

# ENHANCING SHAREHOLDER VALUE THROUGH LEADERSHIP ON NUTRIENT MANAGEMENT IN NEW ZEALAND

**Hilton Furness and J Richards**

*Seven Consulting Group, P O Box 147010, Ponsonby, Auckland 1144.*

*Email: [hilton@sevenconsultinggroup.co.nz](mailto:hilton@sevenconsultinggroup.co.nz);*

*Web: [www.sevenconsultinggroup.co.nz](http://www.sevenconsultinggroup.co.nz)*

## **Abstract**

Agricultural sectors are facing the challenge of increasing their output to meet food production and economic expectations while at the same time responding to increasing demands to deal with adverse impacts including those associated with nutrient use.

These types of challenges are not unique to nutrient use or agriculture and have been successfully addressed by other industries. This has involved a three phase process:

- Improving efficiency by focusing on cost and risk reduction. This is often in response to regulatory or public pressure. Action taken is usually internal to the company or sector. Essentially this involves doing the same things as usual but doing them better.
- Innovation and transformation. This involves a future focus and a change in thinking and the way things are done. Rather than reducing waste the focus is on a better process that doesn't produce waste or using waste as a raw material for new products.
- Collaborating to avoid fragmentation and confusion. This is particularly relevant to industries and sectors rather than individual companies.

These phases are discussed in relation to current nutrient management in New Zealand. Suggestions are made as to how they can be implemented in New Zealand, emphasising collaboration and leadership, in a way that enhances shareholder value while meeting regulatory and public expectations.

## **Introduction**

Agriculture is extremely important to the New Zealand economy. Production and processing by the primary sector accounts for 12.1% of GDP (SONZAF, 2010) and contributes over 50% of New Zealand's export earnings (N Z Economic and Financial Overview, 2010). The dairy sector is the largest contributor making up about 40% of gross agricultural production by value (SONZAF, 2010).

Fertiliser is a significant farm input and a major item of expenditure making up 14% of dairy and 12% of sheep and beef farm expenditure

([www.ravensdown.co.nz/About/Fertiliser+in+New+Zealand](http://www.ravensdown.co.nz/About/Fertiliser+in+New+Zealand)).

In the case of the dairy sector the annual spend on fertiliser is \$ 447 million (Schilling, C; Zuccollo, J and Nixon, C, 2010), which does not include fertiliser used to produce feed by other sectors e.g. arable.

O’Conner *et al* (1990) studied the long-term effects of withholding phosphate application on north island hill country – they reported:

*“A farmlet grazing trial began in 1983 to study the effects on production of reducing or withholding fertiliser over a 6 year period.....  
.....by years 2-3 onwards production declines of some 20%-30% were evident.”*

Statistics New Zealand (Statistics New Zealand, 2006) commenting on fertiliser use and the environment stated:

*“It is estimated that without the extra soil nutrients provided by fertiliser, New Zealand soils would only be able to support between 25% and 50% of the current number of animals grazed or crops grown.”*

Fertiliser expenditure has a disproportionate impact on farm profitability. Withholding fertiliser (12% - 14% of expenditure) results in a significant decrease in production (20% - 50%).

While the benefits of fertiliser are well documented so too is the evidence that nutrients applied as fertiliser can have adverse environmental impacts (Environment New Zealand, 2007) particularly on water quality.

The fertiliser industry thus has the challenge of supplying nutrients to maintain and in some cases increase agricultural production and meet demands to increase food production while at the same time reducing the adverse impacts of fertiliser production and use. The fertiliser industry is not unique in facing these apparently contradictory demands. Other industries have faced similar challenges which have been addressed through a process of reframing sustainability as a business opportunity, offering avenues for lowering cost and risk and growing revenues and market share through innovation. Companies capable of transforming current practice will characterise those creating sustainable value for shareholders.

### **What is sustainable shareholder value?**

Until recent times shareholder value has been based on a one dimensional economic model. In the agriculture sector this has in part been enabled because of a range of ‘free’ natural resources available to it including water, waste disposal to rivers, and other natural system resources collectively referred to as ecosystem services.

