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Exploring the dilemma of local sourcing versus international development - the case of the flower industry.

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Abstract: This paper examines the debate surrounding the local versus international sourcing of retail products, particularly food and flowers, in light of the emerging carbon imperative. It begins by examining the Fairtrade market and then examines ‘food miles’ and carbon impact. The complexity of sourcing decisions when considering both international development issues and the emerging carbon agenda is considered using the case of the cut flower industry.

Keywords: Food miles, flower industry, international development, consumers,

Introduction

Corporate social responsibility (CSR) can be grouped into three dimensions: economy, the environment and society (Jones *et al*, 2005). The economic dimension includes issues such as wealth and job creation. Society refers to the social impacts of the firm, including employee issues, health and safety and inclusiveness issues. The environmental dimension considers the use of ecological resources and the impact of a specific activity upon environmental systems. However, it is naïve to assume that these three areas are necessarily mutually reinforcing.

Using the case of the cut flower market we argue that the focus of attention on one area may come at the expense of another. As attention increasingly focuses on the carbon footprint of specific activities, consumers in developed counties (especially in the UK and EU) are asked to consider purchasing more local products. Yet these purchasing decisions may result in trade-offs between these three dimensions of CSR and potentially have economic and social consequences for some of the least developed regions of the world.

This paper explores these trade-offs by examining retail industries in general, and specifically the case of the cut flower industry. This industry is a good example of the complex perspectives

involved in the decision to source from developing countries and the multitude of factors that need to be considered. For instance UK supermarket Asda (owned by Wal-Mart) was criticised for offering 12 Kenyan red roses for sale for Valentine's Day at the bargain price of £2. Critics accused them of exploiting Kenyan workers and undervaluing the use of environmental resources (Poulter, 2007). Contradictory voices argued the carbon embedded in this product was less than if the roses had been sourced from Europe, where they would be grown in greenhouses (Riungu 2007; Seager 2007; Williams 2007).

The economic impact of international trade products in developing countries can be substantial. The cut flower industry is a major foreign exchange earner for many and the principal employer for many local workers. Some estimates suggest the Kenyan flower industry employs 500,000 Kenyans directly, a million indirectly (Seager, 2007) and brings more than \$250 million into the economy per year (KFC, 2007ⁱ).

A cursory examination of supermarket shelves shows the clear independencies between consumption in the Northern hemisphere and everyday life in the Southern hemisphere. Northern populations are increasingly disconnected from their local resource base relying more on the goods traded in the global marketplace (Shanahan and Carlsson-Kanyama, 2005). The value of international trade in 2003 was over 4,000 billion euros (Pirrotte, 2007). These goods are often produced in *shadow areas* (Borgström, 1972) in the poorest parts of the world appropriated by rich consumers for the production of their consumptive goods. Driven by potential economic benefits these areas experience a flow of environmental goods to the North with no consideration of the associated negative environmental or social costs.

Producing and consuming ethically represents potentially complex and difficult choices to businesses and consumers alike, and are likely to result in trade-offs between different dimensions. The drive to reduce carbon impact from transportation choices (often described as food miles) may be at the expense of the economic development of poorer nations. Embedded carbon is also affected by production choices and focussing solely on transport may not represent an equitable comparison.

This debate is crystallised by the recent decision of the Soil Association to change their organic standards to ensure that organic food is only air freighted to the UK if it delivers genuine benefits for farmers in developing countries, and meets their Ethical Trade standards or those of Fairtrade (Soil Association, 2007).

Little published literature exists on this topic, although increasing attention is paid to this debate. Much of the material presented in this paper is exploratory and from editorial and industry-focused sources. Hence the objectives for this paper are:

- To present an overview of the Fairtrade in the context of this debate;
- Examine the arguments presented around the carbon impact of production and transportation of retail products;
- To use the case of the cut flower industry to examine the complex factors that need to be considered when making sourcing decisions;
- To examine the range of cut flower verification schemes that may provide legitimacy and aid customer choice; and

- To present a research agenda for future analysis of these trade offs and the cut flower industry.

Fairtrade

Kofi Annan (2001) stated ‘*trade rather than aid*’ is the best route out of long term patterns of poverty. Yet small scale producers especially in the Southern hemisphere may lack access to finance, market intelligence or alternative buyers. In a weak legislative environment with lack of enforcement many farmers may have no choice but to sell to a monopolistic buyer at below market prices. Fairtrade focuses on the mobilisation of consumers and their hypothetical capacity to influence economic, ecological and or social production conditions in developing countries by offering access to markets and paying a fair market price (Pirotte, 2007).

