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Title: **Making sustainable links: the well-being of NZ exports in a changing climate**

ABSTRACT

Global trade liberalisation is relentless; trade barriers, quotas and market trends are part of the everyday export-business lexicon – and New Zealand is immersed in it all. Have sustainability requirements also become part of everyday business vocabulary? Consumers worldwide are increasingly aware of the implications of their purchasing decisions and consequently demand products that demonstrate sound environmental and social standards. Events such as the floods and heatwaves in Europe and Hurricane Katrina in the US have increased consumer understanding about the links between production and consumption, greenhouse gas emissions and climate change. In response to these concerns, governments have been supporting the trade in environmental products and services by putting in place national regulations and standards. Similarly, some large companies and retailers have introduced complex environmental and social requirements to their supply chain, including commitments to source more locally – a potential threat to New Zealand exports.

Some New Zealand producers have applied responsible production practices, including energy efficiency and emissions management, which have improved their environmental credentials. To ensure New Zealand products are recognised for their low impact and to maintain their market share, producers and exporters need to be able to demonstrate the low environmental impacts and carbon intensity of their products across their entire life cycle. Such analysis must consider all impacts related to producing and shipping the product to export markets to determine whether energy-efficient production practices can compensate for the distance to the market. Risks from climate change and the high price of fossil fuels not only make a compelling business case for New Zealand producers to improve their practices but also provide them with the opportunity to access faster-growing markets for environmentally and socially responsible products at home and abroad.

INTRODUCTION

New Zealand's role in international trade

New Zealand's economy is heavily dependent on overseas trade. Traditionally a large proportion of New Zealand's exports (mainly agricultural products) went to the UK. However, over the past 25 years trading partners have become more diverse with trade to Australia (18%), the US (15%) and Japan (13%) becoming much more important than trade with the UK (5%) (Statistics New Zealand website, overseas trade, 2006). While New Zealand presents few trade barriers to imports, it faces a wide range of barriers to its exports and has been working actively to widen access for its exporters to key markets.

Trade barriers (or protectionism) were established to protect domestic industries from overseas competition. Trade liberalisation, in its broadest interpretation, is a process of negotiation between governments to remove such trade barriers, thereby making new markets available. More recently, trade

liberalisation has been identified as a key mechanism for improving the economic sustainability of developing countries.

New Zealand is actively engaged in international negotiations to improve access to key overseas markets for its exporters and to help improve the economies of developing countries. As well as participating in World Trade Organisation (WTO) discussions, New Zealand has also entered into discussions at a regional level to develop Free Trade Agreements (FTAs) or Closer Economic Relations (CER) within the Asia-Pacific region. Existing agreements with Australia, Thailand, Singapore and Trans-Pacific countries (Brunei/Chile/Singapore) are being followed by FTAs currently under negotiation with China, Malaysia, and the Association of South East Asian Nations (ASEAN).

Bilateral and regional FTAs are proliferating around the world, largely as a result of a difficult round of negotiations at the WTO (Doha Development Round), which was recently suspended indefinitely. However, there are concerns about such agreements, including the fact that they do not address all areas of trade and agricultural subsidies or anti-dumping measures (Lamy, 2006). There are also greater uncertainties about the integration of environmental considerations into FTAs, which may be more limited than in the case of multilateral agreements. New Zealand's position on trade and environmental issues is largely based on WTO rules, and is outlined under the Trade and Environment Framework that the government put in place in 2001 (MFAT website, undated).

Impact of trade-related issues on exporters

Trade barriers may include tariffs that raise the price of goods coming into a country, quotas setting a limit to the number of goods that can be brought into a country after which higher tariffs may apply, and other non-tariff or technical trade barriers such as regulations that make it more difficult for goods to be sold into a country. However, countries may impose anti-dumping measures to prevent companies selling their goods in export markets at a lower price than in their domestic market (World Trade Organisation, 1994). Although the WTO rules preclude social and environmental reasons for taking action against dumping, in practice it is a complex issue. Producers who effectively ignore social and environmental responsibilities have an advantage in some markets.

