peter Holst's interest in the adoption of technology and the AMLRDC interest in Rapid Rural Appraisal led to the expansion of the research team and finally funds to conduct the project DAN 055. This project was called a producer opportunities and constraints study, but the agreed research approach was to heavily involve research and extension officers in the process of developing an understanding of producer attitudes and problems with the Elite Lamb Concept.

(A1) - 8 CONCLUSION

At the time of the research the AMLRDC was the major source of research funds for the lamb industry. It had an emphasis on market development within the Prime Lamb Program. This industry development agenda created an openness to approaches that led towards change not just the requirement for another report.

The challenge facing the research group was to find a way of facilitating improvement of the lamb industry. The contract to conduct the constraints and opportunities baseline study (within the Prime Lamb Program of the MRC) provided the opportunity to work with extension and research officers in seeking improvements in the industry. This is in contrast to traditional approach where the research group would have adopted the role of being detached observers providing an initial analysis of producer attitudes to lamb industry production and marketing.
APPENDIX TWO

THE LAMB INDUSTRY
A SITUATION STATEMENT 1989

The purpose of this appended paper is to provide some detail on the history, state and current structure of the Australian lamb industry in the context of trends in the agricultural sector and the economy of Australia. The paper has not been published elsewhere.

In the context of the thesis, this paper provides background information and a critique of the Prime Lamb Program. Which was an initiative aimed at sustaining and developing the Australian lamb industry.

Chapter 1.2 of the thesis presents the major insights from this paper in an abbreviated form.
(A2) - 1 BACKGROUND

(A2) - 1.1 History of Lamb Production

The first sheep arrived in 1788 with the First Fleet and by 1800 there were 6000 sheep in Australia. In 1880 there were 60 million sheep in Australia and the first shipment of frozen mutton had been sent from Sydney to London (Anon, 1970). Annual data over the last 50 years (ABARE 1990:16), shows that by 1970 the sheep population had reached 176 million and after declines due to low wool prices it has now increased to a population of 160 Million, as shown in Figure 13.

![Graph showing Sheep Population Australia (1788-1988)]

- Early Records
- Recent Statistics

Figure 13 Sheep Population Australia (1788-1988)

(A2) - 1.2 Location of Lamb Production

Lamb production in Australia is closely associated with wool production systems. The Australian Bureau of Agricultural and Resource Economics (ABARE) monitors sheep production in three broad environmental/geographical categories namely:

- The Pastoral areas where wool is produced and there is virtually no cropping.
- The Wheat-Sheep belt where the dominant enterprises are cropping and wool production.
- The High Rainfall areas where there is a range of broadacre and horticultural cropping in conjunction with beef, dairying and lamb production and some fine wool production in the colder areas.
Survey results from the financial year 1986-87 (ABARE 1988:56) show that livestock sales are a significant but relatively minor source of income on all Australian broadacre farms. The farms with significant sheep sales are geographically widely spread in all states.

![Graph showing farm annual cash receipts by zone and income source](image)

**Figure 14  Components of Farm Cash Receipts in Each of The Broadacre Zones (1986-87)**

The absolute value of livestock sales tends to disguise the importance of lamb sales for slaughter, especially for those broadacre farmers in the high rainfall area. Comparison of the cash income categories on a percentage of total cash income (see Figure 15) shows more clearly than the absolute values, that sheep sales are a significant income source for high rainfall farmers at approximately 17% of total cash income.
Figure 15  Farm Cash Receipts in Each of The Broadacre Zones Expressed in Percentage Terms (1986-87)

The category sheep sales includes sales for slaughter (mutton and lamb production) as well as sales of sheep for use by other farmers. Most livestock sales in the pastoral areas would be sales of old sheep for slaughter or for use by wheat-sheep zone farmers and young sheep for wool production. A much higher proportion of sheep sales in the high rainfall area would go directly for slaughter meaning that these farmers are more dependant on the lamb market for their business survival than is the case for pastoral farmers. Recent calculations from Australian Meat and Livestock monthly surveys in New South Wales indicate that 90% of lambs for slaughter come from the higher rainfall and wheat-sheep areas of the Tablelands, Slopes and Southern Plains (Hall and Wiltshire, 1991:47).

(A2) - 1.3  Lamb Consumption

Approximately 17 million lambs are slaughtered annually and their carcasses are sold on domestic and export markets. The following figure presents a 9 year average (in carcass weight terms) of the exports and domestic consumption of Australian lamb (ABARE 1990:25).
Figure 16  Lamb Domestic Consumption and Exports
(mean carcass weight 1980 88)

The high proportion of domestic consumption indicates that the profitability of lamb production is more directly tied to domestic market conditions than export market happenings.

(A2) - 1.4  The Lamb Industry

By way of definition the lamb industry has been taken as that group of individuals, organisations and institutions involved either directly or indirectly in lamb marketing. Those involved in physically handling the lamb are conceived as being part of the distribution channel in the following diagram (Figure 17) while other organisations are represented to be part of the overall marketing channel.
Figure 17  The Lamb Marketing Channel

When this project was conducted the industry was composed of a number of groups held together by loose business and professional relationships. The market exchange mechanism provided the main form of communication between the members of the distribution channel and there were few examples of formal contract arrangements. This was particularly so for the relationship between producers and the rest of the distribution channel.

At the time of the study the lamb industry was geographically diverse. Most sheep were sold through the saleyard auction system where agents sold farmer lots through regular auctions at a range of rural centres. The implication of this structure was that any research
approaches aimed at industry sustainability and development needed to recognise the geographic spread and loose business relationships between the industry members.

