Multiple Objectives on NSW Dairy Farms: Assigned Importance and Related Satisfaction [*]

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Abstract

Dairying is a major rural industry in New South Wales (NSW). It contributes significantly to local economies through farm level activities, by generating substantial downstream employment and value adding through processing. In recent years dairy farm management has become increasingly complex with a need to balance numerous, perhaps conflicting, objectives. Farmers must reconcile their own private goals with those of society. They face intense pressures to increase production, reduce production costs and increase product quality while simultaneously conserving natural resources, maintaining lifestyle and achieving other personal objectives. The extent to which these objectives are mutually achievable may have implications for both the importance attached to them and related farmer satisfaction. Using survey data from two hundred NSW dairy farms, this study examines the importance farmers assign to a selection of objectives and the satisfaction farmers feel in terms of achieving these objectives. Results of analysis indicate both conflicts and concurrence in the weights assigned. The findings have implications for farm management, industry policy, the assessment of farm performance and the operationalisation of sustainability.

INTRODUCTION

One of the most basic assumptions of economic theory is the objective of profit maximisation. However, there is evidence suggesting that farmers have a range of economic as well as non-economic objectives.[1] This study examines the relative importance of multiple objectives to dairy farmers in NSW as well as their satisfaction with their performance on each of these objectives. Characteristics that may influence the rankings are investigated and comparisons are made between importance and satisfaction.

Dairying is a major rural industry in New South Wales (NSW), being the fifth largest in terms of the value of farm gate production. The industry contributes significantly to local economies through farm level activities, by generating substantial downstream employment and value adding through processing. However, dairy farm management has become increasingly complex with a need to balance numerous, perhaps conflicting, objectives. As a result of both internal and external influences, farmers face intense pressures to increase production, reduce production costs and increase product quality while simultaneously conserving natural resources and maintaining lifestyle. The extent to which these objectives are mutually achievable may have implications for both the importance attached to them and related farmer satisfaction.

Farmer objectives may be of a personal or business nature. Societal goals may also influence the farmer; they may be shared by the farmer or the farmer may feel obliged or pressured to consider such goals in decision making. The goals of external actors have changed over time; from a heavy emphasis on economic achievements to a complex set of economic, ecological and social goals. For example, sustainable development is often conceptualised as the integration of economic, ecological and social systems and the various human-ascribed goals of each of these systems (Barbier 1987). However, due to differing degrees of emphasis placed on each of the three systems, the signals sent to farmers (and other producers) are somewhat confused.

Barbier (1987) suggests that it is not possible to simultaneously maximise the objectives of each of the economic, ecological and social systems; instead, the achievement of sustainable development involves an adaptive process of trade-offs between the goals of each of the systems. In order to move towards an operationalisation of sustainability the trade-offs need to be analysed. Exploring farmer's perceptions of various normative objectives may offer some useful insights for the analysis of these trade-offs.

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[1] Gasson (1973, p. 523) points out that '[n]o motives are purely economic or non-economic, although some are more relevant than others for economic behaviour'.

The multiplicity of objectives that may be emphasised by farmers and interested external parties leads to a further problem: how should farm performance be measured? The measurement of performance is dependant upon assumptions about objectives because it is the objectives that lead to the choice of appropriate criteria for measuring performance. Using profitability as the criteria for farm performance is based on the implicit assumption that farmers aim, or should be aiming, to maximise profits. An economic goal is therefore judged to be the ultimate goal of farmers. Deciding what the objectives for a farm should be requires making value judgements and so the chosen objectives and, thus performance criteria, will vary depending on whose viewpoint is taken.

Interested parties that may have varying viewpoints about the objectives, and thus the performance, of a farm include governments, creditors, the farmer and society in general. Given the wide range of possible performance criteria that these groups may consider to be appropriate, a farming operation may be simultaneously judged as a success and a failure (Jennings & Beaver 1997). However, as Jennings and Beaver (1997, p. 68) point out, 'No one single set of criteria are, per-se, any more or any less valid and important than any other set. Each is equally appropriate, in the right circumstances'.