Issues such as public confidence in food safety and the management of trade in genetically modified organisms (GMOs) have been used by interest groups to lobby for increased standards. This in turn would reduce market access for products in which such groups do not have a comparative advantage (Anderson et al., 2004). Food safety issues may affect an entire sector, for example, the widespread restrictions on the trade of beef from a country where bovine spongiform encephalopathy (BSE) or "mad cow disease" has been reported. International environmental protocols and national regulations concerned with issues such as biosecurity, climate change and producer responsibility may therefore conflict with WTO rules.

Nevertheless, interest groups have sometimes stimulated vigorous debate about issues such as "food miles". Initially, the focus was on highlighting the differences between local and global food supply chains by making consumers aware of the impacts of food systems from a social and environmental view point (Paxton, 1994). More recently, the issue has been linked with climate change by highlighting the increase in fossil fuel use and greenhouse gas emissions associated with distribution into (overseas) markets (Jones, 2001). It was estimated that in the UK alone, road freight movements between the UK and Europe increased by 90% between 1989 and 1990, while airfreight grew at an even faster rate in the same period (Jones, 2001). Although food miles was considered by the UK government as an inadequate sustainability indicator (AEA Technologies, 2005), the UK Food Industry Sustainability Strategy has to a degree formalised the concept by introducing performance indicators for the industry that include carbon dioxide emissions associated with transport of food and drink products (DEFRA, 2006).

Impact of consumer expectations on exporters

Criticism of the social and environmental practices of large trans-national corporations (TNCs) that locate their production activities in developing countries has been voiced by international non-governmental organisations with strong public-interest agenda such as Transparency International, Greenpeace, Corporate Watch, Friends of the Earth, Amnesty International, Human Rights Watch, Third World Network, World Wide Fund, and many others.

The agenda for Corporate Social Responsibility (CSR) has been shaped by issues such as child labour, rights of indigenous people, environmental pollution, degradation of marine ecosystems and destruction of rain forest, and a better understanding of the impacts of economic globalisation (Utting, 2005). The emergence and adoption of various standards, such as those set by the International Labour Organisation, Fairtrade Labelling Organisation, Forest Stewardship Council and the Marine Stewardship Council, allow businesses to demonstrate their social responsibility and contribution to sustainable development.

Shareholders have also seen the value in using CSR as an effective tool to manage reputational/brand risks and create shareholder value when social, ethical and environmental factors are adequately considered (SustainAbility, 2001). Companies recognised for their CSR may be included in so-called ethical investment portfolios that have been shown to perform better in stock markets – the sixth annual SRI benchmarking study commissioned by the Ethical Investment Association released in 2006 showed that managed SRI portfolios grew by 56% in 2005–06, from \$7.67 billion to \$11.98 billion. By comparison, mainstream managed portfolios grew 15.5% in the same period. More recently, climate change liability has been compared for share portfolios by measuring carbon intensity per \$million invested (Trucost, 2006). Companies that had reduced their greenhouse gas emissions by 40% performed financially as well as companies that had taken no climate change action. In other words, there was no financial cost to the companies for a 40% improvement in environmental performance.

Consumers worldwide are increasingly concerned about environmental and social issues. A recent European-Union-wide survey shows that European citizens are equally concerned by environmental and economy issues, and 9 in 10 people expect policy makers to take into consideration environmental aspects when making economic policy decisions (Directorate General Environment, 2005). As concerns increase, so does the level of consumer action through purchasing decisions, leading to a significant growth in sales of products with higher environmental and social credentials. The latest UK Ethical Consumerism Report (2005) states that the market share of ethical products has increased by 22% since 1999 when the first report was issued and that niche markets like fair trade are now becoming mainstream (The Co-operative Bank, 2005). The availability of ethical products includes a broad range of sectors from food and households goods (including mortgages and loans) to travel and cosmetics, and the high growth in sales makes them attractive for producers.