There is a trend in the food industries in western economies for the adoption of market management approaches, identifying niche markets and developing brands to attempt to get a profitable market share. There is further discussion on the changes in food marketing over recent years in Section (A2) - 3 (Marketing Agricultural Products).

A feature of the distribution channel is that industry power was unevenly held because of central role of processors and wholesalers and exporters who are few in number relative to the other members of the distribution channel. There was a trend for multinational conglomerates to develop and they were becoming vertically integrated meaning there was an increasing concentration of power developing from the retail level down the distribution channel. Over the 1990's decade this trend would lead to a continuing "changing of the guard" of the major power brokers in the industry.

An implication for the lamb industry is that sustainability is dependent upon the business viability of a few players in the middle of distribution channel. The introduction of multinational conglomerates into food retailing may increase stability of the whole marketing channel because their economies of size should make them more resilient than the family meat companies which they are currently purchasing. There is further discussion on the implications of the trends in market structure in Section (A2) - 5.2 (Structure Conduct Performance Paradigm).

(A2) - 2 INDUSTRY TRENDS

(A2) - 2.1 Changes in The Environment of The Lamb Industry

The dominant pressure on Australian agriculture over the last four decades has been an ongoing decline in the farmers terms of trade. It has declined from a high of 320 in the year 1951-51 (with the post war wool boom) to 85 in the year 1988-89, relative to the index of 100 for 1979-80 (ABARE,1990:14).

"Of course there have been periods when the terms of trade have improved,... However the long term trend in the terms of trade is downward and driven by world-wide increases in the technical efficiency of agricultural production as well as by the significant assistance offered producers in some countries, such as the European Community, Japan and the United States" (Wonder and Fisher, 1989:50)

If the government continues with current economic reform policies of lowering industry protection, the low rates
of protection currently afforded agriculture will continue to shrink. The protection offered textile and clothing industries are predicted to be reduced more proportionally but their absolute levels of protection will continue to remain high compared to agriculture as shown by the following Table (IAC, 1988).

<table>
<thead>
<tr>
<th>INDUSTRY OR SECTOR</th>
<th>EFFECTIVE RATE OF ASSISTANCE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>End 1987</td>
<td>Mid 1990's</td>
</tr>
<tr>
<td>Textiles</td>
<td>69%</td>
<td>58%</td>
</tr>
<tr>
<td>Clothing and Footwear</td>
<td>183%</td>
<td>118%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>19%</td>
<td>13%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>11%</td>
<td>9%</td>
</tr>
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</table>

Table 7 Predicted Effective Average Rate of Industry Assistance

The level of assistance to sheep meat production is below the average rate of assistance to agriculture in general. The following table shows a 1985-86 estimate of the effective rate of assistance to the lamb industry compared to other animal production industries and the wheat industry. (Martin and Savage 1988:62)

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>EFFECTIVE RATE OF ASSISTANCE (%)</th>
<th>BUDGETARY ASSISTANCE ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg</td>
<td>53.3%</td>
<td>2.3</td>
</tr>
<tr>
<td>Poultry</td>
<td>-4.0%</td>
<td>8.8</td>
</tr>
<tr>
<td>Pigs</td>
<td>-10.6%</td>
<td>5.5</td>
</tr>
<tr>
<td>Manufacturing Milk</td>
<td>80.0%</td>
<td>17.9</td>
</tr>
<tr>
<td>Market Milk</td>
<td>418.9%</td>
<td>16.2</td>
</tr>
<tr>
<td>Honey</td>
<td>1.2%</td>
<td>0.4</td>
</tr>
<tr>
<td>Sheep Meat</td>
<td>3.1%</td>
<td>18.9</td>
</tr>
<tr>
<td>Wool</td>
<td>2.4%</td>
<td>97.8</td>
</tr>
<tr>
<td>Beef</td>
<td>5.7%</td>
<td>123.0</td>
</tr>
<tr>
<td>Wheat</td>
<td>3.7%</td>
<td>66.3</td>
</tr>
</tbody>
</table>

Table 8 Assistance to Agricultural Industries

The above figures show that sheep meat production (which includes lamb and mutton production) operates as a relatively unprotected industry (3.1% effective rate of assistance). It is important to note that the two major industries producing competitive meats poultry and pigs have negative rates of assistance at -4% and -10.6% respectively. Therefore it is doubtful that governments would be inclined to lift the rate of assistance to the lamb industry.
The agricultural sector has survived in the past by **increasing its overall level of production and productivity** compared with all sectors of the Australian economy. It has done this with a declining labour force and little extra capital investment as shown by the following measures calculated by the ABARE (Martin and Savage, 1988).

<table>
<thead>
<tr>
<th>SECTOR OF THE AUSTRALIAN ECONOMY</th>
<th>CAPITAL GROWTH (UNIT)</th>
<th>LABOUR GROWTH (% per year)</th>
<th>OUTPUT GROWTH</th>
<th>PRODUCTIVITY GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>0.29</td>
<td>-0.91</td>
<td>2.43</td>
<td>2.76</td>
</tr>
<tr>
<td>All Sectors</td>
<td>3.97</td>
<td>0.99</td>
<td>3.40</td>
<td>1.12</td>
</tr>
</tbody>
</table>

**Table 9 Comparison of Changes in Agriculture with all Sectors of the Australian Economy (1965-66 to 1985-86)**

The following table of statistics on Australian agriculture, derived from Australian Bureau of Statistics (ABS) information, points to some of the overall trends of the sector as a part of the economy over the last half of this century (ABARE, 1990:6-17).

