section two

Business as sustainability innovators

If the mission of business is to provide value to society, then the sustainability agenda addresses the manner in which that value is created. Businesses take interest in the sustainability agenda because their stakeholders (customers, staff, shareholders, suppliers, financiers, regulators, etc.) have an interest in the risks and opportunity that the agenda embodies.

Business interest in sustainability has taken many forms. Climate change has led to a focus on greenhouse gas emissions, carbon footprints and food miles. Businesses have looked for ways of measuring and reducing their impacts, especially on the environment, and for ways of certifying their performance. Life Cycle Management, which moves beyond an assessment tool to a product design and management tool, is gaining ground. Public disclosure of performance through sustainable development (or corporate social responsibility) reporting has become widespread with many large businesses using the Global Reporting Initiative or other formal guidelines.

Increasingly businesses are looking for innovative product, service and business models and the emerging Māori business model of New Zealand is becoming of interest to a global audience.

Foodmiles: fact or fiction?

How do New Zealand's exporters innovate for a world of sustainability conscious consumers?

Changing the game: organisations and sustainability

Why and how do organisations change to integrate a sustainability agenda?

Our journey from unsustainability: reporting about Landcare Research reports

Landcare Research's experiences at integrating and reporting on sustainability

Coming of Age: a global perspective on sustainability reporting

Allen White co-founded the Global Reporting Initiative. Here he gives us his perspective on where corporates are taking sustainability reporting

Sustainability and Māori business

Learning from the cultural practices and experience of tangata whenua

Life Cycle Management

Embracing the new design constraints and opportunities that arise in a supply-chain-conscious trading system

carboNZero

A global programme that helps businesses tackle their carbon footprints

Greening the Screen

The NZ Film Industry's world-leading industry environmental management programme

Landcare Research
Manaaki Whenua

Foodmiles: Fact or Fiction?

CHAPTER 6 : HATCHED

Sarah McClaren

Summary

The term 'food miles' describes the distance food travels from producer to consumer. The UK Government has explored the validity of using food miles as an indicator of sustainable development in the past, and food miles has gained currency in countries such as Canada because it provides a simple representation of environmental impacts within very complex globalised food systems.

The food miles concept poses a potential threat to the New Zealand economy because New Zealand is the most physically remote developed country in the world relative to major markets. Moreover, more than half of New Zealand's exports by financial value are agricultural products.

However, evidence suggests that food miles is not a robust indicator of the sustainability of food products because:

- From an environmental perspective, it is not possible to say that transportation is always – or is never – the most important life-cycle stage for all food products. Indeed, different life-cycle stages dominate for different food products due to the relative magnitude of environmental impacts at the agricultural and processing life-cycle stages compared with the transportation stage. For some food products, imported foodstuffs may be associated with lower greenhouse gas emissions than the same foodstuffs produced in the domestic marketplace.
- The mode of transport used is important as there are significant differences in environmental impacts per kilometre travelled between truck, train, ship and aeroplane. Transport by car between the retailer and home can easily dominate the life cycle of all food products.

Therefore the food miles concept can and should be challenged. In doing so, it is important to remember that three broad categories of motivation can be distinguished behind use of the food miles concept: protectionism (a desire to protect one's own economic activities over and above the economic activities of other countries or regions); a concern about climate change and other transport-related environmental issues; and support for local economies, communities and cultures. Responses to the food miles challenge should be framed with these motivations in mind. At the same time, it is critical that New Zealand exporters demonstrate the environmental and sustainability credentials of their products through life cycle studies.

To develop a better understanding of food miles from a New Zealand perspective, this chapter first explores what is meant by this concept (Meaning of 'food miles'), why it is used and by whom (Motivations for invoking food miles), the evidence for and against food miles (The evidence), and what this implies for our food exporters (Conclusion).

MEANING OF 'FOOD MILES'

The term 'food miles' was first used in a report by the SAFE Alliance in 1994.[1] Since that time, the term has been increasingly used in the UK. In 2005, the UK government's Department for the Environment, Food and Rural Affairs (Defra) published a report exploring the validity of using food miles as an indicator of sustainable development[2] and a variety of recent policy documents refer to food miles and/or local food.[3]

The same thinking has been popularised in Canada by the book *The 100-mile diet*,[4] which recounts the experiences of a couple living in Vancouver, British Columbia, who decided to spend one year buying and gathering their food within a 100-mile radius of their home.

In the original SAFE Alliance report[8] food miles were defined as the distance food travels from producer to consumer. However, the report Summary also states, 'But food miles isn't just about distances. This report explores some of the wider social and ecological implications of international food trade…' (p. i).[8] In other words, in its original use, food miles was an umbrella term to refer to a variety of issues related to the production and transportation of food within a wider sustainability context.

Food miles can be seen as an example of an environmental representation. The idea is that some phenomena are too difficult to understand and act on, and in these situations people develop representations so that they are empowered to articulate their own values, make links between apparently disparate issues comprising the phenomena, take part in political debate, and actively support knowledge production.

In the case of food miles, the complex networks of individuals, organisations, and policies that constitute today's (largely) globalised food systems are difficult for individuals to understand, and in particular to know how to influence from a sustainability perspective. Food miles provide one way of understanding and articulating what is going on and how to act in this situation. In the literature on food miles, they are invoked to represent one or more of the following issues:

- Climate change: use of fossil fuels for transportation produces carbon dioxide and other global-warming gases.
- Air quality: use of fossil fuels for transportation produces pollutants such as nitrogen oxides, particulate matter, sulphur dioxides, volatile organic compounds, and so on.
- Traffic congestion, noise, accidents and transport infrastructure: road vehicles contribute to a number of traffic-related problems.
- Organisation of food distribution systems: the move to use of regional distribution centres (RDCs) leads, in some cases, to apparent anomalies in logistics as foods are channelled through RDCs rather than directly from local producers to local retail outlets.
- Local economies, communities and cultures: it is argued that reducing distances between points of production and consumption leads to strengthening of local identities, building of social capital, and increased knowledge

WHY SHOULD NZ CARE?

From a New Zealand perspective, a focus on the distances travelled by foodstuffs from locations of production to export markets is of concern because New Zealand is the most physically remote developed country in the world relative to major markets.[5] For example, within a 3.5-hour flight: [6]

- Auckland has access to 1% of world GDP and 0.4% of world population
- Hong Kong has access to 32% of world GDP and 42% of world population
- Paris has access to 27% of world GDP and 15% of world population
- Chicago has access to 25% of world GDP and 7% of world population.

Moreover, more than half of New Zealand's exports by financial value are agricultural products, and it exports these products to countries all over the world (the top five being the US, Australia, Japan, the UK and China).[7]

Therefore concerns in export markets about food miles are particularly relevant for New Zealand food producers and exporters, and for the country as a whole.

and understanding of food, local food culture and distinctiveness.

- Fresh, tasty and safe food: some people associate transport and storage of food with negative impacts on its freshness, taste, safeness and nutritional quality.
- Disease and pest risks: as demonstrated by foot and mouth disease in the UK in 2001, long-distance transport of foods can increase the risk of spreading diseases and pests.
- Animal welfare: transport of live animals raises animal welfare issues.
- Food security: today's food systems are heavily reliant on fossil fuels for delivery to markets (as well as for agricultural production), and this makes these systems vulnerable to disruptions arising from conflicts in oil-producing regions, price rises, etc.

However, at the same time there is an ongoing debate about the appropriateness of food miles in representing the issues outlined above. Iles (2005)[9] comments, 'reducing food miles is assumed to be inherently sustainable and transformative.' However, does a reduction in food miles actually promote sustainability? Hinrichs (2003[10] and Winter (2003)[11] note that 'local' foods do not necessarily equate with higher quality and/or more sustainable foods and farming systems. Indeed, from an alternative perspective, it can be argued that increased food miles contribute to benefits such as increased consumer choice, more efficient and/or environmentally friendly production overseas, health benefits from imported fresh foods when they are out-of-season in the importing country, support for economies in developing countries, cultural links with other countries, and increased profitability of the food retailing sector.[12]

A farm shop in the UK has labelled its produce by distance travelled from point of production.

In fact, different stakeholders in society actually attach different meanings to food miles. Therefore when the term is invoked in any discussion it is important to understand the motivation underlying its use.

MOTIVATIONS FOR INVOKING FOOD MILES

In general, three broad categories of motivation can be distinguished for use of the food miles term: protectionism, a concern about climate change and other transport-related environmental issues, and support for local economies, communities and cultures.

Protectionism

In New Zealand, there is a general perception that the food miles concept is being used in the UK as a protectionist measure. For example, Wellington's newspaper *The Dominion Post* Editorial on Tuesday 15 May 2007 commented: '…there are groups in Europe with a vested interest in turning the erroneous food miles concept into an unofficial trade barrier.'

This perception is supported by reports such as the following from *The Dominion Post* on Friday 15 June 2007 titled 'Kiwi lamb snub angers farmers':

Waitrose said it would offer new-season Welsh and British lamb in all its branches from this month as long as it was available… Another chain, Marks & Spencer, last week told Irish farmers that it would have local spring lamb on sale in all of its stores later this week, five weeks earlier than 2006. The Irish Farmers Association had accused the retailer of damaging Irish lamb producers by stocking its shelves with New Zealand lamb when Irish-produced products were readily available at what it called a competitive price…British farmers have been protesting outside shops stocking

Kiwi lamb, saying they are being undercut by chilled lamb, which can be sold cheaper than their early-season spring lamb.

Environmental impacts: climate change, energy use, pollution issues

For many people, the debate around the validity of food miles concerns the possible trade-off in environmental impacts associated with transportation distances compared with agricultural production/processing in alternative countries. Essentially this is a question about whether agricultural comparative advantage is large enough to compensate for increased transportation distances to markets. The food miles report by the UK's Defra[13] is an example of a study undertaken largely from this perspective. For example, its Executive Summary proposes four indicators for food miles and comments, 'These indicators focus on the direct impacts of food transport, such as congestion, accidents and pollution. Wider economic and social issues such as local sourcing of food are not addressed directly by this indicator set' (p. vi).[13]

From this perspective, quantitative environmental Life Cycle Assessments (LCAs) provide an appropriate analytical tool for investigating such trade-offs. In an LCA, the environmental impacts of products or services are quantified along the life cycle from extraction of raw materials, through processing and manufacture, distribution, retailing, use and on to waste management. For example, Sim et al.[14] used LCA to compare apples, watercress and runner beans produced in different countries for final consumption in the UK; and Mila i Canals et al.[15] compared primary energy consumption along the life cycle of apples produced in different countries for final consumption in Europe.

There has been some media interest in this approach to analysis of the benefits versus disbenefits of invoking food miles, particularly from a carbon-footprinting perspective. For example, an article in the UK *Telegraph's* online site dated 3 June 200[16] discusses the trade-offs in some depth, commenting that:

Analysis of the industry reveals that for many foods, imported products are responsible for lower carbon dioxide emissions than the same foodstuffs produced in Britain. Even products shipped from the other side of the world emit fewer greenhouse gases than British equivalents. The reasons are manifold. Sometimes it is because they require less fertilizer; sometimes, as with greenhouse crops, less energy; sometimes, as with much African produce, the farmers use little mechanized equipment. The findings are surprising environmental campaigners, who have, until now, used the distance travelled by food as the measure of how polluting it is.

Support for local economies, communities and cultures

A number of surveys have investigated the perceptions of UK consumers about food miles and local food. Interestingly, they suggest that the primary motivations for consumers buying local food are to support local businesses and the local economy, and/or taste and freshness – not reduction of environmental impacts. For example, the UK's Food Standards Agency published an Omnibus Research Report in March 2007,[17] which found that, amongst consumers who said it was important to buy local food, the two top reasons concerned support for local businesses and supporting the local area and/or community (mentioned by 57% and 51% of consumers respectively). Environmental factors such as causing fewer air miles and less pollution were cited by just 12% and 9% of consumers respectively. Other relevant studies are discussed by Winter[18] and Weatherell et al.[19]

THE EVIDENCE

In reviewing the evidence to support the food miles concept, it is worth asking, first, whether food should be a focus of attention from the perspective of environmental impacts; and second, what is the evidence concerning possible trade-offs in environmental impacts associated with transportation distances compared with agricultural production/processing in alternative locations?

Should food be a focus of attention?

Perhaps the most comprehensive study of the environmental impacts of food products compared with other products in the economy is a European Science and Technology Observatory (ESTO) project on the 'Environmental Impact of Products' (EIPRO).[20] The final report for this project reviewed seven existing studies and presented the results of a separate environmental input-output study[21] for final household consumption in the EU25 countries.

The impacts studied in the project were abiotic depletion, global warming, photochemical oxidation, acidification, eutrophication, human toxicity potential, and ecotoxicity. The study found that 'food and beverage consumption' accounted for 22–34% of total life-cycle impacts in all environmental impact categories (apart from eutrophication where it accounted for 60% of this impact).[19] Focusing on global warming potential specifically, if restaurants were included then the food and beverage consumption category contributed 40% of the total global warming result for the EU25 countries.[19]

Focusing on global warming specifically, Garnett[22] calculated that the life cycle impacts of food consumption contribute 19% of the UK's total global warming potential.

The *Journal of Industrial Ecology* published a special issue on priorities for environmental product policy in 2006. In the Editorial, Tukker[23] points out that about a dozen of the 'most influential and important studies on priority setting for final consumption activities from the last five years' all come up with similar headline results. According to all these studies:

Mobility (automobile and air transport), food (meat and dairy, followed by other types of food), and energy use in and around the home (heating, cooling, and energy-using products) cause, on most environmental impact categories, together 70 to 80% of life-cycle environmental impacts in society. It has been shown many times before and is well known among specialists that these three consumption categories are the most important ones, more relevant than, for example, clothing, health care, education and communication. (p. 2)[22]

It is clear that food is quite rightly a focus of attention for those concerned about the environmental impacts of economic activity and consumption.

LIFE CYCLE ASSESSMENT (LCA)

Also known as 'cradle-to-grave analysis,' LCA is the assessment of a product or service's environmental impacts (e.g. global warming potential) at each stage in its life cycle, including resource extraction, production, use, and waste disposal.

Source: Life Cycle Association of New Zealand www.lcanz.org.nz

Is transportation important in the life cycle of food products?

A large number of environmental Life Cycle Assessment studies have analysed food products. In general they are not directly comparable as they often assume different system boundaries (e.g. one study on apples might include production of tractors and other farm machinery whereas another might exclude this aspect) and account for different types of environmental impacts. However, some general observations can be drawn from these studies.

First, it is not possible to say that transportation is always – or is never – the most important life-cycle stage for all food products. In fact, different life-cycle stages dominate for different food products (e.g.[24]). However, total food transport for consumption in countries such as the US and UK has significant environmental impacts. For example, food transport is equivalent to 3.4% of the UK's annual carbon dioxide emissions (including both imports and exports) and 3.6% of its final energy consumption.[25] In the US, transport of raw and processed food products (excluding transport abroad) contributes 1.4% of total energy consumption.[26]

Second, although there are always exceptions, in general transportation is more likely to be relatively important (compared with other life-cycle stages) for fresh fruit and vegetables. It is less likely to be relatively important for livestock-derived foods (meat and dairy products) from intensive farming systems, and other processed foods. The reasons are related to the relative magnitude of environmental impacts at the agricultural and processing life-cycle stages compared with the transportation stage.[27] An exception is fruit and vegetables cultivated in greenhouses when compared with outside cultivation in alternative countries. The environmental impacts associated with greenhouse cultivation may outweigh the impacts associated with transporting fruit and vegetables from countries where outdoor cultivation takes place. Some evidence for the existence of this trade-off is demonstrated by a study on tomatoes grown in Spain and the UK. [28]

Third, the mode of transport is important in determining whether transportation-related impacts are relatively important in the life cycle of foods. There are big differences in environmental impacts per kilometre travelled between truck, train, ship and aeroplane. For example, transport by air is more significant than the others listed from the perspective of climate change and total energy use.[29]

Last, transport by car between the retailer and home can easily dominate the life cycle of all food products. For example, McLaren (unpublished data) calculated that doubling the average distance travelled between the retailer and home in the UK, and changes in assumptions about the number of items purchased on a shopping trip, could add approaching 70% to the total-life-cycle global warming impact of milk powder produced in New Zealand and consumed in the UK. In another study, eight different scenarios for bread production in Germany were analysed using Life Cycle Assessment; it was shown that if the consumer travelled by car further than 1 km to buy bread, this life-cycle stage became more important than any differences between the eight scenarios in determining primary energy use for 1 kg of bread.[30] This is due to the relative energy intensity of car transport compared with other activities in the life cycle of bread.

CONCLUSION – WHAT THIS IMPLIES FOR NZ FOOD EXPORTERS

A review of the literature and media reports on food miles indicates that judging food miles as either fact OR fiction is too simplistic. As discussed previously (Meaning of 'food miles'), the concept of food miles means different things to different people. For some, a reduction in food miles represents a reduction in climate change and pollution impacts, for others it represents support for local communities and economies, and for others it signals fresher food. It is arguable, however, whether a reduction in food miles does actually deliver these end results. For example, Hinrichs[31] makes the point that 'local' speciality foods may not have a large enough market locally to support companies producing such foods; the economic survival of these companies is dependent upon national and international distribution.

Transport by car between the retailer and home can easily dominate the life cycle of food products.

However, the fact that the existence and popularisation of food miles as a concept led to commissioning of the UK Defra report, and that it is considered a legitimate topic for discussion, arguably indicates that this concept has succeeded in achieving its purpose. To requote Iles,[32] food miles has succeeded in converting 'complex environmental and social phenomena into forms that people can access and use'. The danger is, of course, that it leads to simplistic interpretation of what can be considered as a sustainable food system. The UK Defra report concluded that 'a single indicator based on total food miles is not appropriate'.[33] They proposed that a suite of four transport indicators should be used instead:

- Urban food kilometres: representing most of the accident and congestion costs (plus impact of air pollution in urban areas)
- Heavy goods vehicle kilometres: representing the majority of infrastructure, noise and air pollution costs of food transport
- Air food kilometres: air freight has a higher environmental impact than any other transport mode
- Total carbon dioxide emissions from food transport: representing the climate change impacts of food transport

Use of a suite of more focused indicators effectively begins to inject greater transparency into the food miles debate by more accurately representing the issue that is considered important – i.e. the environmental impacts of transportation. However, as previously discussed, studies provide evidence that transport impacts are an inadequate proxy measure for evaluating the environmental impacts of food, and a broader interpretation of sustainable food is required that encompasses the fuller life-cycle environmental impacts of a product. When this is articulated, products exported from distant countries may be found to have lower environmental impacts than those produced more locally.

For New Zealand exporters, it is critically important to engage in the food miles debate and demonstrate the environmental and sustainability credentials of their products. New Zealand has highly productive agricultural systems and the vast majority of its food products are shipped overseas rather than airfreighted. Several studies have indicated that New Zealand food products compare favourably with local production in export markets from a life-cycle perspective (e.g. [34]). Now is the time to convey these messages to export markets, and engage in constructive debate around conceptualisation of sustainable food systems.

WANT TO FIND OUT MORE?

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For the Author's contact details see page ii

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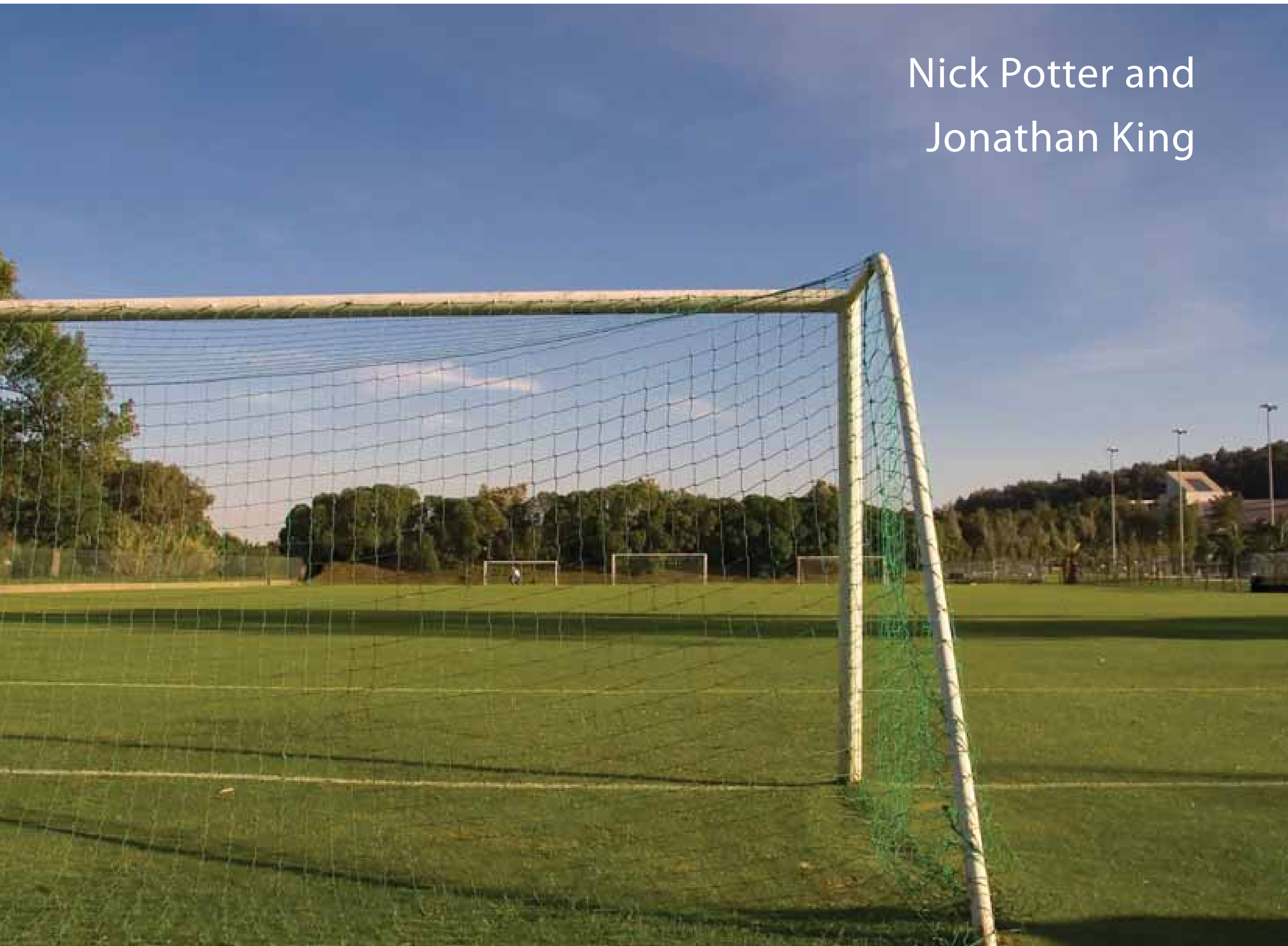
Changing the game

Organisations and Sustainability

CHAPTER 7 : HATCHED

Nick Potter and
Jonathan King



Summary

All organisations have the potential to be change-makers. Organisations with a pro-sustainability culture, coupled with effective learning capabilities, can be leaders. Most of the time though, oganisations do not actually create change. They respond and adapt to changes that have emerged elsewhere in society. For example, social movements often arise in reaction to environmental damage and/or social injustice. When these movements generate institutional changes, they create new 'rules of the game' that organisations need to meet to maintain their legitimacy. Organisations do have a choice, though, in how they respond to pressures for change.