Communicating the environmental credentials of products

Labelling is a common tool used to communicate product and even producer credentials to consumers. The proliferation in labels covering food safety, organic status, energy and water efficiency, human rights, environmental management and corporate governance sets a challenge for producers. There is little guidance to help them determine which claims consumers consider valid and trustworthy. Some industry bodies are closely involved in developing and policing the standards associated with these labels or brands. The Confederation of the Food and Drink Industries (CIAA), a European industry body, encourages its members to report in a transparent manner on their economic, social and environmental performance (CIAA, 2002). The CIAA has defined sustainability for the sector as three long-term goals to:

- protect the environment where agricultural raw materials are grown and in which the industry operates
- improve access to quality and healthy food for consumers

- enhance economic growth.

However, the CIAA points out that the food and drink industry faces future challenges related to resource management, especially for water and energy.

Will consumer concern about climate change impacts create new environmental trade barriers?

Extreme events such as recent floods and heatwaves in Europe, drought in Australia or hurricane Katrina in the US have contributed to increased public awareness of climate change and understanding about the links between consumption and greenhouse gas emissions. Consumers now have the opportunity to take direct action to reduce their greenhouse gas emissions by purchasing energy-efficient appliances or fuel-efficient cars, and buying local food. However, the facts that are available to them to make informed decisions do not generally reflect a life-cycle approach. For this reason, most consumers cannot yet relate greenhouse emissions to the embodied energy (emissions due to production) of the goods they purchase. The recent announcement that California is seeking monetary compensation from six automobile manufacturers for damage to health, the economy and the environment caused by greenhouse gas emissions (BBC News, 2006) will help raise awareness of production impacts on climate change.

In response to increasing scientific evidence on the impacts of climate change and public demand for action to reduce greenhouse gas emissions, governments have introduced energy taxes, mandatory and voluntary standards, subsidies for environmentally responsible production processes, energy-efficiency labelling and certification schemes, and the sale and transfer of emissions units or carbon credits. Many of these actions affect the cost of traded goods and may be construed by the WTO as creating an unfair advantage for local producers (Sampson, 2000). Although there are no examples of trade sanctions on imports from countries that have not achieved emissions targets, the emissions monitoring requirements set by the UK Food Industry Sustainability Strategy (DEFRA, 2006) will provide retailers with the data necessary to discriminate against goods with a high carbon footprint, including food miles. The case for government action on climate change was made in clear economic terms in the Stern Review, which concludes that lack of action now will require five times greater economic investments down the track (Stern, 2006). Initiatives like that of the European Commission to explore the possibility of imposing a “climate border tax adjustment” for products imported from countries that do not have carbon emissions caps for their industries (EurActiv.com, 2006) is relevant to exporters. The aim of such an initiative is to mitigate the impact of domestic climate policies on industry competitiveness by imposing a comparable cost on imported products. It remains to be seen how this initiative will unfold, and whether potential conflicts with the WTO will challenge such a development/line of action.

The role of the supply chain as a *de facto* environmental trade barrier

While consumer concerns have led governments to design new policies and impose regulations, by far the greatest growth is in those environmental voluntary requirements imposed on supply chains by the private sector (Panitchpakdi, 2005). Demand is increasing for goods meeting organic, fair-trade and environmental management standards. This affects sectors such as food production, electrical and electronic equipment, textiles and clothing, leather and footwear, timber and chemicals. The requirements are intended to yield longer-term benefits in improved resource efficiency, higher occupational safety, improved public health conditions, and less environmental pollution. As retailers focus on the social and environmental risks associated with their supply chains, often driven by their corporate responsibility agenda or risk-avoidance strategies, producers face more demands to implement standards and meet certification requirements. Examples of voluntary standards that have spread fast through retail and supply-chain initiatives include those addressing sustainable forest (FSC) and fisheries management (MSC) or good agricultural practices (EuropGAP).

