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FARM MANAGEMENT TEACHING AND THE DEVELOPMENT OF
PROFESSIONAL FARM MANAGEMENT AT LINCOLN UNIVERSITY

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Summary

Farm Management developed in NZ through the work of Flay during the restructuring of farm debt following the great depression. The critical aspect of the restructuring was the preparation of productive budgets upon which sustainable debt levels were established. The preparation of these budgets required a comprehensive understanding of the farm system and its productive capacity. The first Farm Management course established at Lincoln in 1938 was based on the restructuring experience of Flay and his colleagues. Following the Second World War this training course provided the agriculturalists who serviced the post war boom in agriculture. Farm Management teaching was based on what was termed the whole farm approach and involved the intensive use of case study visits to commercial farms. Because the early emphasis of farm development was physical in nature this tended to be reflected in the early Farm Management curricula. However as the development emphasis changed so did the curricula and in the 1970s financial planning became a more important component. Developments in the Farm Management discipline have included accounts analysis, the use of computers and the application of techniques such as linear programming, systems analysis and other advanced methodologies. All of these have made some contribution to the discipline's development but the basic teaching method has still centred upon the whole farm approach and the use of case study visits to farms. Although in the future computer technology and other developments will play an important role in the development of Farm Management the basis for understanding farming systems will be most effectively achieved through the whole farm approach.

1.0 Introduction

The growth of Farm Management as a profession and an academic discipline is determined by the needs of farmers.

The role of the Farm Management profession is to assist farmers to survive and prosper in a dynamic farm business environment. The profession will only grow if those involved have an understanding of the sociological, physical, biological and financial features of farming systems.

As an academic discipline Farm Management in New Zealand has always been closely involved with farmers and their professional advisors. Over the years academics have made significant contributions to the development of farming and the Farm Management profession

2.0 Development of Professional Farm Management in NZ

Professional Farm Management in New Zealand had its origins in the work of Albert Flay in the early 1930s. Flay was an agronomist at Lincoln College who realised that it was difficult to advise farmers on agronomic matters without considering other components of the farming system.

The first major step in the development of Farm Management occurred following the 1930s depression with the restructuring of farm debt under the Mortgagors and Leasees Rehabilitation Act (1936). The Act required farms to be valued at a productive valuation based on the capitalised surplus from an annual cash budget for the farm. These 'whole farm' budgets and valuations were used to establish new sustainable mortgage levels for farms whose financial viability was threatened by excessive debt. In many instances mortgages were reduced by substantial amounts resulting in gains for the farmers but losses for the mortgagees.

The input required for these productive budgets proved to be the foundation of Farm Management as it has developed in NZ (Stewart, pers. Comm.)¹ The budgets, which reflected the performance of the "average efficient farmer", could be challenged in the Land Valuation Court. Budget preparation had to be very thorough to survive these court challenges. Establishing the annual "cash surplus" involved detailed descriptions of the farm, its farming policy and an assessment of physical and financial production levels.

The complementary relationship that developed between Farm Management and Valuation during this period was formalised with the establishment of the Diploma in Valuation and Farm Management at Lincoln College in 1938. Graduates with this diploma became specialists in debt restructuring and farm supervision. Since 1938 both Farm Management and Rural Valuation have become an integral part of a number of agricultural degrees and diplomas at Lincoln.

The demand for Farm Management specialists also led to the development, in the late 1930s, of the Lincoln College Farm Advisory Service. This service still provides an important link between Lincoln and professional Farm Management.

1. Sir James Stewart, Emeritus Professor of Farm Management, Lincoln University.

The Second World War slowed the development of Farm Management. As the end of the war approached Castleberg, head of the Rural Division of the State Advances Corporation, the Government agency which was the major agricultural financier, saw the need for well trained agriculturalists with specialisation in Farm Management and Valuation. These people would become the field staff for a number of Government departments that were associated with the purchase, settlement and development of farm land. A number would also become advisory officers with the Ministry of Agriculture and Fisheries.

