

CARBON FOOTPRINTS, FOOD MILES AND THE AUSTRALIAN WINE INDUSTRY

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[The embrace of carbon footprinting and local food sourcing as environmental measures designed to reduce greenhouse gas emissions poses a potential threat to Australian food export industries which are geographically distant to market, like the Australian wine industry. Food transport costs can add considerably to a product's carbon footprint and detrimentally affect sales. The raison d'être of carbon footprinting is to encourage responsible environmental production methods. However, the author questions whether this aim can be effectively fulfilled and whether carbon footprinting and local food sourcing policies are instruments of anti-globalisation sentiment and thus can be challenged under the World Trade Organization framework.]

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I INTRODUCTION

When the respected British newspaper *The Times* called on its readers to purchase French wine instead of New Zealand wine as part of a 'low carbon diet

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masterplan',¹ New Zealand winemakers soon realised the threat that this exhortation posed to their export-driven and geographically isolated industry. New Zealand Winegrowers, the national wine industry body, responded with press releases attacking what was characterised as a myopically focused approach to environmental sustainability, while simultaneously extolling the New Zealand wine industry as clean, green and headed toward carbon neutrality.² Government ministers also came to the industry's defence with press releases of their own attempting to debunk the concept of food miles.³

New Zealand Winegrowers and the New Zealand Government were greatly assisted by a report prepared by a small group of academics at Lincoln University,⁴ which examined the carbon footprint of a number of key New Zealand export products using a life cycle assessment approach that calculated total energy arising from production and processing, as well as transportation. Their report found that the energy cost of producing food such as lamb, apples and onions in the United Kingdom was significantly greater than the carbon dioxide ('CO₂') emissions generated by transportation between New Zealand and the UK. Another report from the UK found that CO₂ costs for freighting food by sea and air over long distances were trivial in comparison to the energy emissions of domestic food transport.⁵

Given that Australia, like New Zealand, is geographically isolated from most of its export markets, with an average of over 18 000 kilometres between point of shipment and market, the debate over food miles is of equal concern to the Australian wine industry.⁶ Indeed, notwithstanding the dubious connection between distance to market, CO₂ emissions and other indicators of environmental sustainability, major wine retailers — such as ASDA and Tesco — have announced a commitment to purchase as much locally produced food as possible. This is in addition to mandating the labelling of air-freighted products.⁷ Furthermore, despite the lack of evidence showing that locally sourced food (including wine) has less environmental impact than imported food,

¹ Using UK Department for Environment, Food and Rural Affairs figures, *The Times* calculated that switching from New Zealand to French wine would save 0.068 kilograms of the greenhouse gas CO₂ per bottle: Anna Shepard, 'Low Carbon Diet Masterplan', *The Times* (London, UK) 21 April 2007, Body and Soul, 12.

² Jacob Gaffney, 'British Journalist's Environmental Advice Angers New Zealand Wine Producers', *Wine Spectator Online* (US) 19 June 2007 <<http://www.winespectator.com/Wine/Features/0,1197,3845,00.html>> at 23 May 2008.

³ See, eg, Phil Goff, 'NZ Fighting Food Miles Battle Hard', *The New Zealand Farmers' Weekly* (Fielding, New Zealand) 6 August 2007, 12; Jim Anderton, Leader of New Zealand Progressive Party, 'IPCC Report is Good News for Our Primary Industries' (Press Release, 20 November 2007), available from <<http://www.progressive.org.nz>> at 23 May 2008.

⁴ Caroline Saunders, Andrew Barber and Greg Taylor, *Food Miles: Comparative Energy/Emissions Performance of New Zealand's Agriculture Industry* (Lincoln University Research Report No 285, July 2006) <http://www.lincoln.ac.nz/story_images/2328_RR285_s13389.pdf> at 23 May 2008.

⁵ Jules N Pretty et al, 'Farm Costs and Food Miles: An Assessment of the Full Cost of the UK Weekly Food Basket' (2005) 30 *Food Policy* 1.

⁶ Amy Russell and Tony Battaglene, *Trends in Environmental Assurance in Key Australian Wine Export Markets* (Winemakers' Federation of Australia Report, March 2007) 31 <<http://www.wfa.org.au/PDF/OTC07.pdf>> at 23 May 2008.

⁷ Farmers Weekly Staff, 'Major Retailers Respond to Food Miles Campaign Petition' (UK) 23 August 2006, available from <<http://www.fwi.co.uk>> at 23 May 2008.

transport costs remain a key target for the European Commission in its bid to cut CO₂ emissions.⁸

While the position of wine retailers in the United States is less rigorous in respect of the environmental credentials of imported wine,⁹ one major and influential retailer, Wal-Mart, has recently introduced a 'Global Sustainable Sourcing Initiative', committing it to prefer suppliers that aggressively reduce CO₂ emissions and use recycled or recyclable packaging.¹⁰ This could also lead to implications for the Australian market.

Apart from the adoption of local food sourcing policies by individual retailers, the UK government has encouraged the development of a method for measuring the paddock-to-plate carbon footprint of individual products, which incorporates, inter alia, carbon emissions generated by transport to market. As this commentary will later show, carbon footprinting is a more accurate measure of environmental sustainability than food miles.

The embrace of local food sourcing and carbon footprinting in key export markets for Australian wine has evolved from a combination of consumer concern, the advent of carbon budgeting¹¹ and carbon trading, and 'soft' regulation — that is, by corporate social responsibility rather than explicit directive.¹² Thus, private rather than public standards have been predominant. In 2007, however, the UK Parliament passed the *Sustainable Communities Act 2007*, which aims to devolve power to local authorities to develop plans that will result in local sourcing of goods and services, the implementation of measures to conserve energy and an increase in the growth of organic farm production and the local food economy. Facilitating localisation through planning and resource management is not the only available regulatory strategy for promoting or mandating carbon footprinting. Other options include mandatory labelling, mandatory local food sourcing targets, mandatory carbon footprint standards for specific products, prohibiting imports that do not satisfy carbon footprint targets, and the discriminatory use of taxation and subsidies.¹³ The UK Parliamentary Environmental Audit Committee is currently conducting an inquiry into some of these matters.¹⁴

By directly or indirectly encouraging discrimination against products originating in geographically distant markets, however, importing states risk breaching the *Marrakesh Agreement*,¹⁵ and in particular the *General Agreement*

⁸ Russell and Battaglione, above n 6, 31.

⁹ Ibid 42–4.

¹⁰ Wal-Mart, US, *Sustainability* (2008) <<http://walmartstores.com/sustainability>> at 23 May 2008.

¹¹ The concepts of carbon accounting and budgeting are a feature of the current Climate Change Bill 2007–08 (UK). For a summary of the progress of the bill through Parliament see <<http://services.parliament.uk/bills/2007-08/climatechange.html>> at 23 May 2008.

¹² Chukwumerije Okereke, 'An Exploration of Motivations, Drivers and Barriers to Carbon Management: The UK FTSE 100' (2007) 25 *European Management Journal* 475.

¹³ See, Laura Valentini, 'Environmental Quality Provision and Eco-Labeling: Some Issues' (WTO Working Paper No ESRD-2005-02, 2005).

¹⁴ Environmental Audit Committee, UK Parliament, 'New Inquiry: Environmental Labelling' (Press Release, 26 July 2007) <http://www.parliament.uk/parliamentary_committees/environmental_audit_committee/eac_260707.cfm> at 23 May 2008.

¹⁵ *Marrakesh Agreement Establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995) ('*Marrakesh Agreement*').

on *Tariffs and Trade*¹⁶ and the *TBT Agreement*.¹⁷ Although the objective of sustainable development has been embedded within the World Trade Organization framework,¹⁸ under these Agreements environmental measures must be WTO compliant and must not constitute disguised restrictions on international trade.¹⁹ Arguably, discriminating against food products on the basis of food miles without scientific evidence establishing a link between long distance transport and negative impact on sustainability amounts to a disguised restriction on international trade. Alternatively, adopting a mandatory carbon footprinting framework which imposes significant cost upon exporters in distant markets discriminates unnecessarily against those exporters and creates a substantial impediment to international trade.

This commentary will examine whether the above contentions are correct within the context of the Australian wine industry and current developments apropos carbon footprinting and food miles in Australia's key export markets. The Australian wine industry provides an interesting case study on a number of grounds:

- 1 it has strong, well-established environmental credentials and is proactive in developing standards including carbon footprinting;
- 2 it is export driven; and
- 3 it is highly consolidated and thus reflects general trends toward corporatisation and globalisation within modern food systems.

However, it should be borne in mind that much of the discussion will apply to the food export activity of any country with distant markets. More philosophically, the discussion also reflects upon the tensions that the food miles debate evokes between globalisation and localisation, and between free trade and desired social or environmental outcomes.

The first half of the commentary commences with a discussion of the features of the Australian wine industry, especially its environmental credentials. The commentary then examines the divergence between the forces of globalisation and localisation observed in international food trade and their relationship to the food miles and carbon footprinting debate. Recent developments in formulating standards for carbon footprinting and their potential application to the Australian

¹⁶ *Marrakesh Agreement Establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995), annex 1A (*General Agreement on Tariffs and Trade*) 1867 UNTS 190 ('*GATT 1994*').

¹⁷ *Marrakesh Agreement Establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995), annex 1A (*Agreement on Technical Barriers to Trade*) 1868 UNTS 120 ('*TBT Agreement*').

¹⁸ See, eg, *ibid* preamble, art 2.2; *Marrakesh Agreement*, above n 15, preamble; *GATT 1994*, above n 16, art XX(b), (g); *Marrakesh Agreement Establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995), annex 1A (*Agreement on the Application of Sanitary and Phytosanitary Measures*) 1867 UNTS 493, art 2.

¹⁹ *GATT 1994*, above n 16, art XX; *United States — Standards for Reformulated and Conventional Gasoline*, WTO Doc WT/DS2/AB/R, AB-1996-1 (29 April 1996) (Report of the Appellate Body) ('*US — Gasoline*'); *United States — Import Prohibition of Certain Shrimp and Shrimp Products*, WTO Doc WT/DS58/AB/R (12 October 1998) (Report of the Appellate Body) ('*US — Shrimp*'). Similar sentiments are set out in *United Nations Framework Convention on Climate Change*, opened for signature 9 May 1992, 1771 UNTS 107, art 3.5 (entered into force 21 March 1994).

wine industry are discussed. Likely objections to the imposition of food miles labelling or carbon footprinting are then outlined.

In the second half of the commentary, the objections considered earlier are incorporated into a discussion of whether food miles labelling or carbon footprinting are consistent with WTO rules, especially art III:4 *GATT 1994* and the *TBT Agreement*. Insofar as art III:4 *GATT 1994* is concerned, matters considered in this part of the commentary include whether products with carbon footprint or food miles labelling are ‘like’ products without such labelling, whether food miles labelling or carbon footprinting accords less favourable treatment to imported products than domestically produced products and whether environmental and public health exceptions to the national treatment principle embodied within art XX *GATT 1994* apply. The discussion regarding the *TBT Agreement* considers whether current regulatory and private measures concerning food miles and carbon footprinting amount to laws, regulations or requirements or whether they fall under the rubric of standards. Depending upon that categorisation, the commentary also considers what obligations might thus apply to their formulation and application.