To what extent, however, do farmer and stakeholder goals coincide? In particular, are economic goals emphasised by farmers over non-economic goals? From previous studies it is apparent that farmers do not solely aim to maximise profits, as might be implied from economic models and a myriad of farm benchmarking reports. Various lifestyle, social and environmental objectives, which may be broadly defined as non-economic objectives, are common amongst farmers (see, for example, Gasson 1973; Kerridge 1978; Schroeder et al 1985; Coughenour & Swanson 1988; Olsson 1988; Fairweather & Keating 1994; Lamberton 1994; DRDC 1995). However, what is not clear from previous research is whether a majority of farmers rank economic objectives more highly than non-economic objectives.

DATA

Data was collected from self-administered questionnaires, distributed as part of a larger study, to members of the NSW Dairy Farmers' Association via the Association's monthly publication. Two hundred and four useable responses were received. The response rate was considered to be acceptable given the method of collection. The possibility of non-response bias was assessed by comparing initial and late responders and by comparing the demographics of respondents with those of NSW dairy farmers as reported in secondary data sources. The sample was found to over-represent intensive dairy farms in

southern NSW where average milk production per farm and herd size is higher than state averages. These farms also made up a large proportion of the initial responses. However, further analysis indicated that there were no significant differences between regional groups or initial and late responders on any of the other variables used in the study.[2]

SAMPLE DESCRIPTION

The age of the 200 respondents[3] operating a dairy farm ranged from 23 to 76 years, with a mean of 46 years. Farmers in the central 50% of the distribution were aged between 38 and 54, and farmers aged 65 or over represented 7% of the sample. These figures are typical of the age profile of farmers, which tends to be older than other workforce profiles (ABS 1996). This older age profile was also reflected in the number of years for which respondents had operated a dairy farm, with the average being around 20 years. Although experience ranged from 1 year to 60 years, half of the respondents had operated a dairy farm for between 12 and 30 years.

The great majority of respondents were male (88%) and owned or partially owned the farm on which they operated their dairy business (86%). Most operated this business as a family partnership (67%), although family companies (11%) and sole proprietorships (9%) were also prevalent. The high representation of family business structures is typical of the agricultural industry (Martin 1996). Partnerships with non-family members represented only 2.5% of the sample.

The small family business orientation of the sample farms was also reflected in the size of the management team. Around half of the teams consisted of 2 people, with 28% being made up of 3 people, 8% of 1 person and 11% of 4 people. Only 2% of farms were run by 5 or 6 people. The mean of 2.5 team members is representative of the average number of partners per farm in the broadacre and dairy farm industries (Martin 1996). These figures reflect the small, centralised structure of farm businesses.

Income from the dairy business represented at least 90% of all family income for around 84% of respondents, with dairy income representing all of the family's income for 55%

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[2] Respondents answering later or requiring more prodding are thought to be more representative of non-respondents (Armstrong & Overton 1977). The analysis of initial and subsequent respondents showed that they differed only on milk production and herd size, with the subsequent respondents having a significantly smaller mean value on both of these variables. Initial respondents also had a significantly greater mean annual milk production than the NSW average. No significant differences were found on any other survey questions, which covered a range of demographic characteristics, financial management strategies, perceptions of the environment external to the farm and objectives.

[3] Due to missing values in the objectives section of the questionnaire only 200 responses were used in the analysis presented in this paper.

of respondents. Only 15% of respondents received any income from other agricultural enterprises on the farm, reflecting the homogenous nature of the dairy industry. Only 5% of respondents received any family income from non-agricultural on-farm activities, 16% from off-farm investments, 10% from off-farm agricultural work and 12% from off-farm non-agricultural work. The heavy reliance on a single source of income by many dairying families, reflected in these figures, suggests that research investigating ways to sustain or increase this income is of great importance.

The sample farms and farm businesses varied greatly in terms of several size measures. Total farm property size ranged from 42ha to 750ha, with around 75% of farms being under 250ha. In approximately three-quarters of cases, at least 80% of this total farm area was used for dairying, with the remainder generally being regarded as unproductive rather than being used for other agricultural activities. Mean herd size in 1997 (cows in milk and dry) was 165 (n = 187), although the distribution was slightly positively skewed with 62% of farms having a herd size less than the mean. Sample farms also varied considerably in terms of annual production volume. Farms in the central 50% of the distribution of annual milk production in 1997 (n = 178) ranged from 574,500 litres to 1,182,500 litres. Mean milk production per hectare used for dairying was 5,846 litres (n = 174) and mean milk production per cow (in milk and dry) was 5,417 litres (n = 173).

