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KEY THREATS AND DECISIONS AFFECTING THE VIABILITY OF FARMERS IN QUEENSLAND, AUSTRALIA

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ABSTRACT

A farm business management survey was conducted by mail across all major rural industries in Queensland. Responses revealed a general consensus that farming is becoming less rewarding as an occupation, and more complex and risky. Rising costs were perceived as the major threat to business viability, followed by climatic variability, marketing and policy issues. Production problems and political pressure groups were seen as only moderate threats, while environmental problems rated as least important. Ranking of threats varied considerably between industries. Key decisions affecting business viability ranged from cropping program determination in the grain, tobacco and fruit and vegetable industries, to choice of time and place for marketing sheep, beef and pigs, to capital improvement and maintenance in chicken and dairy industries, and optimising input levels in the sugar cane industry. These findings are discussed in the context of a dynamic external environment, particularly in respect of changing policy settings.

INTRODUCTION

The purpose of this paper is to present and comment on selected results from a farm business management survey administered to Queensland farmers in late 1993. The topic chosen is farmer perceptions of key threats and major decisions affecting farm business viability, and factors possibly influencing these. The reasons for its

development, and some relevant details regarding the commercial macro-environment will first be outlined in the next section.

Background to the study

In 1992 a working party was established under the aegis of the Queensland Rural Industry Training Council to review farm business management education and training in Queensland, with particular emphasis on post-formal, farmer-oriented training. As part of its activities, a survey of a representative sample of Queensland farmers was conducted in order to determine farmer opinions as to their farm business management training needs in terms of both content and mode of delivery. Other information gathered included farm demographics, family involvement in the farm business, attitudes towards education and level attained, perceptions of and attitudes towards risk, and medium term intentions of managers towards business expansion.

The external environment

There are a number of factors of the environment external to farming which have imbued these issues with new relevance in recent years. One of the more powerful agents of change for many farmers is the ebbing tide of government involvement in and assistance to agriculture, which, amongst developed economies, has been most marked in export oriented economies such as New Zealand and Australia. Such trends have been widely reported, for example, see Chudleigh (1991) and Gow and Lough, (1993). Principal manifestations of this trend in Australia have included reductions in levels of extension service provision, declining taxation incentives or benefits for farming, removal of input subsidies, and gradual but consistent phasing out of statutory schemes aimed at support and/or stabilisation of commodity prices. Deregulation of the financial sector in 1983 and frequent changes to numerous aspects of taxation policy also served to increase investment risks for farmers (Douglas and Davenport 1994). Throughout the 1980s the cost-price squeeze continued, with an average annual decline in terms of trade (prices received/prices paid) of 1.7 % associated with an annual increase in prices paid of 6.1% (ABARE 1992)

The general effect of these changes has been to increase exposure to price fluctuation and uncertainty, place increased responsibility for risk bearing on individual growers and to virtually eliminate any measures which reduced the impact of rising costs.

Thus this survey was conducted amongst farmers experiencing a dynamic, volatile and uncertain commercial and institutional environment. At the same time, most industries and regions were in the grip of 'the worst drought in living (and frequently, recorded) memory'. Anecdotal as well as statistical evidence suggested widespread financial hardship, in some cases severe, particularly in the grazing industries, where incomes had been reduced by 50% to 80% by the wool market collapse, and in the grain industry where prolonged drought had caused continual crop failures for up to 3 years. It was determined to attempt to gauge farmers' reactions to these circumstances.

PROCEDURE

The general principles outlined by Dillman (1978) were followed in design and administration of the survey. It contained 26 questions and a mix of question types including Lickert Scale responses to statements (1 - *strongly disagree* through 4 - *uncertain* to 7 - *strongly agree*), ranking of alternatives, single or multiple choice, and open ended.

Mailing lists were drawn at random from membership lists were provided on self-adhesive labels by the major producer organisations in the state. Surveys were mailed during the second and third weeks of November, 1993. The mail-out package included the survey, an explanatory cover letter, and a postage paid return envelope. A reminder postcard was mailed 14 days after the first posting. In all, 1860 surveys were mailed out and 595 were returned, of which 578 (31.1%) were suitable for analysis. With an estimated 25000 farmers in Queensland, these figures represent 7.4% of farmers surveyed, and 2.34% actually responding. Statistical analysis was conducted using Excel 4 for Windows and Statistical Package for the Social Sciences/PC. Results were analysed in total, and also by industry or commodity group in accord with the 8 bodies which provided member mailing lists.