The commentary’s conclusion is that far more work needs to be done to determine the costs and benefits of carbon footprinting before it becomes standardised or incorporated into regulation. Food miles labelling and other local food sourcing policies without objectively causal links to environmental or other public health benefits are firmly rejected.

II THE AUSTRALIAN WINE INDUSTRY: A SNAPSHOT

The pattern of ownership and participation in the Australian wine industry has undergone substantial change since the mid-1980s. Currently, the industry is dominated by five large wine companies — Constellation-BRL Hardy, Orlando Wyndham, Berringer-Blass (Fosters), McGuigan-Simeon and Casella — which account for 60 per cent of branded case output.²⁰ About 2000 small to medium wineries compete for the remaining 40 per cent of the market, with a large number of those wineries producing less than 100 tonnes per annum.²¹

The above pattern of consolidation has also been a significant feature of wine retailing. In the past several years, supermarket chains Coles and Woolworths have been acquiring large numbers of wine merchants and liquor outlets, expanding their combined market share to 46 per cent of all wine sales.²² Consolidation is even more marked in Australia’s export markets, particularly in the UK, where retail chains like Tesco and Sainsbury’s hold approximately 75 per cent of the retail wine market. Wine wholesaling in the US is also rapidly consolidating.²³ Analysts predict further mergers in the global wine industry as

²⁰ Australian Trade Commission, Australia, *Wine Capability Overview* (2007) <<http://www.austrade.com/Overseas-Wine-capability-overview/default.aspx>> at 23 May 2008.

²¹ *Ibid*; *The Australian and New Zealand Wine Industry Directory: 2007* (2007) 6, 18–20.

²² Jason Baker, ‘Liquor Industry Drowning Its Sorrows’, *Smart Company* (Australia) 15 November 2007 <<http://www.smartcompany.com.au/Premium-Articles/Industry-Trends/20071115-Liquor-industry-drowning-its-sorrows.html>> at 23 May 2008.

²³ Matt Kramer, ‘Consolidation and the Wine Shop Around the Corner’, *The New York Sun* (New York, US) 2 August 2006, Food and Drink, 4.

large retailers want fewer suppliers and a narrower, less geographically diverse portfolio.²⁴

In 2005–06, the value of Australian food exports was AU\$23.8 billion with the export of wine accounting for a significant 12 per cent of that value.²⁵ Although falling substantially behind Italy, France and Spain, the Australian wine industry now holds the fourth largest volume share of world wine exports.²⁶ Relative to total production, the Australian wine industry is heavily dependent upon export earnings. Currently, approximately 66 per cent of total wine production is exported.²⁷

In terms of export strategy, the Australian wine industry is relatively unique. Unlike many other industries where marketing efforts are fragmented between firms, there has been a concerted effort by Australian winemakers, industry bodies and the Australian government to jointly engage in the development of new markets and to build ‘Brand Australia’.²⁸ To date the strategy has been highly successful. In 2006, the Country Brand Index named Australia as the world’s most recognised country brand.²⁹

Cooperation has also been a hallmark of research and development in the Australian wine industry. Research and development are funded on an industry-wide basis through statutory levies on grape growers and winemakers, exacted under the *Primary Industries (Excise) Levies Act 1999* (Cth), and supported by matching Commonwealth government funding and private sector partnerships. Such public funding underwrites the work of the Grape and Wine Research and Development Corporation (‘GWRDC’) and, through that body, the Australian Wine Research Institute and the Cooperative Research Centre for Viticulture. Funds allocated by the GRWDC for 2005–06 amounted to AU\$22.413 million.³⁰

A significant proportion of the research in the wine industry has been directed towards sustainable grape growing and wine production practice, which in turn

²⁴ Holly Preston, ‘Consolidation is Key in the Tricky Sector of Wine-Related Investing’, *International Herald Tribune* (New York, US) 23 November 2007, 14.

²⁵ Food and Agriculture Division, Department of Agriculture, Fisheries and Forestry *Australian Food Statistics 2006* (Department of Agriculture, Fisheries and Forestry Report, March 2007), available from <<http://www.daff.gov.au>> at 23 May 2008.

²⁶ Australian Wine and Brandy Corporation, *Winefacts: Global Wine — Australia in Perspective* (Australian Wine and Brandy Corporation Report, 27 February 2007) <<https://www.awbc.com.au/winefacts/data/free.asp?subcatid=97>> at 23 May 2008.

²⁷ Australian Wine and Brandy Corporation, *Winefacts: Australian Wine Sales at a Glance — 2007* (Australian Wine and Brandy Corporation Report, 18 March 2008) <<https://www.awbc.com.au/winefacts/data/free.asp?subcatid=96>> at 23 May 2008.

²⁸ The collective approach to export development is exemplified in three significant documents: *Strategy 2025*, released in 1996 by the Australian Wine Foundation, with the goal of attaining AU\$4.5 billion by 2025; Australian Wine and Brandy Corporation and Winemakers’ Federation of Australia, *The Marketing Decade: Setting the Australian Wine Marketing Agenda 2000–2010* (WFA Report, November 2000) <<http://www.awbc.com.au/library/marketingdecade.pdf>> at 23 May 2008; Australian Wine and Brandy Corporation, *Wine Australia: Directions to 2025 — An Industry Strategy for Sustainable Success* (Australian Wine and Brandy Corporation Report, May 2007), available from <<http://www.wineaustralia.com>> at 23 May 2008.

²⁹ Russell and Battaglione, above n 6, 1.

³⁰ GWRDC, *Annual Report 2005–06* (2006), available from <<http://www.gwrdc.com.au>> at 23 May 2008.

has been supported by industry wide environmental strategies and policies.³¹ Environmental guidelines have been produced for sustainable management of fertiliser and soil, water use, pests and chemicals, and vehicle equipment and machinery in viticulture.³² Mitigation of, and adaptation to, climate change insofar as it impacts upon grape phenology, water supply, wine quality and other key elements of the wine industry has also recently been a focus of concern and research, partly as a result of market demand, but principally as a result of the threat that climate change poses to the ongoing viability of an industry inextricably linked to climatic forces.³³

In response to the demand for sustainability (including carbon sustainability), eco-efficiency agreements have been entered into by industry bodies such as the Winemakers Federation of Australia, and state winemaking bodies, such as the South Australian Wine Industry Association, whereby the associations have agreed with the Commonwealth Government to undertake work with their members to increase efficiency and reduce their environmental impact.³⁴ An audit of the Australian wine industry in 2003 revealed broad implementation of the industry environmental policies among viticulturalists and winemakers.³⁵ The majority had established and developed environmental management systems, eco-efficiency and greenhouse gas abatement initiatives, cleaner production methods and supply chain management programs, while having implemented environmental stewardship undertakings.³⁶

A wine industry stewardship program has also been established to ensure that the Australian wine industry is able to meet or exceed the environmental assurance requirements of export markets.³⁷ In conjunction with that program, the Winemakers' Federation of Australia — together with the Wine Institute of California, New Zealand Winegrowers and Integrated Production of Wine South Africa — has commissioned a *Greenhouse Gas Accounting Protocol for the*

³¹ See, eg, South Australian Wine and Brandy Industry Association Incorporated, *Sustaining Success: The Australian Wine Industry's Environment Strategy* (SAWBIA Report, 2002) <<http://www.wfa.org.au/PDF/Sustaining%20Success.pdf>> at 23 May 2008.

³² Winemakers' Federation of Australia, Australia, *Australian Wine Industry Stewardship* (2008) <<http://www.wfa.org.au/awis4.htm>> at 23 May 2008.

³³ Leanne B Webb, Penny H Whetton and Edward W R Barlow, 'Potential Impacts of Projected Greenhouse Gas-Induced Climate Change on Australian Viticulture' (2006) 21(4) *Australian and New Zealand Wine Industry Journal* 16; Peter Hayman et al, 'Climate Change — Consequences for the Australian Wine Industry' (Paper presented at the Australian Wine Industry Technical Conference, Adelaide, Australia, 29 July 2007). In the US, some scientists have predicted the eradication of a number of current premium vineyards as a result of climate change: Michael A White et al, 'Extreme Heat Reduces and Shifts United States Premium Wine Production in the 21st Century' (2006) 103 *Proceedings of the National Academy of Sciences of the United States of America* 11 217.

³⁴ Department of Environment, Water, Heritage and the Arts, Australia, *Eco-efficiency Agreement between South Australia Wine and Brandy, Winemakers' Federation of Australia and Environment Australia* (2002).

³⁵ South Australian Wine Industry Association Incorporated, Australian Government Department of Environment and Heritage and Winemakers' Federation of Australia, *Australian Wine Industry State of the Environment 2003* (SAWIA Report, 2004) <<http://www.wfa.org.au/PDF/Environment2003.pdf>> at 23 May 2008.

³⁶ *Ibid.*

³⁷ Winemakers' Federation of Australia, above n 32.

International Wine Industry.³⁸ The development of the protocol is a response to several factors: market demands for information about carbon impact; predicted mandatory reporting requirements; future implementation of an emissions trading scheme; and the need to promote a 'clean and green' image of the Australian wine industry in domestic and overseas markets.³⁹

Australian wine exporters are subject to a rigorous regulatory regime that monitors the quality of Australian wine exports as well as the provenance and authenticity of wine. This is achieved through a system of export licensing and a domestic Label Integrity Program. Export licensing was introduced by regulation in 1981. Under *Australian Wine and Brandy Corporations Regulations 1981* (Cth) regulations, all wine shipments over 100 litres require export approval,⁴⁰ which is undertaken by the Australian Wine and Brandy Corporation. To obtain approval, the exporter must hold an export licence⁴¹ and allow for samples of the proposed export to be tested for merchantable quality and soundness.⁴² Exports must also comply with Australian Food Standards.⁴³ To further assure wine quality, export permits are required for each consignment.⁴⁴

Exports to the European Union are prohibited unless the exporter furnishes a written guarantee that statements made as to wine variety, traditional expression, vintage, place of bottling and other matters set out in the *Australian Wine and Brandy Corporation — Administrative Guideline — Labelling for EC Countries* are met.⁴⁵ These provisions supplement the domestic Label Integrity Program, the object of which is to ensure the truthfulness of statements by winemakers as to the vintage, variety and origin of wine.⁴⁶ Within Australia, it is an offence to sell, export or import wine with a false or misleading description or presentation.⁴⁷ The Program is reinforced by mandatory record keeping requirements for winemakers⁴⁸ and independent auditing of winemaker claims.⁴⁹ Combined, these regulations are integral to promoting and protecting 'Brand Australia'. Interestingly, they also provide a ready-built regulatory framework in which mandatory eco-labelling, incorporating carbon footprinting or food miles, might sit.

³⁸ Karl Forsyth, Darren Oemcke and Philip Michael, *Greenhouse Gas Accounting Protocol for the International Wine Industry* (The Wine Institute of California, New Zealand Winegrowers, Integrated Production of Wine South Africa and the Winemakers Federation of Australia Report, February 2008) <[http://www.wfa.org.au/PDF/GHG_Protocol_Version_1.1\(154%20pages\).pdf](http://www.wfa.org.au/PDF/GHG_Protocol_Version_1.1(154%20pages).pdf)> at 23 May 2008 ('*GGA Protocol*').

³⁹ *Ibid.*

⁴⁰ *Australian Wine and Brandy Corporation Regulations 1981* (Cth) reg 6(2).