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AGRICULTURAL ESTABLISHMENTS (No. 000's)</th>
<th>AREA OF FARMS (m. ha.)</th>
<th>TOTAL GROSS VALUE OF FARM PRODUCTION ($ m)</th>
<th>FARM PRODUCT CONTRIBUTION TO MERCHANDISE EXPORTS ($ m)</th>
<th>% Merch Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951-52</td>
<td>203</td>
<td>441</td>
<td>1924</td>
<td>1095</td>
<td>80.9</td>
</tr>
<tr>
<td>1956-57</td>
<td>205</td>
<td>460</td>
<td>2552</td>
<td>1556</td>
<td>78.3</td>
</tr>
<tr>
<td>1961-62</td>
<td>202</td>
<td>475</td>
<td>2734</td>
<td>1400</td>
<td>75.5</td>
</tr>
<tr>
<td>1966-67</td>
<td>198</td>
<td>487</td>
<td>3825</td>
<td>2013</td>
<td>68.1</td>
</tr>
<tr>
<td>1971-72</td>
<td>188</td>
<td>500</td>
<td>3968</td>
<td>2105</td>
<td>51.0</td>
</tr>
<tr>
<td>1976-77</td>
<td>174</td>
<td>492</td>
<td>6756</td>
<td>5222</td>
<td>45.6</td>
</tr>
<tr>
<td>1981-82</td>
<td>174</td>
<td>491</td>
<td>12644</td>
<td>7907</td>
<td>41.4</td>
</tr>
<tr>
<td>1986-87</td>
<td>167</td>
<td>488</td>
<td>17373</td>
<td>12159</td>
<td>34.3</td>
</tr>
</tbody>
</table>

**Table 10 Agricultural Sector Trends Over The Last Half Century**

The table shows that there has been a **gradual decline in the number of farms** since the early 1950’s. The increase in the area farmed until the mid 1970’s illustrates that the notion of "Get Big Or Get Out" was a reality for the sector at that time. The total area farmed after 1977 declined, probably indicating the reversion of marginal lands and the loss of productive areas due to causes such as salinity and soil erosion and urban expansion. During this half century the sector has continued to make a contribution to the economy through an increasing gross
value of farm production and increasing rural exports in nominal value terms. However Australia no longer "rides on the sheep's back" to the degree it used to as there has been a **marked decline in the proportional contribution of agriculture to exports**, from 81% to 34% in the last 50 years. This decline is primarily due to the expansion of mining as an export sector and the emergence of a services sector influenced by the growth in tourism. A telling comparison is the very **high proportion of the gross value of production from agriculture which is directed to export**. These figures reflect two characteristics of agriculture in Australia. Firstly, agriculture has a small domestic market, and secondly, the sector is very sensitive to international trading factors such as the exchange rate and the effectiveness of foreign trade barriers and foreign trading cartels such as the European Economic Community. The proportional contribution of the various sectors to export earnings are illustrated by the following pie chart which is based on data presented in the Commodity Bulletin (ABARE, 1990:6).

![Pie Chart: Australian Export Earnings By Sector (1987-88)]

**Figure 18** Australian Export Earnings By Sector (1987-88)

Trade related issues continue to be important to the meat industries in Australia as articulated by The Chairman, Australian Meat and Livestock Corporation at the 1991 National Agricultural and Resources Outlook Conference (Austen 1991):

"at the time this paper was being prepared it appeared doubtful that there would be any significant agreement reached in the current GATT negotiations. Consequently, there may not be any short term changes to the world trading environment"
in areas such as market access and export subsidies, both of which currently impinge significantly on the Australian meat and livestock industries." (Austen 1991:1)

(A2) - 2.2 Consumption Trends

The fortunes of lamb producers are more directly tied to domestic market conditions than export market happenings, relative to other broadacre farm enterprises, because lamb has such a high proportion of domestic consumption. On this domestic market lamb has not fared well in the battle for consumer favour over the last four decades as shown by the following Figure 19. Lamb and mutton consumption has dropped from a high of over 60 kg/person in 1958 to an annual consumption of approximately 20 kg/person over recent years. The mutton consumption component over recent years has been from 6 to 8 kg/person (ABARE 1990:25).

![Figure 19 Trend in Apparent Domestic Meat Consumption Per Person 1943-88](image)

*Source: Commodity Bulletin (ABARE 1990:24).*

The major meats of the mid century beef and sheep meats have both lost their dominance and the consumer diet has become much more varied although total meat consumption has remained in the order of 100 Kilogram per person per year.

Given this overall context the particular situation of the lamb component of sheep meat consumption appears to be declining as shown in the following Figure 20.
Agricultural economists state with confidence that:

"Consumer preferences for individual meats and meat in general are influenced more by price than any other concerns. Individual meat demand and corresponding prices follow diverging time paths as might be expected. Prices of alternative meats also influence demand heavily" (MacAulay et al., 1990:272)

The trends shown by the last decades lamb prices and consumption support the contention that the consumption decline is closely linked to the increasing prices being paid by consumers.