Fair trade includes a balanced power relationship between the buyer and supplier, or an equitable partnership that empowers the producer. Nicholls and Opal (2005) define Fairtrade’s key practices as:

- Agreed minimum prices usually set ahead of the market minimum;
- Focus on development and technical assistance via the payment to suppliers of an agreed social premium (usually 10%+ and distributed through a co-operative);
- Direct purchasing from producers;
- Transparent and long term trading partnerships;
- Co-operative not competitive dealings;
- Provision of credit when requested;
- Provision of market information to producers;
- Farmers and workers are organised democratically;
- Sustainable production is practiced; and
- No labour abuses occurred during the production process.

There are strong similarities between these key practices and the International Code of Conduct for Cut flowers (ICC, 2007) and voluntary flower certification programmes summarized in Table 1.

Table 1: Certification programmes available for the cut flower and potted plants industry

Demeter Biodynamic label based in the USA. http://www.demeter-usa.org/
EuepGAP business-to-business label and is not directly visible to consumers http://www.eurepgap.org
Fair Flowers Fair Plants (FFP) is a new initiative funded by the European Community and the Horticultural Commodity Board. http://www.fairflowersfairplants.com/
Fairtrade Labelling Organizations International (FLO). Fairtrade is the UK based arm of the FLO. http://www.fairtrade.org.uk/
Florverde. Certification programme set up by the Association of Columbian Flower Exporters (Asocoflores). http://www.florverde.org/
Flower Label Program (FLP). Based in Germany with offices in Ecuador based on the ICC code. http://www.fairflowers.de/
International Flower Campaign and the International Code of Conduct for the production of

cut flowers (ICC). A Dutch co-operation between two NGOs and a trade union - main objective is to improve labour conditions for workers in the cut flower industry and to promote more sustainable production of cut flowers worldwide. www.flowercampaign.org
Kenya Flower Council (KFC) industry group of independent growers and exporters. www.kenyaflowers.co.ke
Milieu Programma Sierteelt (MPS). MPS-Florimark is a certificate that is awarded upon certification for modules in environmental, quality and social criteria. http://www.my-mps.com/
The Ethical Trading Initiative (ETI) members commit to implementing the ETI Base Code in their supply chains www.ethicaltrade.org
USDA National Organic Program (USA) flowers are grown according to a set of organic farming standards. www.ams.usda.gov/NOP
Veriflora is a set of sustainable agricultural, environmental and labour standards based in the USA. www.veriflora.com

There are now 548 Fairtrade certified producer organisations, representing almost 650 traders, and over 800,000 families of farmers and workers from over 58 countries in Africa, Asia and Latin America. There are over 2000 Fairtrade products for sale in the UK with estimated sales figures of over £195 million in 2005ⁱⁱ. The European market had a retail value of £413 million in 2005 and with worldwide sales of Fairtrade products growing 20% per year since 2001 (Krier, 2005).

Though growth in Fairtrade sales has been impressive (Barrientos and Dolan, 2006; Pirotte, 2007) these alternatives account for a very small proportion of world trade. In 2002 Fairtrade purchases comprised less than 0.01% of the world market in trade goods (Pirotte, 2007 p.129). Market penetration in certain brand categories is very strong. In Switzerland, 47% of bananas, 28% of flowers and 9% of all sugar sold are Fairtrade labelled (Barrientos and Dolan, 2006). This growth in Europe is characterised by an expansion from a retail activity predominantly in small specialist stores to clearly designated sections in national supermarkets chains. The larger UK supermarkets have realised the consumer value in stocking Fairtrade products with Sainsbury's recently announcing that all of their bananas would be Fairtrade. All of Marks and Spenser tea and coffee are now also Fairtrade but interestingly with no change in price (Benjamin, 2006). The adoption of Fairtrade by mainstream retail markets might pose challenges in terms the risk of devaluing the Fairtrade concept. Supermarkets in particular have been heavily criticised for their contribution to the negative aspects of the global retail trade (Blythman, 2005; Lawrence, 2004).

Understanding the boundaries of the Fairtrade label is an important requirement for informed consumer choice. Cotton has seen a threefold increase in Fairtrade sales since its launch in 2005 with more than 560 items now carrying the label, carried by large UK retailers such as Topshop and Marks and Spenser. However this standard refers to the production of cotton not its subsequent manufacture and cannot guarantee working conditions during this stage. These items are not priced at a higher premium and reflects subsidisation from uncertified product ranges. There is evidence of trickledown effect where factories are being asked by buyers about social compliance standards (Martin, 2006).