⁴¹ *Australian Wine and Brandy Corporation Regulations 1981* (Cth) reg 6(1)(a).

⁴² *Australian Wine and Brandy Corporation Regulations 1981* (Cth) reg 6(1)(ii)(d), (e).

⁴³ *Australian Wine and Brandy Corporation Regulations 1981* (Cth) reg 6A.

⁴⁴ *Australian Wine and Brandy Corporation Regulations 1981* (Cth) reg 6.

⁴⁵ *Australian Wine and Brandy Corporation Regulations 1981* (Cth) reg 6AA(1).

⁴⁶ *Australian Wine and Brandy Corporation Act 1980* (Cth) s 39A.

⁴⁷ *Australian Wine and Brandy Corporation Act 1980* (Cth) ss 40C, 40E.

⁴⁸ *Australian Wine and Brandy Corporation Act 1980* (Cth) ss 39F–39ZAC.

⁴⁹ *Australian Wine and Brandy Corporation Act 1980* (Cth) ss 39ZA–39ZH.

III CARBON FOOTPRINTING, FOOD MILES, GLOBALISATION AND LOCALISATION

As a result of climate change becoming significantly more important on the global political agenda over the past five years, the terms ‘food miles’, ‘carbon footprint’, ‘globalisation’ and ‘localisation’ frequently appear in the international press. Yet there is little scholarly consensus as to the meaning of these terms, let alone a commonly accepted measure that might allow meaningful comparison across economic activity or between products and services.

A *Globalisation and Localisation*

Globalisation is not synonymous with internationalisation. It not only refers to the growing number of transactions and closer economic integration between countries, but also to the enhancement of global economic governance through bodies such as the WTO and, through that body, the liberalisation of international trade by the abolition of tariffs, deregulation of trade protections and dismantling of foreign exchange control.⁵⁰

A large body of literature in agricultural economics⁵¹ and rural sociology,⁵² confirmed by WTO International Trade Statistics, documents the globalisation of agriculture and food systems. This literature shows a significant increase in the international trade of food products during the past 10 years.⁵³ It also documents increasing concentration along supply chains such that fewer key economic players, particularly in distribution and retailing, have led to a shift in the management and control of the supply chain away from the agricultural to the retail sector.⁵⁴ Concomitantly, large-scale production is becoming more dominant.⁵⁵

⁵⁰ Joseph E Stiglitz, *Globalization and Its Discontents* (2002) 59–67.

⁵¹ See, eg, Dennis R Henderson and Charles R Handy, ‘Globalization of the Food Industry’ in Daniel I Padberg (ed), *Food and Agricultural Marketing Issues for the 21st Century* (1993); Thomas Reardon and Christopher Barrett, ‘Agroindustrialization, Globalization and International Development: An Overview of Issues, Patterns and Determinants’ (2000) 23 *Agricultural Economics* 195; Bruce Traill, ‘Globalisation in the Food Industries?’ (1997) 24 *European Review of Agricultural Economics* 390; Thomas Reardon and C Peter Timmer ‘Transformation of Markets for Agricultural Output in Developing Countries Since 1950: How Has Thinking Changed?’ in Robert Evenson and Prabhu Pingali (eds), *Handbook of Agricultural Economics* (2007) vol 3, 2808.

⁵² See, eg, Richard Le Heron, *Globalized Agriculture: Political Choice* (1993); Frederick H Buttel, ‘Some Reflections on Late Twentieth Century Agrarian Political Economy’ (2001) 41 *Sociologia Ruralis* 165; C Clare Hinrichs, ‘The Practice and Politics of Food System Localization’ (2003) 19 *Journal of Rural Studies* 33; Lynne Phillips, ‘Food and Globalization’ (2006) 35 *Annual Review of Anthropology* 37.

⁵³ Between 1996 and 2006 world exports in food increased from US\$477 955 million to US\$754 837 million: WTO, *WTO International Trade Statistics* (2006), available from <http://www.wto.org/english/res_e/statis_e/statis_e.htm> at 23 May 2008.

⁵⁴ Natalie Yakovleva, ‘Measuring the Sustainability of the Food Supply Chain: A Case Study of the UK’ (2007) 9 *Journal of Environmental Policy and Planning* 75; David Burch and Geoff Lawrence, ‘Supermarket Own Brands, Supply Chains and the Transformation of the Agri-Food System’ (2005) 13 *International Journal of Sociology of Agriculture and Food* 1; Hazel R Barrett et al, ‘Globalization and the Changing Networks of Food Supply: The Importation of Fresh Horticultural Produce from Kenya into the UK’ (1999) 24 *Transactions of the Institute of British Geographers* 159.

⁵⁵ Richard J Sexton, ‘Industrialization and Consolidation in the US Food Sector: Implications for Competition and Welfare’ (2000) 82 *American Journal of Agricultural Economics* 1087; Mark Drabenstott, ‘Agricultural Industrialization: Implications for Economic Development and Public Policy’ (1995) 27 *Journal of Agricultural and Applied Economics* 13.

Lobbying by consumers, farming groups and others for local food sourcing is consequently only partly a response to environmental concerns. Localisation is also a counterpoint to perceived negative aspects of globalisation,⁵⁶ specifically the industrialisation of the agricultural sector, homogenisation of food products⁵⁷ and diminution in local culture associated with particular methods of food production. Given the highly consolidated nature of the Australian winemaking industry with its related large-scale grape growing and wine production practices, as well as the widespread adoption of modern grape growing, grape harvesting and winemaking techniques, Australian winemakers are particularly sensitive to hostility of this nature when exporting to traditional winemaking countries where production is small-scale and heavily embedded within local culture. From the Australian industry's standpoint, the promotion of food miles as a means of discrimination between goods and services is more closely associated with localisation than with mitigating climate change.

B Food Miles

Simplistically, the term 'food miles' refers to the distance travelled between production and consumption. Underlying this definition is an assumption that proximity to market is a good measure of carbon sustainability, hence the exhortation to British consumers to eschew New Zealand wine in favour of its French counterpart. In support of the assumption, there is a considerable amount of literature which argues that the environmental impact of transportation within global food chains is substantial.⁵⁸ More recent studies, however, suggest that environmental costs arising from long distance shipping are very small compared to the cost of trucking food within countries of origin between central warehouses and outlying supermarkets.⁵⁹ Consequently, the UK Department for Environment, Food and Rural Affairs ('DEFRA') has determined that total food miles are an inadequate indicator of sustainability.⁶⁰ Furthermore, DEFRA has noted that differences in the eco-efficiency of food production systems can often offset the environmental impact of transport, especially in respect of long distance sea carriage. This observation is particularly pertinent for the Australian wine industry which, as noted, invests heavily in sustainable grape growing and winemaking practices.

⁵⁶ Hinrichs, above n 52, 34.

⁵⁷ Others have suggested that the storage and long distance transport across global food chains dilutes the food's nutritional value: see Andy Jones, *Eating Oil: Food Supply in a Changing Climate* (Sustain and Elm Farm Research Centre Report, November 2001).

⁵⁸ See, eg, *ibid*; Hugh Raven and Tim Lang with Caroline Dumonteil, *Off Our Trolleys? Food Retailing and the Hypermarket Economy* (1995); Susan Subak, 'Global Environmental Costs of Beef Production' (1999) 30 *Ecological Economics* 79; Rich Pirog et al, *Food, Fuel and Freeways* (2001); Tara Garnett, *Wise Moves: Exploring the Relationship between Food, Transport and CO₂* (Transport 2000 Trust Report, London, UK, 2000); Phillip A Stephens, Jules N Pretty and William J Sutherland, 'Agriculture, Transport Policy and Landscape Heterogeneity' (2003) 18 *TRENDS in Ecology and Evolution* 555; Sarah J Cowell and Stuart Parkinson, 'Localisation of UK Food Production: An Analysis Using Land Area and Energy as Indicators' (2003) 94 *Agriculture, Ecosystems and Environment* 221.

⁵⁹ Pretty et al, above n 5.

⁶⁰ Paul Watkiss, AEA Technology Environment Plc, *The Validity of Food Miles as an Indicator of Sustainable Development* (DEFRA Report No ED50254, July 2005) <<http://statistics.defra.gov.uk/esg/reports/foodmiles/final.pdf>> at 23 May 2008.

Nonetheless, a recent comparison of the carbon cost of importing wine from Australia, Europe and Western US to Eastern US conducted by the American Association of Wine Economists,⁶¹ demonstrates that, while the mode of transportation to market is key, food miles still matter. According to the study, the net impact of grape cultivation and fermentation on greenhouse gas emissions is negative. However, there is significant environmental impact arising from transportation primarily accumulated when wine is shipped to market. The study found that on a comparative basis, wine imported to New York from Australia is more 'carbon expensive' than wine imported from Bordeaux, but slightly 'carbon cheaper' than wine imported from the Napa Valley by long distance truck haulage.⁶²

C *Carbon Footprinting*

Climate change has been described as the most serious problem facing the planet.⁶³ To allay increasing temperature, water shortages and the deleterious impact of climate change on agriculture, security and health, significant reductions must be made in greenhouse gas emissions. A large number of countries, including Australia, have committed to greenhouse gas emission reduction targets in the order of 20–60 per cent.⁶⁴ To work effectively, these commitments require the cooperation of individuals, businesses and governments and an ability to accurately measure greenhouse gas emissions using methods which allow for eco-efficiency comparisons. The term 'carbon footprint' is widely used for measuring the amount of greenhouse gas emissions associated with commercial and consumption activity. However, several questions arise regarding exactly what is measured by the footprint and how it is measured.⁶⁵

⁶¹ Tyler Colman and Pablo Paster, *Red, White and 'Green': The Cost of Carbon in the Global Wine Trade* (Working Paper No 9, American Association of Wine Economists, October 2007) <http://www.wine-economics.org/workingpapers/AAWE_WP09.pdf> at 23 May 2008. This conclusion was also reflected in the *GGA Protocol*: Forsyth, Oemcke and Michael, above n 38, 16.

⁶² Colman and Paster, above n 61.

⁶³ HM Treasury, *Stern Review: The Economics of Climate Change* (HM Treasury Report, London, UK, 30 October 2006) <http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm> at 23 May 2006; Intergovernmental Panel on Climate Change, *Fourth Assessment Report: Synthesis Report* (IPCC Fourth Assessment Report, 17 November 2007) <http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf> at 23 May 2008.

⁶⁴ In campaigning for the 2007 federal election, the current Australian Labor Government proposed a 60 per cent reduction in 2000 carbon emission levels by 2050: see Australian Labor Party, *2007 National Platform and Constitution* (2007) 137 <http://www.alp.org.au/download/now/2007_national_platform.pdf> at 23 May 2008. On 10 January 2007, the European Commission adopted a common energy policy, *Energy for a Changing World*, which proposed reductions in carbon emissions of 20 per cent by 2020 and of 50 per cent by 2050: see Council of the European Union, 'Presidency Conclusions of the Brussels European Council' (Press Release, 8–9 March 2007). The UK's Climate Change Bill 2007–08 aims to put in place a mandatory framework to achieve reductions of 60 per cent in greenhouse gas emissions by 2050.

⁶⁵ Thomas Wiedmann and Jan Minx, *A Definition of 'Carbon Footprint'* (ISA UK Research Report 07-01, June 2007) <http://www.isa-research.co.uk/docs/ISA-UK_Report_07-01_carbon_footprint.pdf> at 23 May 2008.

