Wholesaling and sustainability:

An exploratory case study of the UK’s leading food and drink wholesalers

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Introduction

A strategic concern for sustainable development has become an increasingly important corporate imperative throughout the business world. That said large retailers are, in theory, in a particularly powerful position to promote sustainability through their partnerships with their suppliers and through their daily interactions with millions of consumers. The majority of large retailers have been developing sustainability strategies, in pursuing sustainability programmes and in reporting publicly on how they are managing their impacts on the environment, on society and on the economy and their activities have attracted increasing attention in the business and retail literature (e.g. Durieu 2003; Richardson 2008; Kotzab et. al. 2011; Jones, et. al. 2013). While wholesaling is in some ways a less obvious element in the distribution system there is growing awareness of the importance of sustainability within the wholesale distribution industry. In 2011, for example, Neetin Datar, Senior Director for Industry Marketing at SAP, argued that wholesale distributors ‘should make sustainability a priority’ for ‘three main reasons.’ Namely that ‘resources that were once taken for granted-water, land, minerals and fossil fuels- will be limited and costly’; that ‘a heightened awareness of sustainability issues amongst customers and trading partners is beginning to affect buying behaviour’ and ‘global regulations for social and environmental compliance will become more numerous and stringent’(SAP 2011). However the role of wholesalers in addressing and promoting sustainability has received scant attention in the academic literature. With this in mind this paper aims to provide an exploratory review of the sustainability commitments and achievements publicly reported by the UK’s leading food and drink wholesalers and to offer some critical reflections on how these wholesalers are currently addressing and pursuing sustainability.

Corporate Sustainability

The ideas underpinning sustainability are not new (Gruber 2012) but the concept began to attract increasing attention from the 1980’s onwards following the publication of the ‘World Conservation Strategy’ (International Union for Conservation of Nature and Natural Resources 1980) and ‘Our Common Future’ (World Commission on Environment and Development 1987). In the following decades the term sustainability has become increasingly seen as offering a potential solution for a wide range of challenges and problems from the global to the local scale across seemingly all walks of life. Diesendorf (2000, p.21) argued that sustainability can be seen as ‘the goal or endpoint of a process called sustainable development.’ Arguably the most widely used definition of sustainable development is that provided in ‘Our Common Future’ namely ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (World Commission on Environment and Development 1987, p.43).
However defining sustainability is not straightforward and there are a number of contrasting and contested meanings and no obvious consensus in providing an operational definition. There is a family of definitions’ essentially based in and around ecological principles and there are definitions which include social and economic development as well as environmental goals and which look to embrace equity in meeting human needs. At the same time a distinction is often made between ‘weak’ and ‘strong’ sustainability with the former being used to describe sustainability initiatives and programmes developed within the existing prevailing economic and social system while the latter is associated with much more radical changes for both economy and society. Roper (2012, p.72, for example, suggested that ‘weak sustainability prioritizes economic development, while strong sustainability subordinates economies to the natural environment and society, acknowledging ecological limits to growth.’

Within the world of business the concept of sustainability has recently moved higher up boardroom agendas as growing numbers of companies increasingly acknowledge sustainability as one of the emerging drivers of competition and as a significant source of both opportunity for, and risk to, long term competitive advantage. Carroll and Buchholtz (2012, p.4), for example, suggested that ‘sustainability has become one of business’ most recent and urgent mandates.’ Elkington (2004, p.1) has argued that future business success depends on the ability of companies to add environmental and social value to economic value. as part of the ‘triple bottom line’ (TBL) which focuses on ‘people, planet and profit.’ A survey of business managers and executives undertaken by MIT Sloan Management Review and the Boston Consulting Group (2012, p.4) suggested that ‘70% of companies have placed sustainability permanently on management agendas’ and that ‘despite a lacklustre economy, many companies are increasing their commitment to sustainability initiatives, the opposite of what one would expect if sustainability were simply a luxury afforded by good times.’ A number of factors can be identified in helping to explain this trend. These include the need to comply with a growing volume of environmental and social legislation and regulation; concerns about the cost and scarcity of natural resources; greater public and shareholder awareness of the importance of socially conscious financial investments; the growing media coverage of the activities of a wide range of anti-corporate pressure groups; and changes in social attitudes and values within modern capitalist societies.