Organisations will face growing pressure to make pro-sustainability changes in years ahead. For example, international and domestic action on climate change will necessitate major institutional changes. Proactive organisations can anticipate the direction of these changes now, and position themselves to benefit from the shifts that are underway.

There are many actions that organisations can take to cultivate sustainability. These include internal actions (e.g. energy and waste management within their operations) and external actions (e.g. supply-chain management) that influence others. Actions of both types are connected.

Organisations can build their capacity as sustainability change-makers. This involves developing a strong intent to become sustainable, being highly adaptive and innovative, and demonstrating accountability. Organisations with well-developed networks can also spread changes through their field.

Organisations have various reasons for making pro-sustainability changes. Most organisations are also motivated by the financial benefits of actions that improve their efficiency or lead to new business opportunities. In many cases they are seeking to ensure their license to operate by meeting social expectations (e.g. of customers and local communities). Some organisations are more strongly driven by their own sense of social and environmental responsibility.

This chapter looks at what organisations can do to cultivate sustainability, why they make changes, and how they can become leaders. It gives examples related to business action on climate change, including case studies of New Zealand winemakers and taxi companies becoming carbon neutral.

PURPOSE AND STRUCTURE

This chapter looks at organisations and sustainability and is mostly aimed at businesses, but insights will also be relevant to government agencies and community organisations.

The chapter is organised into five sections:

- Thinking about organisations and sustainability
- Why organisations make pro-sustainability changes
- What organisations can do to cultivate sustainability
- How organisations can become sustainability leaders
- Concluding comments on changing the game.

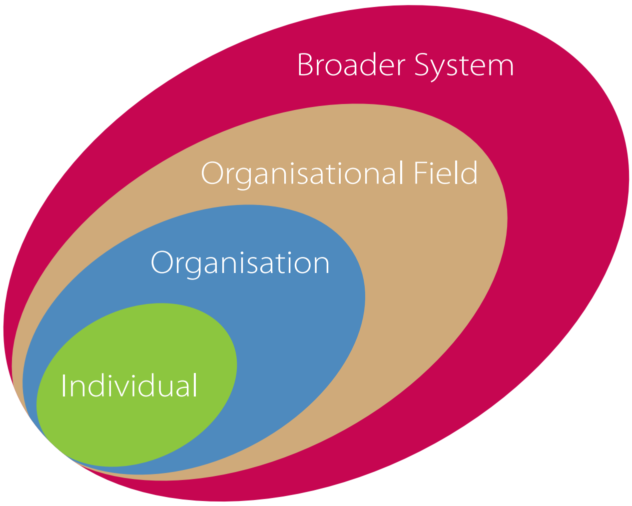


Figure 1 Organisations and systems

THINKING ABOUT ORGANISATIONS AND SUSTAINABILITY

When looking at organisations and sustainability, it is important to keep in mind that organisations are not isolated entities. They are part of systems (i.e. sets of interconnected parts). As Figure 1 highlights, there are four layers to consider when looking at why organisations change, and how they can cultivate sustainability:

1. *Broader systems* - including environmental aspects (e.g. ecological cycles that sustain life), social aspects (e.g. accepted norms and values) and economic aspects (e.g. rules for generating, exchanging and accumulating wealth).
2. *An organisation's field* - the community that an organisation most frequently interacts with (explained in detail in the next section).
3. *An organisation* - a network of people working together to achieve a purpose.
4. *Individuals* - the people who form part of organisations.

Changes at an organisational level can come from both directions in this diagram. That is, organisations change through the individuals who constitute them, and organisations face pressures to change from others in their field and the broader system. The next section explores this in detail.

What is meant by sustainability?

'Sustainability' in this document refers to how organisations can be sustained through sustaining people and the living systems of which people are a part.

At a societal level, actions are pro-sustainability if they:

- regenerate ecological systems, or at least do not cause long-term damage
- improve the quality of people's lives and surroundings, particularly the lives of the world's poorest people
- do not compromise the livelihoods of future generations
- let people participate in important decisions that affect them.[1]

Organisations can explore how they contribute to these elements. An action may be considered 'pro-sustainability' if it meets some, but not necessary all, of these elements. However, actions that meet one or more of these elements while causing harm elsewhere cannot be regarded as sustainable.

WHY ORGANISATIONS MAKE PRO-SUSTAINABILITY CHANGES

To understand organizational change, it is useful to explore what drives change.This section highlights why it is important to consider the four levels highlighted in Figure 1 by giving examples of action on climate change.

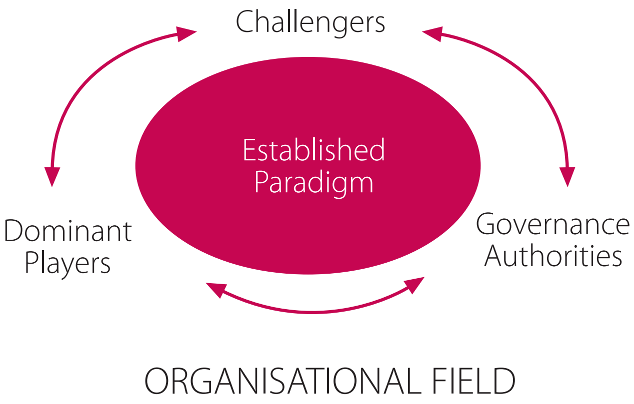


Figure 2 Players interacting in an organisational field

The broad systems level

Most of the time organisations do not actually create change. They respond and adapt to changes that have emerged elsewhere in society.[2] For example, social movements often arise in reaction to environmental damage and/or social injustice. When these movements generate institutional changes, they create new 'rules of the game' that organisations need to follow to maintain their legitimacy. Major events such as economic collapse or ecological disaster can also disrupt established patterns and trigger an opportunity for innovation to occur.[3]

As box 1 highlights, New Zealand businesses will face growing pressures and/or greater incentives to make changes due to climate change in years ahead. These pressures may emerge through a combination of factors such as increased scientific evidence of human harm and damage, growing social movements, international agreements, changes in regulations in export markets, and new technologies. Changes anywhere in the global system may influence New Zealand businesses, in particular changes that emerge in valuable export markets.

The Organisational field level

Organisations, and the individuals who constitute them, are always interacting with those around them. They tend to interact with some 'players' more frequently than others. These players form their 'organizational field'. For example, businesses in the same industry tend to share many of the same contacts and they act on information from many of the same sources.

box 1: CHANGES ARE COMING, READY OR NOT

Global and domestic action on climate change, which is connected with all other sustainability issues, will force many organisations to adapt in the future unless they initiate their own changes now. As recent comments emphasise:

The best question for the business community is whether we can be certain that climate change presents a substantial risk; a risk that will have a profound impact on society and the economy? To this the answer is clearly 'yes'… The issue at hand is serious and requires an immediate response. Action taken sooner is both better and cheaper – *CBI: the United Kingdom's leading business lobby group*[4]

"I couldn't care less if somebody thinks that the science of climate change is unproven… What I do care about though is that our customers are increasingly concerned about those issues… whatever your private view on climate change science might be, the marketplace is making a judgment about that… and we need to be responding to that judgment." – *CEO of a major NZ business* [5]

If no new policy actions are taken, within the next few decades we risk irreversibly altering the environmental basis for sustained economic prosperity. To avoid that, urgent actions are needed to address in particular the "red light" issues of climate change, biodiversity loss, water scarcity and health impacts of pollution and hazardous chemicals. – *OECD*[6]

The initial financial shocks that hit Australia in the 1890s, central Europe and the industrial world in the 1930s, or Indonesia in the 1990s… changed political institutions fundamentally and as permanently as human institutions can be changed. They shifted the whole trajectory of economic growth. Unmitigated climate change, or mitigation too weak to avoid dangerous climate change, could give human society such a shock. – *The Garnaut Climate Change Review (Australia)*[7]

A field may include businesses, citizens, consumers, regulatory agencies and community organisations. These players may perform one or more of these roles:

- *Dominant players* – established individuals, groups and organisations that a field tends to revolve around.
- *Challengers* – those seeking to challenge the position of dominant players, or to achieve major changes in a field.
- *Governance authorities* – those that exercise authority.[8]

As organisations in a field interact, they learn from and influence one another. Through this process they tend to develop similar patterns in how they think and act. That is, they develop a shared paradigm (see Figure 2).

An example of an established paradigm is a shared view on climate change. Many people in an industry may develop the view that climate change is not a relevant business issue, or that action on climate change is only a cost to their business. Some people may challenge this view, perhaps because they see the opportunities for making positive changes.

Research into the 'greening' of organisations shows that established paradigms are highly resistant to change.[9] One reason for this is that a shared paradigm provides people in a field with a sense of stability. When stability turns into rigidity, people become insulated from ideas in other fields or sectors of society and new learning becomes limited. This point is returned to in the section "How organisations become leaders in sustainabilty", futher on.

Research also suggests that major organisational changes, at least in established fields, tend to be driven by challengers on the fringes of organisational fields.[10] Changes seldom come from dominant players that are satisfied with the status quo (see boxes 2 and 4 for examples).

The Organisational level

Organisations themselves have many reasons for making pro-sustainability changes. Research shows that businesses, in particular, tend to have three major motivations:

box 2: HYBRID ELECTRIC TAXIS IN NZ - CHANGES FROM THE FRINGES

The introduction of hybrid electric vehicles in New Zealand's taxi fleets provides a good example of a change that emerged on the fringes of an established field. The first company to develop a fleet of hybrid electric taxis in New Zealand was a new entrant to the taxi industry. 'Green Cabs' marketed themselves as an "environmentally friendly" alternative with lower fares than existing players. Their rapid growth demonstrated the benefits of using hybrid electric vehicles and challenged the competitiveness of other industry players. Shortly after Green Cabs entered the market, the dominant taxi operator in Wellington 'Wellington Combined Taxis', created a new policy that no new petrol-only vehicles would be introduced into their fleet. A year later they achieved carboNZero[Cert TM] certification for their organisation and service.[11] Hybrid electric vehicles are now likely to make up a growing share of New Zealand's taxi fleet in years ahead.

- *competitiveness* – improving efficiency and adding value
- *legitimacy* – meeting society's expectations, including social regulations, norms, values and beliefs (i.e. 'being seen to do good')
- *responsibility* – being driven by internalised social/ environmental values (i.e. 'doing the right thing').[12]

Research shows that legitimacy, meeting society's expectations, is usually the strongest motivator for businesses.[13] All organisations are concerned about their image and reputation, and they are under constant pressure from others in their field to demonstrate their legitimacy. They need to maintain a 'licence to operate' in society to ensure their ongoing viability. An implication of this is that organisations are likely to demonstrate more action on climate change if there are growing social expectations for organisations to play a constructive role in this area.

A concern for demonstrating legitimacy also helps to explain why many large organisations report on their social and

box 3: WHY NZ WINEMAKERS ARE BECOMING CARBON NEUTRAL

Our research has explored why a growing group of NZ winemakers has chosen to undergo carbon neutral certification through the carboNZero programme. It could be argued that these winemakers are simply responding to pressures for change. Over 65 percent of NZ wine is exported, and there has been growing concern in international markets about the issue of 'food miles' (i.e. the distance food travels from producer to consumer, and the associated greenhouse gas emissions). One of the perceived benefits of becoming carbon neutral is that it can reduce the risk of trade restrictions. Yet these winemakers are not currently facing significant pressures directly.

For most of these winemakers, the decision to achieve carbon neutrality for their wineries and wine products was driven by individuals within the companies who had a strong sense of environmental and social responsibility. This was mixed with a desire to maintain and improve their organisation's long-term competitiveness. These individuals played a crucial role in encouraging change (see Box 4 for an example).

Responsibility was not the strongest motivating force for all organisations. In the case of the NZ Wine Company (NZWC), responsibility was initially driven from two individuals within the company but it was necessary to develop the commercial arguments to convince company directors that becoming carbon neutral was the right thing to do for their business. NZWC received major media exposure and high-profile attention after it became carbon neutral. It also benefited financially, with a major increase in demand for its products, especially from UK supermarket chains. This in turn helped to legitimize the practice of becoming carbon neutral in the wine sector and influenced another winemaker to undergo certification aiming to repeat NZWC's commercial success. Some winemakers commented that NZWC made it easier for them to become certified, because NZWC is seen as a credible organisation and becoming carbon neutral therefore looked credible too.

For many of these winemakers, the decision to become carbon neutral may have also appealed because it strengthened each organisation's identity as environmentally progressive and/or caring family-owned businesses

environmental performance, and not just their financial performance. Reporting is a technique that can improve accountability through communication with stakeholders.

2.4 The Individual level

It is also important to recognise the essential role that individuals play in generating change within organisations. Every individual has the potential to create and encourage change, although some individuals are more effective at this than others. This often relates to their formal role. For example, senior managers have more ability to influence decisions than entry-level staff. A person's ability to influence change is shaped by their personal attributes, such as self-awareness, and skills such as communicating effectively and being good at building relationships.[14]

3. WHAT ORGANISATIONS CAN DO TO CULTIVATE SUSTAINABILITY

Organisations can take many actions to cultivate sustainability. The term 'cultivate' is used here because the impacts of actions can grow and develop over time. These actions can be directed:

- internally – within an organisation, and/or
- externally – to influence an organisation's field.

Examples of internal actions include:

- using resources such as energy, water and raw materials efficiently and reducing, reusing and recycling waste
- switching to renewable forms of energy
- developing innovative products, services and technologies that are harmless or good for people and the environment.

Examples of external actions include:

- directly influencing other organisations in a field (e.g. requiring suppliers to meet social and environmental criteria)
- collaborating to change the 'rules of the game' (e.g. creating voluntary industry agreements, or seeking changes in government regulations).

Figure 3: Areas where organisations can promote sustainability

As Figure 3 above highlights, internal and external actions are connected. For example, organisations influence their field and the natural environment when they use resources more efficiently, because they require relatively fewer resources. From the opposite angle, organizations can remove obstacles to being more sustainable when they develop changes in their field. For example, businesses in some countries have closely collaborated for action on climate change.[15] They have exerted major pressure on government to make legislative changes that would encourage many businesses to reduce their greenhouse gas emissions. By creating rules that all industry players need to meet, they are seeking to create a 'level playing field' that rewards good behaviour and does not penalise firms (relative to their competitors) for investing in new technologies that may create higher costs. Voluntary industry agreements are another example of organisations seeking to shift the 'rules of the game'.[16]

What organizations need to be able to act

It is easy to focus on what actions organisations can take to promote sustainability, but organisations equally need to have the capacity and capability to implement those actions effectively. That is, they need sufficient motivation to commit to an action and the appropriate skills, capabilities and resources to achieve it. By developing their networks, organisations can also become more active in their field and potentially collaborate on changes with others. Figure 3 highlights these two layers (i.e. taking action and building capacity). Both levels are connected. The following section looks at what organisations can do to build their capacity as sustainability leaders.

4. HOW ORGANISATIONS BECOME LEADERS IN SUSTAINABILITY

Organisations that wish to lead changes, rather than just respond to pressures as they emerge, need to consider three key areas: their motivations, identity and adaptability.[17]

Motivations

Organisations that are aiming only to maintain their legitimacy are unlikely to be leaders in sustainability. This is because they usually only adapt when they face sufficient pressure from stakeholders in their field. In contrast, organisations that can see a clear competitive advantage in changing, or are driven by a strong sense of responsibility, can be a major force for change.[18]

Identity

It is also important to consider each organisation's identity, as the unique purpose and intent of each organisation strongly influences their activities. An organisation's identity is related to questions of what an organisation 'is', 'stands for' or 'wants to be' in its relationship to the environment, stakeholders and society at large. It provides an important reference point around which to organise. People may find it difficult to let go

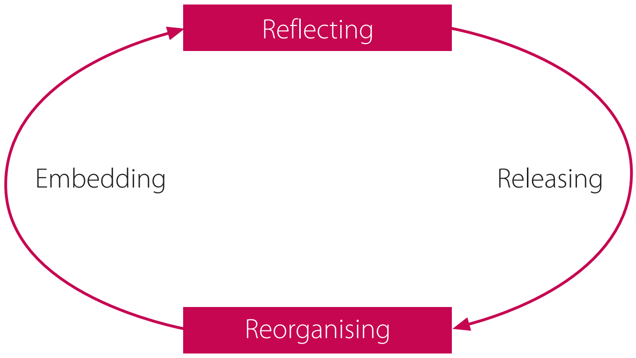


Figure 4: Active learning and adaptation

of existing practices if they do not have a clear sense of what their organisation stands for and what it is seeking to be.[19] In contrast Wheatley (2006) comments:

When an organization knows who it is, what its strengths are, and what it is trying to accomplish, it can respond intelligently to changes from its environment. Whatever it decides to do is determined by this clear sense of self… The presence of a clear identity makes the organisation less vulnerable to its environment; it develops greater freedom to decide how it will respond. [20]

It is also important to consider whether values associated with sustainability are aligned with an organisation's identity and core purpose. Where there is a large mismatch between an organisation's raison d'être and their espoused social and environmental practices, deep changes may be needed to transform organisational practices.[21] This can be very challenging, because organisations also have powerful inclinations not to change when that change threatens their sense of security or identity.

Organisations can therefore develop their capabilities as sustainability leaders by clarifying what their organisation stands for (i.e. their identity), what it is seeking to achieve (i.e. their purpose and long-term strategy) and how these relate to sustainability.

Adaptability

Adaptability is also important. Being a highly adaptive business means recognizing new risks or opportunities earlier than competitors. Most importantly being adaptive involves continuous learning. As depicted in an earlier section (Why organisations make pro-sustainability changes), different organisations in a field tend to develop similar patterns of thought and behaviour as they interact. This can limit new learning if organisations become isolated from, and unresponsive to, broader influences in society.

Established patterns in thinking and practice can be intentionally changed through active learning. This involves being conscious of what and how people are learning. It can be encouraged through reflection (e.g. closely observing practices and asking questions about their effectiveness)[22] , imagining (e.g. envisioning alternatives) and/or 'sensing' (e.g. investigating intuitions).[23]

As people become more aware of established patterns, they can create new ones. For this to occur, changes need to be embedded. It is also beneficial to observe the impacts of these changes on the organization so that new learning can result. This suggests that an ongoing process of active learning and adapting is needed (see Figure 4).

Various authors have represented a similar cycle in which organisations can initiate change through 'stepping back' (reflecting and releasing any resistance to change) and 'stepping in' (reorganising and embedding).[24] It is also important to consider how people are involved in decision-making processes. This is because "people don't resist change. They resist being changed."[25] Literature on organisational change consistently emphasises the importance of meaningfully involving organisational members in decision-making processes to enable change.

Influencing a field

For organisations to be leaders in sustainability, a further important factor is their ability to influence their field (e.g. peers, stakeholders, or value chain). Large organisations often exert considerable influence in a field as dominant players. Small organisations have less resources, but they can also influence their field through inspiring others or developing innovative services or technologies. As noted above, players on the fringes of organisational fields actually tend to be sources of change more often than dominant players. Box 4 provides an example of small winemakers influencing their field.

box 4: WINEMAKERS INFLUENCING THEIR FIELD

carboNZero certified wineries and wine products are part of a field that includes other winemakers, governance authorities, suppliers, distributors, consumers, and the local communities in which they are based. Winemakers that have been certified so far are not dominant in their industry. To some extent, they adopted a new practice and they are encouraging other winemakers to do the same. Staff of the NZ Wine Company, in particular, have been very active in building networks and attempting to influence other winemakers. Smaller winemakers, however, expressed some frustration about their inability to influence larger players due to their size.

All these winemakers met considerable scepticism when they became carbon neutral. This was based on doubts about the environmental and/or business benefits of becoming certified. Yet the success of these businesses, coupled with praise from New Zealand leaders and significant media attention, has helped to legitimise their decision to become carbon neutral. There is a sense among these winemakers that more people within their field are beginning to understand and accept the practice of becoming carbon neutral.

It is too early to tell how widespread this practice could become. If other winemakers try to mimic the successes of these early leaders, or if NZ winemakers face stronger pressures to take action on climate change, this practice could become an accepted part of normal business. It could also spread more quickly if a dominant industry player were to become certified.

There may be limits to how much impact the wine industry can have without changes in the wider system. The certified winemakers suggest that substantial reductions are largely outside of their control, as they rely on changes throughout society. Carbon neutral certification can play a useful role in promoting sustainability, but it needs to be complemented by other factors (e.g. shifts in consumer purchasing choices; legislative changes) to achieve major changes. Such changes are being seen for example in the UK with major retailers (e.g. Tesco, Marks & Spencer) taking leading positions on the need to calculate greenhouse gas emissions embedded in products.

Organisations can also increase their influence by developing networks and collaborating with others. Examples of this include the Sustainable Business Network and the New Zealand Business Council for Sustainable Development.

5. CONCLUDING COMMENTS ON CHANGING THE GAME

This chapter concludes with some key points to keep in mind when exploring ways to develop pro-sustainability changes among organisations:

- Organisations can take specific actions to promote sustainability, but they also need to develop their capacity to implement actions effectively. It is important to look at each organisation's intent, adaptability, accountability and networks as these contribute to the capacity to change.
- Learning is particularly important to encourage adaptability and challenge established paradigms.
- Although organisations are often motivated by the financial benefits of making changes (e.g. cost savings from efficiency), many organisations are more strongly motivated by the desire to 'be seen to be doing the right thing'
- Social movements and governance authorities often play a major role in changing the 'rules of the game' that organisations must meet to achieve success. Organisations can benefit when they anticipate changes and respond quickly.
- Organisations can also collaborate with other players in their field to develop rules that reward pro-sustainability behaviours.
- There are many points of intervention for achieving change within an industry or sector. Organisations on the fringe of a field are often more innovative and responsive to change than dominant players. However dominant players can play an important role in legitimising changes because of their established credibility.
- Individuals also play a crucial role as change-makers in organisations. Although this aspect was not explored in-depth in this paper, it is also important to develop the capacities of individuals to create and lead change.