These questions include whether the footprint:

- includes methane, nitrous oxide, and carbon monoxide, as well as CO₂;
- includes indirect emissions from upstream processes (which might lead to double counting)⁶⁶ or only direct emissions from on-site production processes;
- includes end-of-life recovery and disposal;
- is based on actual consumption and emissions or on averages across industry, time and space;
- expresses the amount of carbon emissions in weight or measures the amount of land appropriation required to sequester the emissions; or
- incorporates carbon offsets.

There are currently a number of methodologies for calculating carbon footprints including the *Greenhouse Gas Protocol* ('*GHG Protocol*')⁶⁷ produced by the World Resources Institute and World Business Council for Sustainable Development and a standard produced by the International Organization for Standardization, ISO 14064.⁶⁸ Both of these methods use life-cycle analysis techniques⁶⁹ and measure corporate or project greenhouse gas emissions rather than a per product carbon footprint. The *GGA Protocol*⁷⁰ referred to earlier is based upon the *GHG Protocol*, although ISO 14064 was extensively consulted during its development. Hence, the *GGA Protocol* is intended to be used from a whole of company or enterprise perspective.

As a result of increased public understanding of climate change, however, there is increasing interest in harnessing consumer demand to create market pressure which can be used to encourage producers of goods and services to adopt environmentally responsible production processes. For this purpose, a method of measuring and clearly labelling the carbon footprint of individual retail products and services is required.

Carbon Trust, a company established by the UK Government in response to the threat of climate change, is currently trialling a carbon label that shows the carbon content of a product in grams as well as a signal of the producer's commitment to lowering their products' carbon footprint. To support the label, Carbon Trust has developed a carbon footprint methodology, drawing heavily on the life-cycle assessment techniques outlined in the *GHG Protocol* and ISO 14064. This methodology calculates the carbon footprint for each item purchased by consumers, inclusive of all greenhouse gases, all supply chain inputs and

⁶⁶ Manfred Lenzen et al, 'Shared Producer and Consumer Responsibility — Theory and Practice' (2007) 61 *Ecological Economics* 27.

⁶⁷ Greenhouse Gas Protocol Initiative, *Calculation Tools* (2008) <<http://www.ghgprotocol.org/calculation-tools>> at 23 May 2008.

⁶⁸ Contained in International Organization for Standardization, *Greenhouse Gases — Part 1: Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals* (1 March 2006), available from <<http://www.iso.org>> at 23 May 2008.

⁶⁹ Chris Hendrickson et al, 'Economic Input–Output Models for Environmental Life-Cycle Assessment' (1998) 32 *Environmental Science and Technology* 184A; Satish Joshi, 'Product Environmental Life-Cycle Assessment Using Input–Output Techniques' (1999) 3 *Journal of Industrial Ecology* 95.

⁷⁰ Forsyth, Oemcke and Michael, above n 38, 12.

outputs (including transportation) minus indirect emissions. Offsets are not allowed.⁷¹ The European Commission favours a similar method for measuring the greenhouse gas emissions of retail items.⁷²

Meanwhile, in California, spurred on by the passage of the *Global Warming Solutions Act 2006*,⁷³ researchers at University of California, Berkeley, and the California Air Resources Board have also begun investigating the creation of a viable carbon label using assessment techniques comparable to those developed by the UK's Carbon Trust.⁷⁴

Based upon Carbon Trust's research, the British Standards Institute has recently released a draft Publicly Available Specification for carbon footprint measurement.⁷⁵ The release of the draft specification has in turn influenced the development of the Australian *GGA Protocol*. Although the Protocol is intended for enterprise rather than per product application, the developers of the Protocol, aware of the development of per product carbon footprinting in the UK and elsewhere, were determined to incorporate important aspects of the UK's draft specification so that the *GGA Protocol* could later form the basis for entraining carbon emitted in the manufacture and supply of individual wine products if required.⁷⁶ To that end, the Protocol defines three scopes. Scope 1 only incorporates direct greenhouse gas emissions. Scope 2 incorporates emissions generated from purchased power such as electricity and Scope 3 incorporates emissions arising from producing a finished saleable wine up to waste disposal. At this stage, Scope 3 is optional.

Under the British Standards Institute specification and the optional Scope 3 of the *GGA Protocol*, food miles are incorporated into the assessment of the per product carbon footprint, but not as an independent factor. Rather, CO₂ and other greenhouse gas emissions that result from the transportation of inputs and outputs across the supply chain are incorporated into the total amount of greenhouse gas emissions or carbon footprint required to produce and market each consumer item. From an international trade perspective, therefore, carbon footprinting using the methods developed by Carbon Trust (or other similar methods) is less likely to constitute an arbitrary and unreasonable restriction upon international trade than discrimination based upon a one-dimensional concept like food miles. Nevertheless, given the findings of the American Association of Wine Economists referred to earlier, if the only reason that wine produced in Australia is more carbon intensive than wine produced in Europe or the US is distance to market, is this an acceptable basis for Australian wine to be assigned a higher carbon value with presumably diminished competitive

⁷¹ Carbon Trust, *Footprint Measurement Methodology* (Carbon Trust Report Version 1.3, 15 March 2007) <http://www.carbon-label.co.uk/pdf/methodology_full.pdf> at 23 May 2008.

⁷² Institute for Environment and Sustainability, *Carbon Footprint — What It Is and How To Measure It* (European Commission Joint Research Centre Report, 2007) <http://lca.jrc.ec.europa.eu/Carbon_footprint.pdf> at 23 May 2008.

⁷³ CAL HEALTH & SAFETY CODE § 38 500 (2006).

⁷⁴ Arpad Horvath and Eric Masanet, *Life-Cycle Assessment for Mitigating the Greenhouse Gas Emissions of Retail Products* (University of California, Berkeley, Report, 9 August 2007) <<http://www.arb.ca.gov/research/seminars/horvath/horvath.pdf>> at 23 May 2008.

⁷⁵ British Standards Institute, UK, *PAS 2050 — Measuring the Embodied Greenhouse Gas Emissions in Products and Services* (2008).

⁷⁶ Forsyth, Oemcke and Michael, above n 38, 12.

advantage? Distance to market is not an environmental factor which Australian winemakers are able to affect, thus falling outside of the rationale of carbon footprinting.

While at this stage carbon footprinting is voluntary, efficacy demands that the methodology become mandatory, or at the very least that its adoption become widespread, to achieve standardisation in measurement and universality of coverage.⁷⁷ If only a small number of producers applied carbon footprints to their products and used different methods to assess greenhouse gas emissions, consumers would not be able to use carbon labelling to effectively discriminate between environmentally responsible and environmentally harmful products. In addition, producers would have little incentive to adopt carbon labelling unless they could attain competitive advantage. There is no competitive advantage unless comparisons can be made across a range of substitutable products.

There is also a suggestion that carbon footprinting could be deployed in the development of low carbon product standards.⁷⁸ Clearly such standards would not be feasible without a universal means of assessing a product's carbon footprint.

IV CONCERNS GENERATED BY CARBON FOOTPRINTING AND FOOD MILES

There are three major objections to the adoption of a food miles and/or carbon footprint regime, each of which will be examined in turn:

- 1 Carbon footprinting and especially food miles are designed to protect domestic industry, restrict market access and erode national competitive advantage;
- 2 Carbon footprinting and/or food miles may produce unwarranted discriminatory effects; and
- 3 The costs of implementing carbon footprinting are prohibitive.

A *Erosion of Competitive Advantage*

Carbon footprinting, whether voluntary or mandatory, is seen as a means of promoting environmentally friendly production practice without the introduction of environmental standards or environmental taxes, which only operate on a domestic basis and therefore tend to disadvantage domestic producers.⁷⁹ Moreover, carbon footprints are less likely to attract WTO opprobrium than carbon minimisation production standards or taxes, which are likely to be characterised as unilateral attempts to impose production process methods on other sovereign entities.⁸⁰

Nevertheless there are concerns that carbon footprinting amounts to de facto control of production process methods and that it generally favours domestic

⁷⁷ See Brenda Boardman et al, *Carbon Labelling Roundtable* (UK Energy Research Centre, 3–4 May 2007).

⁷⁸ *Ibid.*

⁷⁹ Valentini, above n 13, 17–18.

⁸⁰ *United States — Restrictions on Imports of Tuna*, GATT BISD 39th Supp, 155, GATT Doc DS21/R (3 September 1991) [5.26]–[5.32] (Report of the Panel) ('*US — Tuna (Mexico)*'); *US — Shrimp*, WTO Doc WT/DS58/AB/R (12 October 1998) (Report of the Appellate Body).

producers over exporting producers. Carbon footprinting provides a means for consumers to differentiate between retail goods on the basis of whether they are made and marketed in a carbon sustainable manner. However, it does so upon the basis of non-product related production process methods, that is, upon methods that have no impact on the final food product and which, as mentioned above, would normally be opposed as inappropriate trade restrictions. While larger Australian winemakers are reasonably well placed to respond to carbon footprinting, the same cannot be said for smaller winemakers or winemakers in less developed countries without access to carbon footprint methodologies and infrastructure. Winemakers in developing countries may also have difficulty in accessing environmentally friendly technology and materials which will enable them to lower their carbon footprint sufficiently to offset transport costs to distant markets, even though resource scarcity and carbon sustainability are not significant issues in their regions. Without access to carbon footprint methodologies, winemakers from developing countries may become dependent on expensive buyer mandated foreign consultants and certification agencies.⁸¹ If only Australian winemakers or winemakers from developing countries have access to conformity assessment procedures verifying carbon footprinting from bodies like the Carbon Trust in the UK or similar bodies in other importing countries, this may also discriminate against foreign winemakers.⁸²

B *Unwarranted Discriminatory Effects*

Greenhouse gas emissions are only one factor relevant to sustainability. Other factors include water security, resource degradation and/or depletion, fair trade, and sustainability of local culture. Other non-greenhouse gas pollutants also affect the quality of the environment. Thus, while conventional large-scale grape growing and winemaking practices may result in marginally less greenhouse gas emissions per hectare, the total ecological footprint of organic winemaking is substantially smaller.⁸³ By focusing upon carbon labelling, consumers and producers have less incentive to address other environmental and social factors and consequently carbon labelling may lead to inappropriate trade-offs. Research undertaken by Thottathil, for example, has demonstrated that a significant proportion of consumers will avoid fair trade products in favour of locally produced items to reduce the use of fossil fuel in the food system.⁸⁴ If this influence is transposed to the decisions of highly monopolised wholesalers and retailers in key importing countries, the capacity of relatively high carbon value products to be exported or sold within these markets may be substantially

⁸¹ Cathy Roheim Wessells et al, *Product Certification and Ecolabelling for Fisheries Sustainability* (Food and Agriculture Organization of the UN, Fisheries Technical Paper 422, 2001) <<http://www.fao.org/docrep/005/y2789e/y2789e00.htm>> at 23 May 2008; Huilan Tian, 'Eco-Labeling Scheme, Environmental Protection and Protectionism' (2003) 36 *Canadian Journal of Economics* 608, 610.

⁸² Manoj Joshi, 'Are Eco-Labels Consistent with World Trade Organization Agreements?' (2004) 38 *Journal of World Trade* 69, 72.