![Graph showing lamb consumption and retail price trends from 1980 to 1987.](image)

**Figure 20** Domestic Lamb Consumption and Retail Price of Lamb Cuts (1980-87)

(A2) - 2.3 Price Trends

A comparison of saleyard prices over the last two decades (Figure 21), shows that lamb is a product which consistently returns low prices per kilogram of carcass sold (ABARE 1990:31). Mutton is a lower priced meat than lamb but it is a by-product of wool and lamb production enterprises rather than being the main purpose of a farm enterprise.
Figure 21  Saleyard Dressed Weight Prices (1970-87)

The above figure shows that the price of yearling beef fell relative to pig and lamb during the mid 1970’s. This was probably due to high exchange rates with our major trading partners (USA and UK) and trading barriers which were growing up around the European Economic Community. The last few years have seen the return of the pattern of the early 1970’s with yearling beef being at a premium to pig meat and lamb commanding a saleyard price of some 50-60% that of yearling beef. The price of wool and sheep skins also has a significant effect on the saleyard price of lamb and currently these prices are low which is impacting on the desirability of lamb production as a farm enterprise.

'Another important factor determining producer returns is the skin value, and given the depressed state of the wool market the skin value is expected to remain very low’ (Mues 1991)

(A2) - 3  MARKETING AGRICULTURAL PRODUCTS

(A2) - 3.1 Trends in Food Marketing

Food marketing is changing world-wide with multi-national companies becoming larger and more integrated. Indicative of this is the major changes in company ownership over the last decade.
"During this period over a hundred major mergers of 50 million dollars or more took place in the food industry. Global food corporations were formed through acquisition and they continue to dominate the world food industry. Of these conglomerates, with the exception of Unilever and Nestle', the top ten are US-based firms." (van Dijk and Mackel 1990:4)

This pattern of ownership is also typical in Australia.

"The horizontal and vertical integration of Australian farm-related companies to form a ‘total food system’ has paralleled developments in the growth of agribusiness abroad" (Lawrence, 1987:139)

"Nationally, the warehouse market shares in food are: Woolworths 26 percent, Coles 25 percent, Amalgamated Australian Wholesalers 25 percent, Franklins 11 per cent and other groups 13 per cent. These percentages vary considerably from state to state." (IAC 1989:77)

These developments have impacted throughout the community with different effects on groups within the community.

"While fierce competition between large food retailers for market share may be squeezing the profit margins of food processing and beverage firms, this activity has been of significant benefit to consumers" (IAC 1989:78)

Sargent (1985) observed that the growth of agribusiness in Australia has negatively effected the way Australia relates to the developing world. She also pointed to environmental and social costs to rural Australia of the move to control by agribusiness entities. Lawrence (1987) has added further observations to this analysis especially in terms of the negative effects on farm people and their communities.

(A2) - 3.2 Branding Food Products

The changes in ownership of agriculturally related activities have influenced the way food products are marketed. It has enabled a trend towards branding, whereby food products are identified and advertised under a particular brand name. This marketing strategy is favoured by the food conglomerates because of the high profitability of brand leaders which is illustrated by the following chart taken from van Dijk and Mackel (1990:5).
Figure 22  Relationship of Brand Position to Profit in the Food Industry.


This concept of branding is now an important aspect of the food industry in Australia as illustrated by the following quotes from a recent report to the Victorian Dairy Industry Authority (McKinna, 1991).

"The development and building of strong brands is a critical component of the dairy industries success and of benefit to consumers, processors and producers alike."

"The VDIA has a demonstrable track record in the marketing of brands which has been a central part of its ability to achieve growth in a period when there has been a world-wide decline"

(A2) - 3.3 Increasing Marketing Margins

Another trend in food marketing is an increasing margin between farmer and retail prices. That is there is a trend for the farmers share of the consumer dollar to decrease as the costs of processing and marketing increase over time. Figure 23 shows the price of lamb at the saleyard and retail levels (ABARE 1990:31-32) over the last two decades.
Figure 23  
**Saleyard Compared to Retail Price of Lamb. 1970-1987**

Figure 24 shows the share which was paid at the saleyard level as a percentage of the retail price of lamb. The result over the nineteen years is that the farmer share to fallen by 8 to 10 percentage points. The graph shows a noticeable downwards trend.
(A2) - 4 LAMB INDUSTRY MARKETING

(A2) - 4.1 Niche Marketing

The lamb industry has made some steps towards brand marketing from its generic "Short Cuts" campaign in conjunction with the beef industry (Cary 1989:6 and Ball and Dewbre 1989:1-3) to the current market niche approaches to develop the industry through an Elite Lamb (DAV 1991 a&b) or large lean lamb (MRC 1991:90, Thatcher 1991; DARA 1990, and AMLC 1990a) on the domestic market and the Fresh Australian Range Lamb (FARL) program on the export market (AMLC 1991 a&b).

These attempts to change consumers perception of the product face the large challenge of eliciting sufficient animals of the right type in sufficient volume to capitalise on the opportunity available. This challenge is being faced in the infant FARL program in the USA and Canada as illustrated by the following comments (AMLC 1990b) by the AMLC Product Manager - Lamb for the Americas.

"Over the last two years the program has continued to develop despite high exchange rates, an inconsistent supply of suitable lambs for twelve months of the year and some opposition from the American Lamb Council.... however there has been over this period some positive operational factors .... For example, the supply of lamb is becoming
more consistent and demand for FARL in North America is extremely Positive" (AMLC 1990b)

An anomaly when viewing this situation systemically is that producers have consistently been receiving a premium for supplying smaller fatter carcasses. Therefore they see no reason why they should change their production when the price signals are indicating that they are doing the right thing. This is shown in recent comments by Victorian Department of Agriculture Officers.