Reviews of international markets also show that private sector standards account for the majority of environmental requirements, and their number and complexity is increasing, often incorporating and exceeding government requirements (Hoffman & Rotherham, 2006). Some New Zealand producers have responded to such market trends; however, the nature of these standards (addressing multiple issues like environmental issues, traceability and workers safety simultaneously) makes their implementation difficult and costly for small and medium-size companies in New Zealand, especially when the economic benefits are not clear. Furthermore, the lack of harmony between standards popular in export markets and limited recognition of New Zealand standards overseas pose further challenges for New Zealand producers already faced with the decision to choose a standard relevant to their product.

SURVEY OF FOOD AND BEVERAGE PRODUCERS

In order to better understand current environmental practices and the environmental requirements faced by New Zealand producers in export markets, during July–August 2006 we surveyed food and beverage companies involved in export activities. This sector was chosen because of its key role in New Zealand’s economy, generating about 10% of the country’s GDP and export sales of over \$15 billion a year (New Zealand Trade and Enterprises website, 2006). Also, the sector directly employs 74 000 people, which represents 4.29% of New Zealand’s total workforce (Statistics New Zealand, 2006). At the same time, the food and beverage sector is New Zealand’s fifth largest user of energy and emissions generator, accounting for about 5% of the country’s total energy demand (29.71 PJ) and 4.9% of total carbon emissions (1.7 million tCO₂-e).

The goals of the survey were to:

- determine the current environmental management practices in the food and beverage sector and the level of awareness about their impact on environment;
- review the environmental hurdles New Zealand producers and exporters currently face in overseas markets;
- explore the sector’s perception of the key challenges they face and what actions could help build capacity and improve exporters’ environmental performance.

The survey was divided into three parts:

- General information about the company – specific area of activity, employees, turnover, export markets, and modes of shipping the product to these markets.
- Environmental profile – set of questions to determine the current environmental practices and credentials.
- Sustainability-needs profile – looking at the sector’s perception of future challenges and obstacles in adopting environmental practices to meet market requirements, and what could be done to assist them.

The businesses invited to participate in the survey included all organisations listed in the New Zealand Trade and Enterprises Exporter Database as well as members of several industry associations whose contacts were publicly available. The survey was sent to 340 companies from all areas of the food and beverage sector (meat, dairy, fruit and vegetables, beverage), including industry associations, export-import and marketing companies. Over 100 responses were received, a response rate of about 30%, which is considered high, given that the food and beverage sector is frequently surveyed and suffers from so-called “survey fatigue”. Furthermore, the survey was complex and required some specific knowledge of the company and its practices, therefore limiting the number of people who were able to complete it. Nearly half (49%) of all respondents had a turnover income of more than \$5 million per year, and over 22% of respondents were companies with 50 employees or more. Some 47% of respondents employed 1–9 staff, 40% between 10 and 99 staff and 13% of respondents had over 100 staff members. Around 60% of respondents were based in the North Island and 40% in the South Island.

The main findings of the survey were:

- The assumption that the food and beverage sector does not have an impact on the environment is broadly spread among producers and exporters. This may be explained by the lack of systematic assessment of the environmental impacts of food production and manufacturing from cradle to grave at company and/or sector level.

- Climate change and water management are not perceived as important issues facing the sector. Despite the high profile of climate change internationally, and despite the fact that, after airlines, the food and beverage sector has the highest intangible value at risk (The Carbon Trust, 2005), climate change and emissions are of low concern for the NZ food and beverage sector, with only 13% listing it as a key issue. More than half of those concerned about climate change belong to the wine sector, even though other crops are at risk from climate change in New Zealand.

- Although about 74% of respondents have implemented at least one practical environmental measure, 38% of New Zealand producers and exporters have not joined any recognised New Zealand or overseas standard, supply-chain code of practice, or eco-labelling scheme. The potential of the sector to demonstrate its environmental credentials is therefore poor, despite the fact that many have implemented some type of environmental measures.

- Only one-third of businesses have procedures to ensure compliance with overseas environmental requirements. Concern about overseas environmental requirements decreases with the business size; small businesses (1–9 staff) being more concerned about compliance with rules and regulations in export markets.