RESULTS

Industries represented

Table 1 below summarises responses to a question asking managers to rank industries in which they were involved in order of economic importance.

Table 1. Industries and commodities represented, and ranking by economic importance to respondents (1= most important)

Livestock Industries					Plant Industries				
% respondents ranking					% respondents ranking				
	1	2	3	Total		1	2	3	Total
Beef	26	28	4	58	Sugar Cane	14	3	0.3	17
Sheep	10	7	1	18	Fruit	12	6	1	19
Pigs	7	4	2	13	Vegetables	4	6	2	12
Poultry	3	1	0.2	4	Ornamentals	0.2	2	0.3	3
Dairy	18	1	0.2	19	Grain	23	10	2	35
Fishing	0.2	2	0	2	Cotton	4	3	1	8
Apiculture	1.2	2	0.5	4	Tobacco	5	0.2	0	5
Aquaculture	0.3	2	0.3	3	Hay	2	1	2	5
Goats	0.2	0.3	0	1	Tea	0.2	0	0	0.2

(Totals do not sum to 100% as some respondents indicated 2 or more industries/commodities to be equally important)

These figures illustrate the mixed nature of Queensland agriculture, with the majority of farms involved in at least 2 significant enterprises. They accord with findings of the regular Queensland Farmers' Federation Quarterly Survey (Anon 1993a). The most common enterprise was beef cattle, this frequently being combined with sheep, less commonly with grain. Similarly, the most common second enterprise on grain farms was beef, followed by sheep. Pork production was most usually combined with grain or beef production. In contrast, sugar cane and dairy farms were predominantly single enterprise businesses. Tobacco farms had fruit, and in some cases, vegetables or beef, as the second enterprise, while fruit and vegetable production was most commonly combined with beef, grain or sheep.

Perception of changing circumstances and risk

A series of statements sought to elicit farmers' general perceptions of the changing commercial environment, using Lickert Scale responses. Results for statements relevant to this report are presented in Table 2. They demonstrate strong perceptions of increasing risk and complexity in farm business management, but a lower level of

confidence in being able to cope with these factors. They also had a somewhat pessimistic view of the future of their major industry, a mean score of 4.5 for this item reflecting negative views of many farmers. Despite these perceptions, and the view that sources of risk had changed with time, there was only moderate need for more skills in farm business and risk management.

Table 2. Attitudes to farm business management, amidst changing circumstances in agriculture

Statements	Response	
	Mean Score (a)	Mode (b)
Farming is less rewarding as an occupation than 10 years ago	5.4	6
Farming is more complex than 10 years ago	6.1	7
My industry has a sound future	4.5	6
Farming is more risky financially than 10 years ago	6.1	7
The major sources of risk have changed over recent years	5.1	6
As a manager I can cope with risk	5.2	6
I/we need more skills in farm business management	5.0	6
I/we need more skills in risk management	5.0	6

(a) based on 7 point Lickert scale responses, 1= strongly disagree, 7= strongly agree)

(b) most frequent response

Major threats to farm business viability

Respondents were asked to choose from a list of seven sources of risk or threat, the three greatest threats to farm business viability, and to rank these (1 = greatest threat). Results are summarised in Table 3 below. For ease of presentation an Aggregate Index for each threat was calculated as shown below the table. The effect of ranking is that the major threat for each industry has the maximum Ranked AI of 100, other threats scored lower Ranked AI values.

Table 3. Ranked Aggregate Index scores for major threats perceived to farm businesses

Threat	Industry								
	All	Grain	Sugar	Fruit/ Veg	Tobacco	Dairy	Pork	Sheep & Beef	Chicken
rising costs	100	83	99	100	55	100	80	98	59
climatic eg flood, drought	92	100	86	67	17	74	100	100	44
marketing issues	80	65	100	89	43	51	77	93	40
political/ policy issues	77	54	62	62	100	70	95	76	100
pressure groups eg "greenies"	31	19	24	40	35	28	28	33	53
production problems	27	10	32	41	16	20	49	21	67
environmental issues eg land degradation	13	10	12	12	6	17	13	13	23

$$\text{Aggregate Index (AI)} = \{(\% \text{ 1st rank} \times 3) + (\% \text{ 2nd rank} \times 2) + (\% \text{ 3rd rank} \times 1)\}$$