Castleberg's initiative resulted in the Rural Field Cadet scheme. Cadets completed a supervised two year period of farm practical work, a two term dairy farm management course at Massey College and an eight months Intensive Course at Lincoln College before proceeding on to the Diploma in Valuation and Farm Management at Lincoln. The practical work component was considered to be a vital part of the whole programme and is still a requirement for all Farm Management courses at Lincoln.

Castleberg's foresight proved to be correct. The settlement of returning soldiers on farms was a major post war activity. The conditions of the settlement required that the price paid for each farm should be based on a 1942 productive valuation. Establishing this value required comprehensive Farm Management skills that had begun to be developed in the immediate pre war period. The farm values that were determined had to be defensible in the Valuation Court. The same rigorous standards of budget preparation that applied pre war were still required.

3.0 Early Farm Management Courses

The early Farm Management courses taught at Lincoln College were based upon the experience gained from the farm debt restructuring programmes of the 1930s. Although World War II interrupted the development of these courses, the immediate post war period was to provide the environment for real growth in the discipline of Farm Management. Flay and his colleagues Bevin and Garrett developed a Farm Management course that focused on the whole farming system. This "whole farm approach" consisted of a lecture programme strongly supported by case study visits to farms.

The basis of the whole farm approach was first to consider the farms physical resources including, consideration of the soils, climate, pastures and crops, the farm improvements and the productive potential. This was followed by an assessment of the management, with comment on the standard of the husbandries and levels of production. Finally an annual budget to measure financial performance was prepared. The human element was an important part of the approach with the objectives of the farm family being strongly emphasised.

The term 'whole farm approach' was appropriate as all aspects of the farming production system were considered. Of particular importance was the degree of integration between enterprises e.g. sheep and cash crop, and their impact upon the availability of farm resources. Flay and his colleagues obviously developed the whole farm approach from their knowledge of the field work that was required to prepare a productive budget in a farm debt restructuring programme. The development of Farm Management as an

John James Stewart, Lecturer Professor of Farm Management,
Lincoln University

academic discipline in NZ was therefore closely related to the needs of the farmers and the farm business.

3.1 The Role of Case Studies

Case study visits provided students with experiential learning opportunities. Visits to farms were made in small groups and on each visit the students would follow the format of the whole farm approach and assess the farms physical resources, the standard of husbandries, the farmers objectives and gather the information required to prepare a cash budget.

During the farm inspection phase of the case study visit, students would make a full assessment of the farm by going into every paddock and digging soil profiles to identify changes in soil type. They would inspect all livestock and crops and make an assessment of the pastures. The farmer would accompany the group and was available to discuss all aspects of the management of the farm.

Following the farm visit, students would complete an exercise about the farm which was then discussed in class. Because of the amount of court work done by Farm Management specialists these discussions were designed to be challenging affairs where a student was required to defend opinions against fellow students. Case study farmer was often involved in these discussions.

Case study visits to farms in the Canterbury region were supplemented by two study tours. A two week visit was made to the North Island followed by a ten day tour of the South. These tours recognised that students were likely to

be employed in a variety of locations throughout NZ and needed to be familiar with farming systems throughout the country. Farm visits on the tours followed the same pattern as for local case studies.

The major assessment for the course was an exercise known as the "field test". Each student, accompanied by a staff member, would visit one farm for a day. He or she would then be given a week to complete a major exercise about that farm. The assignment would include an assessment of the farm resources, a discussion on the management of the farm and the personal factor, plus a budget and a development programme. It was a comprehensive exercise which continued the theme of practical experiential learning that had been followed throughout the Farm Management course.

Canterbury farmers have always been willing to have groups of students visit their farms and they are an important part of the development of the case study approach to farm management teaching. They have always been forthcoming with information of a confidential nature including from the mid 1950s onwards their farm accounts (Ryde, pers. comm.)²

3.2 Professional Consultants

The rapid development of NZ agriculture in the 1950s created a demand for a professional Farm Management input.