- There is no consensus in the sector about the existence of a “Clean and Green” brand and the values it represents. Also, because of competition in the sector, some fear that many producers are “free-riding” the brand and that clear criteria and a certification process should be developed.

- The sector relies heavily on customer information and personal research to improve its environmental practices. It also looks inward (inside NZ) when seeking advice on environmental practices, which is not sufficient when competing in overseas markets. At the same time, existing resources that could assist with increasing operational efficiency of businesses remain untapped (Energy Efficiency and Conservation Authority, waste management companies, Ministry for Environment).

Environmental requirements faced by New Zealand exporters

Respondents to this survey are faced with a broad range of requirements, reflecting the variety of markets to which they export and the expansion of standards boundaries (from farm to fork). About 70–80% of all respondents, irrespective of their business size, reported that they have to comply with mandatory standards and certification, starting with their ability to meet New Zealand food safety regulations, those of the country to which they are exporting, and export certification requirements that can vary depending on the product and the destination country.

However, many of respondents questioned mentioned mandatory requirements that are supply-chain driven and combine food safety and traceability, environmental issues and even social conditions simultaneously – these standards are often more complex and more stringent than governmental regulations. Examples include EurepGAP, British Retail Consortium and Tesco Nature Choice. Respondents have also mentioned organic and sector-specific standards such as the MSC for fisheries, which, although a voluntary standard, can be a key condition for supplying certain retailers.