The Ranked AI for each threat was then calculated

$$\text{Ranked AI} = \text{AI expressed as a percentage of the highest AI for the industry group}$$

It can be seen from Table 3 that rising costs are seen as the major threat in the aggregate all industries data, as well as in two of the individual industries, and rank very high in four others. Only in the chickenmeat and tobacco industries are they less important than a number of other issues. The extensive, broadacre beef, sheep and grain industries ranked climatic problems as the major threat, and this threat, ranked second overall, was seen as very important in all but the tobacco and chicken industries. Marketing issues and political/policy issues were of similar importance overall, with marketing being the major threat in the sugar industry, and policy issues in the tobacco and chicken industries. Increasing awareness of political pressure groups was evident, with threats from this source exceeding production problems in prominence. Production problems, such as control of pests and diseases, did not emerge as major concerns in any industry, and environmental problems such as land degradation received the lowest ranking across all industries.

Key decision affecting farm business viability

In an open ended question respondents were asked to nominate the decision they made regularly which had most importance for the financial viability of their farm business. Responses were and aggregated into groups, and the results are presented in Tables 4 and 5 below. Table 4, which shows distribution of all responses, represents an attempt to categorise decisions into the commonly identified elements of the management span - production, marketing, finance and personnel (see, for example Giles and Stansfield 1990), with finance split into capital and operating components, and Table 5 shows most frequent responses for each industry group.

Table 4. Distribution of key decisions (%) across the management span - an industry comparison

Industry	Sector of management span				
	Production %	Marketing %	Finance - operating %	Finance - capital %	Personnel %
Grain	58	24	12	5	2
Sugar	54	6	13	24	4
Fruit & Vegetables	26	7	42	22	2
Tobacco	35	0	12	53	0
Dairy	31	2	11	53	2
Pork	28	28	28	17	0
Wool, Beef	30	28	26	15	0
Chicken meat	36	0	27	36	0
All	37	12	21	28	1

It is evident that production issues dominate decision making in most industries, but in dairy, poultry, and tobacco capital decisions are seen as most important. Fruit and vegetable producers are concerned with operating finance decisions, but there is obviously a strong link between those and production decisions.

Table 5. Decision made regularly having greatest impact on financial viability of the farm business (most frequent response) - an industry comparison.

Industry	Key decision	% of responses in industry group
Grain	variety, quantity and timing of crop planting - reliability vs profit margin	44
Sugar	level of inputs (fertiliser, water, cultivation)	33
Fruit & Vegetables	variety, quantity and timing of crop planting - reliability vs profit margin	25
Tobacco	variety, quantity and timing of crop planting - reliability vs profit margin c	40
Dairy	capital improvement and repair - what, when and at what cost	35
Pork	When and where to sell stock	28
Wool, Beef	When and where to sell stock	20
Chicken meat	capital improvement and repair - what, when and at what cost	36

The cropping industries in which choice of crops and cropping programs is available - grain, fruit and vegetables and tobacco - selected this decision choice as being most important. In the sugar industry, cost of production issues related to input levels were paramount. In the animal industries, where the majority of sales, and sales prices, are determined by open auction, and where significant weekly price variation may exist, selling decisions were seen as most critical. Thus pork was different from the other intensive industry, chicken meat, and the semi intensive dairy industry, both of which nominated capital improvement decisions as most important. Possible reasons for this will be suggested in the discussion.

DISCUSSION

A number of points emerge from this data and its analysis, which while based on the situation in Queensland, Australia, may have implications and relevance in a wider sphere. The first point relates to major perceived threats. Rising costs was seen as the major threat to farm viability when all data was analysed in aggregate, and in 6 of the 8 industries analysed separately it ranked first or second. As noted above in the introduction, the 1980s continued the cost-price squeeze trend of previous decades,

but the advent of inflation rates below 3% in more recent years has moderated this trend. The data suggest that farmers perceive this deviation from trend as but temporary. It is also likely that in the extensive industries, particularly grain, the higher commodity prices have benefited few growers. Many have had virtually no production to sell as a result of drought. Some commodity prices rose to extreme levels during this time, particularly for feed and milling grains, hay and other fodder sources, but this reflected severe supply difficulty coupled with extraordinary demand. The questions raised by this response, given this awareness of the threat of rising costs, include:

- To what extent do farmers appreciate the need for increasing efficiency in order to stay in business?
- To what extent do they know how to gain the information, attitudes and expertise requisite for increasing efficiency?
- To what extent do potential providers of such information appreciate the needs as perceived by farmers?