The marketing strategy of Fairtrade brands is linked to reducing the perceived distance between producers and consumers, in order to engage the emotions and values of consumers in the Northern

Hemisphere with producers in the South. Increasingly attention has shifted to how much distance retail products have travelled and the carbon impact of their transportation, and a wider level their carbon footprint that encompasses the entire life cycle. Consumers may be asked to make a choice between products that have a lower carbon footprint or products that promote economic self sufficiency in developing countries. This is the dilemma of the trade off between carbon impact and purchasing from global markets, albeit under a social brand such as Fairtrade, becomes problematic and value-laden.

Food Miles / Carbon Footprints

'Food Miles' was a term first coined by Professor Tim Lang in 1992 and adopted by the SAFE Alliance, now Sustain, in 1994ⁱⁱⁱ. It represents the distance travelled from where an item was grown to the consumer. This phrase is now synonymous to the impact of global shipment of retail products. There have been dramatic changes in food production and its supply chain due to:

- Globalisation, increase in food trade and wider sourcing both in the UK and overseas;
- Concentration of food supply base into fewer, larger suppliers;
- Major changes in delivery pattern, routing through delivery centres using Heavy Goods Vehicles (HVGs);
- Intensification of agriculture and increase in processing and packaging of food; and
- Centralisation and concentration of food shopping into weekly shops at supermarkets (AEA Technology, 2005).

In a recent study a majority of consumers (52%) would buy less imported food if they knew the distance it had travelled (Gairdner, 2006). There is a significant lack of understanding about where food comes from, seasonality and when it can be produced without a greenhouse environment, casting doubts on consumer ability to make judgemental choices between different products if a misleading or simplistic label is used.

Local is hard to define and is context driven. How far can a product travel and still be classed as local? Another facet is where people live and their access to retail outlets. Tesco has outlets all over the UK but little suggests that every product range will have a customised label based on the specific UK postcode location. Although some supermarkets such as Sainsbury's have advertised that they use local suppliers for certain product ranges local to a specific branch. Locality appears to be variably defined by geography, political and administrative boundaries, ecological system boundaries and physical distance. The question of locality is still a matter of interpretation and context and in itself is a worthy research question.

Some studies have suggested that if all farms in the UK were to turn organic £1.1bn of environmental costs would be saved (Pretty *et al.* 2005). There are reports of increased use of farmers markets and farm shops and examples of small scale producers thriving in local markets (Davey, 2007), but the majority of consumers still use supermarkets for a bulk of their shopping.

It is not just as simplistic as how far products travel to reach the retail outlets and promoting the use of local markets, the impact of transportation mode has also received attention. While choosing to buy organic has value, the hidden costs of shopping increase substantially when road miles are factored in - perhaps even more so than air miles. If all food in the UK was sourced from within

20km of where it was consumed environmental and congestion costs would fall from £2.3bn to £230m (BBC, 2005).

Selecting public transport or walking/cycling to shops may save another £100m in environmental costs (BBC, 2005). A 5 mile journey by car to purchase food emits the same amount of CO₂ as shifting the same food 23 miles by air, or 600 miles by truck (Murray, 2007). The use of centralised supply depots is one recommendation where local produce may be shipped out by road to a central site and then returned to within miles of its original location (Lawrence, 2005; Murray, 2007).

Another consideration is the carbon footprint of production, rather than just transportation. Food grown in European greenhouses may produce less carbon during transit but when the total life cycle is taken into account the option that has the lowest total carbon generation maybe the product shipped in from overseas (Williams, 2007). These findings led to a flurry of publicity both in the UK and Kenya (Foster, 2007; Riungu, 2007; Seager, 2007) and crystallize the debate around the trade off between sourcing from a country where natural conditions are more conducive to production than more locally based sources (Hardie, 2007; Saunders *et al*, 2006).

A single indicator based on total food kilometres travelled would not be valid as it would not represent the complexity of trade offs between different factors. A suite of indicators that reflect the key adverse impacts of food transport such as congestion, accidents and pollution: urban food km; HGV km; Air food km; and total CO₂ emissions have all been recommended (AEA Technology, 2007). Wider economic and social issues are not included within this indicator set. It effectively focuses on the carbon footprint that, whilst useful, fails to incorporate any trade off's with sustainable development goals.

Decisions of consumers, policy makers and businesses need to be based on good information, if environmental impact is to be traded against development benefits then (MacGregor and Vorley, 2006):

- The degree of harm must be quantified and put into context of other choices;
- Put into context against total ecological space/emissions per capita in Africa; and
- The degree of development gain quantified.