⁸³ Valentina Niccolucci et al, Centre for Business Relationships, Accountability, Sustainability and Society, *The Ecological Footprint Analysis Applied to Two Different Italian Wine Productions* (2007) <http://www.brass.cf.ac.uk/uploads/Niccolucci_et_al_A95.pdf> at 23 May 2008.

⁸⁴ Sapna E Thottathil, *The Food Miles of Fairtrade: Do People Care?* (MSc Thesis, Oxford University, 2006) <http://udall10.udall.gov/pdf/essay_thottathil.pdf> at 23 May 2008.

diminished. On the other hand, food trade between Sub-Saharan Africa and the UK provides financial support to one million rural Africans, while a mere 0.1 per cent of the UK's greenhouse gas emissions are derived from that source.⁸⁵

In some countries, particular production processes may be more socially and environmentally suitable to that country's geographical, climatic and other circumstances. A focus upon carbon output may unduly favour conditions in the importing country. If exporting countries are excluded from the development of carbon labelling criteria there is a risk that the criteria may favour the labelling state at the expense of those exporting.⁸⁶

C Prohibitive Costs of Implementing Carbon Footprinting

Depending on the detail required by regulation or a standards setting body, life-cycle analyses are generally very time consuming and expensive when compared to a simple concept like food miles. For example, the Lincoln University research project conducted by Saunders et al examined four commodities but took over six months with three part-time academics to complete.⁸⁷ In another case, GlaxoSmithKline drink product life-cycle assessments, using a full-time intern and part-time senior input, took between four and six months to reach a conclusion.⁸⁸ Verification costs associated with conformity assessment procedures by independent agencies to ensure confidence in retailers' carbon footprint assessments are also likely to be high. However, insofar as accuracy of eco-efficiency assessment and elimination of unwarranted discrimination are concerned, carbon footprinting is clearly preferred to food miles. On the other hand, given its high cost, there are questions about the efficacy of carbon footprinting as an environmental measure. These questions are more acute for small producers and producers in developing countries where carbon footprinting will add substantially to the marginal costs of production, especially if suppliers and importing countries adopt a plethora of different standards or label requirements.

Costs can be substantially reduced through international development and adoption of carbon footprint standards, and the use of industry averages across time and space rather than measures based upon actual emissions. Such thinking underlies the development of the *GGA Protocol*.⁸⁹ Although the Protocol is largely the brain child of the Australian wine industry, the Winemakers

⁸⁵ James MacGregor and Bill Vorley (eds), 'Fair Miles? Weighing Environmental and Social Impacts of Fresh Produce Exports from Sub-Saharan Africa to the UK' (October 2006) 9 *Fresh Insights*, available from <<http://www.agrifoodstandards.net>> at 23 May 2008.

⁸⁶ UNCTAD, *Trade, Environment and Development: Aspects of Establishing and Operating Eco-Labeling Programmes*, UN Doc TD/B/WG.6/5 (6 June 1995) 6; Ibon Galarraga Gallastegui, 'The Use of Eco-Labels: A Review of the Literature' (2002) 12 *European Environment* 316, 318–19; Gilles Grolleau, Lisette Ibanez and Naoufel Mzoughi, 'Industrialists Hand in Hand with Environmentalists: How Eco-Labeling Schemes Can Help Firms to Raise Rivals' Costs' (2007) 24 *European Journal of Law and Economics* 215, 216–17; Joshi, above n 82.

⁸⁷ Saunders, Barber and Taylor, above n 4.

⁸⁸ Rebecca White with Brenda Boardman and Sapna Thottathil, *Carbon Labelling: Evidence, Issues and Questions* (UK Energy Research Centre Briefing Paper, 3–4 May 2007) <http://www.ukerc.ac.uk/Downloads/PDF/07/0705_Carbon_Labeling_WP.pdf> at 23 May 2008.

⁸⁹ Forsyth, Oemcke and Michael, above n 38.

Federation of Australia was careful to include other bodies from major wine exporting countries such as New Zealand Winegrowers and the Wine Institute of California in its development. Furthermore, instead of trying to measure actual emissions, emissions measurement is based upon relatively cheaply sourced data such as the average CO₂ emissions per kilowatt of purchased electricity throughout a whole state.⁹⁰ Similarly CO₂ emissions for shipping are based on average CO₂ emissions per tonne published by CE Delft, a non-profit environmental consultancy based in the Netherlands.⁹¹

As noted earlier, the main objective of carbon footprinting in terms of affecting the rate of climate change is to enable consumers to discriminate between environmentally responsible and environmentally harmful production practices. However, there is little clarity about the actual impact of climate change on consumer perceptions and purchasing behaviour.⁹² In relation to wine production and marketing, many winemakers and wine retailers regard responding to climate change as a form of good corporate social responsibility. It remains unclear, however, whether and how consumers will respond to the redesign of supply chains, environmental assurance labelling, carbon footprinting or food miles, or how they will prioritise these against other hedonic factors such as region and brand.⁹³ If, for example, the latest Australian wine industry strategic plan, *Wine Australia: Directions to 2025*,⁹⁴ is successfully implemented and Australian wine carries an implicit assumption of superior quality and environmentally sustainable production practice, this may offset the influence of food miles and anti-globalisation sentiment that might otherwise attach itself to the brand.

Questions concerning the strength of the link between consumer behaviour and carbon labelling are further exacerbated by the interactions carbon labelling might have with other existing regulatory requirements such as health warnings,⁹⁵ alcohol to volume labelling,⁹⁶ and allergen labelling.⁹⁷ There may be a risk that too much detailed information attached to food products, especially products such as wine which are already subject to substantial labelling regulation, will simply lead consumers to rely upon heuristics such as country or brand rather than to identify, assimilate and compare carbon value. Producers

⁹⁰ Ibid 60.

⁹¹ Ibid 66.

⁹² The Organisation for Economic Co-operation and Development ('OECD') Joint Working Party on Trade and Environment reported that eco-labelling is only moderately successful with consumers: see Environment Directorate and Trade Directorate, OECD, *Effects of Eco-Labelling Schemes: Compilation of Recent Studies* (2005) 6, available from <<http://www.oecd.org>> at 23 May 2008. See also Daniel Melser and Peter E Robertson, 'Eco-Labelling and the Trade-Environment Debate' (2005) 28 *World Economy* 49, which expressed pessimism about the efficacy of eco-labelling as a tool for solving environmental problems.

⁹³ Bron Cuthbertson and Nicki Marks, *Beyond Credence? Emerging Consumer Trends in International Markets* (Victorian Government Department of Primary Industries Report, May 2007) <<http://www.dpi.vic.gov.au/dpi>> at 23 May 2008.

⁹⁴ Australian Wine and Brandy Corporation, above n 27.

⁹⁵ See, eg, *Federal Alcohol Administration Act*, 27 USC § 215 (2003), which requires a US Surgeon General health warning on all wine that women should not drink alcohol during pregnancy and that alcohol consumption impairs ability to drive or operate machinery.

⁹⁶ *Food Standards Australia New Zealand Regulations 1994* (Cth) reg 2.7.1.

⁹⁷ *Food Standards Australia New Zealand Regulations 1994* (Cth) reg 1.2.3.

will also face increasing marginal cost as the number of labels increases.⁹⁸ Consequently, there is a danger that investing substantial funds in implementing carbon footprinting will not, of itself, lead to changes in consumer preferences.

Others argue that, notwithstanding the lack of evidence of strong consumer preference for carbon footprinting and other eco-labelling, such labelling increases competition among producers for environmental innovation.⁹⁹ Certainly the significant investment made by the Australian wine industry, not only in environmentally friendly production practices, but also in promoting a 'clean and green' image suggests that winemakers regard good environmental reputation as a competitive advantage.¹⁰⁰ However, unless reductions in greenhouse gas emissions lead to a significant cost savings or low carbon footprints can be related to increased profits through increased market share,¹⁰¹ the social welfare benefits of increasing rivals' costs appear uncertain.¹⁰²

Assuming that carbon footprinting does create unwarranted discriminatory effects or otherwise imposes unnecessary costs on international trade, thereby reducing competitive advantage, several questions arise: first, whether the WTO agreements provide the Australian wine industry with any leverage to influence the way in which carbon footprints are measured, for example, whether they incorporate food miles; second, whether carbon footprints and carbon footprint standards are applied universally or in a discriminatory fashion, for example whether the wine trade is exempted because of its good environmental record; and, third, whether existing market activity adopting local food sourcing policies, especially in the retail and distribution sectors, ought to be condoned or condemned.

V WTO: POTENTIAL REDRESS

When examining the issue of eco-labelling, the WTO Committee on Trade and Environment ('CTE') has expressed the view that '[w]ell-designed eco-labelling schemes/programmes can be effective instruments of environmental policy to encourage the development of an environmentally-conscious consumer public'.¹⁰³

⁹⁸ Christopher Bruce and Andrea Laroiya, 'The Production of Eco-Labels' (2007) 36 *Environmental and Resource Economics* 275, 283.

⁹⁹ Kenzo Abe et al, 'Eco-Labelling, Environment and International Trade' in Robert M Stern (ed), *Issues and Options for US-Japan Trade Policies* (2002) 235-6; Wendy Williams, *Eco-Labelling: A Socio-Economic Analysis* (PhD Thesis, Vienna University of Economics and Business Administration, 2004) 133 <http://epub.wu-wien.ac.at/dyn/virlib/diss/eng/mediate/epub-wu-01_79d.pdf?ID=epub-wu-01_79d> at 23 May 2008; Grolleau, Ibanez and Mzoughi, above n 86.

¹⁰⁰ Mary Pugh and Richard Fletcher, 'Green International Wine Marketing' (2002) 10(3) *Australasian Marketing Journal* 76, 79.

¹⁰¹ See, eg, Roger A Sedjo and Stephen K Swallow, 'Voluntary Eco-Labelling and the Price Premium' (2002) 78 *Land Economics* 272, which contends that unless there is significant consumer demand for eco-labelled products with low carbon footprints, producers will not be able to charge a price premium for their environmentally friendly products.

¹⁰² See, eg, Bruce and Laroiya, above n 98, which argues that as a result of increasing returns to scale and complexities in production that the cost of producing eco-labels is not offset by the limited amount of information they convey. See also Mads Greker, 'Eco-Labels, Trade and Protectionism' (2006) 33 *Environmental and Resource Economics* 1; Grolleau, Ibanez and Mzoughi, above n 86.

¹⁰³ *Report (1996) of the Committee on Trade and Environment*, WTO Doc WT/CTE/1 (12 November 1996) [183].

Nonetheless, despite the Doha Ministerial Conference making eco-labelling an issue of special focus for the CTE in 2001,¹⁰⁴ controversy within the WTO surrounding eco-labelling remains intractable, especially in relation to eco-labelling based on non-product related production and processes like carbon footprinting.¹⁰⁵

There is no specific WTO agreement governing regulation of carbon footprints and accounting for food miles. However, art III of *GATT 1994* and the *TBT Agreement* are the WTO provisions which most directly address these issues. Indeed, many WTO members have expressed the opinion that the topic of eco-labelling is better dealt with by the TBT Committee rather than the CTE.¹⁰⁶

A *Article III:4 of GATT 1994*

Article III of *GATT 1994* applies to ‘laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use’ of products. These terms are interpreted broadly.¹⁰⁷ Most pertinent to the issues of food miles and carbon footprinting is art III:4, which requires that products imported from other WTO countries should be accorded treatment ‘no less favourable than ... like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, transportation, distribution or use’.

