Enhancing Productivity through R&D – Opportunities for Wood Producers

Much is said about how well the dairy sector has done over many years; and in terms of growth and innovation it has undoubtedly been a story of improved productivity both on a per farm basis but also in the amount of land now under dairy farming. Ironically much of the recent publicity has come as a result of the conversion of at least 30,000 ha of forested land into dairy and beef grazing in the Rotorua Taupo area.

Compared to the forestry and wood processing sector, dairying appears spectacular in its growth and development. Over the past 30 years the number of cows being milked has increased by 86% with a further increase in per cow production of 38%\(^i\). The combined effect of this has seen the milk available for processing rise by 156%. This increase in milk production has not dampened the price received by farmers. The impact on price received has been positive with gross milk returns doubling in the last 20 years and with the inflation adjusted payout remaining relatively flat. The impact on sale price for land has shown an inflation adjusted increase of 26% over the last 20 years\(^ii\). Combined with the consolidation of land holdings by individual dairy farmers it is fair to say that there has been a significant improvement of the profitability in the sector.

Like the forest sector, dairying is in the commodity business. Despite the marketing hype about value added products the dairy industry is essentially a commodity trader. The vast majority of milk is processed into powder, butter or cheese. Producing milk powder is about sucking the water out of milk and putting it into a bag; making butter is about separating cream from milk, adding salt and churning it; making cheese is about taking the curd from the butter making process, adding starters, mixing, heating and curing. While there are specialised products being developed and marketed from milk the majority of a dairy farmer’s income comes from the sale of a commodity product into a saturated world market. New Zealand’s total milk production is only 2.8% of the world production.\(^iv\) Like the forest sector dairy farmers are commodity traders.

By comparison, the financial position of the wood producing and processing sector is not as easy to find. A MAF report quoting data up to 1999 using the publicly listed CHH and Fletcher Forestry company’s annual reports noted that “the performance of these companies compared relative to many New Zealand Corporates has been modest”\(^v\). The same report went on to state that the CHH share price had under performed the market average for the period 1998 – 2000.

The issue for debate in this paper is why – why does one primary producing sector exporting a commodity product perform well and perhaps another not so well – is it all down to investment into Research and Development?

I don’t believe it is. While R&D is an important factor in the success of the dairy sector it is not the whole reason. I believe the success of the dairy industry is about an attitude and an ethos of investment. Investments by farmers and processors into all facets of the business designed to improve it over the long term.

For many years the marketing of dairy products was controlled by the Dairy Board which regulated the sale of milk products from the cooperative dairy companies that supplied it. During the time of the Dairy Board a significant amount of payment was withheld from farmers and used as an investment into a whole range of activities which collectively have enabled the industry to prosper.

---

\(^i\) 5000 ha CHH Kinleith Estate, 25,700 ha Wairakei Pastoral

\(^ii\) LIC Statistics

\(^iii\) LIC Statistics

\(^iv\) John Skorburg Economic Analysis American Farm Bureau

\(^v\) MAF The Forest Processing Investment Environment
These investments included

- On farm research and development
- A nationwide genetic improvement and performance recording system
- National dairy production and financial statistics
- Production based research
- Market development
- Lobbying and Promotion

**On farm research and development**

Both the forestry and dairy sectors have received significant government funds which have been and continue to be invested into production based R&D. New and modified production systems are being researched to improve the production of the raw product. One of the questions is whether we are now getting to the point of diminishing returns with the investment into production based research and should that money be transferred into processing systems, product development and marketing?

Additionally, as with dairy research, a significant amount of money is being invested into identifying what biochemical or neutraceutical products can be derived from wood. This long term research is of potential value into the future and needs to continue.

**A nationwide genetic improvement and performance recording system**

The national dairy genetic improvement and performance recording system used research findings to develop what is today known as artificial breeding. From the late 1950’s New Zealand dairy farmers funded what is still world leading technology into genetic improvement of dairy cattle. Once owned by the NZDB it is now owned by all farmers using the system. By making this investment the dairy industry has been able to modify the milk to suit market needs. This has occurred both by changing the composition of milk, increasing milk protein at the expense of milk fat, through to improving milk quality by the reduction of somatic cells.