WANT TO FIND OUT MORE?

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ACKNOWLEDGEMENTS

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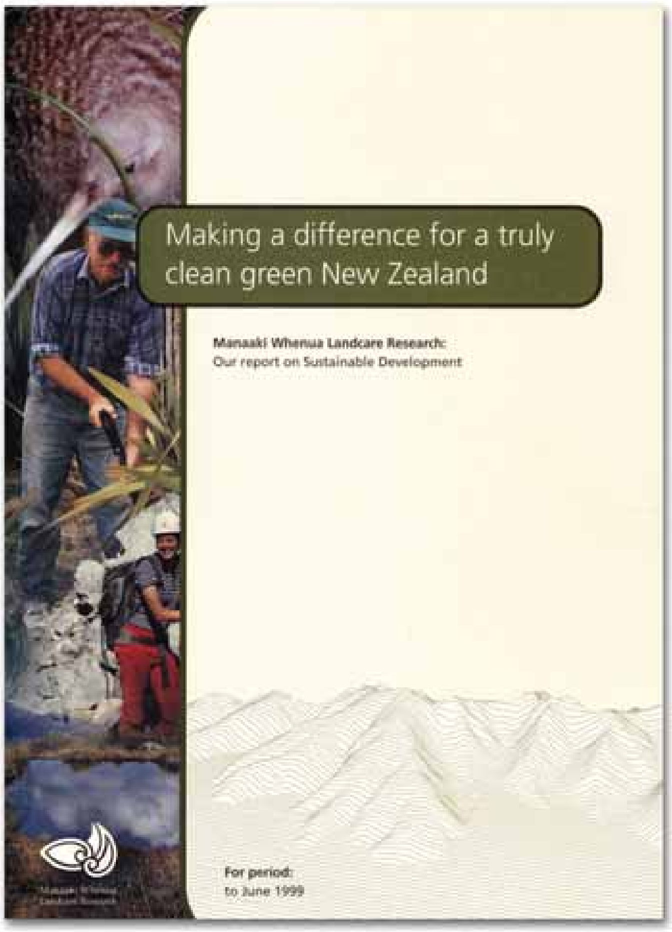
Landcare Research
Manaaki Whenua

Our journey from unsustainability

Landcare Research corporate reporting

CHAPTER 8 : HATCHED

Judy Grindell and
Richard Gordon



Summary

'Sustainable development is not an option; it is an imperative. It is not a destination, but a direction.'

With those words, Landcare Research began corporate sustainability reporting 10 years ago. In the beginning, few people understood what we were talking about. People were quite frankly puzzled as to why we were reporting all that extra detail when we didn't have to. Ten years on is a good time to reflect on why we started the journey and what we've learnt along the way.

WHAT WE STAND FOR

Landcare Research is focused entirely on sustainability – 'science for sustainability'; this in itself puts us in a very different position to many other reporters. Our business model is research, science and technology addressing three linked outcomes of national and global importance: sustaining and restoring biodiversity, sustaining land environments, and sustainable business and living. In each outcome area we generate new knowledge to understand the pressures that society puts on its biophysical environment, the state of the environment, and the ways in which economy, society and environment interact. We provide tools that help organisations to understand their role in that triangle of economy, society and environment; what are the material issues, what are their impacts, their options, and the ways of achieving change within their organisations.

BEGINNINGS OF OUR JOURNEY

Our corporate sustainability reporting started internally in the mid- to late 1990s, when John Tan (Chief Financial Officer) and Richard Gordon (Science Manager) were working on environmental accounting with an expatriate New Zealander in the UK (Jan Bebbington – now Professor of Accounting and Sustainable Development, St Andrews University, UK, and Vice-Chair (Scotland) of the Sustainable Development Commission). Together they developed and promoted a corporate strategy to move into the field of business and the environment, which was launched through publication in 1999 of a report on the environmental impacts of our activities — that is, to start applying these environmental accounting protocols to ourselves as an environmental research organisation. These 'green accounts' included an assessment of our wastes and emissions from energy and travel, and the costs of offsetting through vegetation – an eco-balance project that was the forerunner of the carboNZero programme.

We had almost completed this report when our then Chief Executive (Andy Pearce) took the bold step of deciding that we should be publicly transparent in reporting our social impacts as well. For those of us producing the report, this decision was a bit scary as the social aspects were uncharted lands for us. But, recognising that this was the proper challenge, we went

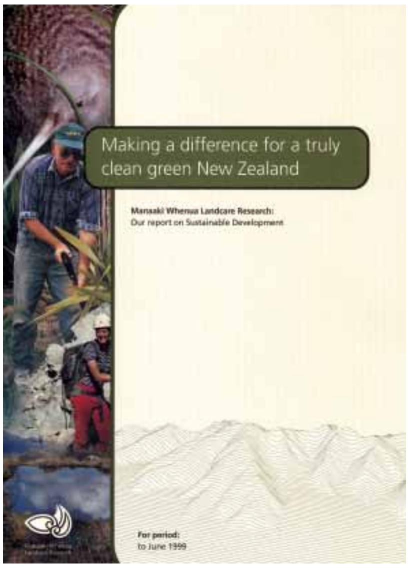


Figure 1 Cover of Landcare Research's Annual Report 1999

back to the drawing board and produced a new report for 1999, published in early 2000. We called it 'Making a difference for a truly clean, green New Zealand – our report on Sustainable Development'. We learnt an awful lot with this first report, simple as it was.

Initially the triple bottom line (TBL) concept itself was challenging to put into practice. While we understood that it encompassed our environmental, social and economic performance, we struggled with how to parcel up our reporting into those 'silos'. Every which way we tried it, there seemed to be too many links and interrelationships to make clear-cut delineations as to how we reported performance in these areas. I guess that was the first fundamental lesson in why we were embarking on the TBL journey: it is indeed difficult to separate economic activity from environmental and social impacts, and reporting financial performance in isolation, as per conventional annual reports, told us relatively little about our organisation. The nature of our business (environmental science) further compounded difficulties with the silo approach to reporting. In the end, we found the easiest way to tackle our reporting was to cut the TBL cake a different way altogether: the more pragmatic 'what we did with others' and 'what we did ourselves'. This distinction reflected our thinking that although we had direct impacts as an organisation (e.g. waste, energy use, greenhouse gas emissions) (see Box 1, overleaf), our bigger impact was in the influence that we had through the users of our science (e.g. government policy for the environment, business actions to reduce their footprint). We included a verification report from external auditors.

box 1: WHAT DO RESEARCHERS CONSUME?

Fortunately, the amount of paper we recycle has continued to increase steadily, and since 2001 we have consistently recycled more paper than we purchased. In 2004, there was a significant spike in paper sent to recycling…almost entirely due to office cleanouts in Auckland in preparation for a major relocation to new purpose-built facilities across town! We believe the smaller spike in recycling in 2009 is due to further office cleanouts as some staff moved to refurbished open-plan offices. Obviously science staff hoard paper as well as use lots of it!

In our 2004 report, we converted some of the company performance data to individual consumption, just to make some data more meaningful. Our recording systems were such that we could calculate that an individual scientist used 5700 sheets of paper in a year (30 kg), 150 envelopes, 6 pens, 8 pencils, 50 paperclips and drank their way through 2 kg of coffee beans.

Another lesson from this first report was to not make assumptions, such as how good our environmental performance would be. For example, research organisations, where all staff have PCs and access to printers and photocopiers, use an astonishing amount of paper. Of course we had paper recycling bins around the offices, but when we actually measured how little paper we recycled and how much went to landfill, we were honestly shocked and embarrassed. So the second fundamental lesson from that first report was the truism of 'measure to manage' – everything that is material to your business and your stakeholders. It can be an unpleasant wake-up call initially but this is all the more incentive to improve. It's an attitude translated into operational management, accountability and transparency.

This can take courage. Right from the outset, we decided we would report on our use of animals in our research on protecting biodiversity and managing pests (see Box 2). This was and still is a highly sensitive issue for many people. The reason for including it in our reporting was two-fold. One, we were willing to stand by our research with its Animal Ethics Committee oversight, duty of care to all animals, good field practices and benefits for New Zealand. Two, we hoped that open reporting would engender a level of trust and help diffuse some of the emotive tensions around animals used in research. Similarly, we have consistently reported our use of genetically modified organisms and new organisms such as the importation of new insects for the biological control of weeds.

Looking back on that first report now, it seems extraordinarily low key. Yet it was ranked highly in a global benchmarking exercise (see Box 3, page 82). While we did not have the same reporting resources as the large multinationals probably had, all the thinking we had done in exploring how to apply the TBL concept to our reporting, plus the support from our Chief Executive and senior managers, had paid off. The approach was firmly embedded in the organisation and put us in a very good reporting position. It also meant that we were 'on the journey' with a number of other organisations (companies and at least one local council) in New Zealand who started similar assessments of their performance in 2000.

OUR MOTIVATION

Landcare Research's decision to adopt sustainability as a business strategy was founded on two assumptions: first, that there would be a business opportunity in providing research, science and technology in this emerging field, and second, that being the organisation we were, dedicated by government mandate to support the sustainable management of natural resources, we should be able to lead by example.

Therefore our sustainable business model had two components: what we do ourselves and what we do for others. What we do ourselves was to include understanding our sustainability impacts (environmental footprint, social and economic performance) (see Box 4, page 82), and going about improving those features. What we do for others was to include developing tools for businesses to enable them to increase their competitiveness and decrease their risks, and to provide government with tools like sustainability indicators and to

box 2: ANIMALS IN RESEARCH

Animals are essential to our research on protecting biodiversity and managing pests. Manaaki Whenua has a genuine commitment to the welfare and well-being of all animals (endangered native species or introduced pests) that goes beyond the minimum standard. Our duty of care involves preventing undue pain or distress. Researchers and our Animal Ethics Committee (AEC) work together so that pain and distress can be avoided or minimised. Animals kept in captivity are housed in purpose-built facilities. All our research involving manipulations of live animals in the field or in captivity is approved by Manaaki Whenua's AEC, which comprises two Manaaki Whenua scientists, and representatives of the New Zealand Veterinary Association, the Society for the Prevention of Cruelty to Animals (SPCA), Māori and the public. The AEC's role is to ensure our use of animals for research is kept to a minimum, complies with the Animal Welfare Act, and follows strict ethical guidelines and operating procedures. In the 2003 calendar year, applications were approved to use animals as part of 3 ecological studies of native and introduced species, in 26 trials of new and improved methods of pest control, and 2 studies of the role of animals in transfer of Tb between species. Work where animals are handled, including catching and banding birds, requires prior approval from the AEC. Trapping possums in the field does not require AEC approval. Nevertheless, staff have a responsibility to minimise suffering and must dispatch trapped possums quickly and humanely. At the conclusion of AEC-approved projects, the number of animals 'used' and their fate are reported to the Ministry of Agriculture and Forestry (MAF) on a calendar-year basis as required. This information is on our website. As part of our efforts to monitor and reduce the number of non-target animals caught during fieldwork, we record all animals caught during all fieldwork — including AEC-approved fieldwork and trapping where no AEC approval is required. These data are summarised here, with more detail available on our website.

http://www.landcareresearch.co.nz/sustainability/indicator_details.asp?SustainabilityIndicator_ID=152

Accidental by-catch of native species

	2004	2005	2006	2007	2008
Studies	24	26	18	19	19
Target animals captured	9,838	10,720	8,984	6,489	5,675
Non-target introduced animals captured	319	364	248	498	150
Non-target native animals captured	72	96	62	22	44
Non-target native animals killed	4	9	0	6	2

Summary of main findings for the 2008 calendar year and key comparisons with previous years

The number of non-target vertebrate captures continues to decline, and at 177 for the calendar year is easily the lowest on record (cf. the figure of 1944 non-target captures in 2001).

Two robins found dead in traps targeting rodents represent the only native species killed as by-catch. With the exception of 19 endemic skinks captured and released unharmed in traps also primarily targeting rodents, only 4 other native animals were caught (3 kea and 1 hawk, all released apparently uninjured).

box 3: LOCAL SOLUTIONS, GLOBAL RECOGNITIONS

Landcare Research's (and New Zealand's) first TBL Annual Report in 2000 was ranked 14th in the world by SustainAbility / United Nations Environment Programme Global Reporters Survey. The 2001 Report was ranked 22nd in the same global report the next year ('Trust Us') (see Frame et al. 2003a, b) and Bebbington et al. 2009)[1, 2, 3] and the following report was ranked 15th.

At the same time the Institute of Chartered Accountants for New Zealand awarded Landcare Research annually for its reports and its contribution to sustainability in New Zealand. After winning the sustainability section in the ICANZ awards for five consecutive years, Landcare Research decided not to enter the awards in 2005 but to sponsor the awards instead. However, the 2005 report did win the best sustainability report in Australasian Reporting Awards (ARA).

Having firmly established itself in the sustainability field, the organisation decided not to enter further awards but to focus on exploring new ways to move its reporting forward, particularly via the Web.

REPORTS – WHAT'S IN A NAME?

Given that our 1999 Sustainable Development report was not published until early 2000, about six months before our 2000 Annual Report was due, we decided to hold off on another report until we could fully integrate it with our Annual Report in 2001. From there on, we tended to refer to these reports as 'annual reports covering all dimensions of our performance', a concept that was easier for people to understand and was widely recognised as a market leader (see Boxes 3 and 4). In 2002, we introduced the notion of sustainability, and by 2004, we were firmly using this concept rather than the TBL. However sustainability reporting was still in its infancy in New Zealand so, to help readers make the connections, we introduced 'Helpful Harriet' who popped up as a footnote throughout the report to explain aspects of various articles in terms of economic, social and environmental sustainability.

We continue to use the term 'sustainability reporting'. TBL reporting seems to have fallen out of favour (possibly because it seems to embody a 'silo' mentality). Corporate Social Responsibility (CSR) is a term widely used overseas but is synonymous with sustainability reporting or Sustainable Development Reporting (SDR). Fully integrated reports whereby the CSR information is presented along with the audited financial statements are still in a minority and are considered innovative.

support policy-development and programmes that they would run for New Zealand's sustainability.

Initial investment in the strategy came at the expense of other areas and was not universally supported within the organisation. As a science organisation we confronted views that sustainability was not real science, and that it was a passing fad. Outside the organisation we confronted views that sustainability was anti-business, and that it was a passing fad. But there were business leaders who supported the notion and saw value to their businesses, to New Zealand and the world as a whole.

box 4: THE GLOBAL REPORTING INITIATIVE

The GRI framework (www.globalreporting.org) provides an internationally accepted protocol for sustainability reporting. Landcare Research was an organisational stakeholder and contributed senior staff time throughout 2000 –2007 to GRI technical working groups and the Stakeholder Council. We remained an organisation stakeholder up until 2009. GRI checked and confirmed that our sustainability reporting Web pages published in October 2008 met their A level.

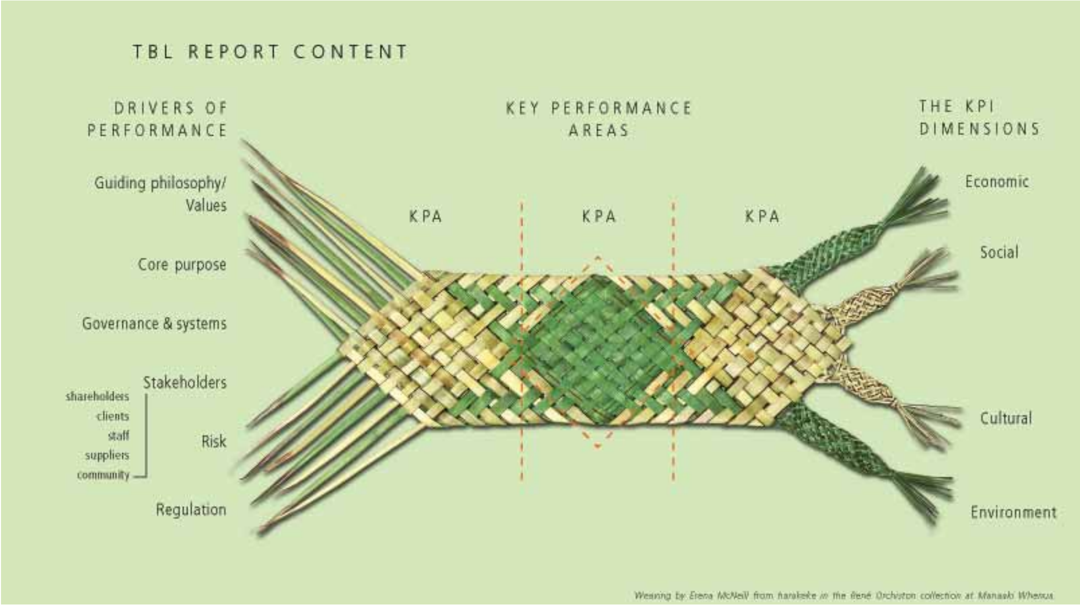


Figure 2 Schematic diagramme in Landcare Research's 2001 Annual Report

MAKING STRIDES…A BIT OF HISTORY

By 2001, our reporting was more confident and more sophisticated, as illustrated with the weaving diagram that shows how the various factors driving reporting meshed together into the management fabric (key performance areas) for an organisation. The key performance indicators (KPI) strands are the measurable data on how well the management systems and strategies are performing.

We used another schematic diagram in our 2005 Annual Report (see figure 3). The drivers (blades of flax) were broken down into a myriad of strands firmly integrated into the body of our organisation (strands wrapping around the anchor stone). The various strands were woven together into reporting areas, which formed the sections of the 2005 Annual Report. We were still using much the same KPIs but presented them in a different structure. In that report, we also started taking a harder look at governance issues and more transparency around how our Board of Directors operates.

We had initiated a robust system in place for documenting each KPI, including who produced the data and who verified it as correct, where the data were held in the organisation and any other information relating to calculation methodologies and what was included and what was not. This system has formed the backbone of external verifications and our reporting ever since; we still retain the same basic numbering system as this makes it very easy to track KPIs across multiple years despite changes to staff and operating systems. We review these indicators each year to ensure they remain aligned to our drivers and management priorities.

We continued to commission an external audit and verification of our non-financial reporting until 2006. This process is demanding in that an already tight reporting timeline is condensed further (Crown Research Institutes have a statutory obligation to deliver a printed annual report to Parliament three months after the end of the financial year). Nevertheless, the external audit added considerable value by challenging us to explain *why* we chose to report what we did as well as examining and verifying *what* we reported. The downside of formal external verification is the quite considerable cost. With extensive restructuring of the organisation and a new Chief Executive, it was decided that the cost could no longer be justified for the 2007 and subsequent reports. However, we have retained various external certifications of best practice performance such as ISO14001, our carbo neutrality, and tertiary (the highest) level in the Accident Compensation Commission's Workplace Safety Management Programme.

CULTURAL REPORTING

By 2001, we were starting to grapple with the concept of adding a fourth (cultural) dimension to our reporting. Our commitment to the Treaty of Waitangi is embodied in our Guiding Philosophy, developed in 1993, and working with Māori as tangata whenua (indigenous people) is part of our core business. We believe

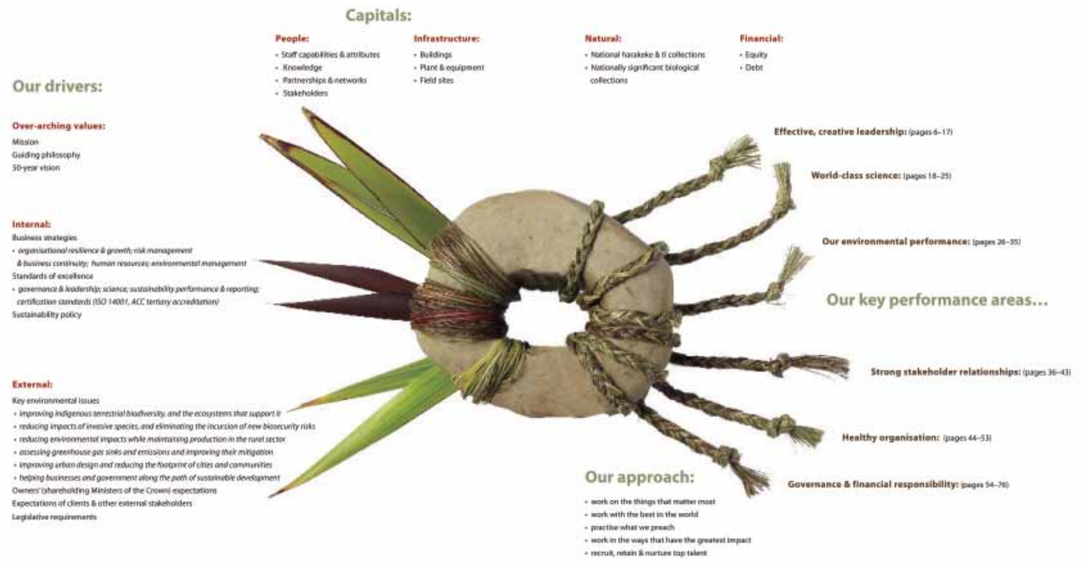


Figure 3. Another schematic approach depicting our 2005 report. It still uses much the same KPIs but the reporting is structured differently. The reporting areas formed the sections of our 2005 Annual Report.

cultural reporting means covering issues important to Māori and from a Māori perspective of enriching traditional culture such as values, language and knowledge.

In 2002 and 2004, we produced short bilingual summary reports where the translations were not literal or word-for-word. This approach, led by our Treaty Responsibility Manager, went against conventional practice at the time but was very well received by Māori. In alternate years, we included either a short quotation from a prominent Māori stakeholder or a well-known Māori proverb…initially with translations only on our website, not in the printed report! Needless to say this unexpected approach startled a few (Pākehā) readers.

Following restructuring and extensive staff changes in 2006, we stopped producing the bilingual summary reports largely because of resourcing issues as the organisation restructured.

BUSINESS AS USUAL

While Landcare Research took a leadership position on sustainability reporting, it is not an end in itself. It is a means of engaging more effectively with stakeholders to determine what are the material issues for an organisation, and to the end of improving performance and establishing a reputation in the market. For Landcare Research to build a reputation for sustainability it needed to go beyond reporting to enable its clients and partners to make a significant difference.