²Bruce Ryde, former Senior Lecturer in Farm Management, Lincoln University.

In 1953 the Franklin Farm Improvement Club was formed with Du Faur as their Farm Management consultant. In the 1950s the management focus was on physical development. Farmers could obtain significant increases in farm output through the use of inputs such as fertiliser and fencing. Farm Management consultants with their technological skills made an important contribution to the development of NZ agriculture during this period.

The continued development of the Farm Improvement Club movement during the 1950s and 1960s confirmed that farmers were interested in professional Farm Management advice on a whole farm basis. This demand impacted upon the then Department of Agriculture and in the 1960s their extension workers began to move towards providing a Farm Management service based on the whole farm approach.

3.3 Teaching Emphasis and Developments

The emphasis on physical farm development during the 1950s was reflected to some extent in the curricula of Farm Management courses. Financial planning through the use of budgets was important but there was little financial analysis. The emphasis was on analysing physical production factors within the context of the whole farm approach.

In the 1960s there were some major developments. The Ag Science degree was modified to enable students to follow a major specialization in Farm Management. J.D. Stewart on his return from overseas in 1961 led the academic development of the new Farm Management subjects. He emphasised the importance of production economics and

introduced a number of analytical techniques, including gross margin analysis and linear programming. (Stewart and Nuthall (1964)).

In the mid 1960s accounts analysis became an integral part of both degree and diploma teaching and the introduction of computers led to an increased use of the analytical techniques mentioned above. By 1968 the major employers had signalled their requirement for Farm Management specialists with a stronger commerce training than the Ag Science degree allowed. Thus the B AgCom degree was introduced which combined commerce subjects with a strong agricultural core. The B Ag Com and Dip VFM courses ran parallel for five years, until 1975, when the Dip VFM was discontinued.

4.0 Developments in the 1970s

By the 1970s many farmers in New Zealand were moving into a phase where increases in output were achieved through modifications to the management system rather than through increasing physical inputs. The terms of trade for farmers were less favourable and overall, farming became a much more risky business. During this period Farm Management teaching became increasingly focused on financial management and in particular on such issues as budgeting under product price uncertainty. The increasing use of computer technology meant techniques like linear programming could be more effectively utilised. Linear programming proved to be a very useful complement to the whole farm approach where students had to consider the range of factors critical to the situation being analysed.

The mid 1970s saw J.B. Dent replace Stewart as Professor of Farm Management at Lincoln. He was interested in the systems approach to Farm Management analysis and teaching. (Dent and Blackie 1979). With its examination of the whole farming system and the interrelationships of the various components systems analysis was a sophisticated complement to the whole farm approach. Its main contribution to Farm Management teaching was to formalise the systems view of the farm which had always been inherent in the whole farm approach and to develop the concept the farm as part of a greater "system" that extended beyond its of physical boundaries to include product processing and marketing. As product prices varied and price predictions became more difficult an increased understanding of processing and marketing factors was a logical development for the Farm management discipline.

However these developments in Farm Management teaching did not result in any reduction in the importance of the whole farm, case study approach. The developments in the more conceptual areas increased the breadth of the courses but students course work continued to be based on a solid diet of farm visits.

5.0 More Recent Developments

In the 1980s New Zealand farmers were hurt badly by declining access and falling prices in their traditional markets and by price and wage inflation in New Zealand. Government policy was directed towards liberalising the economy and reducing the extent of government interference in all sectors including agriculture. Farmers were exposed

much more directly to fluctuations in the international markets. A number of farmers were forced to leave farming because of declining profitability and excessive debt. Sound financial management became an even more dominant part of professional Farm Management and the Farm Management curriculum. Management of the farming business was becoming more demanding and there was a requirement upon students to better understand these small but complex businesses.