It seems evident that the forestry sector has also benefited from significant genetic improvements in its forest stock enabling desirable characteristics to be identified and introduced through superior breeding stock.

**National statistics**

The production of national statistics may seem an unlikely benefit to a major industry like forestry. However the use of statistics in the dairy sector has enabled individual farmers to compare their performance with other farmers and has had a significant positive effect on farm management practice. Likewise the use of statistics to enable accurate lobby and representation to government officials has allowed an accurate picture of the industry to be put forward. The same level of statistical analysis is not available in the forestry and wood processing sector. This is likely due to the competitive nature of the sector with commercially sensitive information being kept within companies. However with it being kept close it is difficult to represent the true picture of the financial position of the industry.

**Product research & development**

For the life of the Dairy Board and on into Fonterra there has been investment into manufacturing and product development. The dollar investment in this activity has always been higher than the industry investment into farm based research. The former Dairy Research Institute (DRI) which became Fonterra Research based in Palmerston North took the commodity milk and looked at ways to enhance its value. This was both a manufacturing/engineering approach which led to more efficient dairy factories, as well as investigating new products or product enhancements. Despite individual dairy companies being separate legal entities to the Dairy Board, and in competition with other dairy companies, the information derived from this whole of industry investment at DRI was made available to all the industry. Individual dairy companies decided if they would take this information up and use it.
Market research & development

Along with product R&D there has always been a high level of market development. This is essentially in-market research of customer needs and development of products or brands to meet those needs. Much of the time the product sold to the customer was the same commodity milk powder, butter, cheese as they could buy locally, however it was presented in a unique way that got the sale. Often the marketing focus was around the “clean green” New Zealand image.

There have been some product innovations based on market needs, such as the calcium fortified Anlene product which is milk powder with additional calcium added to it to assist in reducing the onset of osteoporosis. The marketing of colostrums – the milk from a newly calved cow high in antibodies is another modification of an existing product and process.

There are some collaborative marketing activities within the forest sector with the most notable the joint promotional activity in Shanghai.

Lobbying and Promotion

Due to the single seller status of the Dairy Board it was the obvious organisation to represent dairy farmers’ interests in aspects of regulation, trade issues and promotion. As a result of deregulation another grouping of farmer interests and companies has been established with Dairy InSight representing farmers’ interests and the Dairy Companies Association representing the companies.

The lobby activity is not only at the politician end but more importantly at a representation level with working groups of government officials.

The forest sector has a number of industry organisations representing the interests of members.

Opportunities for Wood Producers

By any way it is measured the dairy industry has been successful. Those benefits have flowed onto the owners of the industry – the dairy farmers. They have benefited by one single practice and that is to invest their money in activities which have had long term benefits for the whole industry. Some of that money has gone into R&D but there has been an across the board investment into many areas of benefit to the whole dairy industry. It’s been invested in on-farm production, market development and the maintenance of a good relationship with governments and regional authorities. But it has been the practice of investment into the future that as a cornerstone activity has set the industry up well.

There are many similarities between forestry and dairy.

- By a world standard both are small producers
- Both produce commodity products
- Both have to operate in a highly regulated New Zealand economy
- Both are affected by exchange rates

There are also differences, the major one being that the dairy sector is producing a food product and it is essentially being sold by one New Zealand owned company, Fonterra. However the same opportunities that have been beneficial to the dairy sector are available to forestry. By a collective approach to investing into the most beneficial aspects of the value chain the forest based industry can benefit. Identifying and exploiting small gains around the commodity product, like dairy has done with Anlene or colostrums, and using any natural advantage, perhaps New Zealand’s sustainable forest practice to market to a more discerning marketplace maybe beneficial.

For the forest and wood processing sector to be successful investment is required. The dairy sector invests at least $70M annually of its own money on the whole spectrum of R&D, industry promotion and government relationships. That is about 1.2% of the $5.9B value of the sector. The forestry and wood processing sector would struggle to invest 0.1% in similar activities. With revenues of $3.2B our sector needs to begin investing significantly more to gain the opportunities that have been achieved by dairying. Dairying has not got there by luck – they have got there by an ethos of investing in their future. The same opportunities are available to the New Zealand forestry sector – what is needed is the investment.

Peter Bodeker

Chief Executive
Wood Processors Association of New Zealand