GOING FORWARD WITH OUR REPORTING…SUSTAINABILITY WEB PAGES

In 2007/08, we looked at how we were reporting and our rationale for doing so. The move to IFRS almost doubled the length of our financial statements, which are of interest to only a narrow sector. With this as a driver, we decided to print the annual report in two parts but with a much reduced number of copies of the financial section. We decided to move our sustainability reporting away from the printed report (summary information only) in favour of developing comprehensive sustainability web pages (see Box 5).

box 5: WHY DEVELOP A SUSTAINABILITY WEBSITE?

- Sustainability is our core business
- Stakeholder expectations
- Reduce resources used in printing
- Greater flexibility than printed report
- Provide more context & links with research
- More connections between strategy & performance
- More opportunities to move into challenging spaces e.g. the 'Voices' section

Figure 4 Landcare Research's Sustainability Reporting online. In 2007/08, we shortened our printed Annual Report and moved our sustainability reporting to an extensive new section on our website. This has enabled us to report more comprehensively and to tackle new challenges. The more conventional sustainability reporting issues are covered under Our sustainability aims and Our sustainability progress. Visit http://www.landcareresearch.co.nz/sustainability/

This exercise has had its own challenges but has opened up many new opportunities for our reporting. One of the key benefits is that we can now make stronger links with our science.

One of the issues we've tackled is thinking around science as a product, and hence how do we manage 'product responsibility' issues? This is stepping into unfamiliar territory but it is a great way to learn and challenge ourselves.

Another opportunity has been to develop the 'Voices' section, which has three components, one of which is fairly common practice, one is less common, and the third is definitely going to cause a few more furrowed (Pākehā) brows!:

1. Internal comment on topical issues from senior leaders within Landcare Research
2. Invited contributions from well-known public figures in New Zealand or overseas. These 'thinkpieces' are included verbatim and are intended to challenge us as well as other readers
3. The cultural aspects of sustainability – the role of Māori knowledge and values (matauranga Māori) and Māori people in sustainable management of resources based on holistic value systems, different concepts of 'ownership' and accountability, and different monitoring frameworks

This is a particularly challenging and exciting space for developing sustainability concepts and a significant paradigm shift away from the financial reporting models prrior to the financial crash, as explored in Chapter 9 by Allen White of the Tellus Institute.

The journey hasn't ended yet. The road isn't straight and every time we round another bend or surmount another hill, we see more looming! Ten years on and the words we started with are still true:

'Sustainable development is not an option; it is an imperative. It is not a destination, but a direction.'

WANT TO FIND OUT MORE?

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For the Author's contact details see page ii

KEY PUBLICATIONS AND WEBSITES

http://www.landcareresearch.co.nz/sustainability/

http://www.landcareresearch.co.nz/publications/reports.asp

http://www.accountability21.net/

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Landcare Research
Manaaki Whenua

Coming of Age

A Global Perspective on Sustainability Reporting

CHAPTER 9 : HATCHED

Allen White

Summary

The demand for increased transparency, greater accountability and responsibility has resulted in not just a boom in the reporting aspects of corporate behaviour but also a dramatic shift in the supporting business case for reporting and the consumer expectation of integrity. This chapter documents global changes that have developed over the last ten years such that:

- Sustainability reporting is now a mainstream expectation of companies
- While transparency provides a powerful ethical case, the conventional business case is equally compelling with purely financial returns positive
- Reporting acts as a proxy for other practices that represent the kind of mindset associated with business leadership and innovation
- Intrinsic to sustainability performance are three interrelated value propositions, and excellence in sustainability reporting provides an indispensable tool for measuring and communicating this
- Share price is as much market psychology as it is true value, and sustainability reporting may play an increasingly significant role in strengthening share price
- Sustainability reporting helps mitigate adverse effects of brand risk, as developing a sustainability report may reveal risks in the value chain that could spur consumer protests; and it identifies possible corrective action
- Sustainability practice is as much about positioning a company for opportunity as it is about enhancing its ability to effectively manage risk
- Companies use sustainability reporting to strengthen stakeholder relations to advance business objectives

Making the business case for sustainability reporting cannot be distilled to measurement of traditional financial indicators. Business benefits are nuanced, multifaceted, and indirect, combining both quantitative and qualitative returns. Sustainability reporting serves as a management and communications tool that mirrors a more general trend in the evolution of 21st century business – that wealth creation itself is a multidimensional concept and must be measured and reported as such. Successful companies of the future will be the ones that recognise this multidimensionality and manage the organisation to enrich concurrently human, social, and natural capital alongside financial capital.

THE TRANSPARENCY IMPERATIVE

In less than a decade, the concept of sustainability reporting (SR)[1] has moved from the extraordinary, to the exceptional, to the expected among organisations worldwide. While the number of reporters still represents a small fraction of the world's enterprises, the drivers that gave birth to SR[1] in the late 1990s continue unabated and, in all probability, will intensify in the post-recession years ahead.

What lies behind this rapid ascent? At the core of SR is the notion that all organisations, regardless of size, product or service, sector or location are creations of government, licensed to exist under terms and conditions designed to protect and enhance the public interest. This is so regardless of whether the organisation is for-profit or not-for-profit. In return for this licence to operate is a set of expectations – a social contract – in which organisations are obliged to meet certain standards of behaviour. These, of course, are manifested in a wide array of formal laws and regulations and informal societal expectations that vary across countries and cultures.

Amid all this diversity, however, are emergent, generally accepted norms that reflect the globalisation of business enterprise. Prominent among these are: international core labour standards promulgated by the International Labour Organization (ILO); rules of corporate governance advocated by the Organisation for Economic Co-operation and Development (OECD; international financial reporting rules developed by the International Accounting Standards Board (IASB); global rules for trade negotiated by the World Trade Organization (WTO); a framework for responsible investment advocated by the UN Principles for Responsible Investment (PRI); universal values for business conduct of the UN Global Compact; and, most relevant to the present inquiry, a framework for disclosure of economic, environmental, social, and governance information designed by the Global Reporting Initiative (GRI).[2] As the forces of globalisation continue unabated, these types of international norms and principles will continue to expand their influence as enterprises worldwide strive for recognition, legitimacy, and competitiveness in the global arena.[3]

One of the key components of this emergent suite of norms is the emergence of transparency as a generally accepted element of business conduct in the 21st century. The reasons for this are several. First, the ascendance of the corporation since World War II as a force in shaping the well-being of people and the environment has reached unprecedented levels. This trend has rendered the centuries-old concept of a social contract between citizens and their government a partial reality. In the contemporary political economy, the business sector as a third party to the social contract is increasingly prominent in the struggle to build sustainable societies. Indeed, in this planetary phase of civilization,[4] some multinational corporations control assets that exceed those of whole nations. Business' assertiveness on the global stage has spawned rising expectations for accountability, the notion that privileges and entitlements must be balanced with duties and obligations, a core one of which is accountability to the stakeholders within the company's sphere of influence.

Second, technology has enabled business news – favourable and unfavourable – to circulate around the globe at warp speed in a contemporary 'CNN world'. Revelations of tainted products, reports of sweat shops operated by contract factories, and allegations of child slavery and human rights violations are available to audiences worldwide within minutes after initial disclosure. In what has been called 'the naked corporation'[5] organisations, either willingly or unwillingly, actively or passively, are subject to a level of scrutiny unimaginable even a decade ago.

Third, transparency increasingly is viewed by companies themselves as a critical management tool. The case for managing the business in a prudent, forthcoming fashion is a critical factor; building investor and customer trust, and creating a stock of goodwill and resilience in the event of unexpected revelations of environmental damage, product defects, or governance lapses. Leaving the initiative to communicate in the hands of the news media runs the risk of biasing disclosure in a way that misleads company stakeholders. Over the long term, a strong alignment between what the company says it is doing and what it actually does is the surest force in building and sustaining its reputation and brand value in the global market.

While the transparency imperative has intensified in recent years, it is likely to do so even more amidst the current global economic crisis. Why? Because, in the eyes of many observers, the crisis itself is in large measure a reflection of a massive transparency breakdown. The failure of financial institutions to estimate and disclose – much less fully and clearly explain – the existence and risk of exotic financial instruments on their balance sheets has created a virus of failed financial institutions. These practices have been a major force in the precipitous drop in share prices in financial institutions and the investor anxiety over the viability and gradual government control of such organisations.

Transparency breakdowns have sent shock waves through global capital markets, occasioning economic contraction, soaring unemployment, reduced global trade, and a global credit crisis. In an interdependent global economy, neither distance nor protectionism create safe havens of insulation against the impacts of such failures. As governments grapple with the formidable challenge of rebuilding the global financial architecture, higher levels of transparency are widely viewed as a precondition for fashioning a system – a 'Bretton Woods II – capable of managing the complexities and risks of the 21st century economy. [6]

GLOBAL TRENDS

SR stands among the most concrete manifestations of the transparency imperative. From its conception little more than a decade ago, SR is now widely recognised as a best practice for all companies, and especially those seeking recognition and reputation for their products and services in the global marketplace. The Global Reporting Initiative framework, the de facto global standard for SR,[7] has reported that 43% of the world's most valued brands produce SR reports based on the GRI.[8] From a curiosity a decade ago, the absence of an SR report among companies that operate – or seek to operate – in global markets today raises questions about their willingness and/or capacity to conduct themselves according to emerging international norms.

A recent survey by KPMG tells the story.[9]

- Nearly 80% of the largest 250 companies publish worldwide SR reports.
- Among each country's largest 100 companies, Japan (88%) and the UK (84%) report.
- Though still uncommon, blending of SR and financial reporting is on the rise: 12% of the largest firms in France and Norway, 20% in South Africa.[10]
- SR reporting is no longer the exclusive domain of developed countries. Large firms in Brazil (78%), South Africa (45%) and South Korea (42%) are increasingly visible SR reporters.

KPMG observes: 'The question is no longer "Who is reporting?" but "Who is not?" Corporate responsibility reporting is now a mainstream expectation of companies…we can expect this trend to roll out rapidly at the country and sector levels in coming years.'

Other research corroborates these trends. The Corporate Register[11] estimates that between 1992 and 2007 SR reporting grew from 27 to an estimated 2500 annually. Regionally, while Europe is still the dominant region with nearly 1500 reporters, North America and Asia now account for nearly 400 reporters each. And from a negligible showing in 2002, firms in South America and Africa and the Middle East have emerged as measurable contributors to global totals. Accompanying these numbers is an equally noteworthy trend: report content has evolved rapidly from a decidedly environmental focus in 2000 to balanced disclosures in 2007 that encompass the spectrum of economic, environmental, and social topics.

Although SR reporting at the global scale remains largely a practice among large companies, reporting by small and medium-size enterprises (SMEs) is on the rise. Already, GRI SME reporters are found in countries as diverse as Brazil, Chile, China, Indonesia, New Zealand, the Netherlands, and Spain. Examples include: Bodega Pirineos (Spain – food and beverages), City West Water and Watercare Services (public water utilities in Australia and New Zealand, respectively), Landcare Research (New Zealand – science), Florestas (Brazil – organics, cosmetics), Abufrut (Chile – fruit processors), Landwasher (China – ecological public toilets), and PT Intaran

(Indonesia – sustainable forestry). In all probability, a large number – even the majority – of SMEs that prepare SR reports are not yet included in current sources such as GRI and Corporate Register listings. Many undoubtedly are prepared in the non-English-speaking world and many do not have the resources or inclination to promote their SRs overseas. Nevertheless, it is likely that the numbers will grow, for at least two reasons: (1) large companies over time will demand SR reporting among their suppliers as selection, risk management and quality control measures; and (2) the tools and methods available to SMEs for SR reporting are becoming more abundant and refined.[12]

MAKING THE BUSINESS CASE

While the transparency imperative may present a powerful ethical case for reporting, is a more conventional business case available and equally compelling? The answer, it turns out, is 'yes,' with caveats.

Setting aside societal expectations for accountability, the balance of evidence suggests purely financial returns to reporting are positive, if not overwhelmingly so.[13] These may occur in the form of lower volatility of share price, lower cost of capital, higher gross margins, and strengthening of intangible assets such as brand and reputation – some difficult to measure but all significant in determining a company's market capitalisation whether or not it is publicly traded.

A recent study[14] exemplifies the kind of association that tends to emerge in studies that hypothesise an association between SR and financial performance. In a study of 60 large companies, a generally positive association between SR and five financial indicators was found: gross margins, return on sales, return on assets, cash flow, and shareholder return. In a similar vein, sustainability performance indices and ratings groups such as the Dow Jones Sustainability Index and KLD regularly find strong sustainability performers with share prices equal to or exceeding overall market performance.

To be clear, findings of this kind of association do not imply causality. Like virtually all studies of this genre, the positive finding likely occurs because SR reporting is acting as a proxy for other behaviours or practices: forward-looking management; long-term, strategic investments in operational improvements; consistent attention to nurturing brand and reputation – in short, practices that collectively represent the kind of mindset associated with business leadership and innovation. At the same time, the association tends to produce a virtuous circle: SR documents and communicates sound management practices, and sound management practices lead to a commitment and continuous upgrading in SR reporting, and so on. A deeper look at this dynamic is made possible by unbundling a number of aspects of the business case.

The many flavours of value

Intrinsic to assessing the sustainability performance of a company are three interrelated propositions. First, sustainability practices in the long term create value for both shareholders and other stakeholders of the organisation. Second, such value is expressed in many forms which collectively enrich multiple forms of capital – financial capital, natural capital, social capital, and human capital. Third, over the long term, this enrichment process leaves the company both more profitable and more valuable in terms of its societal contributions. The multidimensional nature of value creation means that SR must capture and communicate multiple-value drivers and outcomes – tangible and intangible, quantitative and qualitative – that together constitute the essence of a sustainable company contributing to the sustainability of society.

For sectors with a deep and extensive environmental footprint such as mining, forestry, and agriculture, the business case for SR may rest on the intangible benefits of contributing to building strong local connections to communities and regulators who decide whether resource extraction will be permitted and/or expanded. For a consumer goods manufacturer of appliances, automobiles, or toys, SR provides a critical vehicle for informing stakeholders what the company's future product mix incorporates, for example, renewable energy and safe materials, in the design of such products. In the retail sector, attraction and retention of high-quality store managers and staff may be enhanced by SR that demonstrates, in a balanced and rigorous fashion, the company's commitment to livable wages, healthy working conditions, and the sale of safe products and services. In short, 'value' is multidimensional, and excellence in SR provides an indispensable tool for measuring and communicating this multidimensionality.

Share price

Share price is as much, or even more, market psychology as it is true value. While an array of forces drive share price – from external geopolitical conditions to national interest rates to consumer spending forecasts – it is fair to say that an information-rich environment overall tends to modulate swings in share price of both individual companies and capital markets in general. SR may play an increasingly significant role in strengthening share price and modulating swings when market conditions experience upswings and downswings.

Why might this occur? First, investors place a high premium on quality of management. Indeed, in the eyes of many, quality of management is *the* most important determinant of a company's future financial performance. As much as, perhaps more than, financial reporting, SR offers the opportunity to demonstrate, in specific and concrete terms, how management identifies, tackles, and meets opportunities and risks facing the organisation. Said another way, SR at its best offers investors a view of the 'mind' of the company – its problem-solving capacity, its capacity to innovate, to think strategically. Challenges remain, of course, in convincing investors of these benefits. But this in no way dilutes the rewards to those that are awakening to their business relevance.

Second, because SR contributes to an information-rich capital market, it helps tame share price volatility. A 2004 report[15] by a UK consultancy found that 300+ GRI reporters experienced lower share price volatility (as well as higher operating profits and revenue growth) than firms that did not publish sustainability reports. In a related assessment, Standard and Poor's, the rating agency, in a 2002 study[16] of 1500 companies, found that 'the amount of information companies provide in their annual reports is correlated to the market risk and valuations, specifically high price-to-book ratios and the ability to lower the cost of capital'.

Of course, studies such as these show association, not causality. But the underlying logic of their findings is intuitive. Capital markets do not look kindly on surprise disclosures. Conversely, evidence suggests they do reward companies that consistently disclose high-quality information, both non-financial and financial. Even when the disclosures reveal temporary operational, product, or other shortcomings, evidence in SR that such problems are being prudently managed will tend to have a calming effect on investors who might otherwise be inclined toward turning over shares.

Risk management

Warren Buffet, generally regarded as one of the world's most successful investors, once observed: 'It takes twenty years to build a reputation, and five minutes to ruin it.' More than any other attribute, trust is the undergirding of reputation; and reputation, in turn, is the foundation of building strong brands.

Examples of how brands may survive or suffer are reported in the media with regularity. The classic case of Johnson & Johnson's recall of Tylenol in the 1980s is often cited as a textbook case of superior risk management – rapid, unequivocal, public response to product tampering. In a similar vein, Mattel's decisive handling of the recent tainted Chinese toy imports has helped maintain the company's reputation as an industry leader. In contrast, the Vioxx drug case involving Merck, the pharmaceutical company, is generally viewed as seriously flawed from the standpoint of brand corruption and reputation damage owing to breakdowns in transparency and timely disclosure of drug risks and trial information.

SR helps to mitigate adverse effects of brand risk in at least two ways. First, the process of developing an SR report helps to reveal in a *pre-emptive* fashion where risks loom in the value chain that spur citizen protests. Further, it identifies what corrective action is needed: e.g. in substandard labour conditions in contract factories that may be exposed in the mass media; in defects in product materials; or in unsustainable water use by food and beverage companies in localities abutting a production facility. The SR process can serve as a vehicle for both risk identification and risk management, providing both the organisation and its stakeholders with the confidence that the company is solidly positioned to manage risks whenever and wherever they arise.

SR provides a cushion for mistakes that inevitably occur, even in cases of excellence in risk management. Companies known for their high standards of transparency have a greater cushion – in effect, a stock of goodwill – to soften the adverse effects of mishaps. When they regularly receive high-quality sustainability performance information, stakeholders view such adversity through a different prism than in cases where a company is known for opacity. This, in turn, helps to buy time for the organisation to implement corrective action and put in place management systems to prevent recurrence of the problem.

Opportunity assessment

In managing a business, sustainability practice is as much about positioning a company for opportunity as it is about enhancing its ability to effectively manage risk. Companies with an eye toward the future, adept at imagining new markets, and alert to new technologies and product development opportunities that address pressing social and environmental needs, may use SR as an instrument for identifying prospects for top-line growth. They understand that behind many risks await lucrative opportunities to provide goods and services that align with society's quest for sustainable development.

Examples of such opportunities are proliferating. Grameen-Danone Foods of Bangladesh, a joint venture of the Grameen Group and Danone, the French dairy company, provides nutrition to the low-income and nutritionally deprived population of Bangladesh. BP has launched an alternative fuels venture in India in partnership with NGOs, to vastly reduce indoor air pollution among the poor, one of the greatest health hazards facing the 'bottom of the pyramid.' And Procter & Gamble has developed and, in conjunction with UNICEF, is marketing an affordable, home-based purification product to address pervasive unsafe drinking water among millions of poor households in developing countries.

High-quality SR can help sharpen awareness of such opportunities by 'connecting the dots' between global challenges and new product and service markets.

Stakeholder engagement

The transparency revolution of the last two decades is a mirror of the changing world in which companies operate. Insularity and opacity are simply no longer options because technology, financial debacles, and a surge in regulatory disclosure requirements have irreversibly altered stakeholder expectations for responsible company practices. Companies that fail to recognise these new realities are destined to fall behind the competition because consumers, employees, activists, communities and, ultimately, investors will lose trust in their products and services. Further, companies also will lose a critical opportunity to help shape the terms of engagement with their stakeholders rather than wait, reactively, for the next accident, boycott, or misstep to unleash stakeholder animosity.

Companies have used SR to strengthen stakeholder relations to advance business objectives. Dell, the computer maker, has shifted in the face of shareholder resolutions from a position opposed to sharing information to one of multifaceted engagement. In addition to seeking input and arranging dialogues with shareholder activists, the company gradually has moved toward more robust GRI reporting.

Bristol-Myers Squibb and Novartis have been leading innovators in sustainability reporting. BMS was one of the very first GRI reporters in the late 1990s. The company also has been a leader in use of the Internet to inform its stakeholders of operations and progress against targets. An interactive website is used to both inform and collect feedback.

Novartis is one of the first global companies to fully integrate financial and sustainability reporting in the belief that the two are inseparable and mutually supportive in terms of communicating company performance to shareholders, consumers, communities, and other stakeholders. Procter and Gamble, widely recognised as one of the most successful brand managers in the world, has used innovative reporting methods to reach its stakeholders through various web-based disclosures within an overall triple-bottom-line framework. A reporter since 1999, Procter & Gamble views SR as integral to its commitment to developing processes and products that meet the needs of both rich and poor countries.

Logically, then, SR adds to such value in diverse ways. Because it catalyses new insights, new conversations across business functions, and new procurement and marketing strategies in a company, value emerges as much from the *process* of SR as from the end product, a sustainability report.

REFLECTION

In a globalising world functioning as an increasingly tightly woven web of trade, information, capital, and technology flows, companies of all sectors, sizes, and locations find themselves scrutinised by stakeholders who seek, and deserve, a steady flow of credible, timely, and usable information. Whether by choice or mandate, responsible companies are rethinking the nature of their obligation to operate transparently both to manage risk and exploit opportunities in the coming decades. It is a wise thing to do and the right thing to do because accountability – the 'right to know' – has emerged as the universal norm in business–society relations.

Making the business case for SR cannot be distilled to measurement of traditional financial indicators. Instead, business benefits of SR are nuanced, multifaceted, and indirect, combining both quantitative and qualitative returns to the organisation. SR serves as a management and communications tool that mirrors a more general trend in the evolution of 21st century business – that wealth creation itself is a multidimensional concept and must be measured and reported as such. Successful companies of the future will be the ones that recognise this multidimensionality and manage the organisation to enrich concurrently human, social, and natural capital alongside financial capital.

WANT TO FIND OUT MORE?