At the same time a number of critics view corporate commitments to sustainability as a cynical ploy, often popularly described as ‘greenwash’, designed to appeal to consumers who are seen to be concerned about the environmental and social impact of business operations throughout the supply chain, while effectively ignoring fundamental environmental and social concerns. As such moves towards sustainability might be characterised by what Hamilton (2009, p. 573-574) described as ‘shifting consciousness’s’ towards ‘what is best described as green consumerism.’ This he saw as ‘an approach that threatens to entrench the very attitudes and behaviours that are antithetical to sustainability.’ and argued that ‘green consumerism has failed to induce significant inroads into the unsustainable nature of consumption and production’ (Hamilton 2009, p.574). Perhaps more radically Kahn (2010, p.48) argued that ‘green consumerism’ is ‘an opportunity for corporations to turn the very crisis that they generate through their accumulation of capital via the exploitation of nature into myriad streams of emergent profit
and investment revenue.’ This, in turn, reflects the earlier argument proposed by Willers (1994, p.1146) that ‘sustainable development is code for perpetual growth’ in which ‘continued growth and development are presented as compatible with respecting environmental constraints.’

As interest in sustainability has gathered momentum so a number of attempts have been made to develop theoretical frameworks of sustainability which recognize that social and economic development cannot be viewed in isolation from the natural environment. Todorov and Marinova (2009, p.1217) reviewed a wide range of models being developed to conceptualise and concluded that a simple three dimensional representation of sustainability capturing environmental, social and economic elements, in a Venn diagram as three overlapping circles, is ‘powerful in reaching a broad audience.’ A number of authors have employed stakeholder theory to conceptualise sustainability and to explore relationships between companies and stakeholder’s environmental, social and economic agendas. Steurer et. al. (2005, p.264), for example, explored the relationship between sustainability and stakeholder theory and examined how ‘corporations are confronted with economic, social and environmental stakeholder claims.’ There have also been attempts to develop a more critical theory. Amsler (2009, p.127), for example, has argued that ‘the contested politics and ambiguities of sustainability discourses’ can be embraced to develop a ‘critical theory of sustainability.’ Castro (2004) has sought to lay the foundations for a more radical theory of sustainability by questioning the very possibility of sustainable development under capitalism and arguing that economic growth relies upon the continuing and inevitable exploitation of both natural and social capital.

**Frame of Reference and Method of Enquiry**

Wholesaling is the sale of goods to retailers and to industrial, commercial, institutional and professional business users. Within the food and drinks sector In effect wholesalers buy products in bulk from producers, manufacturers or processors and supply a wide range of businesses particularly small independent retail outlets, convenience stores and hotels, public houses, restaurant, cafes schools and canteens. In aggregate terms food and drink wholesalers supply over 400, 000 businesses and support over one million jobs within the UK (Federation of Wholesale Distributors 2014). In 2014 the Federation of Wholesale Distributors reported that its members had a combined turnover of £30 billion per annum, greater than any UK supermarket group other than the market leader Tesco, and that its members generated £2.8 billion of gross added value to the UK economy (Federation of Wholesale Distributors 2014). Two principal methods of wholesale distribution can be identified namely cash and carry businesses and delivered good businesses. In the former businesses visit large depots to buy and collect goods while in the latter the wholesalers offer a delivery service to their retail and catering customers. While the food and drink wholesaling market is smaller than its retail counterpart it provides a link between manufacturers and retailers and caterers and arguably has an important role to play in promoting sustainability.

In an attempt to review the extent to which the UK’s leading food and drinks wholesalers are reporting on sustainability commitments and achievements within the
public realm the ten leading food and drink wholesalers (See Table 1), as identified by the Institute for Grocery Distribution (2015) were selected for study. Booker are the UK’s largest cash and carry wholesaler with a nationwide network of over 170 depots offering over 18,000 branded and own label grocery, fresh and frozen food products, beers, wines, spirits and tobacco. Blakemore, originally founded as a retail business in 1917, operates from 14 cash and carry depots, largely in the north and midlands of England, and its product range includes fresh, ambient, chilled and frozen foods. Brakes, which was initially established as a family firm in 1958, is a major supplier to the catering industry within the UK and employs over 10,000 people. As the leading players within the UK’s wholesale marketplace the selected wholesalers might be seen to reflect contemporary approaches to sustainability within the sector and be keen to publicise their sustainability initiatives to a wide audience.