It has been suggested that consideration of the ecological space that each individual has, translated into per capita right to emit carbon dioxide (as illustrated in Figure 1) should be included.

Disproportionate use is made of this ecological space by the Northern hemisphere yet it is the Southern hemisphere, especially sub-Saharan Africa whose trade will suffer from decreased air freight of export produce. Others have suggested that reducing carbon emissions would be better served by the developed countries turning off TVs at night and using energy efficiency light bulbs than any initiatives to reduce African air-freight (Seager, 2007).

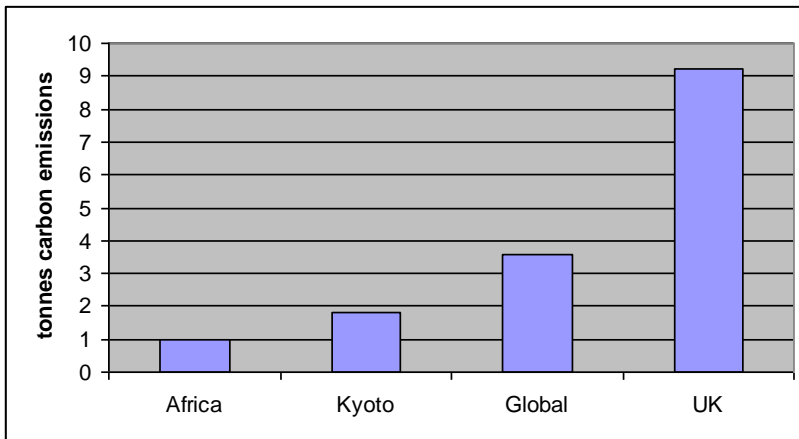


Figure 1: A comparison of per capita carbon dioxide emissions (adapted from MacGregor and Vorley, 2006)

Tesco recently announced plans to go even further and place carbon labels on all its products in the same way it does fat and salt content. They will not place a ban on flying goods in from all suppliers due to the impact on the poorest but would reduce the total amount from the current 3% to 1% (Finch and Vidal, 2007).

The UK government has plans for a carbon footprint label based on the ‘traffic light’ system (AEA Technology, 2005). This label will be devised by DEFRA in association with the British Standards authority. This label scheme may find that carnations from Africa grown in the winter months might have a lower footprint than those grown in Britain in a heated greenhouse (Waugh 2007). The footprint label is expected to mark down certain products such as electrical products with only standby mode, suggesting that there is some scope to add in marking criteria that might assess the social impact of the product through supporting local farmers or through Fairtrade criteria.

The Cut Flower Industry

The worldwide market for cut flowers is estimated at \$40 billion, with an average consumption of 10 million cut flowers per day in the United States alone. Whilst Valentine’s Day represents a peak in consumption, with over 175 million roses sold on Valentine’s Day alone the market is far from dominated by gift purchases with 60% of the annual £2.2 billion spent in the UK representing people purchasing flowers and plants for themselves (Stewart, 2007a; Stewart, 2007b). The flower industry states ‘*fresh flowers are a disposable item to be enjoyed and then discarded*’^{iv}.

Social, Economic and Environmental Issues

The cut flower industry represents a potential source of substantial economic benefits. In the 1980s Non-Traditional Agricultural Exports (NATEs) such as flowers were seen as a way for countries such as Columbia to develop alternatives to cocaine production. Specific economic incentives were used to facilitate this process with over 95% of Columbia and Ecuador’s flowers entering the US duty free under the Andean Trade Preferences Act (US/Leap and ILRF 2007). Also notable is the substantial increase in foreign capital that results from trade in NATEs with indirect investment also occurring

in infrastructure (Castellanos, 1998) and a multiplier effect with increased employment opportunities in indirect industries such as packaging and transport (Thrupp, 1995). The indirect employment multiplier varies from country to country but is substantial, with estimates of 8:3 in Ecuador and ranging from 6:5 (US/LEAP and ILRF 2007) to 8:5 in Columbia (Thrupp, 1995).

Flower farms offer smallholders in rural areas, especially women, an opportunity to grow a cash crop. Ferrer (1997) suggests that four out of five households that depend on the flower industry are headed by women (Castellanos, 1998). Over 5500 women's groups are active in the Nyeri region in Kenya with their own micro-finance fund and training programmes on aspects of production such as safe pesticide use (FAO, 2002). One of these smallholders said '*The export crops have changed our lives. We have new roofs, better homes and our children can go to school* (FAO, 2002)'.