Contact buildingcapacity@landcareresearch.co.nz

For the Author's contact details see page ii

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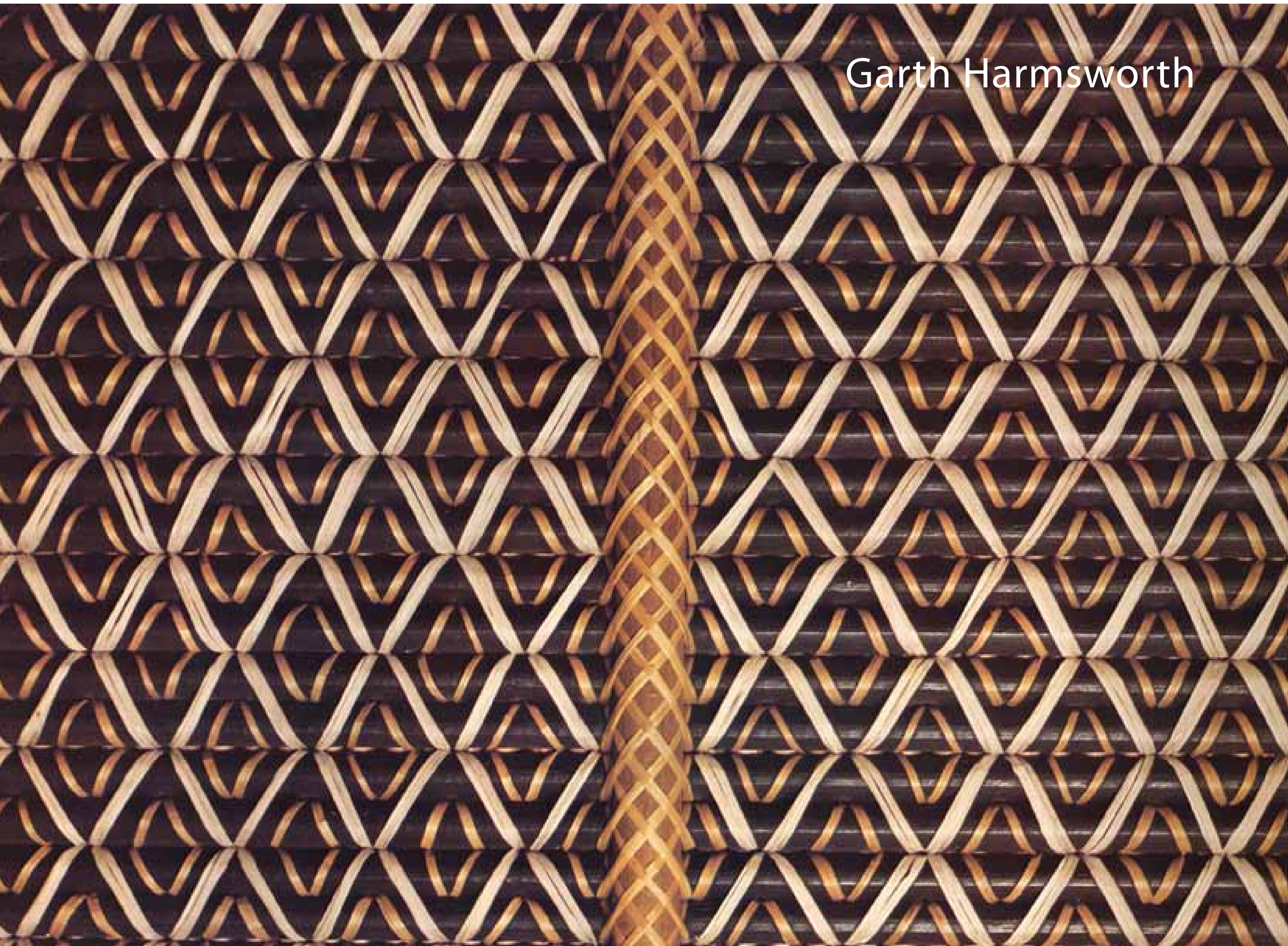
Landcare Research
Manaaki Whenua

Sustainability and Māori business

CHAPTER 10 : HATCHED



Garth Harmsworth

Summary

- Businesses lie at the heart of a progressive move by Māori to achieve economic prosperity and self-determination (*tino rangatiratanga*), as well as facilitating social equity, building human and cultural capital and protecting and managing natural and cultural environments.[1]

- Māori business governance models have evolved from traditional to modern forms, with many successful companies combining corporate capitalist practice with strong cultural and environmental values and ethics. As such Māori governance of businesses and organisations provide effective models for sustainable business approaches globally.

- However, these sustainable governance models are far more complex than standard corporate models. Many Māori businesses face the challenge of balancing financial imperatives with broader social, cultural and environmental goals. A Māori business's constituency (e.g. shareholders, iwi/hapū, consumers) will rate its performance and define its success by looking beyond profit margins and short-term planning. This has led many Māori businesses and companies to develop long-term (often generational) strategies and undertake sustainability reporting.

- Māori culture remains unique forming a key element of Brand NZ which is believed to be worth billions of dollars. It is critical that Māori branding is protected and used with integrity to maintain its cultural and economic value.

- The Māori economy is emerging steadily within the wider New Zealand economy. Māori organisations and businesses have made significant long-term investments in human and financial capital. This investment, combined with treaty settlements, will enable the Māori economy to play a significant and growing role in New Zealand's long-term prosperity. The long-term and holistic focus that Māori businesses take reflect the spirit of sustainable development: *'Manaaki Whenua, Manaaki Tangata, Haere whakamua' (Care for the land, Care for the people, Go forward – Wakatu).*

INTRODUCTION

Sustainability implies a holistic set of goals, not just economic growth, but also improved standards of living, social equity and ethical standards, and caring and protecting the natural environment. A sustainable business, therefore, is one that reduces its impact on the natural environment, while seeking to provide benefits not only to shareholders and consumers, but also to stakeholders, communities and society at large. Māori corporations and businesses commonly embrace these multiple goals providing effective models for sustainable business.

This chapter introduces seven research topics related to Māori business and sustainability:

1. A historical background to Māori business
2. How Māori values and sustainability principles are incorporated into business
3. The Māori economy - a definition and current status
4. An evolving definition of Māori business
5. Governance of Māori organisations and business
6. Sustainability performance reporting – a cultural perspective
7. Māori business branding

The full research papers from which these topics are drawn are referenced at the end of the chapter.

HISTORICAL BACKGROUND TO MĀORI BUSINESS

What characterises Māori business models today reflects the past, the dynamics of the present, and the Māori aspirations for the future. Therefore we start by tracing the history of Māori economic development.

Before colonisation, Māori lived and worked together in small, geographically distinct groups as part of larger hierarchical tribal structures (iwi, hapū, whānau). Trade between tribal groups was advanced and Māori technological and economic activity was sophisticated, entrepreneurial and resilient, albeit based largely on subsistence and survival.[2,3] Following the arrival of Europeans in the early 1800s local and export trade increased dramatically and Māori were effective in developing their resources for markets, as illustrated[4] below:

In 1857 in the Bay of Plenty, Taupo, and Rotorua, Māori (about 8000 Māori inhabitants) had upwards of 3000 acres of land in wheat, 3000 acres in potatoes, nearly 2000 acres in maize, and upwards of 1000 acres in kumara. They owned nearly 1000 horses, 200 head of cattle, 5000 pigs, 4 water power mills, and 96 ploughs, as well as 43 coastal vessels averaging more than 20 tons each, and upwards of 900 canoes.

However, colonisation brought in a raft of Crown Government interventions that alienated Māori from their resource base. In 1840 Māori controlled largely all of New Zealand's natural resources. By 1998 Māori customary land had diminished to only 6% of the total New Zealand area[5] and Māori access to land, forests, coastal and marine (e.g. fisheries) resources was severely curtailed. The Māori resource base has re-emerged and increased since 1975 with redress from over 1000 land, resource and property claims under the Treaty of Waitangi tribunal process. Many tribal organisations are now positioning themselves to manage 100's of millions of dollars of assets, while other Māori businesses and enterprises have been highly successful and have flourished outside the Treaty process in the last 20 years.

Māori social structure has been an enduring feature of Māori business and governance models. Up until the 1950s Māori were largely populated in rural settlements. Today 85% of Māori now live in urban settlements, resulting in a complex and fragmented Māori social structure. However, most Māori continue to affiliate with hierarchical groups such as *iwi, hapū*, and *whānau* based on *whakapapa* (ancestral lineage). The basic unit of Māori society is still the *whānau*, the extended family. The next level up is the sub-tribe or *hapū*, made up of extended families or *whānau* originating from a local geographic area and distinct ancestral line. The largest geographic-cultural-political grouping is the *iwi*, a distinct tribe or nation belonging to a larger geographic area. Traditionally, *whānau* was the residential unit with designated areas of land where each individual had a right to share resources equally. Today, the *hapū* or *iwi* and *urban Māori* are the main groupings involved in pooling resources for programmes relating to economic development, health, education, housing and environmental and resource management.

Whānau and *hapū* groupings still provide the basic unit for decision-making for specific blocks of land, local business activities, coastal and fisheries resource management and for utilising specific natural and human capital.

Traditionally, Māori beliefs and values (*tikanga*) gave rise to a communal society where Māori lived and worked together, shared common goals, managed natural resources and collectively cared for each other and adapted to change. These are still very important concepts within Māori society, although colonisation and Western law and economics have greatly affected and altered Māori collectivism and resource ownership.

Māori businesses today take many modern forms, from *whānau*-based trusts and incorporations, to *rūnanga* (councils, *iwi* governance boards), to limited liability companies and privately owned businesses/enterprises. The large majority of businesses have a distinctly Māori dimension, which is reflected in their governance, strategic planning and networks and style of entrepreneurship.

HOW MĀORI VALUES AND SUSTAINABILITY PRINCIPLES ARE INCORPORATED INTO BUSINESS

Values[6] are becoming increasingly important as a sound basis upon which to plan sustainable development. In business, organisational values are described as the 'invisible threads between people, performance, and profit', and 'every organisation has values, whether it consciously realises this or not'.[7] Those organisations that understand their values can guide their own destiny and create 'sustainable competitive advantage'.

The traditional values that underpin a modern Māori business include:[8–12]

- *Whakapapa* (ancestral lineage, ancestral rights)
- T*ikanga* (custom, tradition, protocols)
- *Rangatiratanga* (status, authority and control)
- *Mana*, *mana whenua*, *mana moana* (based on *whakapapa*, represents power, control, status, leadership)
- *Manaakitanga* (caring for, looking after, hosting)
- *Whānaungatanga* (relationships, family connections)
- *Kotahitanga* (unity, consensus, participation)
- *Urunga-tu* (participation)
- *Tohungatanga* (the retention and use of knowledge to benefit the tribe or business)
- *Kaitiakitanga* (environmental guardianship)
- *Tau utu utu* (reciprocity, giving back what you take)
- *Wairuatanga* (spiritual well-being, taking into consideration the spiritual dimension)

Māori values may be reflected in any aspect of the business. The challenge for many Māori businesses is how to balance aspirations for cultural enrichment, such as values, language and knowledge, with those more modern elements of advancement: commerce and economic development. This challenge is explored further into this chapter within the section on Governance of Māori organisations and business.

DEFINING THE MĀORI ECONOMY

The term 'the Māori economy' has been used since the late 1990s to indicate a Māori dimension within the New Zealand economy that is largely culturally and ancestrally based.[13] It is difficult to distinguish and quantify the Māori economy as a separate entity from the wider economy as the two are closely interconnected.[14,15,16]

In 2002 and again in 2007, Te Puni Kōkiri, the Ministry of Māori Development, gauged Māori contribution in the New

box 1: STATUS OF THE MĀORI ECONOMY

The Māori economy is defined as assets owned and income earned by Māori – including trusts and incorporations, businesses, and service providers. The Māori commercial asset base[17] was reported to be worth $16.5 billion in 2007, and largely concentrated in primary industry (52%) – farming, forestry, fisheries, and agriculture. Māori organisations now control around 10% of New Zealand's forestry holdings. Estimated value of Māori exports in 1999/2000 was $650 million[18] and in 2002 the Māori economy contributed around $700 million or 7.4% of New Zealand's total annual agricultural outputs. In 2001 the total annual tax contribution from the Māori economy was $2.4 billion[19] and Māori were lenders to the New Zealand economy. For some Māori enterprises this commercial asset base is growing rapidly and becoming a major part of local and regional economies. The number of Māori businesses such as tourism, food and beverage, and fisheries has increased sharply in the last 10 years. However, Māori continue to be greatly under-represented in most knowledge-based and technology industries. [20]

Zealand economy. This report and others[11,12] identified that Māori economic development has markedly improved since 1992, after a sharp decline between the mid-1980s and 1991. As described in Box 1, the Māori economy now contributes significantly to the New Zealand economy and this contribution and its future potential is expected to grow.

Within the Māori economy, Māori can express their collective interests and aspirations. It is commonly believed that greater Māori economic development based on Māori collectives and joint partnerships would strengthen Māori cultural identity, well-being, and *tino rangatiratanga* (self-determination). It is therefore important to increase Māori participation rates in the New Zealand economy across a range of sectors through initiatives that include partnerships and joint ventures.

DEFINING MĀORI BUSINESS

Māori business has been defined in many ways[21–26] and includes various levels of participation by Māori.[a] To identify a Māori business from any other, Durie[27] proposed criteria that took into account the business's contribution to Māori development and advancement, which helps distinguish a Māori business in the Māori economy. This proposition was developed into a number of specific questions, which led to six key outcomes that could be used to separate a Māori business from another and determine its special characteristics. A Māori business could therefore be measured by:

- Its focused contribution to Māori development and advancement
- The part it plays in a Māori network such as a *hapū*, *rōpu* (group) or community
- How it adopts Māori values in both governance and management
- The principles and goals it uses to shape a Māori business ethic
- How it is geared towards Māori realities and recognises Māori diversity, and lastly
- How it creates choice for Māori consumers[28]

In addition, to be effective nationally and internationally, a Māori business should operate in a bicultural way that should not ignore established global principles such as international ethics, fairness, and sustainability principles.

Six guiding principles[29] that underpinned the ethics of a Māori-centred business and enabled achievement of quadruple-bottom-line goals were then identified (Box 2, overleaf).[30]

The principles were then incorporated along with economic, social, environmental and cultural goals into a Māori business framework (Fig. 1, overleaf). The framework shows the importance of key underpinning principles for achieving economic, social, environmental and cultural goals that together raise the Māori business ethic that reflects Māori values. Together these tools and frameworks for describing and evaluating a Māori business challenge the idea that Māori must adapt to the 'conventional business environment', and argue instead for Māori to adapt the mainstream business model to 'reflect the Māori position rather than confusing the Māori position'.[33]

a Key characteristics can include various levels of participation by Māori: Māori operate the business; Māori own the business; the business employs Māori staff; the business incorporates a distinctly Māori style of governance and management; the business may focus on *kaupapa* Māori.

GOVERNANCE OF MĀORI ORGANISATIONS AND BUSINESS

To achieve sustainability, businesses need to adopt a multidimensional approach to performance, where governance boards have 'responsibilities that look beyond the single bottom line'.[35] Those responsibilities have progressively broadened from providing benefits to shareholders to providing benefits to local

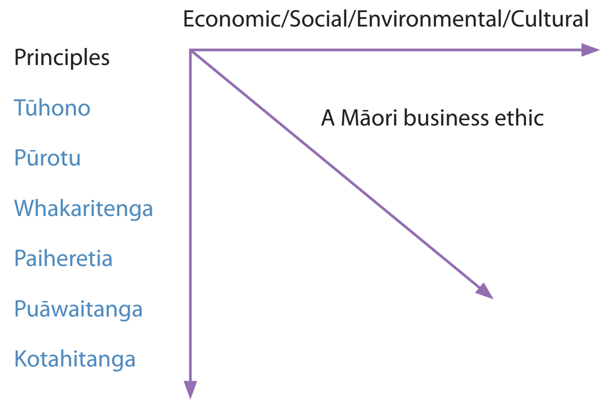


Figure 1 Framework for exploring a Māori business's principles and goals.[34]

Acting for these broader interests is considered by many as essential if a business wants to become an internationally competitive and responsible corporate.[36]

Role of governance in Māori business

While Māori businesses have traditionally taken this multidimensional role, it is a challenging task. Most Māori organisations have to be financially viable before they can address environmental, social and cultural goals. Many tribal organisations also grapple with separating the management of their investment and revenue from the management for distributing income for a wider collective good. Problems can arise, for instance, when there is a lack of impartiality, for example if board members and managers are also shareholders. However, the main complexity arises when an organisation tries to be too many things for too many people and is challenged by trying to meet a multitude of cultural, social, and environmental imperatives, as well as financial ones Māori organisations and businesses have attempted to overcome these challenges by developing more effective governance models.

Cultural and historical drivers of the Māori business governance model

In New Zealand, business governance models reflect local legislative and accountancy requirements and any international standards required for global markets. A number of mainstream governance models are followed, which typically have a top-down structure from directors to managers to shareholders (Fig. 2).

box 2: SIX GUIDING PRINCIPLES UNDERPINNING A MĀORI-CENTRED BUSINESS[31]

Tūhono is related to issues of agreement and alignment. In a business context *tūhono* affirms that a Māori-centred business will be aligned with Māori aspirations and involve substantial consultation with other Māori.

Pūrotu (transparency) requires a Māori business to be responsible not only to its funders but also to the wider Māori community who are its stakeholders.

Whakaritenga (balanced motives) acknowledges that, beyond the profit motive, there are culturally based motives such as heritage (for land- and sea-based industries), as well as social and political motives, that must be balanced through wise governance.

Paiheretia (integrated goals) outlines the need for good management of a range of diverse goals even when they contain an element of conflict. The single overarching goal and the single measure of the accounting 'bottom line' are rejected.

Puāwaitanga (best outcomes) suggests the 'best possible return' for shareholders and beneficiaries must consider the wider social, cultural and economic perspective by endorsing the use of multiple measures.

Kotahitanga (unity and alliance) encourages Māori to foster a spirit of cooperation rather than competition (i.e. isolation and fragmentation), and considers the benefits of economies of scale through alliances and joint ventures, leading to greater product range, better employment, higher levels of capital investment, and the opportunity to capture niche markets.[32]

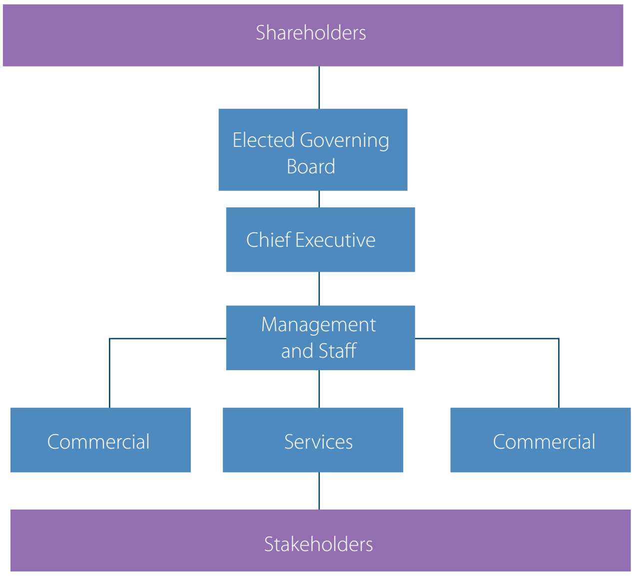


Figure 2 Standard international business governance model.

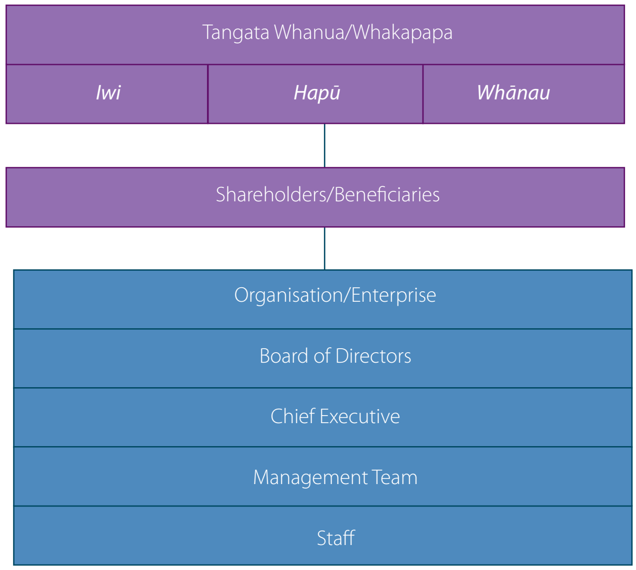


Figure 3 A typical Māori governance model with shareholders/ beneficiaries from iwi/hapū/whānau.

These mainstream governance models are commonly modified by Māori businesses and intertwined with cultural elements and responsibilities.[37] This adds to the complexity of many Māori businesses and specific cultural drivers can contribute to their organisational success or failure.[38] Most tribal organisations and businesses are typically influenced by (and must consider) the following cultural drivers:

- The historical basis or purpose on which the business has developed or evolved (e.g. tribal connections – *whakapapa*, culture, *tikanga* – customary practice)
- Ancestral or tribal assets of the shareholders or beneficiaries
- The geographic resource base or asset base being, or to be, utilised
- Core values (e.g. derived from Māori culture) of the individual or group that have set up the business
- Values and ancestral connections of key players, directors, managers etc.
- Aspirations for a collective good, multiple goals (purpose, expectations, and responsibilities conferred on the business by shareholders or beneficiaries)
- Desired target outcomes and goals
- The time frame in which the business is planning and operating

Therefore some of the 'unique Māori cultural elements' that have to be taken into account in many Māori business models and dictate governance include:

- Communal ownership (and distribution of resources)
- Guardianship over ancestral lands
- Guardianship over resources (*taonga*) and sacred areas
- Non-transferability (out of the collective), and
- Multiple accountabilities/relationships

In the business world, such communal ownership and accountability, cultural guardianship, multiple relationships, and focus on multiple goals are often seen as mixed blessings, adding complex layers and challenges to achieving objectives. James Johnston suggests however 'it is more of a question of finding those things Māori that add value to the governance process'.[39]

Contemporary Māori governance models

The most effective Māori governance model will reflect the organisation's core values and purpose, and balance commercial objectives with social, cultural and environmental objectives. The model will also be based on increasing the amount of objectivity, accountability, experience, and professionalism within the business. The common governance structures to date have split the commercial, social, cultural and environment into divisions that can be then overseen together by a governance board, managers and stakeholders.[40]

A number of Māori governance models illustrate the way larger Māori businesses and enterprises in New Zealand have developed structures to serve their constituencies.[41,42] The common Māori governance model (Fig. 3) is typically driven from the shareholders and beneficiaries downwards and the organisation is often set up to serve a dynamic cultural, social, historical, and political constituency. Many of these structures

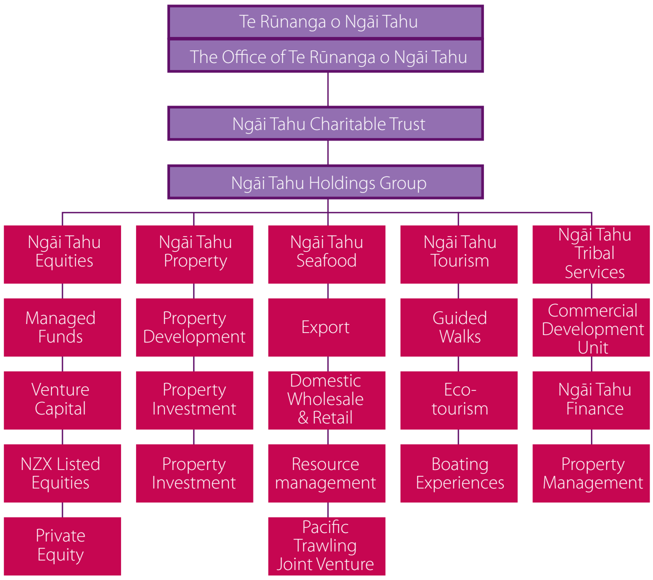


Figure 4 Te Rūnanga o Ngāi Tahu governance model (2004).