Businesses employ a variety of methods to report on sustainability including ‘product labels, packaging, press/media relations, newsletters, issue related events, reports, posters, flyers, leaflets, brochures, websites, advertisements, information packs and word-of-mouth’ (European Commission Directorate-General for Enterprise undated, webpage). Over a decade ago Bowen (2003) reported that a growing number of large organisations were employing the Internet to report on their sustainability commitments and achievements and since then this has increasingly become the norm within the business community. This led the authors to conduct a digital Internet search for information, using the key phrase ‘sustainability report’ and the name of each of the selected wholesalers, in September 2015 employing Google as the search engine.

In discussing the reliability and validity of information obtained from the Internet Saunders et al. (2009) emphasised the importance of the authority and reputation of the source and the citation of a specific contact individual who can be approached for additional information. In surveying the selected food and drink wholesalers the authors were satisfied that these two conditions were met. At the same time the authors recognise that the approach chosen has its limitations in that there are issues in the extent to which a company’s public statements fulsomely, and in detail, reflect strategic corporate thinking and whether or not such pronouncements are little more than carefully constructed public relation exercises. However the authors believe that their approach offers an accessible window and an appropriate portal for the present exploratory study.

Findings

The Internet search revealed considerable variation in the volume and detail of the information the UK’s leading food and drink wholesalers provided on their sustainability agendas and achievements on their corporate websites. Four of the selected wholesalers, namely Bestway/Batley, Costco, Blakemore and 3663, published dedicated, but often brief, sustainability reports, Booker published a sustainability report within their annual report, whilst three companies, namely Dhamecha, Musgrave and Brakes, posted some limited information on sustainability. Two companies, namely Parfetts and P&H McLane, posted no information on sustainability on their corporate websites. Although the selected wholesalers which posted reports or information on sustainability demonstrated some recognition of the impact of their business activities on the environment and on the
communities and economies in which they operate there was limited explicit evidence of how they were integrating sustainability into their core business strategies. Booker, for example, reported that it ‘has social and environmental responsibilities arising from its operations and is committed to responsible business practices. These improve the welfare of colleagues and the communities in which we operate and reduce our impact on the environment.’ 3663 reported that ‘sustainability remains a fundamental aspect of our business strategy’ while Blakemore claimed that ‘to regard the promotion of safety, health and environmental protection measures as an absolute requirement for management and employees at all levels.’

More specifically the selected wholesalers reported on a range of environmental, social and economic agendas. A number of environmental issues are routinely addressed throughout namely climate change and greenhouse gas emissions; energy consumption and efficiency; waste management and recycling; logistics; sustainable sourcing; and site development and building design. Bestway/Batley, for example, reported ‘a significant absolute reduction in its carbon footprint of around 22% since 2011’ and the company notes that this reduction has been achieved while it has opened two new depots, extended a third and built a new chilled distribution centre during this period. On the other hand while Costco recognised that ‘climate change is significant for a number of its customers and its investors’ while total carbon dioxide emissions per unit of sales fell by 21% during that time period, total carbon dioxide emissions across the company rose by some 9%. Brakes reported reducing its carbon dioxide emissions by 32% relative to turnover and targeted a further reduction of 2% by 2020 relative to 2010. The company also stressed its support for ‘the government’s plan of action for a low carbon economy and facilitate this by a range of best practice initiatives and investment programmes that have been rolled out across the group aimed at minimising energy, fuel, food miles and waste to landfill.’

Booker reported on its approach to waste management and recycling and stressed that ‘we continue to work to prevent waste, to redistribute fit for purpose, increase recycling and divert waste away from landfill.’ The company also reported working with ‘both customers and suppliers across the supply chain’ and on ‘packaging improvements’ designed to ‘use fewer materials’ and to ‘protect stock from damage, thereby reducing food waste.’ 3663 emphasised that ‘effective waste management will remain high on our agenda’ and reported on its ‘Convert2Green’ programme which involves the collection of waste cooking oil from customers and its conversion to biodiesel for use in the company’s delivery vehicles. Musgrave suggested that it aimed to maximise waste recovery and though it reported a small increase in total waste generated during 2014 the company also reported that it recycled some 98% of its waste.