Several questions arise from the above requirements:

1 *Are Food Products Such As Wine with Carbon or Food Mile Labels ‘Like’ Wine without Such Labels?*

If mandatory carbon footprinting or food miles labelling were introduced into a key export market such as the UK or US, one question which would arise is whether applying such a regulatory requirement to sales of imported products might attract art III:4. This would only occur if labelled and unlabelled wine were regarded as ‘like products’. Like products are products in a competitive relationship with each other.¹⁰⁸ Four general criteria are relevant:

- (i) the properties, nature and quality of the products;
- (ii) the end uses of the products;
- (iii) consumers’ tastes and habits ... in respect of the products; and
- (iv) the tariff classification of the products.¹⁰⁹

¹⁰⁴ *Draft Ministerial Declaration*, WTO Doc WT/MIN(01)/DEC/1 (14 November 2001) [32] (*‘Doha Ministerial Declaration’*).

¹⁰⁵ Ralph Piotrowski and Stefan Kratz, ‘Eco-Labelling in the Globalised Economy’ in Alfred Pfaller and Marika Lerch (eds), *Challenges of Globalization: New Trends in International Politics and Society* (2005) 217, 228.

¹⁰⁶ Joshi, above n 82, 81–3.

¹⁰⁷ Andrew Green, ‘Climate Change, Regulatory Policy and the WTO: How Constraining Are Trade Rules?’ (2005) 8 *Journal of International Economic Law* 143, 155.

¹⁰⁸ *European Communities — Measures Affecting Asbestos and Asbestos-Containing Products*, WTO Doc WT/DS135/AB/R, AB-2000-11 (12 March 2001) [99] (Report of the Appellate Body) (*‘EC — Asbestos’*).

¹⁰⁹ *Ibid* [101].

Applying the above criteria to asbestos-containing products, the WTO Appellate Body has found that the toxicity of these products rendered them 'unlike' other building products despite similar end uses.¹¹⁰

Nevertheless, as previously outlined, while a number of wholesalers and retailers in major Australian wine markets are supporting or proposing to adopt carbon footprinting, there is very little evidence that carbon footprinting will affect consumer preferences. Some reports have found that compared to price, quality, food safety and cleanliness, 'green' food ranks very low as a credence factor.¹¹¹ While a small minority of environmentally aware and reflective consumers may alter purchasing decisions with respect to a limited range of products as a result of eco-labelling, the majority will not.¹¹²

Moreover although the jurisprudence of the earlier *US — Tuna (Mexico)*¹¹³ and *US — Shrimp*¹¹⁴ disputes has to some extent been supplanted by *EC — Asbestos*,¹¹⁵ if the wine in each case is chemically identical regardless of its carbon footprint or the food miles travelled it is probable that it will be

¹¹⁰ Ibid [128]–[132].

¹¹¹ Department of Primary Industries, *Beyond Price and Quality: Understanding Credence Attributes of Food Products in Victoria's Priority Markets* (Victorian Government Report, 2004) <<http://www.dpi.vic.gov.au/dpi>> at 23 May 2008.

¹¹² Esben Rahbek Pedersen and Peter Neergaard, 'Caveat Emptor — Let the Buyer Beware! Environmental Labelling and the Limitations of "Green" Consumerism' (2006) 15 *Business Strategy and the Environment* 15, 18. But see Marcus Sutcliffe, Paul Hooper and Ros Howell, 'Can Eco-Footprinting Analysis Be Used Successfully to Encourage More Sustainable Behaviour at the Household Level?' (2008) 16 *Sustainable Development* 1; Mario F Teisl, Brian Roe and Robert L Hicks, 'Can Eco-Labels Tune a Market? Evidence from Dolphin-Safe Labeling' (2002) 43 *Journal of Environmental Economics and Management* 339.

¹¹³ GATT BISD 39th Supp, 155, GATT Doc DS21/R (3 September 1991) (Report of the Panel). In this case, the US unsuccessfully sought to argue that tuna caught with purse-seine nets was not 'like' tuna caught in a dolphin friendly manner.

¹¹⁴ WTO Doc WT/DS58/AB/R (12 October 1998) (Report of the Appellate Body). In this case, the US sought to ban the import of shrimp caught on boats without turtle extruder devices ('TEDs'). The Appellate Body determined that the ban was prohibited by *GATT 1994*, above n 16, art XI and rejected the US's defences based on art XX. The question of whether shrimp caught with TEDs was like shrimp caught without TEDs was not directly considered by the Appellate Body. Nonetheless, by accepting that the mandating of TEDs by the US was discriminatory, implicit within the Appellate Body's discussion of art XX was that the ban on TEDs was a ban on a production process which would otherwise produce like products.

¹¹⁵ WTO Doc WT/DS135/AB/R, AB-2000-11 (12 March 2001) [192] (Report of the Appellate Body). Although the Appellate Body determined that health considerations were subsumed within the criteria governing whether products were like each other set out earlier in this article, its decision that the toxicity of products containing asbestos rendered them 'unlike' other construction products signalled that the criteria would be interpreted more broadly than had previously been the case, at least under the *US — Tuna (Mexico)* decision. Further, incorporation of the health impact of a product within the criteria led some to speculate that environmental impact might also be incorporated into the test: Michael M Weinstein and Steve Charnowitz, 'The Greening of the WTO' (2001) 80 *Foreign Affairs* 147; Gillian Triggs, 'Dispute Settlement Under the World Trade Organization: Implications for Developing Countries' (2003) 15 *Bond Law Review* 44, 62–3; Robert Read, 'Like Products, Health and Environmental Exceptions: The Interpretation of PPMs in Recent WTO Trade Dispute Cases' (2004) 5 *Estey Centre Journal of International Law and Trade Policy* 123; Nathalie Bernasconi-Osterwalder et al, *Environment and Trade: A Guide to WTO Jurisprudence* (2006) 13–14. If environmental impact becomes a valid basis for discriminating between products, it is unlikely that measures discriminating on this ground will be prohibited by *GATT 1994*, above n 16, art III:4.

characterised as a ‘like product’.¹¹⁶ Evidence of cross-price elasticity between low carbon and high carbon wine will add support to this conclusion.¹¹⁷

2 *Does Voluntary Carbon Footprinting Coordinated and Supported by the Government Amount to a Requirement?*

The term ‘requirement’ is clearly distinguishable from laws and regulations in art III:4. It refers to requests or demands (such as demands for carbon footprinting or food miles labelling), and can extend to the actions of private parties where there is a nexus between those demands and government action. Hence, in *Canada — Autos*¹¹⁸ a commitment communicated to the Canadian government by Canadian car manufacturers to increase the value added to cars manufactured in Canadian plants, when linked to entry into an automotive trade agreement between Canada and the US, constituted a ‘requirement’ subject to art III:4. In the same manner, administrative guidance or other forms of direction and control exerted by majority government shareholders over privatised state entities can also amount to a requirement.¹¹⁹ Domestic purchase requirements imposed to obtain reduced tariff levels also constitute a requirement even where the importers concerned have discretion as to whether or not they will pursue that advantage.¹²⁰

Arguably, a blend of private, officially sanctioned and regulated activities concerning carbon footprinting and food miles together constitute a requirement. These activities include: official encouragement of carbon footprinting in the UK through the government-owned entity Carbon Trust as well as the British Standards Institute; regulations such as the Climate Change Bill 2007–08 (UK) and the *Sustainable Communities Act 2007* (UK); legislation mandating

¹¹⁶ *Japan — Customs Duties, Taxes and Labelling Practices on Imported Wines and Alcoholic Beverages*, GATT BISD 34th Supp, 83, GATT Doc L/6216 (10 November 1987) (Report of the Panel, adopted on 10 November 1987). The panel found that minor but clearly perceptible differences in taste, colour and other properties between Japanese and European alcoholic beverages did not prevent the products qualifying as ‘like products’. See also Green, above n 107, 166.

¹¹⁷ *Korea — Taxes on Alcoholic Beverages*, WTO Doc WT/DS75/AB/R, WTDS84/AB/R (18 January 1999) (Report of the Appellate Body). Although this report dealt with art III:2 rather than art III:4, the finding that imported whisky and tequila are directly substitutable and competitive with diluted and distilled soju (a native Korean spirit) is analogous. See also *India — Measures Affecting the Auto Sector*, WTO Doc WT/DS146/R, WT/DS175/R (21 December 2001) [7.193] (Report of the Panel), concluding that making the grant of a licence to import car assembly kits contingent upon entry into a memorandum of understanding between car manufacturers and the government, whereby the manufacturer agreed to minimum levels of local content in car production amounted to a requirement.

¹¹⁸ *Canada — Certain Measures Affecting the Automotive Industry*, WTO Doc WT/DS139/R, WT/DS142/R (11 February 2000) [10.106]–[10.107], [10.123] (Report of the Panel) (‘*Canada — Autos*’).

¹¹⁹ *Canada — Certain Measures Affecting Periodicals*, WTO Doc WT/DS31/R (14 March 1997) [5.33]–[5.36] (Report of the Panel).

¹²⁰ *Turkey — Measures Affecting the Importation of Rice*, WTO Doc WT/DS334/R (21 September 2007) [7.218]–[7.219], [7.225]–[7.226] (Report of the Panel).

environmental reporting¹²¹ and the taking account of environmental impact in corporate decision-making;¹²² and government-issued environmental reporting guidelines that provide direction as to how to measure environmental impact along supply chains.¹²³ As noted in *Japan — Film*,¹²⁴ individual measures need not be examined in isolation. Where measures jointly create a milieu of compliance, they may be regarded in combination as a requirement. Similar reasoning may be applicable to developments in California in the near future.

3 *Does the Voluntary Imposition of Food Miles by Highly Consolidated Retailers and Wholesalers, though Unsupported by Government, Amount to a Requirement?*

Although private action can amount to a ‘requirement’, there must be a means of demonstrating that the government is responsible for the conditions imposed by private importers.¹²⁵ Given DEFRA’s position on food miles and the failure of governments in other key importing wine countries to endorse food miles or food miles labelling, the voluntary use of food miles labelling by some, albeit highly monopolised retailers, cannot be regarded as a ‘requirement’ within the meaning of art III:4. Consequently, notwithstanding that food miles may constitute a disguised restriction on international trade, Australian winemakers will not be able to contest their application pursuant to *GATT 1994* art III:4.

4 *Does Food Miles Labelling or Carbon Footprinting Lead to Discrimination against Imported Products?*

Carbon footprinting and food miles labelling apply equally to imported and domestic products. Nevertheless, measures need not directly discriminate against imported products in order to breach art III:4. According to the WTO Appellate Body, ‘[w]hether or not imported products are treated “less favourably” than like domestic products should be assessed instead by examining whether a measure modifies the conditions of competition in the relevant market to the detriment of imported products’.¹²⁶ Thus in *EC — Trademarks and Geographical Indications*¹²⁷ European regulations that limited the legal protection for geographical indications in relation to imported agricultural products and

¹²¹ *Companies Act 2006* (UK) c 46, ss 417(5)(b)(i), 417(5)(c); DEFRA, *Environmental Key Performance Indicators: Reporting Guidelines for UK Business* (2006) <<http://www.defra.gov.uk/environment/business/envrp/pdf/envkpi-guidelines.pdf>> at 23 May 2008.