The exhaustion of these resources and the degradation of receiving environments are undermining the viability of the complex natural systems and the resource base on which agriculture and wider society depends. Under these circumstances shareholder value cannot be sustained.

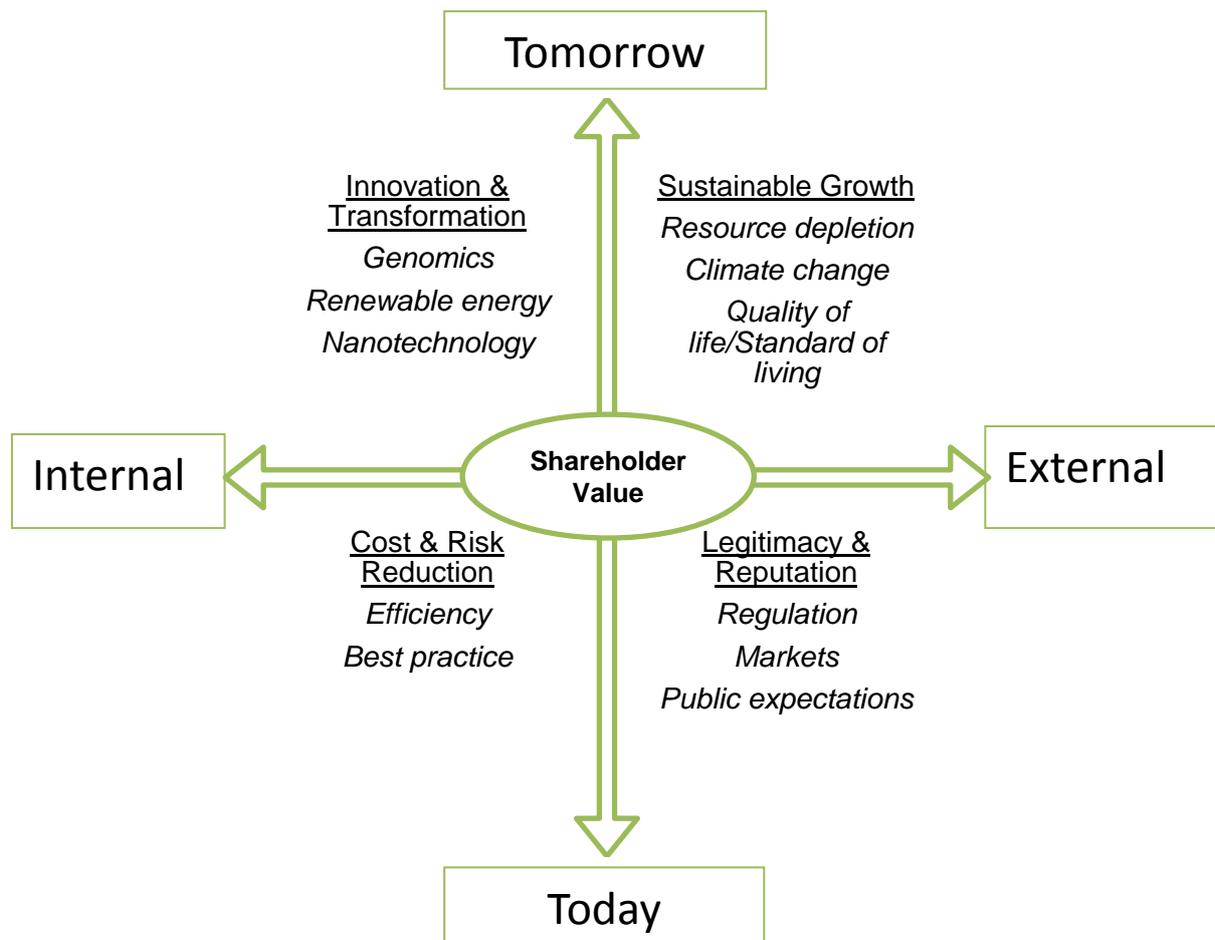
Just as unsustainable outcomes are the result of multidimensional practices, the achievement of sustainable outcomes will require a multidimensional response.