Bestway/Batley reported on its investment in its low carbon vehicle policy in order ‘to ensure that our fleet is as efficient as possible.’ More specifically the company reported that its entire fleet had been fitted with fuel monitoring devices and vehicle tracking systems. The aim here is to provide accurate data on fuel consumption and route analysis and to ‘plan optimum efficiencies and planning deliveries and reduce fuel usage.’ In addition the company reports fitting vortex deflectors on all its trailers to increase aerodynamics and further reduce fuel consumption. The company also reported future plans to work with suppliers to backhaul goods in order to improve environmental
efficiencies and to reduce the number of vehicles on the road and on plans to trial a double-decker multi-temperature trailer. In a similar vein 3663 reported on reductions in emissions from its delivery vehicles and on improvements in the efficiency of its vehicle refrigeration units.

Brakes claimed that ‘sustainability is a key consideration wherever or whenever we are sourcing products for our customers’ and that the company is committed ‘to animal and farm welfare assurance schemes, protecting the fishing industry and fish stocks and ensuring that our people and suppliers consider the environment at every part of the procurement and supply chain process.’ The company also reported on its Marine Stewardship Council certification, and on its commitment to ensure suppliers only use certified palm oil and palm oil derivatives and meeting the Global Good Agricultural Practices standards. Costco reported on a number of innovations in its approach to sustainable practices in site development and building design. These included computerised building management systems to maximise efficiency, the insulation of all building materials, the use of energy efficient lighting systems and the construction of bio-retention rain gardens.

In addressing the social and economic dimensions of sustainability a number of themes can be identified including diversity and equality of opportunity; employee engagement; staff training and development; health and safety; healthy eating; trading relationships; links with local communities; and charitable donations. Bestway/Batley emphasised that ‘the promotion of health and safety is a prime objective’ and that ‘we are committed to maintaining and improving the health, safety and welfare of our employees, customers and visitors.’ The company also reported circulating regular safety briefings throughout the organisation and that all employees are trained to ensure that they are aware of their safety responsibilities. Brakes reported having developed ‘a number of policies and procedures to ensure all our people can enjoy a safe environment in which to work and to promote their personal well-being.’

3663 emphasised their commitment to ‘healthy eating’ and argued ‘we believe it’s important that we continue improving our customer offer by clearly highlighting healthier options.’ The company also reports that its website and dedicated advice centres allows customers to access ‘a wealth of information to promote healthier lifestyles.’ Bestway/Batley reported on its initiatives to improve public health including working with suppliers to improve its offers on healthy products, reducing salt and artificial additives in its own label ranges and adopting a clear format for providing nutritional information on own label packaging. Musgrave claimed to be ‘championing healthy living’ and reported on its commitment ‘supporting the wider community by taking part in health and wellbeing initiatives at local and national level’ and its belief that ‘fresh health food should be available to every local community.’ Booker stressed its commitment to the ‘Fairtrade’ principles of achieving better selling prices, decent working conditions, local sustainability and fair trading terms for both farmers and workers in countries in the developing world. Booker also reported expanding its range of catering products certified as Fairtrade and its financial contribution through Fairtrade premiums to coffee growers in its supply chain.

The majority of the selected wholesalers reported on their commitments to the local communities in which they operate and on their charitable donations. Under the banner
‘Building Vibrant Communities’ Musgrave, for example, reported renewing its ‘commitment to local retailers, local suppliers and local communities’ in the light of the global downturn and suggested that it wanted ‘stores associated with our brand to be the centre of community life.’ Booker claimed that it ‘believes that good community relations are important to the long term development and sustainability of operating business’ and that the company ‘aims to build sustainable relationships with its customers, who are mainly independent businesses at the heart of the community, by improving their choice, price and service of products and services supplied.’ Each of Booker’s business and distribution centres has a nominated local charity and the company also donates surplus food to local homeless charities. In a similar vein Dhamecha emphasised its role in enhancing the economic development of the communities in which it operates and its support for a range of local, national and global charities.

The methods the UK’s leading food and drink wholesalers use to report and provide information on their sustainability agendas and achievements also merits attention. The majority of the selected wholesalers provided a brief narrative of their sustainability agendas and achievements often illustrated with descriptive statistics, simple graphs and diagrams and cameo case studies are occasionally used to illustrate general themes. None of the selected wholesalers reported employing any of the generic guidelines, such as the increasingly widely used Global Reporting Initiative (GRI) framework. None of the wholesalers reported addressing the issue of materiality, which is concerned with identifying those environmental, social and economic issues which matter most to a company and its shareholders and which is assuming increasing importance in the sustainability reporting process. Only 3663 had commissioned any independent external assurance of the information included in their sustainability report.