'heavy lambs were commonly 10-15 c/kg less than trade weight lambs'. R. Harris, Statewide Industry Officer, Sheep (DAV 1991b:1)

and

'However, the current situation where large lean lambs are incurring price discounts at the marketplace (LMRS 1990) does not reflect the specialised production systems nor does it indicate their high retail value' (Channon 1990:2)

(A2) - 4.2 Advertising

Some recent research conducted by the Australian Bureau of Agricultural and Resource Economics provides an interesting perspective on the issue of lamb marketing. (Ball and Dewbre 1989). This project investigated the response to generic advertising of meat products in Australia and the measured approach used through econometric modelling provided some useful results. The report was directed at two issues:

"The effects on red meat demand of increased generic advertising of beef, lamb and pork"

and

"The effects of this advertising on net returns to beef lamb and pork producers." (Ball and Dewbre 1989:1) The results expressed as elasticities of demand with respect to the funds spent on advertising are summarised in the following table.

<table>
<thead>
<tr>
<th>TYPE OF ADVERTISING</th>
<th>ELASTICITY OF MEAT DEMAND IN RESPONSE TO THE ADVERTISING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beef Demand</td>
</tr>
<tr>
<td>Beef and Lamb</td>
<td>0.037</td>
</tr>
<tr>
<td>Pork</td>
<td>-0.004</td>
</tr>
</tbody>
</table>

Table 11 Elasticity of Response to Advertising

Source: Ball and Dewbre 1989:8
These results indicate that if funds are spent on beef and lamb advertising they will increase consumption more for beef than for lamb and it will suppress pork consumption. If money is spent on pork promotion there is only a minor suppressing effect on beef consumption but quite a significant suppressing effect on lamb consumption as well as having a favourable effect on pork consumption. They found through modelling that if equal amounts were spent on advertising both pork, and beef and lamb, the positive effects on lamb consumption from the beef and lamb promotion would be nullified by the negative effects of the pork advertising. They concluded:

"Overall, it appears that beef producers have gained considerably from their advertising expenditures during the past twelve years. Pork producers also appear to have gained, but much of this gain is likely to have been in terms of preventing a decline in returns in the face of increased advertising by the beef and lamb industries. The overall result for lamb producers is less clear-cut - it appears that while they gain from advertising undertaken by the Australian Meat and Livestock Corporation they may lose marginally when this expenditure is matched by the Australian Pork Corporation" (Ball and Dewbre 1989:3)

Lamb producers have little control over the promotional activities of pig producers so as a group they may be well advised to investigate if they could get better returns from more of their marketing levies investing in other activities such as promotional activities in other countries. This may be a more profitable activity than spending money on promotion on the domestic market to counter the effects of pork promotion.

Ball and Dewbre (1989) counsel against extrapolation of their results to a new situation where the levels of expenditure on advertising are different to those ruling during the data collection period.

Some other assumptions in the analysis which require due recognition are:

- Meat marketing margins were assumed to be a constant nominal value.
- Some calculations assume equal expenditure on pork and beef and lamb advertising.
- Chicken advertising was excluded from the modelling because the researchers could find no reason why the inclusion of chicken advertising had a "counterintuitively positive" effect on demand for the other meats.
- The expenditure on beef and lamb advertising was not separated into its elements
- Skin prices for lambs seems not to be included as a variable.
- The years of the analysis include many years when beef prices were low due to international trading issues as shown in Figure 21 and discussed in section 2.3 of this appendix.
In conclusion, there are some significant questions about the data used by Ball and Dewbre (1989) so any results need to be treated with due care. However the advertising elasticities raise the issue that advertising on the domestic market may at best be a holding ground exercise in terms of sales of lamb against the initiatives of the pig producers. Possibly just holding their ground is the best activity for lamb producers but the situation raises the issue that there may be more profitable ways to invest their advertising dollar and marketing initiatives. Possibly the lamb producers money can reap better rewards by targeting consumers in the United States or some other export opportunity. If an export market could be found there is less chance of the consumption suppressing effect you would expect in theory from Australian lamb advertising on Australian beef consumption. Since Australian lamb producers and Australian beef producers are in most cases the same people it is worth extra effort to determine ways that the situation of "Robbing Peter to Pay Peter" can be avoided because of the cross elasticities of demand between beef and lamb.

(A2) - 5 CRITIQUING A MARKET LED APPROACH

There appears to be potential for the industry to look at marketing as a way of improving its situation. The AMLRDC developed the Prime Lamb Program in an attempt to realise this potential by initiating the development of a higher value market for some of the lamb produced on Australian farms (MRC 1991:90). The ideas expressed in the Prime Lamb Program are derived using the concepts of the marketing management paradigm articulated by Kotler (1972).

There are a number of other paradigms that professional groups use to find improvements in marketing situations. It is beyond the scope of this review to give a critique of each paradigm but I have attempted to apply the general concepts of two paradigms in a theoretical analysis in order to critique the concepts behind the MRC Prime Lamb Program (MRC 1991:90).

The paradigms considered herein are:
Neoclassical economics paradigm.
Structure conduct performance paradigm.

(A2) - 5.1.1 Neoclassical Economics Paradigm.

(A2) - 5.1.1 Description of the Paradigm

Neoclassical economics is a paradigm used extensively in analysing structural and marketing problems.