On their case study visits students were increasingly confronted with highly technical production systems, involved ownership structures and complex financial organisation. They had to consider the impact of a variable economic climate upon a farming system that was often under financial stress. Where twenty years earlier students may have been confronted with a relatively straight forward production problem on a farm visit, now Farm Management students had to consider difficult financial as well as production issues in a much more complex environment.

The whole farm approach has continued to be successful in the consideration of these more complex management issues. It is important that students continue to consider the basic factors of production before moving on to analyse such features as the ownership structure, product processing and the market.

5.1 Role of Computers and Advanced Methodologies

In this environment of greater market uncertainty and financial pressure, the need for better information from

both on-and off-farm sources increased and methods of handling and using information needed to be improved. The Farm Management department at Lincoln has been in the forefront of developments in information systems technology in agriculture with the establishment of the Farm Management Unit in 1980 funded by a grant from the W.F. Kellogg foundation. The Kellogg Unit is now the leading supplier of software for primary producers through out Australia and New Zealand.

Computers have relieved Farm Management students and professionals of a lot of the tedium associated with financial planning arithmetic. They have also enabled much more advanced financial analysis to be considered and ensured that a greater number of options may be analysed. More sophisticated planning methods based on spreadsheets and simulation models which incorporate underlying biological relationships have been developed and are beginning to be used in teaching and by professional consultants.

To cope with greater uncertainty new techniques from the business schools have been incorporated into farm management. Perhaps the most important of these is Strategic Management, a technique that is used to further develop the whole farm approach and to improve our ability to analyse and understand the complex environment in which farming systems operate (Martin et al, 1990).

Introduction of advanced business management concepts and techniques and more formal instructions on information systems technology into farm management degree and diploma courses has been further encouraged by A.C. Bywater who took over from Dent as Professor of Farm Management in 1987.

But despite computers and advanced business methodologies the teaching approach is still firmly based upon identifying the essential production factors. Identifying these leads to the understanding of how the whole farming system operates. The more advance techniques can then be used to develop this understanding into a greater range of information on a greater number of options for farmers to consider.

5.2 Educational Developments

Employers remain concerned about the professional aspects of Farm Management. Graduates are expected to generate business very early in their professional careers. Every opportunity is taken during the teaching programme to emphasis and develop professionalism

A reduction in formal contact time has reduced the amount of time available for the teaching of Farm Management. Fewer case studies are undertaken and the conduct of case studies has been modified. However in some courses farmers have become involved more directly with students as tutors.

Under this 'farmer tutor' system the farmer is allocated a small number of students who visit the farm on four separate occasions. The tutor programme has three main objectives; students observe a commercial farm through the production cycle; they discuss with the farmer the process of physical and financial decision making; and finally they use the farm as a vehicle for the Farm Management techniques learnt in lectures.
(Plank, 1987)

Assessment methods have also been modified; the original field test has been replaced by the major farm project, an exercise where each student is allocated a project farm early in the year. They have virtually the whole academic year to complete the exercise. The students have the opportunity to follow the production cycle through the year, more time to understand the farming system and the time to develop a professional relationship to with the farmer.

6.0 The Future

An increasingly difficult farm physical and financial environment will place greater and greater demands upon farmers and Farm Management professionals. Developments in the computing field will mean that Farm Management analysis and planning will become more sophisticated. New methodologies from other fields will contribute to the growth of the Farm management discipline.

In the 1990's the whole farm approach and the use of case study teaching will be extended to an international context with the development at Lincoln of a new post graduate qualification in farming systems and rural development. In both a New Zealand and an international context the knowledge of farming systems will continue to be based on an understanding of the basic features of the system. Only when this understanding has been achieved can any worthwhile analysis of the farming business take place.

Case studies will remain the basis of Farm Management teaching and their effectiveness will be increased through

the strategic use of video cameras. It is only on case study visits that students can identify the critical factors of production that influence the farming operation and experience the variable environment that farmers operate within.

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