¹²² *Companies Act 2006* (UK) c 46, s 172(1)(d).

¹²³ DEFRA, above n 121.

¹²⁴ *Japan — Measures Affecting Consumer Photographic Film and Paper*, WTO Doc WT/DS44/R (31 March 1998) [10.88]–[10.89] (Report of the Panel).

¹²⁵ *Canada — Autos*, WTO Doc WT/DS139/R, WT/DS142/R (11 February 2000) [10.106]–[10.107] (Report of the Panel).

¹²⁶ *Korea — Measures Affecting Imports of Fresh, Chilled and Frozen Beef*, WTO Doc WT/DS161AB/R, WT/DS169/AB/R (11 December 2000) [137] (Report of the Appellate Body) (emphasis omitted).

¹²⁷ *European Communities — Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs — Complaint by Australia*, WTO Doc WT/DS290/R (15 March 2005) (Report of the Panel) (*‘EC — Trademarks and Geographical Indications’*).

foodstuffs by imposing more onerous requirements¹²⁸ upon exporting producers than those which applied to European Community producers were found to breach the national treatment principle embedded within *GATT 1994* art III:4 as well as *TRIPS Agreement* art III:1.¹²⁹

Even so, it must be demonstrated that the relevant measure accords ‘less favourable treatment’ because of the foreign origin of the products rather than as a result of the product’s safety or environmental credentials. Thus, in *EC — Biotech*¹³⁰ failure to promptly consider applications for approval of biotech products was not regarded as ‘less favourable treatment’ contrary to art III:4, notwithstanding that the imported biotech products competed against similar domestic non-biotech products not subject to an onerous approval process.

Carbon footprinting and food miles labelling would not prevent wine and other food products from being sold freely, nor would they directly affect the price of wine in the same manner as a tax. Rather carbon footprinting and food miles labelling provides consumers with ‘credence’ information that they would not otherwise be able to obtain concerning the carbon sustainability of their purchase.

Consequently, carbon footprinting is unlikely to contravene the national treatment principle. In the *US — Tuna (Mexico)* dispute,¹³¹ a regulation limiting the use of the label ‘dolphin safe’ to instances where the exporting producer could provide documentary evidence that the tuna was not harvested with purse-seine nets was held to be consistent with *GATT 1994*. Although the decision in the *US — Tuna (Mexico)* dispute was never adopted, this aspect of the decision has been frequently supported in academic literature.¹³²

Conversely, it may be possible to argue that food miles labelling is different to carbon footprinting, given exporting producers are further from market than domestic producers. Consequently, if food miles labelling were transformed from an uncoordinated market activity to government supported measure, imposition through labelling of a negative implication regarding a product’s

¹²⁸ Ibid [7.189]. European Economic Community (‘EEC’), *Council Regulation (EEC) No 2081/92 of 14 July on the Protection of Geographical Indications and Designations of Origin for Agricultural Products and Foodstuffs* [1992] OJ L 208, art 12, required importing producers to demonstrate that the importing country: (a) gave protection to geographical indications which was equivalent to the protection available in the EEC; (b) had inspection and objection procedures similar to those in the EEC; and (c) was able to provide guarantees of protection similar to those found in the EEC.

¹²⁹ *Marrakesh Agreement Establishing the World Trade Organization*, opened for signature 15 April 1994, 1867 UNTS 3 (entered into force 1 January 1995), annex 1C (*Agreement on Trade-Related Aspects of Intellectual Property Rights*) 1869 UNTS 299 (*TRIPS Agreement*); *EC — Trademarks and Geographical Indications*, WTO Doc WT/DS290/R (15 March 2005) [8.1] (Report of the Panel).

¹³⁰ *European Communities — Measures Affecting the Approval and Marketing of Biotech Products*, WTO Doc WT/DS291/R, WT/DS292/R, WT/DS293/R (29 September 2006) [7.2408]–[7.2412] (Reports of the Panel) (*EC — Biotech*).

¹³¹ *US — Tuna (Mexico)*, GATT BISD 39th Supp, 155, GATT Doc DS21/R (3 September 1991) (Report of the Panel).

¹³² See, eg, David Vogel, ‘EU Environmental Policy and the GATT/WTO’ in Jonathan Golub (ed), *Global Competition and EU Environmental Policy* (1998) 142, 153; Cora Dankers *Environmental and Social Standards, Certification and Labelling for Cash Crops* (2003) 7.2; Ralph Piotrowski and Stefan Kratz, ‘Eco-Labeling in the Globalised Economy’ in Alfred Pfaller and Marika Lerch (eds), *Challenges of Globalization: New Trends in International Politics and Society* (2005) 217, 231.

sustainability or health attributes may be considered a form of competitive disadvantage indirectly related to its foreign origins, particularly if the negative implication cannot be objectively justified.

Even if carbon footprinting or food miles labelling are contrary to art III:4, art III:4 is subject to the exemption provisions of art XX, which provide:

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination ... or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures ...

- (b) necessary to protect human, animal or plant life or health; ...
- (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption ...¹³³

Article XX thus permits trade-restrictive environmental measures in limited circumstances. Given the importance of reducing greenhouse gas emissions to the health and well-being of the planet, arguably carbon footprinting (but less so food miles) fits within art XX(b) or (g).

The term 'necessary' in art XX(b) mandates the elimination of all alternative less trade-restrictive measures and, where the impact upon trade is significant, proof that the measure is apt to make a material contribution to its objective.¹³⁴ In undertaking any assessment pursuant to art XX(b), the Appellate Body has recognised that the assessment will involve a balancing process, taking account of the relative importance of the values and interests sought to be protected by the measure and the relative impact that the measure has upon international trade.¹³⁵ In addition, the Appellate Body has recognised that an individual measure may constitute part of a panoply of interlocking measures designed to pursue a comprehensive environmental objective (such as mitigation of climate change), and that consequently the assessment of an individual measure's impact and efficacy ought not to take part in isolation from its related counterparts.¹³⁶

Thus, notwithstanding the weak evidence of carbon footprinting's efficacy as an environmental measure, it seems very likely that carbon footprinting will fall within art XX(b) when it is viewed in combination with other measures designed to reduce greenhouse gas emissions (such as the regulation of vehicle emissions and the consideration of greenhouse gas emissions as a factor in local planning law). This is because carbon footprinting is non-discriminatory (it applies universally to all products sold in the importing country and does not impose particular production or processing methods upon exporting countries), and its impact is allied to market forces rather than command and control regulation. Given the tenuous link between food miles and carbon sustainability measures,

¹³³ *GATT 1994*, above n 16, art XX.

¹³⁴ *Brazil — Measures Affecting Imports of Retreaded Tyres*, WTO Doc WT/DS332/AB/R (3 December 2007) [150] (Report of the Appellate Body) ('*Brazil — Retreaded Tyres*').

¹³⁵ *Ibid* [143], citing *United States — Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, WTO Doc WT/DS285/AB/R (7 April 2005) (Report of the Appellate Body).

¹³⁶ *Ibid* [151].

however, mandating food miles labelling is unlikely to be regarded as ‘necessary’.

Similar arguments apply with respect to art XX(g). Clean, fresh air and a temperate climate are exhaustible resources¹³⁷ and given the global nature of climate change there is ample justification for imposing carbon footprinting on both domestic and importer producers. Again, however, the justification for imposing food miles labelling remains unconvincing.

For the exceptions in art XX to apply, the chapeau to art XX provides that the measures cannot be ‘applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade’.¹³⁸ As a result, if carbon footprinting or food miles labelling fell within art XX(b) or (g), they might still be regarded as invalid if characterised as a disguised restriction on international trade. This additional requirement is designed to ensure that WTO members avail themselves of the exceptions set out in art XX in good faith without the intention of circumventing their international trade law obligations.¹³⁹ For this reason, if exemptions to an import ban imposed for public health purposes are sufficiently wide so as to undermine the objective of the ban, the ban will be regarded as an unjustifiable discrimination between countries and/or a disguised restriction on international trade.¹⁴⁰

In other cases, the chapeau has been contravened by (a) failure to allow a measure to be applied in a flexible manner by exporting producers so as to give them a choice in relation to the means they adopt to meet equivalent levels of protection, and (b) failure to make good faith efforts to reach a multilateral agreement on a particular issue.

Although carbon footprinting allows exporting producers discretion as to the means they might adopt to reduce CO₂ emissions along their supply chain — and in that sense is neither arbitrary nor a disguised restriction on international trade — it could be argued that applying carbon footprinting to every consumer product regardless of cost, and failing to consult trading partners as to how carbon footprints are measured and what they measure, provides a basis for establishing unjustifiable discrimination or a disguised restriction on international trade. This would, however, depend upon a finding that carbon footprinting amounts to ‘less favourable’ treatment to imported products, a finding which is unlikely, given earlier arguments outlined in this commentary.

B *The TBT Agreement*

The aims of the *TBT Agreement* are to reduce the extent to which technical regulations and standards operate as barriers to market access and to encourage the development of international standards that reflect legitimate objectives, such

¹³⁷ *US — Gasoline*, WTO Doc WT/DS2/AB/R, AB-1996-1 (29 April 1996) [6.37] (Report of the Appellate Body).

¹³⁸ *GATT 1994*, above n 16, art XX.

¹³⁹ *US — Shrimp*, WTO Doc WT/DS58/AB/R (12 October 1998) [158] (Report of the Appellate Body); *Brazil — Retreaded Tyres*, WTO Doc WT/DS332/AB/R (3 December 2007) [215] (Report of the Appellate Body).

¹⁴⁰ *Brazil — Retreaded Tyres*, WTO Doc WT/DS332/AB/R (3 December 2007) [248]–[252] (Report of the Appellate Body).

as sustainability.¹⁴¹ Different provisions of the *TBT Agreement* apply depending upon whether the relevant measure is characterised as a ‘technical regulation’ or a ‘standard’. Technical regulations are mandatory specifications applicable to a product or group of products, related processes or production methods, whereas standards are voluntary specifications for products, related processes or methods of production. Regulations and standards include ‘terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method’.¹⁴²

In so far as technical regulations are concerned, members are obliged to ensure that:

- the technical regulation complies with the national treatment principle;¹⁴³
- the technical regulation does not create an unnecessary obstacle to international trade;¹⁴⁴
- the technical regulation is not maintained if the circumstances justifying its implementation have changed;¹⁴⁵
- the technical regulation is consistent with relevant international standards;¹⁴⁶
- positive consideration is given to accepting equivalent technical regulations of other WTO members;¹⁴⁷ and
- other members are consulted in relation to the implementation of a technical regulation which does not concord with a relevant international standard.¹⁴⁸

Obligations with respect to standards are very similar. Where standards are prepared by central government standardising bodies, members are obliged to ensure that they comply with the *Code of Good Practice for the Preparation, Adoption and Application of Standards* set out in annex 3 to the *TBT Agreement*. In relation to non-central government bodies within their jurisdiction, members should ensure or at least encourage these bodies to prepare and apply their standards in accordance with the Code. The Code sets out comparable obligations to those applicable to technical regulations including compliance with the national treatment principle and a requirement that standards are not designed or applied with a view to creating unnecessary obstacles to international trade. Harmonisation with relevant international standards is also promoted under the Code.