"The dominant ordering system for analysing and recommending change in Australian agriculture is neoclassical economic theory." (Kingma 1985:9)
The neoclassical economics ideal is a "free market" or a market where there is perfect competition.

"In neoclassical theory the economy is modelled as a set of markets in which prices equate the supply of and demand for commodities under 'perfectly competitive' conditions and utility (profit) maximisation and where it is assumed that individuals' actions when aggregated sum to the best outcome for society as a whole.... If one or more of the underlying assumptions of the theory are violated, as is the case in the real world, then a free market system cannot provide guidance on an optimal intertemporal allocation of resources" (Kingma 1985:8)

Although one needs to be well aware of the warning about the limitations of the neoclassical paradigm Todd and Cowell (1978) consider it is worth pursuing as a conceptual exercise in searching for a robust rationale for a research activity with the industry.

"The concept of the perfect market, despite its limitations provides a useful bench-mark by which to evaluate actual market situations. The livestock market can perhaps be described as an imperfect market 'where variations in product, selling method, services or numbers of buyers and sellers and their information and degree of market power create a far more complex pattern of exchange relationships and inter-action than the classical concepts would indicate" (Todd and Cowell 1978:39)

The same rationale can be used to justify using the neoclassical economics paradigm to evaluate ways of improving the marketing of Australian lamb. However amenable the paradigm is conceptually for the purpose of a theoretical analysis of the Prime Lamb Program the limitations of the ideal of perfect competition means the insights developed must be handled with due care.

(A2) - 5.1.2 A Neoclassical View of the Lamb Industry

Doran introduces the neoclassical economics paradigm in the Faculty of Agriculture AGPAK series on economic concepts (Doran 1986).

Economic theory suggests that factors which move either the supply function or the demand function to the right will lead to an increased industry income.

Factors which will effect the demand function include:
  Income of consumers
  Population
  Tastes and preferences of consumers
  Advertising and promotion
  Prices of competing and complementary products

Factors which effect the supply function include:
  Weather
  Prices of inputs
Level of technology
Prices of competing and complementary products

Austin uses many of these concepts when summarising the AMLC predictions for the lamb industry in 1991 (Austen 1991:2) as shown in the following quote which has been annotated with SS to indicate supply shifter  or DS to indicate demand shifters.

"The environment for the lamb sector of the sheep industry is not as negative as it is for the rest of the industry.

Production is forecast to remain fairly constant next year (SS as weather patterns were not seen to be a major variable) and this should help to support prices. Domestic consumption should also be stable (ie. DS no effects expected on the domestic market because of any significant changes in demand shifters) and will continue to account for at least 80% of production.

However, exports, particularly of higher-quality product, should expand gradually (DS as there is expected to be extra markets opening up) as marketing campaigns in markets such as the US and the Middle East increase the awareness of, and consumer attitudes towards, Australian product (DS as the advertising is expected to change export consumers favourably towards the Australian product).

In addition, exports should increase if the Australian dollar weakens (DS in that it effectively increases the price of competing products and SS in that it may lower the costs of some imported inputs but this effect would be very small)

One possible adverse development for the lamb industry could be the effects of wool producers switching into lamb production (SS because of the lowering of the profitability of the competing wool enterprise). This could lead to an increase in first-cross lamb production which could depress overall prices in the prime lamb industry." (Austen 1991:2-3)

The above summary supports the claim by Kingma (1985:9) that the neoclassical paradigm is a dominant paradigm for analysing Australian agriculture. It also shows clearly a commodity approach to the market rather than thinking about the products and market shares which the marketing management paradigm focuses on. In terms of the Prime Lamb Program the demand shifting nature of higher-quality products is recognised but the potential of a higher quality product on the domestic market is ignored.

One of the architects of the Prime Lamb Program makes the point that current pricing mechanisms in the lamb industry tend to bring forward small (14 - 16 Kg. carcasses) fat (fat score 4) animals for sale but consumer needs and nutritionist advice appears to be calling for
larger leaner animals (Thatcher 1991). In neoclassical economic terms the market should relay price signals sufficiently clearly to make it economically profitable for producers to change their form of production. If a perfectly competitive market did exist and there was perfect information available to all the parties the observation made by Thatcher (1991) could only be explained by a cost of production for the new product being higher than the premium the consumer is prepared to pay. A component of the Prime Lamb Program investigating the various production systems is designed to investigate the potential for cost effective production systems (Simpson et al. 1991). The intention in the program is for research and extension workers to work with some farmers to trial best bet systems during the period of the program until 1994. Similar work is planned to be conducted with butchers to look at the desirability in the retailing component of the marketing channel (Channon 1990).

(A2) - 5.1.3 Two Priced Scheme

In the past neoclassical concepts have been the basis for the design of two priced schemes. These require a marketing institution to be delegated the power through government statute to be able to control the volume of a commodity which is sold on a relatively inelastic market to increase the revenue for the industry from that market. Then the remaining production is disposed of on a relatively elastic market such as the export market where the volume of supply from Australia will normally not effect the ruling price. Such a scheme was established for lamb marketing in Western Australia in 1972. A subsequent evaluation found it to be ineffective as a means of attending to the marketing problems facing the Western Australian lamb industry.

"The perceived benefit to the Western Australian lamb industry from the existing regulations is that some reduction in price instability has been achieved. There is no evidence that average prices at the producer level have been increased consistently over the period of the operation of the Scheme and, in fact, prices paid to producers have declined relative to those in the eastern States since the introduction of the scheme.