Common export requirements

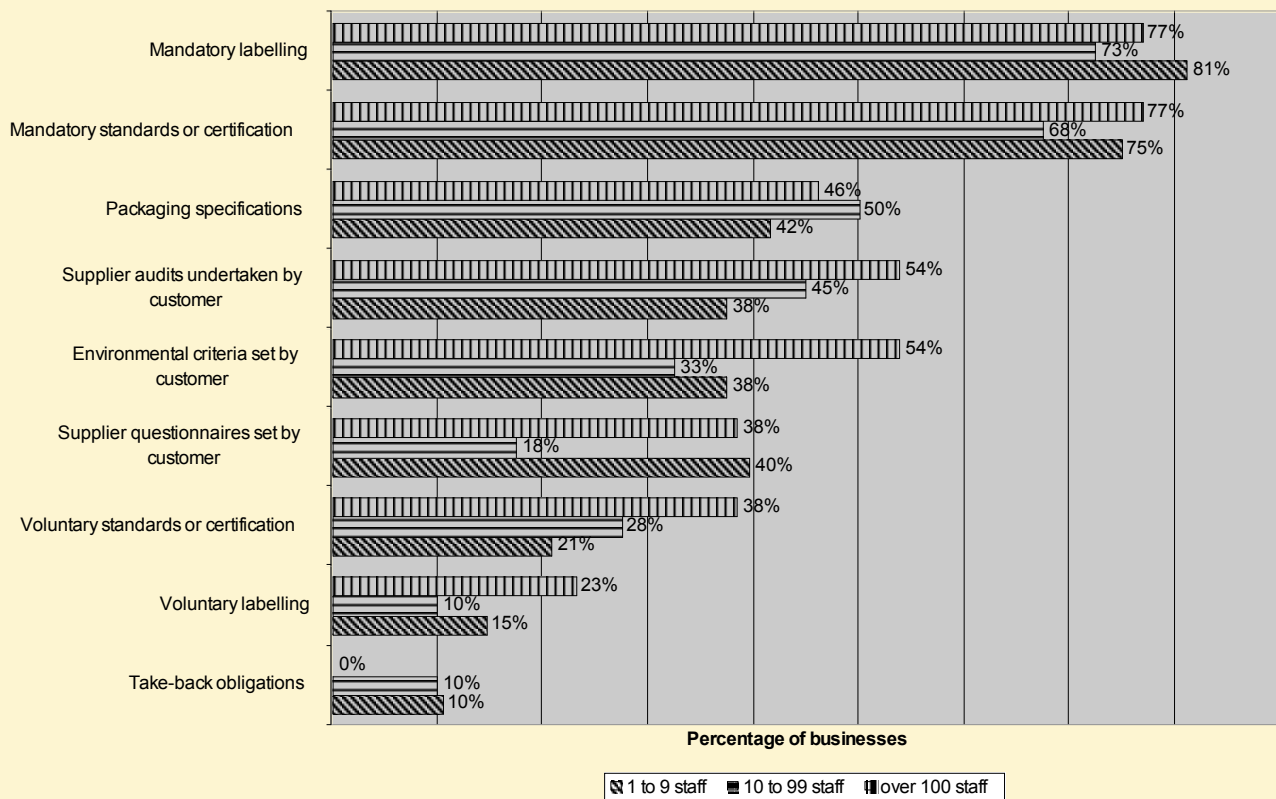


Figure 1: Common export requirements

New Zealand producers face requirements related to the content of their products (i.e. GMO-free, hormone-free, minimum residue levels), process or production method (i.e. spraying practices, fertiliser and pesticide management, soil protection), as well as packaging specifications (i.e. biodegradable, recyclable), and even take-back conditions. In general, there seems to be a fine borderline between mandatory and voluntary requirements, respondents having referred to them interchangeably in their responses. This could suggest that any non-regulatory requirement (in NZ or overseas) that determines access to a certain market, may be considered mandatory. Almost 40% of respondents have to meet some kind of specific environmental criteria, many of them as a result of supply chain standards, food safety or eco-label standards.

As this survey is the first of its type to look at the New Zealand food and beverage industry, a full range of actors in the food and beverage export chain were targeted. Respondents included sector groups or industry associations, who generally play an advocacy role and may have limited or no mandate to deal with environmental matters. Consequently, not all of them were in a position to answer questions related to environmental practices and/or specific export requirements. Some of the import-export companies also felt that specific questions about environmental practices could only be answered by producers directly, while others simply stated that they were not aware of the producers' environmental practices.

Survey results show that about three-quarters of respondents from the food and beverage sector have implemented at least one practical measure to address their environmental impacts or resource use; a figure higher than in the SME sector in the UK (66%) (NetRegs, 2005). Not surprisingly for the food sector, waste reduction and minimisation is the most common measure (52% of businesses), followed by water conservation (42%), and energy efficiency and protection of biodiversity and habitats (about 33%). There seemed to be less activity in areas such as pollution prevention and transport and fuel use,

and on average only 18% of respondents have measures in place for emissions management; however, this figure varies significantly depending on the business size (13% for those with less than 9 staff members and 31% for those with over 100 staff). Generally, small businesses of up to 9 staff members lag behind larger businesses in all areas of intervention, with the exception of biodiversity and habitat protection where they demonstrate comparable drive. An across-the-board survey of SMEs in New Zealand conducted by the University of Waikato in 2003 also showed that company size matters when it comes to environmental and social practices, with large companies being more proactive and taking more measures than small companies (Lawrence & Collins, 2004).

The survey also shows that some sectors are more active than others – for example, wine and seafood producers, who implement a larger number of environmental measures. Another emerging pattern is that producers with more direct contact with export markets appear to have better awareness of voluntary environmental requirements (supply-chain driven) and tend to implement a bigger range of measures to mitigate their environmental impacts than the rest of producers. At the same time, they are also more likely to communicate their environmental practices through marketing activities as a way to differentiate their products in the market. It is unclear how the rest of producers – those not directly linked to the market – communicate their practices (especially those that exceed regulatory requirements) and receive information about trends in those markets. The consequence of this may be the predominantly reactive approach to market trends that can be seen with many New Zealand exporters.

DISCUSSION

The challenge for the food and beverage sector is to maintain and strengthen its export success at a time of consolidation in food markets, increasingly higher consumer expectations for sound food safety standards (which are closely intertwined with environmental and social requirements), and increased concern for climate change. The recently published *Smart Food, Cool Beverage* report (Food and Beverage Task Force, 2006) reviews some of the challenges the sector faces and attempts to provide a framework for action to secure the sector's future. The report suggests the need for sub-sector strategies that will, it is hoped, see sustainability issues, including the vulnerability to climate change, addressed in detail.