A sustainable enterprise, capable of delivering sustainable shareholder value, therefore, is one that simultaneously delivers economic, social and environmental benefits – the so-called triple bottom line.

## Creating Sustainable Shareholder Value

It has been argued that social responsibilities are not part of the role of corporate executives (Milton, 1970). Their job is to make as much money as possible, obviously within the bounds of the law, for the business owners and shareholders. Executive do not have the right to redirect funds to ‘social’ issues which could be likened to ‘taxation without representation’. This approach ignores some key issues, for example, the use of non-renewable resources. In this situation company executives focusing only on profit risk gradually eroding shareholder value. A more important aspect is that the business world is a very different place from what it was in the 1970’s. A key aspect of this is the emergence of non-government organisations (NGO’s) and their role in monitoring company behaviour and enforcing society values. A classic example of this is the impact that NGO’s and public pressure had on Nike to address labour and environmental practices (McDonald *et al*, 2002).

These and related developments have given rise to different views and roles of companies and their executives, which are embodied in the concept of creating sustainable value (Hart and Milstein, 2003). The concept involves managing the business for the present (short term) while simultaneously creating technology and markets for the future (long term). This moved away from the idea that sustainability was a one dimensional nuisance to one of a multidimensional challenge (Hart and Milstein, 2003). To advance this thinking Hart and Milstein (2003) developed a model for creating shareholder value (Figure 1).



**Figure 1** Elements of Shareholder Value (after Hart and Milstein, 2003)

The model consists of a horizontal line separating short term (below the line) from long term (above the line) requirements of the business. The vertical line separates internal (left of line) from external requirements (right of line).

The four quadrants formed by the vertical and horizontal lines contain the drivers for sustainable shareholder value. Shareholder value is achieved by performing well in all four quadrants simultaneously.

The bottom left quadrant addresses short term, internal issues such as reducing waste and improving efficiency. These activities will usually add value to shareholders and reduce regulatory risk. These activities may be initiated within an organisation, working with sectors in the lower right quartile or because of pressure exerted by them.

The lower right quadrant also focuses on short term activities but those that are external to a company or sector. This quadrant is represented by regulators, NGO's and the media. They may work proactively with stakeholders on issues in the first quadrant or bring pressure to bear so that stakeholders are forced to act.

The upper left quadrant focuses on issues that are long term and internal. Activities in this quadrant generate outcomes, products and markets for the future. The approach needs to be innovative and transformational.

The upper right quartile has a long term external focus. Companies need to offer new or enhanced services and products to customers or tap into new markets. It is through activities in this quadrant that future growth and shareholder value will be generated.

Good performance in all four quadrants simultaneously must be achieved to create sustainable shareholder value (Hart and Milstein, 2003).

### **Nutrient Management and Shareholder Value in New Zealand**

The nutrient management sector in New Zealand, essentially the fertiliser companies, have focused mainly on short term cost and risk reduction activities (Figure 2 lower left and right quadrants).

Cost and risk reduction activities include:

- Developing and implementing a Code of Practice for Nutrient Management.
- Developing nutrient management tools such as Overseer and the Econometric model.
- Developing and implementing training courses for advisory staff.
- Delivering nutrient budgets and nutrient management plans.
- Undertaking communications and information activities.
- Developing and implementing a tiered approach to cadmium management.

These activities can increase efficiency, reduce costs, meet regulatory requirements and address community expectations. The above activities were initiated both in response to achieving savings and to meet regulatory requirements but they are all short term, internal activities.