The preamble to the *TBT Agreement* provides that

no country should be prevented from taking measures necessary to ensure the quality of its exports, or for the protection of human, animal, and plant life or

¹⁴¹ *TBT Agreement*, above n 17, preamble, art 2.2.

¹⁴² *Ibid* annex 1, art 1.

¹⁴³ *Ibid* art 2.1.

¹⁴⁴ *Ibid* art 2.2.

¹⁴⁵ *Ibid* art 2.3.

¹⁴⁶ *Ibid* art 2.4.

¹⁴⁷ *Ibid* art 2.7.

¹⁴⁸ *Ibid* art 2.9.

health, of the environment, or for the prevention of deceptive practices, at the levels it considers appropriate.¹⁴⁹

However, as noted above, members are still obliged to observe the national treatment principle, while regulations and standards must not create an unnecessary obstacle to international trade.¹⁵⁰ This means that where states are devising regulations or standards to pursue policy objectives, such as a reduction in greenhouse gas emissions, the regulations or standards should be no more restrictive upon international trade than is necessary, taking account of the harm that would be caused by failing to address climate change through the relevant means. As such, this aspect of the *TBT Agreement* operates analogously to art XX of *GATT 1994* as it requires a degree of proportionality in the design as well as the application of environmental measures.

As previously outlined, although international standards exist for measuring the carbon footprint of organisations or projects, there are currently no international standards for measuring the carbon footprints of individual retail items. However, the carbon footprinting methodology being developed on a localised basis incorporates similar life cycle assessment techniques as those incorporated in the existing international standards. Under the *TBT Agreement*, if the regulation is consistent with a relevant international standard, it is presumed not to create an unnecessary obstacle to trade.¹⁵¹ Nevertheless, while there are similarities between the relevant international standards and those developed by Carbon Trust and others, the international standards are not per product standards and there is no international view as to whether carbon footprinting should be applied to all retail products or to a discrete selection of products, where the costs of implementing footprinting are likely to be proportionate to the environmental benefits likely to be secured. According to the Appellate Body, there must be a very strong and close relationship between the relevant international standard and the technical regulation or standard adopted by the importing country for art 2.4 to apply.¹⁵²

The national treatment principle encapsulated within art 2.1 of the *TBT Agreement* operates independently of the limitation against unjustified regulation under art 2.2. Consequently, while it may be difficult to establish that carbon footprinting leads to discrimination against foreign products, technical regulations and standards remain open to substantive scrutiny if they impose unnecessary costs which might impede international trade.¹⁵³ Arguably, given the high cost of meeting carbon footprinting standards and the dubious impact of carbon footprinting upon consumer preferences, especially in relation to wine trade where other hedonic factors are more likely to be influential, a case can be established for a breach of art 2.2. This applies even more strongly apropos food miles. While the cost of meeting food miles labelling requirements is substantially less than carbon footprinting, if imposed or encouraged by the state, food miles labelling will amount to a state endorsement of the view that locally

¹⁴⁹ Ibid preamble.

¹⁵⁰ Ibid arts 2.1, 2.2.

¹⁵¹ Ibid art 2.5.

¹⁵² *European Communities — Trade Description of Sardines*, WTO Doc WT/DS231/AB/R (26 September 2002) [242]–[245] (Report of the Appellate Body) ('*EC — Sardines*').

¹⁵³ Green, above n 107, 174.

sourced food is environmentally better and/or healthier than imported food. This puts imported food at an unwarranted competitive disadvantage and consequently amounts to an unnecessary obstacle to international trade.

However, whether carbon footprinting or food miles labelling falls under the protective umbrella of the *TBT Agreement* will depend on whether they meet specific threshold requirements. The *TBT Agreement* is more limited in reach than *GATT 1994* art III. To constitute a ‘technical regulation’ or a ‘standard’ under the *TBT Agreement*, the relevant instrument must apply to an identifiable product or group of products. While this does not require express identification of particular products within the regulation or standard, there must be a means to identify the products to which the regulations or standards relate. Hence, a regulation banning the importation of products containing asbestos fibres would fall within the *TBT Agreement*.¹⁵⁴ By contrast, while there remains a degree of controversy on the matter,¹⁵⁵ it seems more likely that non-product related production and process methods fall outside the purview of the *TBT Agreement*.¹⁵⁶ If so characterised, carbon footprinting and food miles labelling may not breach the *TBT Agreement*, notwithstanding that they may create an unnecessary impediment to trade.

Currently, there is considerable uncertainty as to whether carbon footprinting and food miles labelling will be characterised as a non-product related regulation or standard. Although environmentally related measures may not be manifest in the physical characteristics of a particular product like wine, consumers are still prepared to discriminate between products on the basis of environmental harm. Arguably there is a distinction between product substitutability encapsulated within the concept of ‘like products’ under the national treatment principle and labelling which enables consumers to discriminate between products on the basis of the characteristics set out in the label.¹⁵⁷ Thus, even though low carbon and high carbon wine might be regarded as ‘like products’, the level of CO₂ emissions associated with each particular wine may still constitute a basis for discriminating between wines which have otherwise equal characteristics, at least for a substantial group of consumers. In some cases the environmental measure may actually define the product for the consumer.¹⁵⁸ As a result, a regulation mandating a certain minimum level of recyclable input defines whether the product can be marketed as a recycled product. In the same manner, regulations specifying how a carbon footprint is measured and the relevant labelling that should apply to products define whether products can be marketed as low carbon or carbon neutral.

¹⁵⁴ *EC — Asbestos*, WTO Doc WT/DS135/AB/R, AB-2000-11 (12 March 2001) [70]–[72] (Report of the Appellate Body).

¹⁵⁵ Steve Charnowitz, ‘The Law of Environmental “PPMs” in the WTO: Debunking the Myth of Illegality’ (2002) 27 *Yale Journal of International Law* 59, 66.

¹⁵⁶ *Ibid* 65; CTE, *Negotiating History of the Coverage of the Agreement on Technical Barriers to Trade with regard to Labelling Requirements, Voluntary Standards, and Processes and Production Methods Unrelated to Product Characteristics*, WTO Doc WT/CTE/W/10, G/TBT/W/11 (29 August 1995); Joshi, above n 82, 75.

¹⁵⁷ Charnowitz, above n 155, 66.

¹⁵⁸ *Ibid*.

This view is supported by the decision in *EC — Trademarks and Geographical Indications*.¹⁵⁹ The Panel determination, which was subsequently adopted by the Dispute Settlement Body,¹⁶⁰ found that requirements as to labelling content need not refer to a product characteristic to constitute a technical regulation. Rather the label on the product itself, in this case, constituted a product characteristic because it designated geographical origin and hence acted as a means of identifying the product and distinguishing it from similar products. According to the Panel Report, ‘a document that lays down a requirement that a product label must contain a particular detail, in fact, lays down a product characteristic’.¹⁶¹ Similar reasoning permeates the decision of the Appellate Body in *EC — Sardines*,¹⁶² where it was held that restrictions upon the ability of producers to market fish products as ‘sardines’ constituted technical regulations.

While regulation may be considered in the near future, at this stage neither carbon footprinting nor food miles labelling are imposed by the state. Questions may still be raised, however, as to whether food miles labelling and carbon footprinting constitute standards. The reason for extending the *TBT Agreement* to standards devised by government and non-government bodies is that these may operate as de facto mandatory requirements and therefore stymie international trade in the same manner as regulatory measures.¹⁶³ Standards are defined in annex 1 of the *TBT Agreement* as documents ‘approved by a recognized body, that provide, for common and repeated use, rules, guidelines or characteristics’.¹⁶⁴ Currently, there is no jurisprudence upon what constitutes a recognised body, however, annex 1 of the *TBT Agreement* indicates that the body may be international, part of central government, part of local government or a non-government body which has the legal power to enforce a technical regulation.¹⁶⁵ Arguably, standards produced by a government-owned entity like Carbon Trust and encapsulated within a Publicly Available Specification by the British Standards Institute fall within the *TBT Agreement*, but it is unlikely that this will apply to food miles labelling spontaneously adopted by a few wholesalers and retailers. Notwithstanding that there need not be consensus in relation to ‘standards’,¹⁶⁶ there must be common and repeated use of rules or guidelines issued by a body recognised by relevant market participants.¹⁶⁷ This is clearly lacking with respect to food miles labelling implemented through uncoordinated market activity, especially in light of DEFRA’s advice that food miles labelling is an insufficient indicator of carbon sustainability and the failure of other recognised standardising bodies to adopt food miles.

¹⁵⁹ WTO Doc WT/DS290/R (15 March 1005) (Report of the Panel).

¹⁶⁰ *EC — Trademarks and Geographical Indications*, WTO Doc WT/DS290/R (15 March 1005) (Report of the Panel).

¹⁶¹ *EC — Trademarks and Geographical Indications*, WTO Doc WT/DS290/R [4.751] (15 March 1005) (Report of the Panel).

¹⁶² *EC — Sardines*, WTO Doc WT/DS231/AB/R (26 September 2002) [187]–[189] (Report of the Appellate Body).

¹⁶³ M Rafiqul Islam, *International Trade Law of the WTO* (2006) 156.

¹⁶⁴ *TBT Agreement*, above n 17, annex 1, art 2.

¹⁶⁵ *Ibid* annex 1, arts 3–8.

¹⁶⁶ Charnowitz, above n 155, 69.

¹⁶⁷ Green, above n 107, 163.

VI CONCLUSION

Contrary to the initial premise contained in this commentary's introduction, the adoption of food miles labelling by a number of highly consolidated retailers in key Australian export markets for wine is unlikely to breach WTO agreements. This is despite the fact the position may be subject to change if food miles labelling became standardised or otherwise promoted through state-endorsed local food sourcing policies.

Insofar as carbon footprinting has become standardised or is about to become standardised, while it does not breach the national treatment principle contained in *GATT 1994* and the *TBT Agreement*, it may be possible to argue that carbon footprinting constitutes an unnecessary obstacle to international trade. This argument essentially rests upon the cost of implementing carbon footprinting compared with the lack of evidence concerning its efficacy. With respect to the wine trade, the latter is of particular concern given the labelling requirements already in force are different between jurisdictions. Adding another set of potentially varying labelling requirements will add substantial marginal cost to wine exports. As Australian grape-growers and winemakers already engage in sustainable practices, adding this extra cost will not yield any significant environmental benefit. In the case of the Australian wine industry therefore, the *raison d'être* of carbon footprinting — to encourage more environmentally responsible behaviour — cannot be realised.

At a minimum, individual states must do much more to ensure an international approach to carbon footprinting. One of the primary aims of the *TBT Agreement* is to try to reduce the impediments to international trade created by the plethora of varying standards that must be met by individual producers. Carbon footprinting will only be a useful tool in the battle to mitigate climate change if it can be applied on the same basis globally so as to enable, where warranted, informed comparisons to be made between high and low carbon products. Consequently, the Australian wine industry's proactive approach to develop a carbon footprint standard for the international wine industry is to be applauded.¹⁶⁸ Nonetheless it is noted that the *GGA Protocol* is not intended to be used as a per product carbon footprint and has indicated that per product carbon footprinting should be voluntary only.

During further such international consultations, Australian winemakers could establish a good case for a mandatory carbon footprint exemption or at least ensure proper recognition of their environmental credentials by reducing the impact of 'food miles' in the carbon footprint calculation.

¹⁶⁸ Forsyth, Oemcke and Michael, above n 38.