Although 9.2% of farms had at least one member of the management team with only primary school education, at least one team member had some higher education level in all cases. Thirty-two percent of respondent farms had at least one team member who had completed an agricultural trade, certificate or diploma course. Twelve percent of farms had at least one team member who had completed a similar course in business and 34.5% of farms had at least one team member who had completed some other trade, certificate or diploma course. Nine percent of farms had a team member with an agricultural degree, 5.5% with a business degree and a slightly higher 11% with at least one team member with some other degree.

In addition to formal education, only a minority of teams (29%, n = 175) had no members who had ever completed a short training course or workshop that included some focus on business or financial management. Around 68% of respondent farm teams had been involved in up to 10 of these courses. Only 30% of teams (n = 183) had no involvement in industry discussion groups. Around one third were involved in one group, 28% with two groups and 10% with between three and ten groups. In addition, 34.3% of farm teams (n = 198) had a member who was involved in landcare.

RESULTS AND DISCUSSION

Farmers were asked to rate the importance of each of eight objectives on a scale of 0 to 10. The scale endpoints were labelled "not important at all" (0) and "extremely important". Farmers were also asked to rate their level of satisfaction with their performance on each of the objectives. Endpoints were "very dissatisfied" (0) and "very satisfied" (10). Responses are summarised in Table 1.

IMPORTANCE AND SATISFACTION SCORES

The means and medians of many of the importance items were close to extreme importance. The satisfaction means were somewhat lower for most items, although still all within the satisfied range. Product quality rated the highest in terms of both the importance and satisfaction means. Although contribution to the community had the lowest mean importance, satisfaction with profit, cost of production and lifestyle was relatively low. Several comments made by farmers regarding quality of lifestyle reflected negative attitudes towards long, year-round working hours that limited, amongst other things, the ability to leave the farm for holidays.

Table 1   **Means and Standard Deviations of Importance and Satisfaction Scores**
            Sample data (n = 200) from a 1998 survey of NSW dairy farmers

	Importance			Satisfaction		
Objective	*Mean*	*Median*	*Std dev'n*	*Mean*	*Median*	*Std dev'n*
High product *quality*	9.16	10	1.19	7.64	8	1.77
High *profit*	9.00	10	1.45	6.06	7	2.25
Low *cost* of production	8.60	9	1.88	5.94	6	2.20
High *volume*	8.36	9	1.85	6.67	7	2.10
Business/farm *growth*	8.22	8.5	1.85	6.80	7	1.94
Quality of non-material *lifestyle*	8.22	9	1.20	6.02	6	2.66
Conservation of natural resources	7.72	8	2.30	6.64	7	2.04
Contribution to the *community*	6.86	7	2.46	6.83	7	2.07

Importance Scale: 0 = Not important at all; 10 = Extremely important.
Satisfaction Scale: 0 = Very dissatisfied; 10 = Very satisfied.

Note: Words in **bold italics** are used to refer to the objectives in all further tables.

RANKED IMPORTANCE OF OBJECTIVES

The Friedman test was used to compare importance across the eight objectives. Using importance scores for each farmer, the objectives were ranked from one to eight. Table 2 shows the mean ranks of importance of each objective. The mean ranks differ significantly across objectives (Chi-square = 233.485; df = 7; $p < 0.001$).

Table 2   Mean Ranks of Importance

Objective	Mean Rank of Importance
Quality	5.67
Profit	5.43
Cost	4.84
Lifestyle	4.50
Volume	4.47
Growth	4.26
Conservation	3.87
Community	2.95

Sample data (n = 200) from a 1998 survey of NSW dairy farmers

Mean ranks of importance differ significantly across objectives
(Chi-square = 233.485; df = 7; $p < 0.001$)

An examination of the mean ranks in Table 2 suggests that the objectives fall into several groups in terms of importance. In order to test this, the Wilcoxon signed-rank test was used to examine pairs of objectives. These tests of difference indicated the following grouping of the objectives.