Long term issues, upper right and left quadrants have not been addressed. These long term issues include:

- Preventing cadmium accumulation in soils (e.g. removal of cadmium from phosphate fertilisers).
- Reducing the carbon foot print of fertiliser (production and on farm use).
- Addressing the non-renewable nature of phosphate fertiliser (recycling and alternative phosphate sources).
- Reducing nutrient losses to freshwater to levels that will meet community expectations (*ca.* 2 mg/l for nitrate and 0.1 mg/l for soluble phosphate).
- Increasing the efficiency of plant uptake (plant breeding and application technology)



**Figure 2** Nutrient Management and Shareholder Value in New Zealand

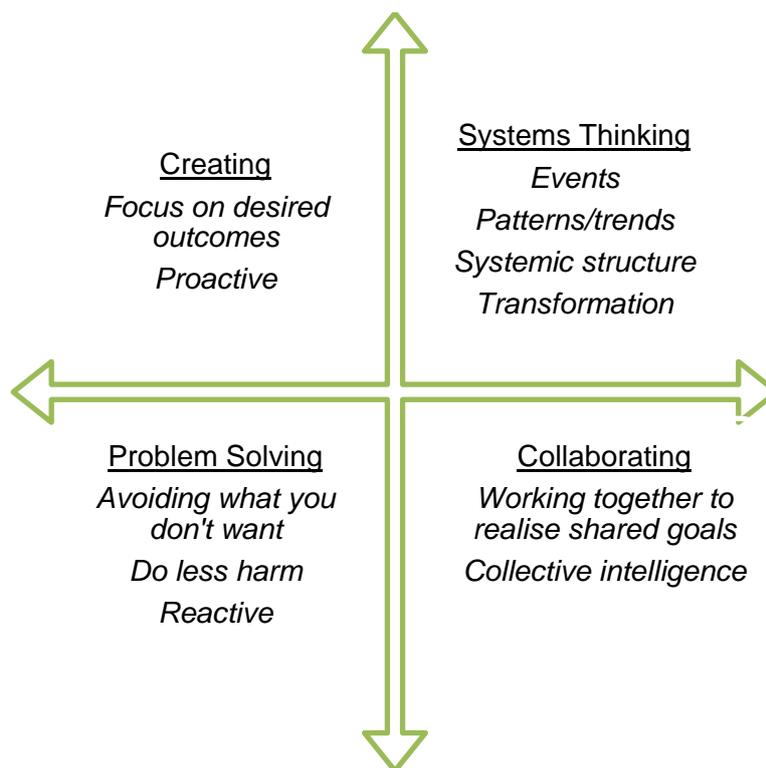
**What can be done?**

The challenges to deliver sustainable shareholder value facing the fertiliser sector in New Zealand are not unique. International companies have successfully addressed similar challenges (Senge *et al* 2008). Examples being companies like Xerox and DuPont. For these

companies the outcome was very different. Xerox continued to produce copiers but modified their product to increase recycling and eliminate waste. DuPont on the other hand has, in general terms, transformed itself from an explosives company, to a chemical company and is now embracing biotechnology. The process followed in the move towards creating sustainable shareholder value is summarised in Figure 3.

The bottom left hand quadrant depicts current activities. These are essentially problem solving and include increasing efficiency which reduces nutrient losses and mitigates adverse impacts particularly from nitrogen and phosphate and reducing cadmium loading rates. These activities do not solve problems merely lessen adverse impacts – a case of doing less harm. These activities, which tend to be short term, internally focused and solving a problem will not satisfy long term regulatory, community or market requirements.

Initial moves towards long-term, sustainable resolution needs to involve a collaborative approach i.e. working across sectors to realise shared goals and harness collective intelligence (Figure 3 bottom right quadrant). A collaborative initiative needs to be accompanied by a systems approach which involves recognising events, analysing patterns and trends and analysing the systems of which they are part. Systems thinking is not restricted to on farm systems but needs to include larger catchment systems and global systems which include issues such as resource depletion and climate change.



**Figure 3** What can be done?

This approach leads to a shared vision and helps to identify skills and competencies for the future which will deliver innovation and transformation through a multidimensional approach to sustainability.

## **Concluding Thoughts**

Sustainability has many different interpretations but is often perceived as addressing environmental concerns with few if any economic benefits.

Increasingly it is being understood that the creation of shareholder value can only be realised when sustainability is embraced in ways that deliver economic, environmental and social gains. Creating shareholder value requires a change in thinking and actions, away from essentially internally focused short term actions, to long term collaboration which encompasses system thinking that will generate innovation and transformation.

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