Environmental measures taken by New Zealand producers are not sufficient for them to make environmental production claims. Producers need to have the evidence to substantiate any claim while simultaneously building their environmental credentials, particularly by adhering to those standards and codes of practice independently verified and recognised by customers. Despite the fact that, as shown above, the food and beverage sector does take environmental measures in a variety of areas, the sector does not apply life-cycle thinking to determining the supply-chain impacts. The survey shows that only 3% of all respondents have undertaken life-cycle assessments of their products, pointing to a potentially serious gap in the sector's knowledge about its own environmental impacts and carbon emissions from cradle to grave.

Among other effects, lack of data limits the opportunities of the sector as a whole to adequately address food miles issues from overseas markets and to promptly provide environmental information when required by overseas customers. In theory, both these effects could limit access to overseas markets for New Zealand products. One of the few life-cycle assessment studies carried out so far shows that New Zealand dairy and lamb production is more energy efficient and has less associated emissions than has UK production (Saunders *et al.*, 2006). More such studies are needed to help build a credible bank of evidence that will enable comparisons between New Zealand products and other similar products with which they compete in export markets.

Lastly, the environmental credentials of the New Zealand food and beverage sector are rather low, about 6 in 10 businesses having joined an environmental scheme or code of practice that would enable them to

carry an environmental logo or seal of approval. Even then, the effectiveness of such New Zealand schemes or codes of practice in terms of market recognition is unclear, and producers may rather need to consider internationally recognised ones. The uptake of environmental management systems is also low, only 6% of businesses having a certified system. Following the increasing global growth in organic product sales, some New Zealand producers have joined organic certification schemes available domestically, many of which follow the International Federation of Organic Agriculture Movements (IFOAM) standards. This has enabled these producers to trade in export markets and carry organic labels available there (i.e. Australia, France, Germany, Japan, UK) and has allowed their access to faster-growing markets of environmentally responsible products.

Another finding of the survey is the low concern on the part of the New Zealand food and beverage sector with climate change, particularly with a view to emissions management and market access. This lack of concern is, however, expected to change, not least because of increased international debate on the need for climate change action, including the now feared food miles issue. The 2006 Stern Review on the economics of climate change calls for urgent action to reduce global emissions by at least 60% by 2050 and suggests carbon costing as a key approach. The European Commission is exploring, for the first time, policy measures to reduce carbon emissions from shipping that are now increasing at the same rate as the airline industry. After cancelling plans to impose a carbon tax in 2005, the New Zealand government has stated that new measures are in preparation and will be announced at the start of 2007. Even though climate change is not yet a vital concern, those food and beverage businesses questioned have placed distance to the market as their second most important challenge, due to increasing costs of transport and fuel prices. This alone makes a compelling business case for New Zealand producers to review their operational practices and improve fuel use, which in turn will lead to reduced carbon emissions.

CONCLUSION

This paper addressed broad trends in trade and environmental requirements in view of increased corporate social responsibility and consumer expectations, coupled with climate change fears. It took a closer look at the environmental practices and requirements faced by the country's most important export area, the food and beverage sector. New Zealand producers and exporters apply responsible practices that enable them to comply with mandatory regulations, for example, food safety requirements, product content, and packaging rules, as well as supply chain or other voluntary requirements (eco-labelling). However, supply chain and voluntary requirements may also be considered mandatory, as they usually incorporate government regulations (e.g. EuropGAP and food safety requirements) and are *de facto* conditions of market access. Because of the stringency of these requirements, the sector seems to have a limited capacity to take on other practices that are not yet conditional for market access (e.g. environmental management systems; eco-labelling based on life-cycle assessment; carbon emissions management). New Zealand's export competitiveness could eventually be affected if the sector does not become more proactive in anticipating market trends and engaging in best available practices. At the moment best practice involves food miles and carbon management – these may well turn out to be important market access issues for the sector.

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