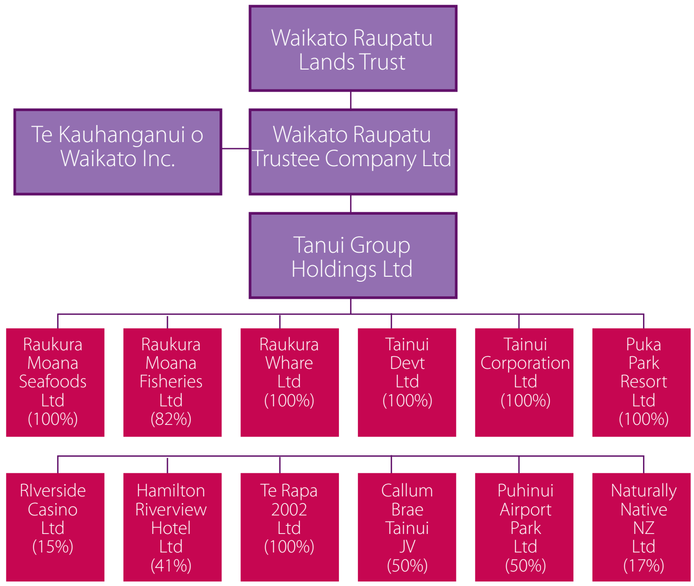


Figure 5 Waikato Raupatu Lands Trust governance model as at 2004.

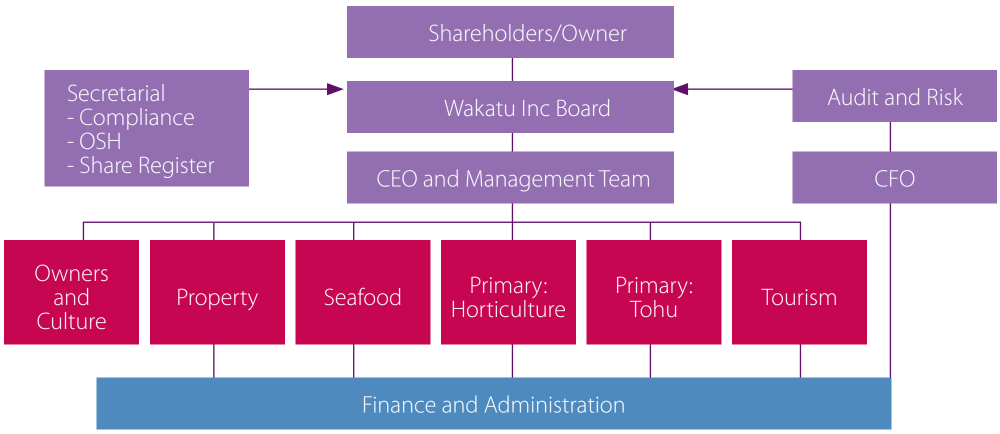


Figure 6 Wakatu Incorporation governance model (2006).

have progressively evolved to respond to changing politics and business and sustainability outcomes.

Figures 4–6 shows three examples of Māori organisations, for Te Rūnanga o Ngāi Tahu, TRONT (Fig. 4), Waikato Raupatu Land Trust, WRLT (Fig. 5), and Wakatu Inc. (Fig. 6). In Fig. 4 the governance of TRONT is based on an 18-member tribal council that makes all major decisions and is accountable to tribal members. From a corporate theory perspective this has been criticised for not being objective enough, and a more independent structure has been suggested.[43] There is, however, a clear demarcation between the entity responsible for making money and protecting and growing the Ngāi Tahu asset base (trading as Ngāi Tahu Holdings Group), and that of the Office of Te Rūnanga o Ngāi Tahu, which is charged with delivering social and cultural benefits to the tribe. The iwi actively promotes growth and development at the board and executive level.[44]

Because of early major governance problems and large investment losses in the mid-1990s, the WRLT embarked on a major organisational reform in the late 1990s to the current governance model shown in Fig. 5[45]. The more commercial structure has allowed Tainui to develop a focused and well-supported vision and greatly increase accountability and performance. Again, there is clear demarcation between its holding group and its entities delivering social, environmental and cultural benefits.

Wakatu Inc., another successful Māori company, is founded on a complex ancestral history, historical land grievance and retention, and more contemporary cultural aspirations. The formation of Wakatu Incorporation goes back to the 1970s. The owners and now shareholders are all descendants of Te Tau Ihu (northern South Island) *iwi* groups. The company is currently worth well over $200 million. The present structure (Fig. 6) shows the ~3000 shareholders sitting above the board of directors, with a clear demarcation between the side of the company focusing on assets and financial performance (i.e.

primary industry, property, seafood, tourism), and the side delivering social, cultural and environmental benefits.[46]

Criticisms

The major criticisms of Māori business governance models, largely based upon mainstream corporate governance theory, have pointed to the lack of independence or objectivity of the elected or nominated governance board, the lack of independence and skills of management personnel, and the overall conflicting control and structure of operations, accountability, and delivery. For many Māori businesses the governance board, management teams and general staff either originate from, or are associated with, constituent *iwi/hapū/whānau* shareholders or beneficiaries. The need for more high calibre business professionals in the Māori business sector is constantly raised by many Māori businesses and organisations.[47]

A range of more appropriate structures and models have been proposed[48] to lift performance and accountability, and improve professionalism and objectivity in strategic planning and decision-making. They aim to increase the number and calibre of elected representatives on governance and advisory boards, and increase the number of business professionals appointed to positions of chief executive, management teams, and staff. These developments are attracting more Māori into the business sector with high quality skills such as accountancy, law, marketing, business, science and technology.

Futures planning: the long-term vision and strategies

Strategic planning has become an integral and ongoing part of business. Most Māori businesses carry out some type of strategic planning on a 1- to 5-yearly basis. Many strategic planning approaches have been developed by *iwi* and *hapū* groups throughout Aotearoa-New Zealand, and a large number of strategic planning documents have been produced.[49]

Many Māori organisations today have to administer large amounts of assets on behalf of their constituents; and provide services to and to represent their constituency in a range of political, social and economic forums – especially following Treaty of Waitangi settlements. This responsibility means the organisation must have a clear purpose and strategic direction and explain its present activities and future plans to its constituency.

Some of the best examples of long-term planning are at the tribal level,[50,51] where 100- to 1000-year visions and planning are not unusual. Within this tribal context Māori businesses tend to strategically plan within 5- to 50-year time frames. Māori ownership of assets and respective organisations and businesses is typically long term (e.g. >100 years) and is always discussed as intergenerational across at least five generations. Because land and resources are often collectively owned and held in perpetuity under governance structures and legislation, strategic planning has to reflect long-term ownership and aspirations and therefore sustainability.

One of the first groups to use a strategic planning approach that identified a collective vision to achieve social, cultural, physical and economic goals was Ngāti Raukawa, centred in the Manawatu–Feilding–Horowhenua–Kapiti districts. Their early planning initiatives in the 1970s were led by Dr Whatarangi Winiata along with several other tribal leaders responding to concerns that the increasing urbanisation of Māori was weakening the institutional and cultural fabric of the tribe. The 1975 approach '*Whakatupuranga Rua Mano*',[52,53] created a vision, strategy and tribal goals to map out how Ngāti Raukawa should move into the 21st century. It prioritised education and culture as key pathways, leading to the establishment of several educational and cultural initiatives for the tribe, including the *Whare Wānanga o Raukawa*, the Māori University at Otaki.

In recent years (<20 years), a number of Māori organisations, especially at the iwi tribal level, produced long-term strategies and vision statements. Ngāti Raukawa often discusses a 1000-year vision and plan, while other groups have discussed plans and vision documents between 20 and 100 years. Ngāi Tahu (South Island iwi) has recently prepared a document *Ngāi Tahu 2025*, while Tainui (Waikato) have produced their 2050 strategy '*whakatupuranga* 2050'. In addition Chapter 3 describes the development process of a long-term sustainability strategy undertaken by the *iwi* of the Auckland Region.

Strategic priorities are usually based on creating intergenerational equity and on accumulating capital over long periods of time. Examples include educational scholarships, training, employment initiatives, housing for the elderly (e.g. *kaumātua* housing), mentoring systems for young Māori

scholars, and annual dividends to tribal resource owners. One of the largest tribal organisations in New Zealand – Te Rūnanga o Ngāi Tahu – provides low interest housing loans and savings accounts to all Ngāi Tahu shareholders (of proven ancestral lineage), and many tribes have discussed forming their own banking systems because of the difficulties of raising capital on perpetual collectively-owned, inalienable assets.

While these priorities distinguish emergent Māori business, they also have relevance in a world seeking a new social contract between business and society.[54] They look to the long-term sustainable future: '*Mō tātou, ā, mō kā uri ā muri ake ne*i' (for us and our children after us – Ngāi Tahu), and they express the spirit of sustainable development: '*Manaaki Whenua, Manaaki Tangata, Haere whakamu*a' (Care for the land, Care for the people, Go forward – Wakatu).

SUSTAINABILITY PERFORMANCE REPORTING – A CULTURAL PERSPECTIVE

To meet new performance targets, an increasing number of businesses are shifting their performance reporting from a single bottom line to a triple or quadruple bottom line (see Chapters 8 and 9). Many businesses now use standard business reporting frameworks and social, environmental and economic performance indicators to achieve and report on sustainability goals. Reporting frameworks include sustainability indices,[55] the Global Reporting Initiative,[56] ISO 14001,[57] sustainability assessment), and standard environmental management system approaches such as Enviro-Mark®NZ.[58]

A cultural framework for reporting

Very few frameworks and indicators internationally and in New Zealand show a means for cultural reporting. Distinct cultural goals are important parts of Māori business performance, for example, 'are there things which are special to each Māori business – that support Māori values being incorporated into the business culture and use cultural values strategically to reinforce cultural identity'. It was found in *Waka Tohu* (2004–2008) project research[59] that very few Māori organisations had mapped their core values across into their business strategies and plans, and few, if any, Māori businesses were reporting cultural performance, either as a dimension in its own right (i.e. as in quadruple bottom line reporting[60]), or as a subset of the social dimension (triple bottom line reporting[61]).

A cultural performance reporting framework and checklist of performance indicators was developed by the author[62] for specific cultural reporting by Māori organisations and other related businesses. The framework was divided into a number of key aspects (categories), consistent with the Global Reporting Initiative (GRI) framework and indicators[63] and designed to be used in conjunction with reporting social, environmental, economic sustainability performance indicators (Table 1). To date the framework has not been used formally; it was first sent out only for discussion in 2006 and serves as a guide for reporting in the cultural dimension.

MĀORI BUSINESS BRANDING

Since World War II commercial brands have been developed to differentiate products in danger of becoming 'hard to tell apart' and to build relationship equity and loyalty with consumers.[64] Today, branding includes visual imagery (logos, text, advertising), as well as the distinctive qualities of the product or service associated with that brand (e.g. luxury, budget priced, trusted, clean and green). Brands can also reflect the relationship and experiences built over time between a customer and a company, expressing the distinctive qualities of the brand. Trademarks, copyrights, symbols, images, and patents have become essential to protect the intellectual property associated with branding.[65] A company brand states what the company stands for – beyond profits.[66,67] Branding around being environmentally or socially sustainable is increasingly mainstream.

Māori branding has always been an integral part of Māori culture and is an active expression of the culture. Elements[68] that typify the culture include: *Te Reo Māori*, geographic and cultural placenames, all aspects of *whakairo* (carving, sculpture) and *toi* (Māori artwork – including design, symbols, images), *raranga* (i.e. weaving), structural building and design inside and outside meeting houses (e.g. *whare tupuna, whare whakairo, wharenui, tukutuku, kowhaiwhai, taniko*), and tattoo – *tā moko, mokomokai*. Māori branding has been defined as:

A unique cultural association of stories, images, names, and symbols which serves to differentiate competing products or services, providing physical and emotional triggers to create relationships between consumers and the product, service, or enterprise.[69]

Following colonisation (since 1769), Māori cultural elements have been increasingly used and exploited by outside cultures. A key driver for this exploitation by foreign cultures was the fascination of something uniquely different from their own culture. British Society in the 19th century, for example, saw Māori culture as deeply rooted in Polynesian culture, of mystical ancient quality, and completely exotic. Intellectual property right issues are an ongoing significant issue for Māori.[70,71] Within the context of Māori trade activities, six distinct time periods – first contact (1769–1800); pre-colonial (1801–1841); 19th century (1842–1899); first-half 20th century (1900–1945); second-half 20th century (1946–1999); and early 21st century (2000–2006) – were identified[72], exhibiting trends in the way Māori branding was used with the growth of commercialisation, adaptation, and exploitation.

Branding has become a significant part of New Zealand's strategy for expanding economic development and diversity.[73,74,75] and authenticity and distinctiveness are cited as central to defining a national identity. The International Anholt-GMI Nation Brands Index[76] ranked New Zealand as the 10th strongest nation brand in the world in 2005,[77] calculating a brand-value figure of US$102 billion for New Zealand for that year[78]. The question of what makes New Zealand companies, products, and services distinct from those of other countries has been widely discussed in the last 10 years by a number of New Zealand agencies and commentators.[79,80,81] It was concluded that most national brands have been leveraging off New Zealand's size, geographical isolation, history and indigenous culture.[82]

At the heart of Māori business is a pride in being Māori and a desire to communicate that to the world. Indigenous branding appears well positioned to play a major role as part of Māori business and Brand NZ in global markets but needs to be strongly aligned to what the business stands for, its purpose and values, and be strategically planned to gain competitive advantage. If brands reflecting Māori culture are used without integrity, the uniqueness and IP of the overall Māori brand are threatened.

CONCLUSION

Businesses lie at the heart of a progressive move by Māori to achieve multiple goals across economic, social, cultural and environmental domains, to advance Māori as Māori, and achieve desired standards of living, quality of life and well-being. Māori business governance models are responsive to the complex and dynamic environments they exist in. They have evolved and adapted from traditional and historical to modern forms, reflecting a fusion between cultural elements, values, goals, responsibilities and modern corporate capitalist ideals and compliance. They are commonly connected to the past through cultural and historic contexts, values, and assets that are intergenerational. This shapes the modern look of the Māori business and defines its purpose. A major challenge for many Māori businesses and organisations has been balancing aspirations for cultural enrichment and identity with economic imperatives, realities, and goals. Traditional Māori values are still integral and resonate strongly in many Māori businesses. Values guide behaviour, help set and clarify goals, and define success and performance.

The Māori culture remains unique, and central to a New Zealand identity.[83] Māori business has a significant role in contributing to Māori advancement and cultural resilience, to sustainability outcomes, and lies at the heart of New Zealand economic prosperity and aspirations for quality of life and well-being.

Table 1 A cultural performance reporting framework and checklist of performance indicators.[84]

Aspect:	Themes (examples):	Values (examples):	Key performance indicators (examples):
Governance (cultural values are integrated across all levels in the business)	Mission; goals; policy; strategic plans; asset management; values; cultural responsibilities; indigenous rights	Whakapapa, tino angatiratanga, whakakotahitanga, manawhenua, mana moana, whakapono, matakite	Business goals are aligned with shareholder aspirations and cultural priorities) (core) The business has a core set of cultural values and principles (integrated into strategy and policy) (core) Māori values are recognised & endorsed by the board of directors (core) The business measures and reports economic, environmental, social, and cultural performance (core) Mandate and performance measure for executives and managers to integrate cultural values across the organisation (optional) Cultural values are applied across the whole organisation. Evidence (optional)
Cultural practices/ tikanga (business retains, promotes, & advances cultural values, custom, practices, & activities)	Cultural training; taonga; marketing; intellectual property; community	Tikanga, te reo, kawa, manaakitanga, akoranga, mauri, tapu, noa	The business develops cultural & social capital (strategies and practices are implemented)(core) Cultural heritage and values are taken into account in all decision-making? (optional) Successful outcomes for protecting & maintaining cultural values in all business activities (e.g. restoring mahinga kai, cultural harvest sites, food gathering sites, wahi tapu) (core) Describe significant adverse impacts or activities the business has had on cultural values (optional) Examples of indigenous branding for any products/services by business (optional) List of cultural taonga (treasures) protected by the business (e.g. artworks, carvings, paintings, weaving, symbols etc.) (optional) Examples of cultural training/cultural practice/tikanga in the workplace Cultural performance is regularly reported to shareholders and stakeholders (core) Policy and main mechanisms in the organisation for protecting indigenous cultural property and cultural values (core)
Economic (profits are used to advance and reinforce cultural values, social capital, social & cultural responsibility)	Financial accountability; financial performance; financial reports, e.g. financial performance is fully reported to shareholders & stakeholders in annual reports	Whai hua, ngākau tapatahi, pono, tika, pūtea, kaikōkiri	Proportion of spending profit and revenue to integrate and promote cultural values (e.g. cultural development, heritage, cultural practices, cultural activities, cultural investments) (core) Proportion of spending profit & revenue to achieve cultural goals and objectives (e.g. cultural capital investments) outside of the organisation (core)
Environmental sustainability (the business contributes to environmental& cultural protection/ guardianship)	Kaitiakitanga practice; environmental policy & management; compliance	Kaitiakitanga, awhinatanga, arohatanga, manaakitanga, tau utuutu, taonga tuku iho, te ao turoa	Describe kaitiakitanga practices in place to achieve 'sustainability goals & practice (e.g. carbon mitigation, managing and limiting pesticide use, herbicide use, insecticide use, increasing sustainable resource use, resource allocation, recycling, energy conservation, water conservation, energy & paper, resource management, recycling and waste management (core) Kaitiakitanga practices to safeguard and protect cultural values, such as culturally significant areas, cultural sites (core) State the environmental policy, registers, manuals, records, procedures, such as an environmental management system (EMS), that includes a set of specific objectives & targets consistent with ISO 14001 standards (core)
Social (the business redistributes success and wealth back to the community, shareholders, stakeholders, & workers)	Community; employment; training & education	Whānaungatanga, manaakitanga, awhinatanga, whakakoha, turangawaewae	Programmes that advance cultural practices & activities in the community Training and educational funding (e.g. employment, scholarships) (core) Jobs created & proportion of Māori employed (optional) Examples of housing for shareholders and community (optional) Examples of savings schemes, bank loans for shareholders, businesses, tribal or development or social capital initiatives (core) Examples of business mentoring to the community, or to Māori entrepreneurs, other Māori businesses, or to advance cultural entrepreneurship (optional)
Spiritual (the business has a soul & recognises a spiritual dimension and purpose above & beyond service, products, & profit	Policy; tikanga; custom; ethics; principles; practices	Wairuatanga, tohungatanga, taonga tuku iho, atua, ihi, weh	Cultural frameworks & policy (or policies) for cultural practice(s) and protocols (i.e. tikanga, kawa) Spiritual values central to the company philosophy, vision, and mission (core) Examples of cultural values incorporated & practised routinely in the business (e.g. te reo Māori, whaikōrero (oration, speech), karakia (prayer),& waiata (song) Policy for bereavement (tangi) leave, cultural beliefs and practice (core)

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Manaaki Whenua

Life Cycle Management

CHAPTER 11 : HATCHED

Jake McLaren
and Sarah McLaren

Summary

World-leading companies are gaining competitive advantage through adopting external, product-focused environmental management programmes. They are responding to increasing demand from consumers and business-to-business markets for transparent accountability with respect to the sustainability performance of their products. At the same time these leaders are well placed to comply with new environmental legislation, which increasingly takes account of the cradle-to-grave impacts of products.

Life Cycle Management (LCM) provides a pragmatic system to improve the sustainability of products and services over their complete life cycle; this encompasses supply chains from initial extraction of raw materials through to end-of-life management. LCM embeds life cycle thinking throughout an organisation's decision-making, and delivers products and services that support sustainable production and consumption in society, while adding economic and social value to stakeholders in the value chain.

Formway Furniture is an example of a New Zealand company that developed and has maintained a pre-eminent position in environmental products, including the LIFE chair, through the early adoption of LCM in 1998.

While LCM can provide some quick 'win-win' benefits to a company, it takes a number of years to fully implement. New Zealand businesses will need to move rapidly to adopt LCM approaches in order to build market advantage and maintain the authenticity of New Zealand's clean green brand in the longer term.

INTRODUCTION

Companies worldwide are facing increased pressure from key stakeholders around a number of environmental issues. These include climate change and carbon management, water scarcity, and the rising cost of raw materials, energy and transport.

During the 1980s and 90s policymakers, researchers and innovative companies working towards sustainability typically focused on supply-side measures such as cleaner production and eco-efficient design. In recent years attention has increasingly shifted towards the question of how to stimulate new models of sustainable consumption as well as production.[1] In response there is growing evidence that sustainability is emerging as a substantial business opportunity area, and some of the world's leading companies are seeking competitive advantage through adopting external, proactive and product-focused environmental programmes. Some examples are given in *Green to Gold* published by Yale University Press.[2]

For these companies, environmental management and wider corporate responsibility issues are integrated at the visionary, strategic and operational levels of corporate decision-making. The market drivers may originate from business-to-business markets and government purchasing programmes, as well as from sectors of the public who are increasingly informed and have various motivations to purchase 'sustainable' products.

This shift in focus can be recognised through the development of product-oriented environmental management systems. These management systems use life cycle thinking as their basic conceptual approach to consider environmental impacts along product life cycles.

WHAT IS LIFE CYCLE MANAGEMENT?

Life Cycle Management (LCM) is the systematic application of life cycle thinking in business practice with the aim of providing more sustainable goods and services. It involves the development and implementation of a product-oriented management system; this seeks to improve the sustainability of an organisation's product portfolio(s) across the entire life cycle and value chain.[3]

Organisations adopting an LCM approach will embed the principle of continuous environmental improvement within their management practices. Furthermore, they will support their visionary, strategic and operational decision-making with information and data that describe the complete life cycle and value chain of their products.