Discussion

While all of the UK’s leading food and drink wholesalers recognised and publicly reported on a wide range of the impacts their businesses have on the environment, society and the economy, there is some variation in the extent, character and detail of the reporting process. More specifically while some of the selected wholesalers publish relatively brief sustainability reports, some simply posted limited information on their approach to sustainability on their corporate websites whilst others published no information on sustainability on their corporate websites. As such this may reflect the reality that the UK’s leading wholesalers may be at the start of a long and potentially difficult journey towards sustainability. Four sets of issues merit attention and reflection. Firstly the leading food and drink wholesalers currently lag a long way behind their retail counterparts in the UK in their approach to sustainability. By way of comparison all the UK’s leading retailers produce dedicated annual sustainability reports (Jones et. al. 2013) and some of them embrace materiality and commission independent external assurance (Jones et. al. 2015). This may reflect the fact that the UK’s leading retailers are larger and have more mature management structures and are possibly more attuned to leading edge management thinking and practice than their wholesale counterparts. At the same time it may also reflect the fact while the leading retailers have a high visibility on the High Street and in edge-of-town and out-of-town retail parks, ‘many of the largest and most important wholesalers are largely unknown to final consumers’ Armstrong et. al. (2012, p.372). As such the leading food and
drink wholesalers may currently feel less pressure to publicly demonstrate their accountability, to their customers and to government and the media than their retail counterparts.

Secondly, given the range of the sustainability agendas and issues currently being addressed by the selected wholesalers it may not always be easy to align what may be competing and contradictory strategic goals and commercial imperatives. When addressing sourcing policies, for example, wholesalers may have to assess whether the environmental costs of importing fresh fruit and vegetables from less developed countries are outweighed by the social benefits of trading with suppliers within these countries. Here wholesalers may have to make difficult trade-offs between competing goals. At the distribution centre or depot level managers who are working to meet what may be ever demanding operational and financial targets and/or to achieve performance related bonuses may, for example, when facing problems in staff scheduling, put employees under pressure to work outside the hours that suit their work/life balance or refuse to release employees for training.

Thirdly there is a set of issues concerning the ways in which the selected wholesalers report on their approach to sustainability. Generally the accent is on providing a simple narrative of sustainability commitments and achievements, sometimes illustrated with basic descriptive statistics and mini case studies with pictures and simple diagrams being widely used to illustrate broad themes. Overall the lack of common and agreed frameworks and standards and the use of simple case studies make it difficult not only to make any meaningful comparisons between one company and another but also to assess the contribution that these companies are making towards sustainability at regional, national and international levels.

Arguably more critically, none of the leading food and drink wholesalers embraced materiality and only one commissioned independent external assurance of their sustainability reports and information posted on their corporate websites. This can be seen to undermine the transparency, reliability and integrity of the sustainability reporting process. Such reservations would certainly appear to reduce the credibility of the sustainability reporting process reviewed in this paper but it is important to remember that the UK’s leading wholesalers are large and dynamic organisations. Capturing and storing comprehensive information and data across a diverse range of business activities throughout the supply chain in a variety of geographical locations and then providing access to allow external assurance is a challenging and a potentially costly venture and one which the majority of the UK’s leading wholesalers currently demonstrably choose not to publicly pursue. Thus while data on a company’s carbon emissions may be systematically collected, collated and audited as part of the company’s environmental commitments, information on their impact on local communities and levels of staff satisfaction may be more difficult to measure, collate, interpret and assure.

Fourthly there are issues about the way in which the selected wholesalers construct their sustainability agendas. While many stress their commitment to sustainability they can be seen to be individually and collectively constructing a specific definition of the concept. Such a definition is built around business efficiency and the search for competitive advantage and is driven as much by business imperatives as by a concern with sustainability.
Thus while many of the environmental initiatives addressed in the sustainability reports are designed to reduce energy and water consumption and waste emissions, for example, they also reduce wholesalers’ costs. In a similar vein the wholesalers’ commitments to their employees focusing for example, upon good working conditions, health and safety at work and training all help to promote stability, security, loyalty and efficiency within the workforce. The selected wholesalers might thus be seen to have constructed sustainability agendas, which are driven primarily, though not necessarily exclusively, by their own commercial interests. The accent being on efficiency gains across a wide range of economic, social and environmental issues rather than on maintaining the viability of natural ecosystems and reducing demands on finite natural resources.