The costs of achieving these benefits from a social welfare point of view are a transfer from Western Australian consumers (estimated at up to $3m. in 1982-83), a reduction in consumption of lamb an the domestic market, an increase in the seasonality of production, an increase in the exportable surplus to the recently unprofitable export market and costs of policing and maintaining the current scheme .... The benefits of a reduction in price instability need to be set against the above costs.

... The limited success of the scheme in achieving its objectives suggests a need for considerable caution in evaluating proposals for similar
marketing schemes in eastern States." (Trewin et al. 1985:3-4)

The observations by Trewin et al. (1985) of the success of the Western Australian attempt at a two price scheme and the current community attitude toward deregulation means there is little likelihood of government support for the introduction of a marketing initiative of this type in the eastern Australian states. The low level of assistance for competing commodities of pork and chicken also mitigate against such overt government support for the lamb industry whether it be by consumer subsidy or direct budget allocation.

(A2) - 5.1.4 Conclusion

In neoclassical economic paradigm terms the Prime Lamb Program cannot be justified if it is assumed that there is a perfect market for the commodity. However, there is significant dissonance from the perfect competition ideal in the lamb industry and the apparent mismatch between consumer trends and price signals make further investigation of the type planned in the Prime Lamb Program desirable. The neoclassical paradigm brings to the fore the need for effective information flows and less impediments to competition. The classical approach of a two price scheme supported by government is clearly politically not sustainable in the 1990's for the lamb industry.

(A2) - 5.2 Structure Conduct Performance Paradigm

(A2) - 5.2.1 Description of the Paradigm

The Structure, Conduct, Performance (SCP) paradigm is a model which is commonly used to analyse markets particularly by policy advisers to governments. The paradigm gives insights as to actions which should be taken by governments to manipulate the environment for healthy industry functioning.

The SCP paradigm is taught in business faculties in a subject called "Industrial Organisation". A prolific writer in this area is Caves from Harvard University, he has jointly authored a book using the SCP paradigm to analyse Australian Industry. (Caves et al. 1987)

The SCP paradigm is from "the stable" of neoclassical economics however it provides:

"an approach which allows the many specific models of markets that are provided by economic theory to be translated into practical terms so that they may be applied to the world around us." (Caves et al. 1987:11)

"Price theory rests heavily on the assumption that businesses act to maximise their profits. Of the various goals which may might govern their decisions the profit motive is assumed to be the strongest" (Caves et al. 1987:5)
"The concepts of market structure, conduct and performance serve as useful main headings for our intellectual filing system. But they do much more than that - they embody the key causal hypothesis of economic theory. Theory tells us that market structure (the market environment) influences market conduct (the behaviour of economic agents within that environment) and thereby affects the level of market performance." (Caves et al. 1987:11)

In the SCP paradigm the following definitions hold:

Market structure refers to stable features of the market environment which influence the buyers and sellers operating in it. For example the relative size of buyers and sellers, whether products are perfect or imperfect substitutes, whether established sellers possess advantages over newcomers.

Market conduct refers to the policies that participants adopt towards the market (and their rivals in it) with regard to price, the characteristics of their product and other terms which influence market transactions.

Market performance refers to a normative appraisal of the social quality of the allocation of resources which results from market conduct. Relevant performance dimensions include efficiency, technological progress, stability and equity.

The SCP paradigm can be used to analyse markets in the context of improving industry organisation through the formulation of mechanisms such as the Trade Practices Legislation to control the behaviour of monopolies and oligopolies.

(A2) - 5.2.2 SCP Paradigm and the Lamb Industry

One of the key questions raised when considering the lamb industry current situation using SCP is where is the boundary of the industry. Is it rational to use the sellers of prime lambs as an industry or would it be preferable to use red meats since there is substitution at the consumption and production ends? Would it be necessary to have a wider boundary if the SCP paradigm where to be an effective predictor of behaviour?

"Economic theory tells us that all participants in a market should be highly sensitive to the price prevailing in the market or to deals which they anticipate that other transactors are capable of offering. And they should not be sensitive to conditions in other markets.

Any attempt to classify all firms in the economy according to separate industries runs into thousands of boundary problems.... Settling each one must be a matter of judgement." (Caves et al. 1987:11)

The above issue of boundaries provides a note of caution to be added to the results of any SCP analysis especially
one in an industry with the characteristics of the Australian lamb industry. The observation that the price signals to farmers do not reflect what is thought to be consumer needs raises questions as to why? One explanation is that if you view the lamb industry as in SCP terms that some of the firms in the marketing channel may not see themselves as being within such a boundary. For example at the retail end there is a trend for organisations to be part of a food industry or at the processing level organisations may well fit more comfortably as members of a general meat industry.

The separation of ownership and management of firms is a factor which can lead to the lowering of the predictive power of price theory.

"...a separation of ownership from control is a common feature of larger companies in Australia, although it does not seem to have proceeded quite as far as it has in the United States" (Caves et al. 1987:7)

When taking the view of the lamb industry as an industry which is attempting to maximise its position. The fact that it may well be in the interests of some of the players, not to have a free flow of information or price signals, may well lead to the industry not behaving as expected.

The structure of the industry with a few companies at the processing and wholesale levels leaves open the possibility of oligopolistic behaviour. Also the likelihood of increased concentration at the retail end with potential vertical integration points towards the failure of the market in the sense of a reasonable level of competition.