LCM is not a single tool or method but a product management system. It provides a framework for organisations to structure activities, and product-related information to improve product sustainability from an enviornmental perspective. It requires an organisation to expand the scope of its environmental management activities from specific operations and/or sites, to encompass the complete product life cycle from cradle to grave (and beyond); this is commonly termed life cycle thinking. The same type of thinking is described in the book Cradle to Cradle by William McDonough and Michael Braungart.[4]

An organisation implementing an LCM programme commonly considers organisational aspects, internal LCM project areas, and communication of the company's environmental profile, as illustrated in Fig. 1, pg 4.

Organisational aspects

Successful implementation will depend upon solid integration within the organisation. A clear and compelling vision and well-defined strategy are important foundations. However, embedding responsibility, accountability and defined processes to deliver a strategy are critical to successful implementation. In particular, because LCM is by nature a cross-disciplinary business area, implementation requires several business functions to embrace the concept and take responsibility to drive forward LCM strategy and practice. Business management must signal a clear mandate that sustainability is an organisational priority; otherwise action owners may perceive LCM tasks as low priority.

Certain aspects of life cycle thinking may require additional expertise and/or specific skills to be developed. For example, the use of life-cycle-thinking tools, specific technical issues

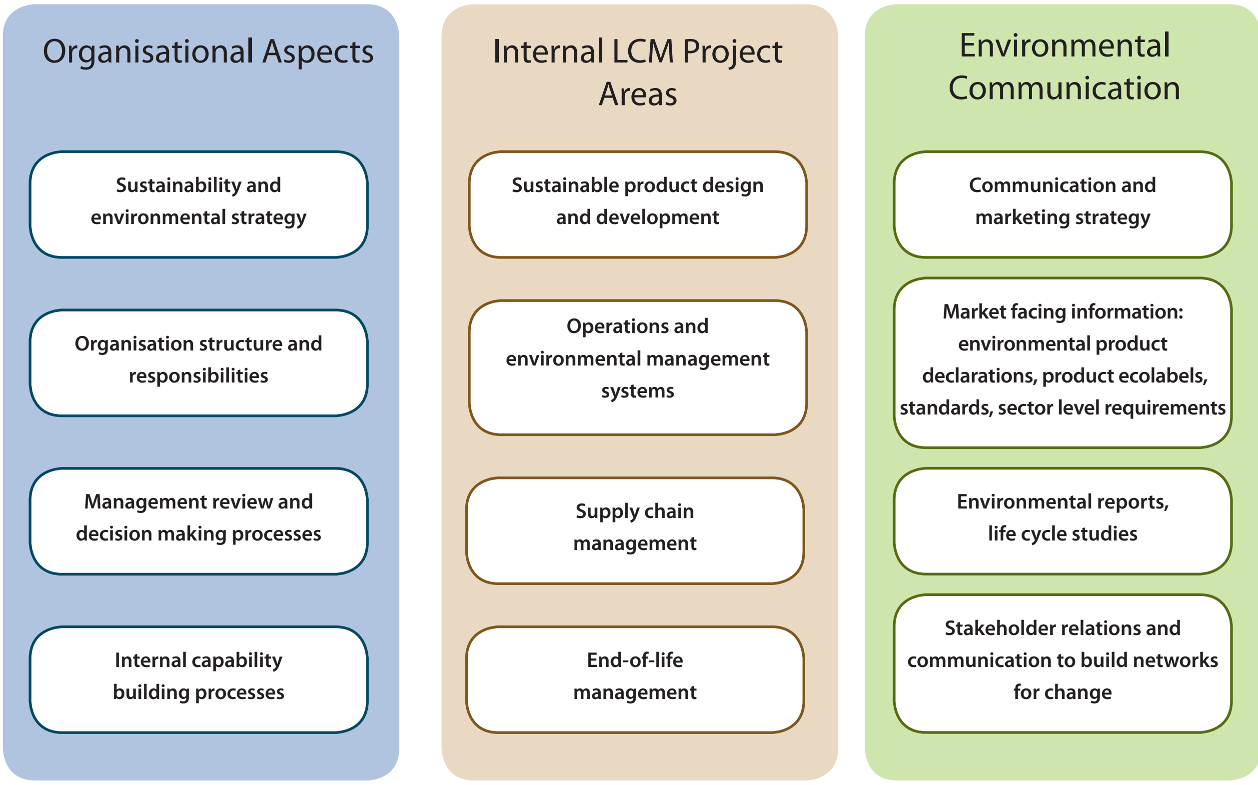

Figure 1 Elements of corporate Life Cycle Management.

about the environment, and development of environmental management systems are aspects of LCM that may require an organisation to gain new knowledge and competence.

Internal project areas

LCM provides an overarching framework for coordinating responsibility and staff engagement within relevant business functions, and encompasses all stages of a product's life cycle. Internal projects will typically focus on addressing key priorities at selected life-cycle stages.

Sustainable product design and development requires both analysis of the issues and creativity to find the best solutions. For research and development of new and/or improved products, embedding life cycle thinking and the use of life cycle tools are priorities for implementing LCM.

Another key aspect is innovation in *supply chain management*. Ensuring key suppliers are improving the environmental performance of their own products and processes can lead to a cascade of sustainability insights, learnings and opportunities to create value. Maximising collaboration along the supply chain is critical to both managing risk and delivering improved transparency and sustainable product performance.[5]

With respect to *operations and environmental management systems,* in-house environmental issues may be diverse and include energy efficiency, carbon management, manufacturing efficiency and waste reduction, process emissions, product packaging and efficient logistics, as well as communications and marketing aspects. Environmental management systems such as the Landcare Research Enviro-Mark® NZ scheme[6] are recognised methods to systematically manage these issues, in line with the globally recognised standard for environmental management, ISO14001.

Product stewardship (or product *end-of-life management*) is an increasingly visible area of organisational responsibility, which may offer first-mover advantages and opportunities to strengthen customer relationships. An effective end-of-life strategy often provides key input for product design, operations and business strategy as well as a route to strengthen communication with markets and other life cycle stakeholders.

Communication of company profile

Consumers and business-to-business markets increasingly expect transparency and accountability regarding the sustainability performance of products. In particular, New

Zealand food and beverage exporters need to be critically aware of consumer concern around our nation's distance to export markets. Offshore market perceptions of 'food miles' and the authenticity of sustainability claims are issues that require proactive use of life cycle tools and adoption of LCM approaches by exporters.[7]

Communication and management of brand reputation regarding sustainability are a growing business requirement in many industrial sectors. LCM enables organisations to communicate with integrity, firstly by demonstrating a detailed understanding of their product's life cycle environmental performance, and secondly by building proactive improvement programmes based upon life cycle thinking and an understanding of an organisation's strategic product-related environmental issues and opportunities. In short, LCM supports businesses in communicating with integrity and validating market claims appropriately.

BENEFITS AND DRIVERS FOR LCM

The more generic benefits of LCM are summarised in Box 1. It can be seen that a company may use LCM to differentiate itself in the marketplace, achieve competitive advantage, and reduce its liabilities.

One of the main drivers for realising these benefits is ecolabelling. Manufacturers that develop products with improved life cycle performance will be better positioned to meet the market requirements embodied in product ecolabels, Environmental Product Declarations (EPDs), and – increasingly – other business-to-business contractual arrangements. For an introduction to the types of ecolabels relevant to specific markets, see the UK Government's document on ecolabelling[8] and the NZ Government's ecolabelling directory.[9]

Also, product environmental legislation is moving towards a consideration of product-life-cycle issues, rather than specific policy instruments focusing on individual issues or life cycle stages. The EU Directive on the Eco-design of Energy-using Products (EuP Directive) is an example of this more recent life-cycle policy approach. The EuP Directive requires producers or importers of specific product types within the EU to perform an 'assessment of product life cycle performance', and to publish a product 'ecological profile'. The European Commission recently communicated a proposal to extend the scope of this directive to a wider range of products with 'significant environmental impacts'.[11] This communication included proposed measures such as *minimum requirements* and *advanced benchmarks.* Offshore policy changes such as these ones may be relevant to New Zealand exporters.

It is worth noting that product-oriented environmental policy is most developed in the European Union. Producers in Europe are increasingly held responsible for their products' environmental performance at all stages of the product life cycle due to Extended Producer Responsibility (EPR) directives in several product sectors and Integrated Product Policy (IPP) initiatives.[12]

box 1: BUSINESS BENEFITS OF ADOPTING AN LCM APPROACH

- Product and service innovation
- Insight and foresight to proactively engage with emerging market trends and adapt to the sustainability paradigm
- Product and brand differentiation
- Increased competitive advantage and improved access to markets
- Improved reputation and customer relationships beyond the point of sale
- Improved efficiencies, and reduction in regulatory costs
- Liability and risk reduction
- Social responsibility including staff engagement and retention through alignment of company values with personal and employee values

SUPPORT TOOLS FOR LCM

Life cycle thinking is a conceptual approach that considers the 'cradle to grave' impacts of products, that is, impacts occurring during the extraction of raw materials, processing, manufacture, distribution, use and end-of-life stages. It is the

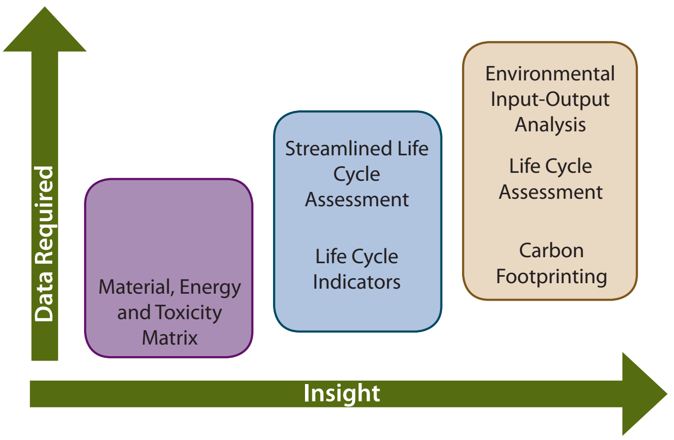

Figure 2 Examples of Life Cycle tools.[13]

key principle underlying Life Cycle Management, and expands the focus of attention from specific processes or life cycle stages to include the impacts of a product over its entire life cycle.

A range of life cycle tools exist for guiding life cycle thinking. These range from quantitative analytical assessment methods to targeted use of creative tools such as brainstorming and scenario modelling for sustainable ideation. Figure 2 shows a number of analytical tools positioned in relation to increasing data complexity and insight delivered. Generally the more data that are included within a model, the greater the insight gained.

Appropriate use of these tools will support an organisation in prioritising work and focusing on the relevant stages of their product's life cycle(s). It is important to note that undertaking a comprehensive Life Cycle Assessment (LCA) is not necessarily a prerequisite for implementing LCM: LCM is a dynamic process and can start with a small goal, using limited resources available, and get more ambitious over time.

STEPS TO IMPLEMENTING AN LCM PROGRAMME

For a business to implement LCM, an essential prerequisite is a positive *attitude and desire* to reduce environmental impacts, to engage with the complex sustainability agenda, and ultimately to expand the scope of traditional management responsibility along the product life cycle. Some businesses have a clearly defined sustainability vision for their organisation that provides a mandate for life cycling thinking; for others, a process of organisational 'soul searching' may be required before adopting an LCM approach. Some of the more challenging aspects associated with this shift in thinking are: accepting the need for greater disclosure and transparency regarding environmental issues, recognising the need to communicate and work with a wider range of stakeholders, and taking more responsibility for the upstream and downstream impacts of the business's products.

There are three (overlapping) stages to adopting an LCM programme:

- Review and develop an understanding about the life cycle issues associated with the organisation's products and product portfolios
- Define an LCM strategy and prioritise actions
- Implement LCM projects within an organisation.

The first stage involves developing a better *understanding of the life cycle issues associated with the organisation's product,* and reviewing marketplace requirements. This is commonly achieved by conducting a quantitative life cycle study of the product or service. Key aims of a life cycle study may be to:

- Identify environmental 'hotspots' in an existing or proposed product
- Compare the environmental impacts associated with two or more products
- Identify opportunities for innovation and greater efficiency
- Inform the direction of an LCM strategy and key environmental improvement goals
- Educate the organisation in life cycle thinking.

A streamlined LCA may be sufficient initially, but conducting a more comprehensive LCA study may be appropriate if existing data are poor, or greater insight is required. Alternatively a focused literature review may identify previous studies and give some indication of the key environmental impacts and relevant issues.

A life cycle study typically focuses on the quantifiable environmental impacts, but a review of market-related environmental issues is equally important to define an appropriate LCM strategy from a commercial perspective. This may include consideration of existing and developing issues such as environmental product requirements (mandatory or voluntary), market and customer needs and perceptions, competitor activity, new materials and technology trends, and any other factors affecting the market.

Following the environmental review from both a scientific and market perspective, the second step is to *define an LCM strategy and prioritise actions* the company should take forward. Defining a clear environmental or wider sustainability vision is likely to be part of this process. The LCM strategy will typically address stakeholder and market issues, while also aiming to reduce the overall life-cycle environmental impacts. Actions may initially be prioritised by focusing on environmental 'hotspots' (areas of the product life cycle that account for significant environment impact) and areas of 'low hanging fruit' where rapid progress is possible.

It should be noted that environmental issues are often categorised as relevant based on a mix of both subjective perceptions and scientific understanding. These two sets of justifications may not always align, and a company's strategy and actions may have to respond to both interpretations of 'green'. For example, a company may prioritise improvement of the environmental performance of product packaging due to customer or staff perceptions, while also being aware that the improved packaging contributes relatively little to reducing the overall life-cycle environmental impacts of the product.

The third stage is *implementing LCM projects within an organisation*. This revolves around two tasks:

- Embedding an environmental improvement mindset and associated action plan into an organisation's deliverables
- Empowering individuals to take ownership of issues or new projects within their already busy work lives.

Regarding the first task, turning an executive-level strategy PowerPoint slide presentation into a culture of continuous environmental improvement is not easy! However, it is fundamentally important to explicitly recognise and define where environmental issues fit among other competing business targets and priorities. This is a key aspect in motivating individual action and organisational accountability.

The issues to be resolved often require cross-disciplinary action, with responsibility and activity driven by teams comprised of representatives from several business functions. In some cases LCM may justify new resources to facilitate the process. However, even with new resources, the key implementation method remains cross-disciplinary integration. In other words, management personnel must be willing to accept responsibility for the environmental issues identified as relevant to their organisational area, and actively encourage their staff to deliver according to an organisation-wide prioritised plan.

It will be obvious that implementing an LCM programme that 'makes a difference' is no small task, and takes a number of years to become embedded in an organisation's vision, strategy and operations. The next section discusses an example of this process in action at the company Formway Furniture.

FORMWAY: A NEW ZEALAND LIFE CYCLE MANAGEMENT CASE STUDY

Formway is a medium-sized New Zealand business that has developed an LCM approach within its business. Formway designs and manufactures commercial office furniture for sale in Australasia and has built significant commercial partnerships internationally through licensing and royalties on intellectual property. Formway's products include the LIFE chair and the innovative HUM workstation system.

During development of the LIFE chair in 1998, Formway identified that sustainability and, in particular, environmental issues were emerging as a potential point of differentiation in the global marketplace. A strategic decision was made to design the LIFE chair with a central aim to 'lead the target market with best product environmental performance'. When the LIFE chair was launched to the market in 2002, the marketing included statements describing the product's environmental performance over the whole life cycle, the overall product environmental concept and benefits to the

Figure 3 Formway LIFE Chair: assembled and disassembled.

user, and the raw materials and manufacturing processes.

Since the launch of the LIFE chair, the number of environmental product standards and certifications applicable to furniture products has increased and there were more than 20 around the world by 2008.[14] Although several competitor 'eco-designed' office seating products are now available, the LIFE chair has continued to retain its pre-eminent position by securing recently developed 'Type 1' environmental product labels in several offshore markets, as well as being the first furniture product in New Zealand licensed by the Environmental Choice New Zealand ecolabel.[15] Meeting the requirements of these third- party-audited ecolabels has enabled the LIFE chair to access the rapidly expanding global markets for green building products, and is proving to be a significant business advantage for both Formway and its international business partners. The insight and proactive attitude of the design team back in 1998 has enabled Formway to build an improved product environmental profile and strong product marketing story, and has ensured longevity of the product in the marketplace.

In addition to product certifications, a detailed LCA study of the LIFE chair has been completed to gain deeper insight into the life cycle environmental impacts of the product and identify improvement areas for subsequent product development. The LCA study was co-authored with staff at Landcare Research and the University of Auckland, and recently published[16] in the peer-reviewed *International Journal of LCA*, which added credibility to this design approach.

After the LIFE chair launch in 2002, the company continued to use external consultants and in-house student projects to conduct several LCAs and streamlined life cycle studies of products, materials and processing technologies. By 2006 demand in the marketplace had increased to the point where Formway could justify employing a full-time environmental manager to develop its Life Cycle Management Programme involving all relevant aspects of the organisation.

Figure 4 shows the focus areas of Formway's LCM programme. The four main project areas are:

1. 'Eco-Innovation' during product design ensures products are designed with a robust approach to reducing life cycle environmental impacts. LCA studies are undertaken that underpin the decisions made during design and development.[15,17], The results of these LCA studies are

LIFE CYCLE MANAGEMENT AT FORMWAY

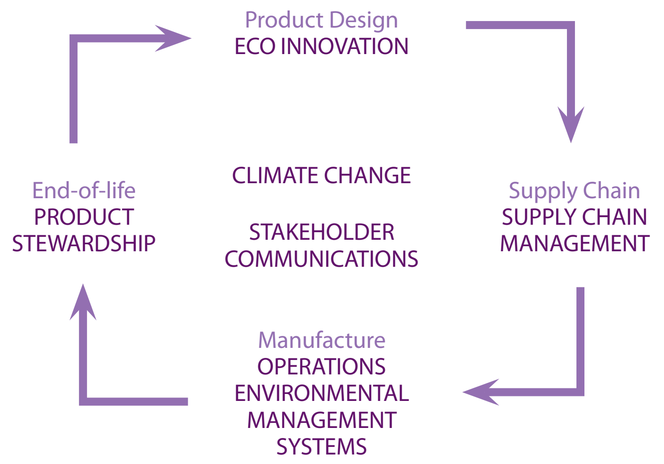

Figure 4 Life Cycle Management at Formway.

now informing and steering the company's environmental strategy, as well as detailed design decisions within product development projects.

2. 'Supply chain management' concerns procedures and specific projects that aim to improve the sustainability of products and services purchased by Formway.
3. 'Environmental management systems' are in place to improve in-house processes and operations within Formway's own manufacturing sites. These have been developed and certified using the Enviro-Mark®NZ scheme.[6]
4. 'Product stewardship' for end-of-life furniture is an area of developing importance to Formway. A number of practical options are currently under development and being trialled by the company for customers.

Climate Change and Stakeholder Communications have been identified as two priority overarching project areas that require coordination across the company's functions.

Additional details about Formway's LCM activities can be found described on Formway's website,[18] and in the Ministry for the Environment case study 'Sustainable design at Formway'.[19]

In summary, the life-cycle-thinking approach has gained traction across the company in recent years and has led to several projects including, most recently, development of a product stewardship programme for end-of-life furniture. The evolution of LCM at Formway is fairly typical of companies adopting an LCM approach. Often an early step involves commissioning a life cycle study of a selected product. This enables the company to become familiar with life cycle techniques and acts as a springboard for integrating life cycle thinking into other activities. Over time, a coordinated strategy and set of activities emerges around product-oriented environmental management, and LCM becomes institutionalised within the company.

CONCLUSIONS

An increasing number of businesses are now embracing life cycle thinking, realising that they have a responsibility to consider the upstream and downstream impacts of their products – and that competitive advantage can be gained from adopting such a perspective. Life Cycle Management (LCM) provides a pragmatic framework to implement proactive, product-oriented environmental management strategies based on life cycle thinking. The key aim of LCM is to embed life cycle thinking within an organisation's decision-making, and deliver products and services that support sustainable production and consumption in society, at the same time as adding economic and social value to stakeholders in the value chain.

In summary, successful Life Cycle Management provides a foundation for the development and delivery of products that provide pragmatic solutions to sustainability issues while also adding commercial value to organisations.

WANT TO FIND OUT MORE?

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For the Author's contact details see page ii

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KEY PUBLICATIONS AND WEBSITES

3M: http://solutions.3m.com/wps/portal/3M/en_US/global/sustainability/policies-standards/life-cycle-management/

InterfaceFLOR: http://www.interfaceflor.com/Default.aspx?Section=3&Sub=4

Other companies do not use the term 'Life Cycle Management' but are effectively implementing life cycle thinking in their operations and management systems. Examples include:

Nokia: www.nokia.com/A41039019

Resene Paint: www.resene.co.nz/comn/envissue/howgreen

Some international links

The Life Cycle Initiative supported by the United Nations Environment Programme (UNEP), and SETAC is coordinating international activities to support implementation of Life Cycle Management: http://lcinitiative.unep.fr/

The International Conference on Life Cycle Management takes place every two years. Presentations at the 3rd International Conference, held in August 2007, can be found at: www.lcm2007.org

The LCA Centre, Denmark, has a page of links to companies using the life cycle approach: http://www.lca-center.dk/cms/site.aspx?p=4015

A Life Cycle Management business portal is hosted by EPA Victoria in Australia:

www.epa.vic.gov.au/lifecycle

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Landcare Research
Manaaki Whenua

carboNZero^Cert TM programme

CHAPTER 12 : HATCHED

Ann Smith and
Kathryn Hailes

Summary

- Global trade faces a carbon-constrained future and exporters will have to reduce their greenhouse gas emissions to maintain or grow market share.
- New Zealand businesses need to wholeheartedly embrace carbon management. Early adopters are realising the financial benefits.
- The carboNZero$^{\text{Cert TM}}$ programme enables individuals and organisations (and their products, services and events) to reduce their impacts on climate change. It guides participants through a three-stage process of measuring, managing (reducing) and mitigating (offsetting) their greenhouse gas (GHG) emissions, prior to independent verification and then certification.
- Organisations benefit from another 'm' – the marketing of credible improvements in their environmental performance.
- The carboNZero programme is the first ISO 14065 accredited GHG verifier outside the USA and the first GHG certification programme in the world to receive international accreditation from the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) which comes under the auspices of the International Accreditation Forum (IAF).
- The carboNZero programme and CEMARS$^{\text{TM}}$ (Certified Emissions Measurement And Reduction Scheme – the measurement, management and certification steps of the carboNZero programme) are now being rolled out internationally through a partnership with Achilles Information.