That said the leading food and drink wholesalers construction of sustainability which emphasises efficiency, can be interpreted, for, example, as being consistent with the UK government’s vision for sustainability which looks to ‘stimulating economic growth and tackling the deficit, maximising wellbeing and protecting our environment’ (Department for Environment, Food and Rural Affairs 2013). More critically Banerjee (2008) has argued that ‘despite their emancipatory rhetoric, discourses of corporate citizenship, social responsibility and sustainability are defined by narrow business interests and serve to curtail the interests of external stakeholders.’ In a similar vein this, echoes Hobson’s (2006) argument that rich and powerful groups will construct sustainability agendas that do not threaten consumption, per se, but seek to link them ‘to forms of knowledge – science, technology and efficiency – that embody the locus of power.’

Fifthly there are broader and more fundamental issues about the tension between sustainability and economic growth. In some ways the distribution sector’s general position was epitomized by Sir Terry Leahy, the then Chief Executive Officer of Tesco, in his ‘Foresight’ contribution at the start of The Global Coca Cola Retailing Research Council Forum report (2009), who argued that, at that time, his company ‘is seeking to create a movement which shows that it is possible to consume, to be green and to grow’. This approach is certainly consistent with the argument advanced by Reisch et.al. (2008) for example, that although moving towards sustainable consumption is a major policy agenda, ‘Growth of income and material throughput by means of industrialization and mass consumerism remains the basic aim of western democracy.’ Reisch et.al. (2008) further argued that ‘rather than controlling consumption, recycling materials and increasing production efficiency have tended to be the dominant means supposed to decouple environmental degradation from economic growth.’

Finally and more fundamentally Jackson (2006) has argued that ‘it is entirely fanciful to suppose that deep emission and resource cuts can be achieved without confronting the structure of market economies.’ In a similar vein Castro (2004) has questioned the very possibility of sustainable development under capitalism and argued that economic growth relies upon the continuing and inevitable exploitation of both natural and social capital. Here Fernando’s (2003) assertion that ‘capitalism has shown remarkable creativity and power to undermine the goals of sustainable development by appropriating the language and practices of sustainable development’ resonates loudly. More generally this, in turn, echoes Dolan’s (2002) belief that ‘the goal of sustainable consumption needs to be seen as a
political project, recognising the power relations between social groupings and between cultural value systems’ and his warning that ‘this is the context within which the idea of sustainability will stand or fall.’

Conclusion

The majority of the UK’s leading food and drink wholesalers, either publicly reported on, or provided information on, their commitments to sustainability. A minority either explicitly or implicitly argued that by integrating sustainability into their businesses, they are better placed to provide long term growth and financial security for all stakeholders and to enhance their market position and reputation. However the authors argue that the leading food and drink wholesalers’ definitions of and commitments to sustainability can be interpreted as being driven as much by business imperatives as by any fundamental commitments to sustainability. Thus the accent is upon making efficiency gains across a wide range of economic, social and environmental issues rather than on maintaining the viability and integrity of natural ecosystems and on reducing demands on finite natural resources. As such the UK’s leading wholesalers are, at best, pursuing a ‘weak’ rather than a ‘strong’ model of sustainability. More critically the authors suggest that the leading food and drink wholesalers’ commitments to sustainability are couched within existing business models centred on continuing growth and consumption and that current policies might be viewed as little more than genuflections to sustainability. As such this echoes Roper’s (2012) belief that weak sustainability represents ‘a compromise that essentially requires very little change from dominant economic driven practices but effectively works to defuse opposition, increase legitimacy and allow business as usual. The UK’s leading food and drink wholesalers are thus effectively and conveniently ignoring the fact that present patterns of consumption may simply be unsustainable in the long term. As such these wholesalers may begin to increasingly attract vocal and sustained criticism from those who are exercised about what Jackson (2009) has described as ‘an emerging ecological crisis that is likely to dwarf the existing economic crisis.’

REFERENCES