Profit through quality. Product quality and profit are ranked as the most important of the objectives and their mean ranks were not significantly different. Lamberton (1994) similarly found that quality and profits, in that order, had the highest mean importance scores in a sample of Australian macadamia nut growers. In the dairy industry in NSW an emphasis on achieving high quality is consistent with achieving high profits (assuming costs are not substantially increased) because the market provides a premium price for quality.

Operations and lifestyle. The most highly emphasised set of objectives after profit and quality is a group consisting of low cost, lifestyle, volume and growth. Three of these (cost, volume and growth) represent more concrete, measurable, specific economic objectives consistent with an overall profit maximisation goal. However, the other objective in this group, lifestyle, tends towards the category of a non-economic goal, although it will be determined in part by economic circumstances. This is consistent with other studies: farmers do regard objectives other than profit maximisation as important.

Ecological. Conservation of natural resources ranks lower again in terms of importance as an objective. Maintenance of the land is an important component of sustained income and wealth but may be regarded as less vital (from a short-term perspective) where economic pressures already exist.

Social. Contribution to the community ranks a clear last. This objective represents a more social dimension of the set of possible goals. Social objectives are apparently not as important as economic objectives. Kerridge (1978) also found that few farmers (3%) considered social values to be the most important of a number of types of goals.

Factors Related to the Importance of Objectives

Farmers' ratings of importance on each of the various objectives may differ depending on their personal and farm characteristics. In order to investigate whether any meaningful associations existed Spearman rank-order correlations between importance and a number of other variables were examined. These variables included dairy farming experience, age, gender, farm ownership, various measures of farm size (including area used for dairying, total farm area, unused area, herd size, volume of milk production and size of the farm management team), landcare membership, team education and training, involvement in dairy discussion groups and reliance on dairy farm income (being dairy farm income as a proportion of total family income). Results are presented in Table 3.

The importance of volume and profit was not correlated with any of the characteristics. These are apparently fairly universal objectives. Decreasing importance of low cost as an objective was associated with a greater number of short business training courses completed by the farm management team. The importance of quality tended to increase as reliance on dairy farm income increased. In particular, there was a tendency for those with income from non-agricultural work to de-emphasise the quality objective. Higher milk quality, and thus revenues, may be seen as a relatively achievable way for farmers with a high reliance on dairy farm income to increase that income and therefore worth

investing some extra time to this objective. However, on the basis of this analysis, the importance of economic-oriented objectives appears to have little association with demographic characteristics.

Table 3   **Spearman Rank-Order Correlations: Importance and Characteristics**
               Sample data from a 1998 survey of NSW dairy farmers

Characteristic	Importance							
	Volume	Quality	Profit	Low Cost	Growth	Conservation	Community	Lifestyle
Experience (198)	-	-	-	-	-	0.191**	0.235***	-
Age (200)	-	-	-	-	-	0.152*	0.161*	-
Dairy income reliance (199)	-	0.229***	-	-	-	-	-	-
Landcare[1]	-	-0.161*	-	-	-	-	-	-
Training (175)	-	-	-	-0.228**	-	-	-	-
Discussion groups (183)	-	-	-	-	0.155*	-	0.250***	-

* = $p \leq 0.05$ ** = $p \leq 0.01$ *** = $p \leq 0.001$

Numbers in parentheses represent the sample size (n) for each characteristic.

Table shows only statistically significant correlations.

[1] A negative correlation indicates that farm management teams with at least one Landcare member tend to view an objective as less important than those with no Landcare members.

The importance of non-monetary lifestyle also had no association with any of the characteristics examined. This supports the idea that choosing to farm for the benefits it is thought to bring in terms of lifestyle is a universal motivation.

Years of dairy farming experience had an association with the importance of conservation and community. Age also had some association with the importance of these two objectives, although weaker. This is not surprising; age and experience are highly correlated. The importance of these objectives may depend on both stage of lifecycle and perhaps the influence of the values emphasised in the period during which one lives. Some additional influence from experience may be that the farmer becomes more aware of the relationships between the objectives: aiming to achieve one requires an emphasis on others due to their interrelationships. The positive correlation between the importance of community and discussion groups may indicate that through such groups farmers can make a contribution to the local dairy farming community.