Another issue of interest is the low level of importance given to environmental problems such as land degradation, which ranked least important threat in all industries surveyed. Despite significant and growing publicity, and increasing government commitment to encouragement of sustainable land use practices, farmers still tend to believe that other problems are far more threatening. Anecdote suggests that while many believe environmental problems do exist, they are on farms other than their own.

Analysis of the data on major threats shows that while rising costs rank consistently highly, other industry specific issues can take precedence, affecting perceptions not only of major threats, but also of key decisions. It is not surprising that in the grain industry, which has endured serious, prolonged drought, cropping program decisions are seen as the key decision, and climatic variability the major threat.

The different perceptions of threats and key decisions in the milk and sugar industries are noteworthy, because there are many similarities between the industries. Both have been subject to high levels of statutory control with farmers receiving administered

prices, and both are subject to uncertainty as deregulation occurs. Both consist largely of virtually single product enterprises and both, having a large proportion of production entering the world market, are subject to price and income fluctuations. Both are located largely in favourable climatic regions with relatively reliable rainfall. Both had optimistic short and medium term prospects at the time of the survey. Yet dairy farmers see capital improvement decisions as having greatest importance, while cane farmers' main concern is in "fine tuning" cultural practices for maximum productivity at minimum cost.

This inconsistency is possibly related to the large scale rationalisation occurring in the dairy industry. Existing farm numbers in Queensland are less than 10% of those in the 1960s, and further reductions, are expected as a result of increased competition and lower price structures after further deregulation to the year 2000, (Bills *et al* 1995). Meanwhile the sugar industry is expanding under favourable prices and optimistic outlooks for the intermediate outlook (Connell and Furnage, 1995). In view of the optimistic outlooks existing at the time of the survey, the perception of market problems as the major threat to cane growers is surprising. However, the industry was emerging from some financially difficult years, where lower levels of both production and price were recorded, which were no doubt still well remembered.

Another interesting contrast is provided by the two most intensive industries, pork and poultry. Pork producers see sale decisions as most important, while with poultry it is capital investment. This may be partially due to the fact that whereas pigs are still sold largely by auction, poultry producers grow birds under contract for processors, are unaffected by short term market fluctuations, and therefore can concentrate on efficiency measures for profit maximisation. The perception of a major threat (most important for poultry, second for pigs) being political is probably due in both industries to concerns over the possibility of imported products eroding the domestic market and also introducing diseases which could significantly increase production costs.

The choice by pork producers of the same major threat as the extensive grazing industries is more surprising, given the intensively housed production regime in this industry. The explanation possibly lies in the fact that many pig producers grow their own grain, and are thus strongly influenced by environmental conditions. They may also be affected indirectly through increased feedgrain prices, which typically comprise over 70% of production costs. The choice of climatic problems as major threat to beef and sheep production is in accord with their reliance on rainfall for productivity. There is a strong link between this perception and concern over selling decisions, as choice of sale time and place has implications not only on price received, but also on future feed demands and animal performance in regard to feed availability.

The perception of tobacco growers that government policy is their major threat may be clearly linked to the imminent withdrawal of industry-favourable import restrictions that have guaranteed 57% Australian content in any tobacco product. It is also probably linked to recent legislation limiting tobacco product advertising and use of tobacco products in many public places and facilities. The distribution of decisions over the management span, as shown in Table 4, was generally in accord with perceptions of major threats and key decisions. However, it is interesting that the third ranked threat, marketing issues, is relatively under represented in the equivalent decision category. This is possibly due to the difficulties farmers are having in developing expertise in issues beyond the farm gate. The "production" decision category still occupies a major part of their concern, but problems in this area are not seen as important threats to farm business viability.

CONCLUSIONS

Despite widely differing institutional settings and geographic distribution, farmers in all major agricultural industries of Queensland perceive rising costs to be a major threat to business viability. Other major threats include climatic variability, marketing issues, and political and policy issues. Activities of political pressure groups are also causing significant levels of concern. Production problems are of only moderate concern, and environmental issues of minor concern only. Where open auction facilities and non-regulated markets exist, as in the broadacre livestock industries, the key decision affecting viability was seen to be where and when to sell stock. As the

effects of economic rationalism become more apparent, farmers are becoming increasingly aware of, and concerned with, threats posed by policy makers and new lobby groups.

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