Viewing the lamb industry through the SCP paradigm highlights the potential for Government to question the trend towards ownership of the food industry by multinationals. An issue which should be questioned is the desirability of placing constraints on the behaviour of the large corporations involved particularly in the processing and wholesaling parts of the lamb marketing channel. Does Australia need trade practices legislation to ensure Australian ownership or preserve competition in the market channel to protect the interests of producers? The prime Lamb Program does not consider issues of this type although it is an important aspect of the programs environment which may well determine the ultimate distribution of the benefits of spending producer research funds on market development.

(A2) - 6  CONCLUSION

(A2) - 6.1 The Situation in 1989

Lamb production was conducted on farms which ran other enterprises (often beef) or there was the opportunity of running other enterprises should lamb production not be
profitable. Farmers continued to face a cost-price squeeze on their business activities. Low wool prices and low skin prices were seriously influencing the profitability of the lamb enterprise and this had the potential to jeopardise the total level of supply.

Lamb was mainly sold on the domestic market and its major competitors were chicken, pork and beef. Consumption levels were sensitive to price and lamb was generally considered a low priced meat compared to the other meats mentioned. Lamb and beef consumption in Australia had declined over the last few decades in favour of increasing chicken and pig consumption.

The pricing mechanisms in the lamb industry tended to bring forward small (14 - 16 Kg. carcasses), fat (fat score 4) animals for sale but consumer needs and nutritionist advice appeared to be calling for larger leaner animals.

The lamb industry in Australia was facing change because of changing consumer and competitive trade pressures. The profitability of lamb production was very sensitive to the profitability of other farm activities and to the price of competing food products. Pork was of particular importance because it was a direct competitor and it had a very significant advertising budget which lowered lamb consumption.

The lamb industry was a loosely tied entity. It survived at the consumer end because it was a less expensive red meat and at the producer end, farmers ran the enterprise as a relatively small but profitable part of their overall business. This had the potential to create a volatile industry. If consumers found the meat too expensive they could reject it for substitutes and if farmers found the enterprise relatively unprofitable they could expand their other enterprises and cease lamb production. This was a problem for the Prime Lamb Program proposal because it had the intention of developing a stable supply of high quality meat for high priced niche markets.

The industry situation was unfavourable in 1989 because exports were low and chicken and pig meats were gathering a greater share of consumption on the domestic market, partly at the expense of lamb. The lamb industry was slow at grasping the opportunity of producing a larger leaner lamb and marketing it, in volume, in convenient forms, for the consumers of the 1990’s decade. The marketing channel for lamb had a concentrated zone as there were few firms involved in processing and wholesaling.

(A2) - 6.2 The Future

The industry could only survive in the short term if it could ride the unfavourable exchange rate and low skin and wool prices.

The ongoing existence of the industry was contingent firstly on the survival of the key processors, wholesalers and exporters who currently serve within the industry. In the longer term existence was contingent on
the strategic decisions of the emerging conglomerates in the food industry, as these are expected to be the major power-brokers in the industry. Changes in food marketing corporations has potential to further concentrate the industry at the retailer end of the marketing channel.

Secondly the industries ongoing existence was contingent on its ability to adapt to changes in consumer needs relative to its major competitors of beef, pig meats, chicken and possibly fish. There was potential for growth if the industry could take advantage of market opportunities which were available on the domestic and export markets.

There is a marked difference between a business corporation and an industry such as the lamb industry. A corporate business can direct its production, distribution and marketing sections toward a corporate goal. In an industry such as the lamb industry there are a number of groups which have to agree to work together to achieve the same end. If an industry is to be pro-active in taking opportunities to manage change it must do it by getting different individuals and organisations to work together. Therefore an important part of the Prime Lamb Program is the search for a way of creating a community within the lamb industry which is capable of market development activities or other cooperative ends.
APPENDIX THREE

LETTER TO DR. IAN JOHNSSON

29 August 1991

Dr Ian Johnsson
Program Manager
Meat Research Corporation
PO Box A498
Sydney South NSW 2000

Dear Ian,

DAN.055 "Commercial constraints and opportunities in the production of Elite lamb."

Thank you for the time we spent on the 15th discussing the current progress with many Prime lamb research and development projects.

My supervisor has asked that I confirm in writing your approval to use the project DAN.055 as a part of a research Masters Degree here at the UWS, Hawkesbury. The issue I am investigating is concentrating more on the processes used in the project rather than on the content issues about producers attitudes and constraints. My topic is "Action Research as a means of Improving the Marketing of Prime Lambs".

I was interested to receive your feedback on the project DAN.055 that you were generally pleased with the outcome in that it confirmed the views that you had previously formed on attitudes held by producers. I take it that you are happy that the project has given you a base line for your project. It was encouraging to hear you say that DAN.055 seemed somehow to have "set the scene" for the rest of your research program, in that it had helped to get commitment from research workers to the importance of concentrating on the development and marketing end of the program. That is DAN.055 had been intrumental in creating an awareness and acceptance of the marketing issues facing the lamb industry.

It was also interesting to hear your view that you would like to see the funding balance for the project change towards marketing and development issues rather than in resolving the fine detail of production issues.

Please find enclosed your copy of Heather Channon’s report on her work with Butchers, are you expecting me to return any more documents?

Please let me know of any further reflections you have on the project DAN.055 or if I have misinterpreted your views.

Yours sincerely,

Elwin Turnbull
Director, Marketing and Rural Commerce Centre.