RANKED SATISFACTION

Satisfaction was examined using the same method as that described in the previous section for importance. The Friedman test indicated that the mean ranks of satisfaction (shown in Table 4) were not the same for all objectives (Chi-square = 129.901; df = 7; $p < 0.001$).

Table 4   Mean Ranks of Satisfaction

Objective	Mean Rank of Satisfaction
Quality	5.84
Growth	4.76
Community	4.75
Volume	4.60
Conservation	4.48
Lifestyle	4.07
Profit	3.85
Cost	3.66

Sample data (n = 200) from a 1998 survey of NSW dairy farmers

Mean ranks of satisfaction differ significantly across objectives
(Chi-square = 129.901; df = 7; $p < 0.001$)

Product quality is clearly the objective with which respondents were most satisfied. The achievement of this objective may be more controllable or perceived to be controllable relative to the achievement of other objectives. These other objectives have similar mean ranks of satisfaction. Wilcoxon signed-rank tests of differences between pairs of objectives indicated two groups: the higher ranked being growth, community, volume and natural resources and the lower ranked group being lifestyle, profit and low cost.

One view of this result is that the higher ranked group represents objectives that may be more easily achieved by farmer actions. For example, by increasing herd size a farmer can achieve both growth (broadly defined) and higher volume. However, making a high profit depends not only on achieving high product quality and quantity but also low costs, something that may be perceived by farmers to be relatively uncontrollable given the nature of their input and output markets. Achieving lifestyle goals may be, to some extent, achievable by simply working and living on the farm. However, seeking to achieve economic goals and having difficulty doing this may have consequences in terms

of, for example, stress and long working hours. Thus farmers may face some trade-off between lifestyle and economic objectives.

Factors Related to Satisfaction

Table 5 shows the Spearman rank-order correlations between satisfaction and farmer and farm characteristics. In contrast to importance, satisfaction with economic objectives was correlated with many more variables. This is not entirely surprising. Many situational characteristics are likely to have a strong influence on whether or not such objectives are achieved and, therefore, whether or not farmers feel satisfied with their levels of achievement.

Table 5 **Spearman Rank-Order Correlations: Satisfaction and Characteristics**
Sample data from a 1998 survey of NSW dairy farmers

	Satisfaction							
Characteristic	Volume	Quality	Profit	Low Cost	Growth	Conservation	Community	Lifestyle
Experience (198)	0.220**	-	0.260***	0.245***	0.199**	-	-	-
Age (200)	0.195**	-	0.208**	0.220**	0.161*	-	0.148*	0.168*
Gender[1] (199)	-0.292***	-0.149*	-0.286***	-	-0.178*	-	-	-
Farm Ha's (198)	-	-	0.142*	-	-	-	-	-
Dairy Ha's (193)	-	-	0.192**	0.143*	0.188**	-	-	-
Milk/cow 1997 (173)	0.164*	-	0.170*	-	0.159*	-	-	-
Herd Size (187)	0.159*	-	-	-	0.207**	-	-	-
Dairy income reliance (199)	-	0.184**	-	-	0.155*	-	-	-
Discussion Groups (183)	-	-	-	-	-	-	0.161*	-

$* = p \leq 0.05$ $** = p \leq 0.01$ $*** = p \leq 0.001$

Numbers in parentheses represent the sample size (n) for each characteristic.

Table shows only statistically significant correlations.

[1] A negative correlation indicates that men tend to be less satisfied than women.

Increasing years of dairy farming experience was associated with increasing satisfaction with the economic objectives of volume, profit, cost and growth. This is an interesting finding when compared to the relationship between experience and importance of the various objectives. Those with more experience placed a greater emphasis on the importance of non-economic objectives than those with less experience but the two groups placed a similar emphasis on the importance of economic objectives. The most apparent explanation for these findings is that farmers with greater years of experience (and to a large extent age) may have achieved a degree of economic security and this allows them to focus more on higher order needs. However, as experience was more highly correlated with both importance and satisfaction than age, there may be some basis for suggesting that a more equal emphasis on conservation and community may have benefits in terms of economic outcomes.

