



Pastoral farmer's goals and intensification strategies

Farmers across all industry sectors are experiencing pressure to intensify their operations and increase production. The principal pressures for intensification include increasing land values and the need for return on investment, alternative competing land uses, local and international product competition, and unstable or declining market prices and a rising NZ dollar. There are many possible technologies and management strategies that may help enable pastoral farmers to achieve in this environment.

This study, conducted in 2005, looked at the drivers of intensification, and the types of strategies that farmers' in the sheep, beef, dairy and deer sectors could use to increase productivity. The study also selected one strategy or technology from each of the four sectors to understand the:

- potential benefits of adoption
- potential barriers
- potential solutions to the barriers
- fit of the strategy or technology with some common goals for their business

Sheep Industry

The top three drivers for intensification identified by sheep farmers in the study were:

1. desire to increase profit
2. higher land values
3. need to obtain a good return on capital

The top four intensification strategies to achieve these goals were:

1. nitrogen use to increase stocking rate
2. minimising inputs for maximising returns
3. DNA typing and marker assisted selection (e.g. eczema, Inverdale gene, twinning gene)
4. better feed budgeting

Examining the intensification strategy of 'high fecundity sheep' highlighted potential benefits of increased financial security, more profit, better return on capital, better utilisation of pasture and better land use. Barriers, and solutions to these barriers, were identified, Table 1. Overall, farmers' viewed the 'high fecundity sheep strategy' as useful for helping to achieve increased profitability. However, it was seen to conflict with other targets, particularly lifestyle goals and environmental and animal welfare considerations.

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Table 1: Barriers to the high fecundity sheep strategy and potential solutions

Barrier	Solution
Farmer mind-set (not ready)	Education, discussion group
Lack of enabling technologies	Genetic research (animal resilience, improved grasses)
Lamb survival	Management practices, vaccines, nutrition
Lambing date not coinciding with grass supply	Management practices, feed budgeting, nitrogen application

Dairy Industry

The three top drivers for intensification identified by dairy farmers in the study were:

1. declining market prices
2. need for increased profitability and productivity
3. increasing capital value of land



The top four intensification strategies identified were:

1. improving genetics of cows and grass
2. improving the value of milk (e.g. through niche products)
3. more intensive use of labour
4. the use of genetic engineering

The intensification strategy of robotic milking was evaluated. It was considered to provide benefits of a reduction in labour, enhanced lifestyle and greater job satisfaction due to reduction of mundane and monotonous tasks, reduced operational costs and increased profits, ability to separate specialised milk products at the shed, and enabling smart communication applications. Barriers included capital cost and issues around new technology and skills, Table 2.

Table 2: Barriers to the Robotic Milking Strategy and Potential Solutions

Barriers	Solutions
Cost of changing to robotic system	Time for technology development, building a critical mass of users (demand and availability)
Farm labour impact – new skill sets may be required	Education and retraining
Unreliability of the technology	Time for the technology to mature
The need for technical support	Robust systems, service contracts with technology providers

Overall, farmers' viewed robotic milking has having great potential to significantly enhance the lifestyle of dairy farmers and their farm workers. However, before becoming viable, considerable changes to the current farming system may be necessary. These include:

- may only be suitable for farms with the right topography
- re-fencing may be necessary
- costly, initially suited to greenfields development
- require new skills and specialised technical skills for maintenance and repair

Robotic milking was seen as enhancing lifestyle goals, giving dairy farmers more freedom and control over their time.

Deer Industry

Deer farmers identified the top three drivers for intensification as:

1. return on investments (land and stock)
2. competition from other land uses
3. returns per hectare compared with other pastoral industries

The top four intensification strategies were:

1. selecting for most efficient hind size to suit the farm
2. a focus on breeding operations
3. intensive summer cropping strategies and conservation
4. specialist pastures for other than winter feed



An intensification strategy of achieving a '100kg weaner by June 1st' was considered. This was identified as providing increased options for management, increased profit, earlier achievement of genetic merit and better kill-out-yield. Table 3 identifies the barriers, and solutions to these.

Table 3: Barriers to the '100kg weaner by June 1st' strategy and potential solutions

Barrier	Solution
Finding markets for extra meat production	The Deer Industry strategy is working on the issue
There is a small window for the premium – this strategy will place it under greater pressure	Extending the premium shoulders
Animal health and welfare issues	Research on diet and nutrition
Clean green image of industry could be comprised	Codes of practice for farmers. Education and increased environmental awareness

Overall, farmers felt the strategy was a useful approach in helping to achieve three of their farming goals, especially financial. They felt that this strategy could present some challenges around animal welfare, and important consideration for major venison markets such as Germany. The strategy was regarded as neutral in relation to the deer farmers' lifestyle goals.

Beef industry

The top four intensification strategies for beef rearers were:

1. use of dairy-beef progeny
2. use of beef breeding cows
3. the use of sexed semen (to produce dairy replacement heifers for dairy farmers and beef bulls from the rest of the herd for the beef industry)
4. diversifying into new markets

For beef finishers the top four intensification strategies were:

1. improved farm management practices
2. improved grass species
3. use of dairy-beef progeny
4. intensive feedlot systems

The project selected intensification strategy was 'dairy-beef progeny' - the use of beef bulls or semen over dairy herds for the production of calves for beef production. The main benefit of this strategy would be increased supply of prime cuts rather than grinding beef, Table 4.

Table 4: Benefits of a dairy-beef strategy

for dairy farmers	for calf rearers	for beef finishers
Better quality calves with superior growth rates	Potential for better margins and increased profits	Higher yield Higher conversion factors
Calves worth more money	Better quality meant leading to access to prime markets	Quicker growth Better final product composition
Increased cash flow income in the spring	A better quality, faster growing, and higher yielding animals with better survivability characteristics.	Hardier more docile animals

Identified barriers and solutions to these barriers for the dairy/beef progeny strategy are identified in Table 4.

Table 4: Barriers to the dairy-beef progeny strategy and potential solutions

Barriers	Solutions
Insufficient incentive for dairy farmers	Premium for beef calves
Calving problem – risks outweigh benefits (longer gestation period, bigger animals)	Better bull selection for ease of calving
Dairy farmer fear of not enough replacement heifers	Use of sexed semen and artificial insemination
Processors not paying premium for beef progeny – meat destined to commodity markets	Payment for yield – not carcass weight as current. Choice meat cuts to high end markets

Results of the study showed that calf rearers and beef finishers saw the benefits of the dairy-beef progeny strategy. However, dairy farmers are key to success and their concerns were for the substantial animal welfare and financial risks associated with this strategy. These included calving problems, increased need for assisted calvings and intervention, insufficient replacement heifers and damaged or empty cows. Additionally, the current high price for colostrum and export heifers were attractive alternatives.

All farmers involved in this study saw a range of intensification options open to their industries to meet challenges they face. However, all expressed concern about some potential effects of intensification – such as negative environmental impacts and animal welfare issues. They were also mindful of both the New Zealand public's and overseas consumers' perceptions of their industry. While intensification options are available to meet their business goals and challenges, some of the available options do not fit comfortably with the traditional New Zealand farmers' lifestyle goals.

Further information

The full technical report, Pastoral Farmer Goals and Intensification Strategies, can be downloaded from www.climatecloud.co.nz/CloudLibrary/2005-21-pastoral%20farmer%20goals%20and%20intensification%20strategies.pdf

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