HOW THE CARBONZERO PROGRAMME WAS DEVELOPED

Like many good things the carboNZero[Cert TM] programme started with a moment of serendipity. A Landcare Research scientist looking at business carbon management practices had a restaurant discussion with a colleague looking at how landowners could get a return on their regenerating native bush. They saw a possible connection.

Building on over a decade of research on climate change, GHG measurement and carbon monitoring, Landcare Research established the carboNZero programme in 2001.

Combining Landcare Research science with international best practice, the programme, headed by Professor Ann Smith, worked with a pilot customer, the New Zealand Wine Company (NZWC), to establish proof of concept. The programme continued to evolve and in 2006 certified NZWC (which included a number of owned and contracted brands: Grove Mill, Sanctuary, Frog Haven, Southern White and Thresher's Origin – see Box 1) as carbon neutral.

The carboNZero team then worked with AsureQuality and PricewaterhouseCoopers to develop the certification programme with future international accreditation as the goal even though there was no accreditation options available at that time.

Ever since certifying the world's first carbon neutral wine, the carboNZero programme has certified a further six wineries and has been successfully helping some of New Zealand's leading organisations products and services reduce their operational costs and gain market access in key overseas markets e.g. Meridian Energy, Urgent Couriers, Christchurch International Airport, Antipodes Water, Pitango, Snowberry (Endue Ltd), Wellington Combined Taxis.

In 2008, the carboNZero programme developed a licensing agreement with UK-based Achilles Information, which has over 40,000 clients in the oil and gas, transport, public, pharmaceuticals, mining, construction, and communications technology sectors in 24 countries. Many of Achilles' clients, together with a large number of New Zealand organisations, are keen to manage down their GHG footprint without making a commitment to being fully carbon neutral. In 2008 CEMARS™ (Certified Emissions Measurement and Reduction Scheme – the measurement, management and certification steps of the carboNZero programme) was launched.

By August 2009, the carboNZero programme had completed over 200 certifications (largely organisations, their products, services and events), and about 100 organisations were working towards certification through the CEMARS and carboNZero programmes. A total footprint of over 5.7 million tonne of CO_2-equivalent GHG's has been verified since the programmes' inception, with over 154,000 tCO_2e GHG's offset.

The carboNZero programme has three goals – to maintain their position as one of the top three GHG schemes in the world, to be a recognised New Zealand export product in their own right and to reduce global greenhouse gas emissions by more than New Zealand's deficit.

HOW THE carboNZero PROGRAMME WORKS

The programme focuses on measuring and reducing GHG emissions and then offsetting any remaining unavoidable emissions by purchasing verified carbon credits from credible projects that sink, reduce or avoid emissions, e.g. EBEX21 (www.ebex21.co.nz) (sink), energy efficiency projects (reduce) and renewable energy generation (avoid).

Measure

Daily operations (e.g. vehicle use, lighting, heating and refrigeration) using energy sources such as electricity, natural gas and petrol emit GHGs into the atmosphere. By measuring consumption of these various resources, we can calculate the amount of GHG released into the atmosphere and enable businesses to understand their emissions profile or carbon footprint. We provide guidance and tools to help businesses prepare their GHG inventory. The carboNZero programme's measurement requirements meet and exceed the requirements of the international standards: GHG Protocol for corporate accounting and reporting and ISO 14064-1. The measurement for products and services includes additional GHG lifecycle emissions relevant to the type of carboNZero certification being sought.

Manage

Making a commitment to manage and reduce GHG emissions at source is the most important aspect of the programme. The carboNZero programme provides guidance to help organisations, products, services and events identify and implement cost effective reduction opportunities. Reduction efforts are monitored by annually re-measuring their GHG emissions and comparing their profiles against their Key Performance Indicators (KPIs).

Mitigate

Mitigation is about 'offsetting' the effects of the unavoidable GHG emissions released into the atmosphere by an organisation. Offsetting emissions is undertaken by purchasing carbon credits through verified schemes such as regeneration of native forests, energy efficiency and renewable energy generation.

Verification

carboNZero certification is awarded only after independent verification of the measure, manage and mitigate steps by authorised verifiers (AsureQuality, Deloitte, PricewaterhouseCoopers, Telarc SAI and Verification NZ). The use of the carboNZero certification marks is also examined during verification.

Authorised verifiers are employed by reputable firms and have auditing qualifications and prior experience and proficiency in greenhouse gas emissions measurement, management and mitigation. To be authorised, verifiers must complete the carboNZero programme training course, pass an examination and be observed undertaking a verification.

Market

Organisations that gain carboNZero certification or CEMARS can be confident that the certification awarded by the carboNZero programme has both credibility and integrity as it has been verified against a global standard.

box 1: THE NEW ZELAND WINE COMPANY – THE FIRST CARBON-NEUTRAL-CERTIFIED WINERY

Within a year of achieving carbon neutral certification, Marlborough winery The New Zealand Wine Company (NZWC), which includes Grove Mill, Sanctuary and Frog Haven, had doubled its sales to UK supermarket chain Sainsbury's and doors were opened to other European markets. The carbon neutral status was also credited with helping to boost the parent company's share price.

We've been winning awards for our wines for years, but its carboNZero certification that has made people want to talk to us. – NZWC CEO, Rob White.

An economic analysis[1] conservatively estimated the value of carboNZero certification to the NZWC to be over 15 times its investment in earning carbon neutral certification. carboNZero certification produced wide-ranging benefits for the NZWC including:

- A significant increase in sales of NZWC wines, especially in the UK
- A 30% increase in share price in the year following certification. Though other factors such as success in competitions potentially influenced share price, carboNZero certification was considered by NZWC management to be the most significant factor in this increase
- A greatly enhanced market impact – estimated by a NZWC UK sales manager to represent a 50-fold return on marketing investment
- Considerable positive exposure through media attention on this world 'first'
- Differentiation from competitors, and the ability to 'cut through' in negotiating with trading partners
- Cost reductions through energy savings and other efficiencies associated with certification
- Influencing the company's supply chain towards carbon neutrality
- A degree of 'future-proofing' – defence against potentially negative impacts of 'food miles', and a timely brand image of environmentally responsible production when demand for products with demonstrated low environmental impact is rapidly escalating

The NZWC's carboNZero certification demonstrated to New Zealand businesses the significant economic gains to be achieved from carbon neutral certification, through increased sales and cost efficiencies in production.

By August 2009 a further six wineries and wine products had also achieved certification: Cape Campbell Wines, Dry River Wines, Huia Vineyards, Kaimira Ventures, Wairau River Wines and Yealands Estate Wines.

Why carbon neutrality?

New Zealand businesses – particularly those with an export focus – need to wholeheartedly embrace carbon management. The early adopters are realising the financial benefits but there is potential to achieve more. For example, if New Zealand's entire export wine industry shifted to carbon neutral production and achieved only half the revenue return achieved by the NZWC, additional export revenue of almost $70 million[2] could be generated. However this assumes a premium for carbon neutral products, which will not always be the case as other producers and other markets move to the same standard. Key to all this is the potential for carbon neutral certification to limit risks to overseas markets for New Zealand's agricultural and horticultural exports.

If global efforts to address climate change are to be meaningful, all organisations must develop strategic responses to the challenge of a carbon-constrained future. In key agricultural and horticultural export markets, New Zealand's trading partners are both cutting their own greenhouse gas emissions and increasingly importing products with demonstrated low environmental impact.

Food miles have an important international profile even though the underlying research is still emerging. In the Northern Hemisphere a 'green finger' is being pointed at New Zealand because of our distance from markets. carboNZero certification provides a significant edge in competitive international trade by providing independently verified proof that New Zealand can provide environmentally responsible products that markets now seek. For example, the value of secure access to UK markets for New Zealand's agricultural and horticultural produce is currently about $1 billion[3].

WHY ARE COMPANIES ADOPTING CARBONZERO CERTIFICATION?

Strong business demand exists for simple and robust GHG measurement and reduction certification schemes that empower organisations and enable them to make public statements around their carbon credentials with confidence.

Both the carboNZero programme and CEMARS are important for businesses that need to report for compliance reasons to the likes of the Emissions Trading Scheme (ETS) or Carbon Pollution Reduction Scheme (CPRS), for voluntary reporting reasons under the Carbon Disclosure Project (CDP) or annual corporate reporting.

Key benefits of joining the programme include to:

- Understand potential risk exposure
- Address consumers', shareholders' and investors' concerns
- Understand inherent carbon liabilities
- Avoid the cost of carbon and rising energy prices
- Reduce operating costs
- Reduce reputational risk and cost
- Gain competitive edge and market access
- Improve business networks and reach
- Demonstrate proactive corporate leadership and increase in staff morale
- Avoid accusations of greenwash (unsubstantiated or misleading environmental claims, e.g. deceptive marketing)

Christchurch International Airport used the carboNZero programme to become the first airport in the Southern Hemisphere to attain carbon neutral certification. As the South Island's largest international tourism gateway, the airport viewed carbon neutrality as an opportunity to reinforce the 'clean green' New Zealand brand promoted to international visitors.

We wanted to do our bit by making our organisation as environmentally friendly as possible. The main contributors to our GHG emission profile are electricity, fuel and energy consumed in maintaining our runway assets. We have programmes in place for managing and reducing those emissions. For example, we have a building management system that controls and monitors lighting, heating and security inputs. That includes heat curtain technology that prevents draughts being created between the back-of-house baggage hall *area and the baggage claim area. We also use runway pavement recycling and new pavement application technologies that reduce our profile*. – Rhys Boswell, Manager Asset Planning & Environment

Meridian, New Zealand's largest renewable electricity generator, sought carbon neutrality for both philosophical and commercial reasons.

Sustainability is simply our business approach. We question how and why we do things to ensure that we get the best outcome from a social, environmental and economic perspective. We are proud of where we have got to on this journey, and are striving to do more.

Meridian is proud to be New Zealand's only supplier of carboNZero certified electricity – Tim Lusk, Chief Executive

State-owned Meridian wanted to show leadership in reducing and offsetting its emissions because it is itself a seller of carbon credits and is a strong advocate for the establishment of carbon pricing. There were also three commercial objectives in obtaining the certification: gaining a competitive advantage, helping its customers achieve their sustainability objectives, and to be well positioned when sustainability inevitably becomes a fundamental requirement for doing business.

Has Meridian achieved a commercial return on its investment? It's too early to assess. But they have a long-term outlook and sustainability is a long-term strategy.

CEMARS – MEASUREMENT, REDUCTION AND CERTIFICATION

CEMARS is the measurement, reduction and certification steps of the carboNZero programme. It recognises the actions of businesses and organisations that measure their GHG emissions, understand their carbon liabilities, and put in place management plans to reduce emissions.

Based on our market research and feedback, CEMARS has an important niche in the carbon measurement sector, particularly with larger corporations for whom carbon neutrality is not currently a viable option, but for whom carbon management is a key strategic issue that needs to be addressed.

CEMARS uses the same methodology as the carboNZero programme's measure and manage steps. This methodology for producing an organisational carbon footprint is aligned with the internationally recognised Greenhouse Gas Protocol (GHG Protocol) for corporate accounting and reporting, and with ISO 14065-1 specification and guidance at the organisational level for quantification, reporting of GHG emissions and removals. The CEMARS carbon footprint exceeds the technical requirements for GHG emissions reporting of the Carbon Disclosure Project (CDP).

By October 2009 twelve businesses had successfully achieved CEMARS certification including: Achilles Information, New Zealand government's Energy Efficiency and Conservation Authority (EECA), EFI (Energy for Industry), Palliser Estate Wines of Martinborough and Westpac New Zealand (an Australian-owned bank).

box 2: WESTPAC – THE FIRST BANK WITH CEMARS CERTIFICATION[4]

Westpac New Zealand achieved CEMARS certification as part of a strategy to reduce its carbon footprint.

CEMARS was aligned with Westpac's philosophy of focusing first on emissions reduction before considering offsetting. At Westpac, sustainability is a core component of its culture and its corporate strategy, and the bank is committed to minimising its direct environmental impact. Although operating in a voluntary carbon market, Westpac sought to take the first step in a transition to a low carbon business and measure the full scope of its greenhouse gas emissions across its head office and national branch network.

We chose CEMARS to assist us in understanding the impact our business operations have on the environment and where we could make the biggest changes. From here we worked with all business units to develop an ambitious, yet achievable, reduction plan that includes a target of reducing our total emissions by 20% per active customer by 2012. – Westpac's Acting Chief Executive, Bruce McLachlan

Westpac has detailed its strategy for actively reducing its emissions intensity — or emissions per active customer. Its current carbon footprint is 14,059 tonnes of CO_2e, which is made up of electricity and gas usage, car fleet and other vehicle use, air travel, paper usage, waste to landfill, and New Zealand hotel accommodation.

By including paper in its greenhouse gas inventory, Westpac has voluntarily expanded its carbon footprint scope. Mr McLachlan says Westpac is the only bank in Australasia to report on paper usage – *It's about disclosing an honest appraisal of where your business has a major environmental impact. For the banking and financial services industry, paper is still unfortunately a significant contributor. Increasingly our customers are banking online, which is encouraging, but there is still a portion of banking that requires paper use such as cheques, statements and deposit slips.*

Mr McLachlan says the bank's focus on emissions intensity enables it to balance its focus on emissions reduction with economic growth, whether that's organic or by acquisition.

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Landcare Research
Manaaki Whenua

Greening the screen

CHAPTER 13 : HATCHED

Nick Potter and
Jonathan King

Summary

- Film and television have an enormous potential to inspire, challenge and educate people to make changes for sustainability.
- *Greening the Screen,* a toolkit for the industry, enabled organisations and individuals (including contractors and subcontractors) to identify simple steps to reduce their environmental impacts. It made issues meaningful for them and highlighted the benefits of change.
- The toolkit has successfully been used in the film and television industry and has generated international interest. However, more significant changes are needed to develop higher levels of motivation and responsibility in the industry to make changes for sustainability.

WHY DID WE BECOME INVOLVED WITH NEW ZEALAND'S FILM AND TELEVISION INDUSTRY?

Film and television make a significant contribution to New Zealand's economy and export earnings, as well as being very powerful media through which we express our national identity and assert our unique brand.[1] – Former Prime Minister Helen Clark

Screen production (film and television) has been for a priority in New Zealand's economic development.[2] It has played a leading role in raising the profile of New Zealand's technical and artistic creativity. It has also benefitted other sectors such as tourism, seen for example when the *Lord of the Rings* movies showcased New Zealand's natural environment to the world. There is a compelling case for this industry to adopt more environmentally sustainable practices. First, the industry has many direct impacts on the environment, both on location (e.g. in sensitive natural areas) and in the studio (e.g. using energy and producing waste, including hazardous materials). Second, there is a strong relationship between the industry profiling a 100% Pure New Zealand image and the industry itself contributing to maintaining that asset. Third, as recognised by leaders in the industry, film and television have a powerful potential to influence society through the stories told on screen. This is therefore a pivotal industry in New Zealand's shift towards sustainability.

WHAT APPROACH DID WE TAKE?

Our involvement began with South Pacific Pictures, a production company in Auckland famous for the movie, Whale Rider and television drama, Shortland Street.[3] Discussions revealed that there was a high level of commitment within this organisation to be proactive on environmental matters. They were concerned about their electricity use, but they did not have the resources to understand how to be more environmentally responsible in their wider operational activities. Professor Ann Smith from Landcare Research proposed to work with them on developing ways to reduce their environmental impacts. By starting with one organisation, the intention was to develop a model for other film and television organisations and professionals in New Zealand and the industry as a whole.

In February 2005, *Greening the Screen* began as a partnership between Landcare Research, the Ministry for the Environment, Waitakere City Council and South Pacific Pictures. The purpose of the project was to develop environmental guidelines for the New Zealand film and television industry to:

- Encourage film and television organisations to improve their environmental performance
- Help protect New Zealand's natural, historical and cultural heritage and the value of the 'clean green' brand
- Contribute to sustainable economic development
- Enhance the reputation and competitiveness of the industry
- Demonstrate sector-wide leadership in environmental responsibility.

The project involved four major steps:

- Researching initiatives by film and television companies and productions elsewhere in the world

box 1: INFLUENCING NEW ZEALAND TELEVISION

South Pacific Pictures' exposure to Greening the Screen *has bought home to us how we can actually make a difference. With very little effort we can make significant improvements to the way we use resources while we reduce our waste. And to our surprise we have realised that whilst we make these improvements and reductions we are going to save money. We're very excited to have led the Greening the Screen project and we're absolutely committed to achieving results that will help us and the environment.* – John Barnett, South Pacific Pictures

The *Greening the Screen* team have worked on a variety of prime time television productions, including *Shortland St, Wa$ted* and *Mitre 10 Dreamhome.*

- Undertaking an environmental review of South Pacific Pictures, as a pilot to develop draft guidelines for the industry
- Engaging significantly with industry professionals across various crafts to involve them in developing a toolkit
- Providing and publicising a toolkit for environmental management[4]

A key success factor was the placement of researcher from Landcare Research who worked alongside staff for some six months. This facilitated relationship-management and built trust with the organisation.

The final toolkit, *Greening the Screen*, is freely available in hardcopy or online at www.greeningthescreen.co.nz. It has stand-alone sections for different audiences:

- **The Business Case** – explains the importance of corporate environmental responsibility for senior managers and business leaders
- **Management** – provides instructions for identifying and managing environmental impacts
- **Tools** – gives simple explanations, suggestions for improvements and a menu of practical tips for different film and television activities (in the office, behind the screen, on location, on screen, and off screen)

box 2: INFLUENCING THE WORLD

The toolkit has received praise within the international film and television community for the wide range of topics covered, its practical nature, and its free availability online. In 2005 the toolkit was the only one of its type in the world, although others have now been initiated. Comments include:

In the course of my research, I found your Greening the Screen handbook which I found very helpful and well written. I have viewed others in the US but your version is the most comprehensive. I would like to share the contents with our clients in Hollywood who produce film and are looking for green locations like your country. – Zahava Stroud, iHollywood Forum, USA (2007)

I'm frequently referring to your website, as I believe the Greening the Screen project is my only TRUE resource at this point. – Christina Thayer, Independent Consultant, USA (2007)

WHAT INFLUENCE HAVE WE HAD?

The Greening the Screen Toolkit has been an integral resource for [our] project. I have found the information to be constantly helpful and supportive, providing excellent guidance, templates and ideas adaptable to the boundaries of the project. – Elly Flower, Sustainability Project Manager for a NZ film production company.

When the project began, New Zealand had few resources for environmental management in the film and television industry. The industry was also lagging behind overseas initiatives in this area. *Greening the Screen* has successfully provided New Zealand's film and television industry with tools to manage their environmental impacts. It has received strong support from individuals and organisations within the industry (see Box 1) and received international attention (see Box 2). It has also influenced the production of some high profile television productions within New Zealand, such as *Wa$ted*.

Although *Greening the Screen* highlights the potential for film and television organisations to positively influence their audiences, it primarily offers tools and practical tips. Promoting better environmental management (e.g. producing less waste) was seen as a first step in promoting sustainability.

THE CHALLENGES OF INFLUENCING A SECTOR

It has been a major challenge to encourage the film and television industry to become more sustainable, as the industry has had little experience in this area. Many discussions were held with industry professionals to raise awareness of the issues and opportunities. We worked with influential industry bodies such as the Screen Production and Development Association of New Zealand, the New Zealand Film Commission, Film New Zealand, the Screen Council, Actors Equity, and the Screen Directors Guild.

From the outset, however, some industry members were concerned that the toolkit and website would be insufficient on their own to ensure that good environmental practices would be embedded. They suggested that further support would be needed. The Ministry for the Environment provided 18 months of additional funding and Landcare Research staff worked directly with production companies to help them implement the toolkit.

Since the end of the contracts with the Ministry for the Environment were completed, Film New Zealand has licensed the toolkit from the Ministry for the Environment and in June 2009 took over responsibility for updating the content of the website and toolkit and relaunching it to the screen production industry. Film New Zealand re-presented the sustainability issue to the industry at the SPADA annual conference in 2008 and hosted an industry sustainability meeting where it was decided to set up a sustainability working group with pan industry representation to guide and inform the industry's approach to sustainability. The working group is now setting up an industry organisation solely focused on sustainability in order to support the changes required within the industry.

Film New Zealand will be maintaining Greening the Screen as an important resource and practical cornerstone for all working in screen production in New Zealand. Preserving New Zealand as one of the world's best screen production destinations is fundamental to Film New Zealand's core business and drives our commitment to maintaining Greening the Screen. It represents a valuable tool in our global marketing initiatives. – Judith McCann, CEO Film New Zealand

WHAT MORE NEEDS TO BE DONE?

Responsible and ethical environmental practices within the screen production sector are essential to the healthy future of New Zealand. These need to be more than lip service... they should be taken to the heart of our industry work practices.– Screen Directors Guild of New Zealand (2005)

Film and television industry professionals are talented, innovative and usually receptive to environmental and social messages. Many show great concern for the environment andrecognise that more needs to be done to improve their industry. *Greening the Screen* has made a valuable contribution, but more needs to be done to:

- Develop greater support within the industry for taking action on sustainability issues
- Embed environmentally sustainable practices across the industry
- Consider how the industry can play a more significant role in promoting sustainability through its influence on society. [5]

To develop better practices, institutional changes need to be considered. Film New Zealand is taking responsibility for the toolkit/website and is establishing the industry sustainability organisation. These are examples of progressive institutional change. Other examples that could be taken on by the new sustainability organisation include providing relevant material in film school curricula, integrating environmental considerations into the screen industry Code of Practice for Health and Safety, and developing sector-specific environmental performance indicators.[6]

It is also vital to keep an eye on the bigger picture. Previous research suggests that media and entertainment companies usually focus on the direct environmental impact of their operations (e.g. waste and energy use), rather than on the far greater, though indirect, influence that they have on audiences through their communications.[7]

Film and television can play an enormously positive role in inspiring, challenging and educating people to make changes in their society. Will New Zealand's film and television industry rise to the more challenging role of influencing broader social change? Some examples are emerging, such as Wa$ted television series and TVNZ's revised draft charter which includes the statement that TVNZ will 'feature programmes that support, encourage and highlight environmental awareness'. [8] In the meantime, it is important to remember that there isn't a back-up location for this planet.

WANT TO FIND OUT MORE?

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www.greeningthescreen.co.nz – The online toolkit

www.wastedtv.co.nz – A local television program focusing on households and waste

www.filmnz.com - contains a Green Screen section

www.theoutlookforsomeday.net – A sustainability film challenge for young New Zealanders

www.ema-online.org/ – The Environmental Media Association (Hollywood) honours people who increase public awareness and inspire personal action on environmental issues

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