Various measures of farm size were correlated with satisfaction with growth. As herd size, milk production per cow and the area used for dairying increased, there was a tendency for satisfaction with growth to also increase. Milk production per cow and area used for dairying were also positively correlated with satisfaction with profit, as was total farm area. As reliance on dairy farm income increased, so too did satisfaction with product quality. Farmers with a higher reliance on dairy farm income are placing a greater emphasis on quality and are also apparently more satisfied with their quality achievements than those with other sources of family income.

Satisfaction with conservation, community and lifestyle apparently has little to do with the farmer's situational characteristics.

COMPARISONS OF IMPORTANCE AND SATISFACTION

The economic objectives are ranked as more important than non-economic objectives, including lifestyle. There are several possible explanations for this finding. Firstly, the average farmer may be struggling to achieve sufficient economic security to enable more focus on non-economic objectives. This view is grounded predominately in Maslow's theory of needs: lower level needs must be satisfied prior to a focus on higher level needs. Lower order needs include physiological needs (e.g. food, shelter) and safety needs (e.g. financial security).[4] This does not necessarily mean that non-economic achievements are not desired by the farmer but that he or she is unable to pursue them.

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[4] Although it could be argued that the ecological sustainability is a lower level (survival) need (given that we all depend on natural resources for our existence) it could also be argued that food on the table and bills paid assume priority in the short-term as more specific lower order needs.

Therefore, this explanation implies that, at least to some baseline or relative level of economic achievement and security, non-economic objectives may conflict with economic objectives.

This explanation presents a dilemma for the societal goal of sustainable development but is supported by previous research. Several researchers have noted the important influence of economic factors on conservation behaviour (e.g. Cary & Wilkinson 1997). Others have found that financial issues are of more concern to farmers, and are perceived by them as more serious, than land degradation and other environmental problems (e.g. Vanclay and Hely 1997). Schroeder et al (1985) found the importance of status enhancement to have a significant positive correlation with farm income and a significant negative correlation with farm debt. Status enhancement, called esteem needs in Maslow's hierarchy, is a higher order need.

A second explanation lies in the hypothesis, supported by Gasson's (1973) research, 'that farmers adapt to their situation and come to value its more favourable aspects while denying the importance of needs which are not gratified, so as to avoid frustration' (p. 532). In some ways this hypothesis presents the antithesis of the first explanation above. The first explanation hypothesises that unfulfilled needs will be of more importance while the second hypothesises that unfulfilled needs will be rated as less important.

Figure 1 shows a quadrant matrix of the objectives where mean importance is plotted against the vertical axis and mean satisfaction against the horizontal axis. The range of each scale is limited to just larger than the range of the means, with the dissection lines representing the midpoints of the scales. The average responses for profit and cost are relatively high on importance but relatively low on satisfaction whereas the average response for community is relatively high on importance and low on satisfaction. Volume, growth and conservation tend to lie in the middle on both dimensions whereas cost lies around the middle for importance but rates relatively low on satisfaction. Quality appears as somewhat of an outlier: relatively high on both dimensions. Excluding quality, there is a strong negative relationship between mean response for importance and mean response for satisfaction. This provides some evidence that unsatisfied needs are likely to be rated as more important relative to satisfied needs. Still, there remains the problem of explaining the position of quality, which fits more easily with the second of the two hypotheses noted earlier. Perhaps there is some interaction with the control that is perceived to be associated with an objective.

Figure 1: **Quadrant Matrix of Two Dimensions of Objectives: Importance and Satisfaction**
Sample data (n = 200) from a 1998 survey of NSW dairy farmers
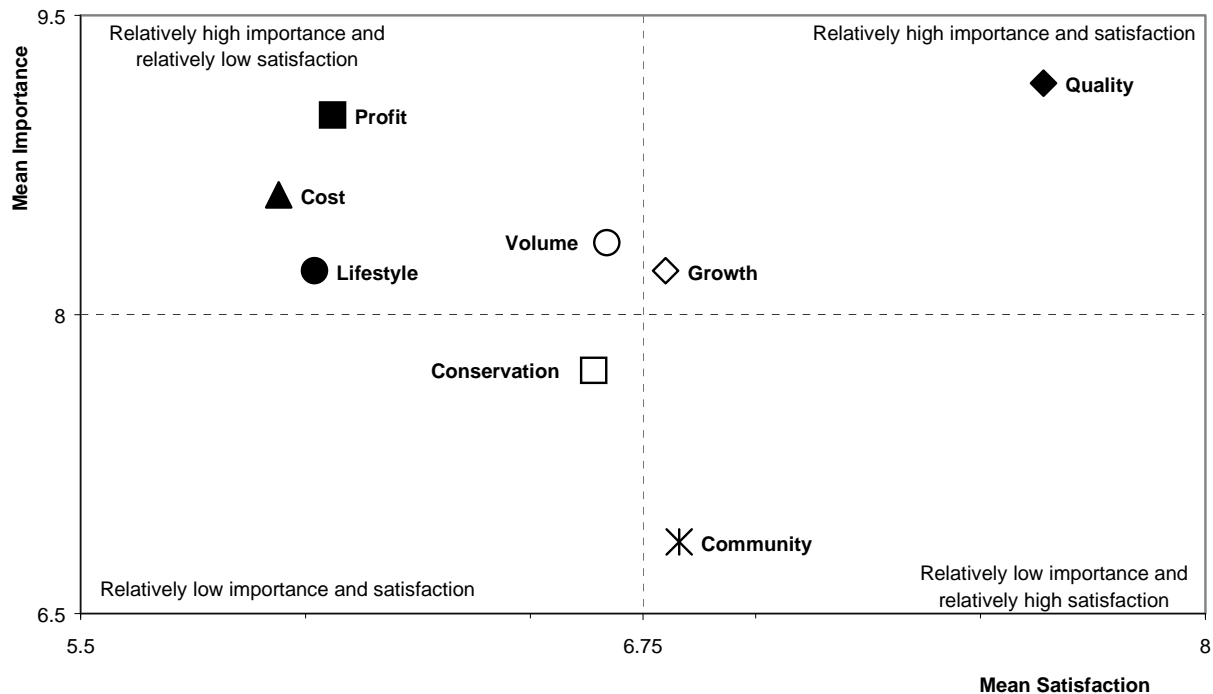
CONCLUSIONS

Several studies of the objectives of farmers have found that economic objectives are more important than non-economic objectives. Others have indicated the reverse. Perhaps the difference lies in the relative prosperity of the farming industry studied, farmers' perceptions of their control over the variables relevant to each objective and their expectations. Future research may address such issues. Additionally, the inclusion of other objectives may provide a further explanation.

One implication of the findings for dairy industry policy in NSW is that lower satisfaction with economic achievement is associated with a greater emphasis on economic objectives. As this may be at the expense of the environment, deregulation may compound this problem. At present, farm gate prices (for milk to be sold as liquid milk) are regulated in NSW but, under the National Competition Policy, the onus is on the state government to prove a net public benefit if it seeks to retain price and production controls. However, deregulation was postponed not long after the data in this study was collected so it is possible that farmers had partly factored deregulation into their

responses. A further understanding of farmers' motivations and their relationship with economic behaviour and outcomes would not only provide useful direction for analysing the trade-offs necessary for sustainable development but also for assessing the impact of policies generally regarded as essentially of an economic nature only.

The results also indicate that the economic incentive offered to NSW dairy farmers for high quality milk under the current regulatory regime is operating effectively. Quality is a heavily emphasised objective and, as an added bonus to farmers, they are generally satisfied with their achievements. This should prove to be an advantage to farmers under deregulation as market signals in deregulated states suggest that quality will continue to be rewarded.

As noted by Coughenour and Swanson (1988), farmer satisfaction has rarely been measured, despite a general assumption that it is high. This study shows dairy farmers are moderately satisfied. Whether they remain satisfied if deregulation occurs would be an interesting question for further exploration of the assigned importance of objectives and related satisfaction.

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