Nurturing embryonic socially responsible businesses, developing partnerships and targeted support are all identified in Kenya and Uganda as important aspects to support the development of smallholders (Kivuitu *et al*, 2005). They struggle to gain access to the supermarkets due to exacting specifications on packaging and production quality and lack of market knowledge (International Trade Centre, 2001).

The flower industry suffers from major social and environmental problems. Exposés of the poverty and working conditions at flower farms have been produced by a number of NGOs (War on Want, 2007; US/Leap and ILRF, 2007). These reports identify the following issues associated with the flower industry:

- Sexual harassment;
- Forced pregnancy testing/ sterilization as condition of employment;
- Severe occupational health and safety deficiencies, including long working hours, lack of training on safe chemical use, forced overtime, and lack of appropriate safety equipment;
- Use of toxic pesticides and fungicides causing health problems including skin rashes, respiratory problems, eye problems, and miscarriages-
- Use of Child labour and
- Lack of recognition of labour rights

A study of women workers in African horticultural farms found a gender economy where women had more informal working roles and codes of practice were less influential in protecting their rights and safeguarding working conditions (Smith and Dolan, 2006). The role of women in this industry is recognized by the Women Working Worldwide campaign whose Flower campaign was a factor in the recent establishment of the Kenyan Horticultural Ethical Business Initiative (Ethical Consumer, 2005).

While the flower miles associated with the transportation of flowers from the southern hemisphere represents a global environmental concern, the damage to local (production) ecosystems is also a significant issue. Environmental groups in Kenya have identified pesticides used at the 50+ flower farms in the Lake Naivasha region a threat to the water quality and resident hippopotamus populations in this freshwater lake (FAO, 2002), excessive water abstraction (Ogodo and Vidal, 2007), and encroachment of monoculture plantations into virgin forests (Castellanos, 1998).

Pressure on these environmental resources is further enhanced by associated increases in population, with estimates that every job in the flower farms attracts seven other people to the area (Ogodo and Vidal, 2007). The huge increase in population from 27,000 in 1969 to over 300,000 in the Lake Naivasha region has also placed demands not only on water consumption but social amenities such as rubbish collection, sanitation, schools, electricity, hospitals, roads, electricity and local forests felled for fuel.

Fairtrade Flowers

Kenyan Fairtrade flowers first went on sale in February 2004 and 2005 saw sales of over 18 millions Fairtrade stems with a retail value of over £4m in the UK alone (Fairtrade 2007). There are ten Fairtrade flower farms in Kenya from a total of 52 farms mentioned as members of the Kenyan Flower Council. Currently 95% of all Kenyan flowers are exported, with 15% going to the UK (Fairtrade, 2006). Specific concerns have been aired over purchasing Kenyan Fairtrade roses suggesting that the Fairtrade ethos of supporting small rural farmers is not applicable in Kenya (Lawrence, 2005). Criticism focuses on the fact that these 'Fairtrade' farms are very large and may be constrained by the market demands of the supermarkets which may mean seasonal excessive overtime especially around Valentine's Day. The Fairtrade response made the point that the maximum working hours for Fairtrade certification are actually more favourable than the local Kenyan laws (Fairtrade, 2005) and that both farms mentioned by Lawrence have made improvements to address working conditions. These are the same farms mentioned by Ethical Consumer (2005) as the subject of part of the Women Working Worldwide campaign. Fairtrade also make the point that whilst their most well known priority work is with smallholders their mission is to improve the position of all disadvantaged people in developing countries (Fairtrade, 2005).

Another Kenyan initiative is the Horticultural Ethical Business Initiative (HEBI) set up in response to concerns that social and ethical business practices were not being followed in the flower industry despite there being voluntary systems of self-regulation in place^v. This initiative was in part as response to the Flower Campaign by Women Working Worldwide who presented a report to the ETI on violations in the base code some of the farms were supposedly certified to. Ethical Consumer (2005) states that representatives of the supermarkets visited Kenya and that employers on farms supplying Tesco, Sainsbury, Morrisons, Asda, the Co-op and Marks and Spencer have all set about addressing at least some of the workers' complaints, with massive investment in both staff training and facilities. However they also raised questions about the contribution these farms make to the long term development of Kenya. This is an area that future research should examine as part of a systematic evaluation of a cost benefit analysis of this industry.

It is clear that approximately one fifth of Kenyan farms may have certified to Fairtrade and that some of the total 50+ farms may be using alternative voluntary initiatives. World Flowers states that all their farms have a minimum standard of the ETI base code and once they reach this are then audited against the MPS standards. Finally once these standards are met then they may be audited for Fairtrade status. This suggests that some of the principle requirements of Fairtrade may be met on the other farms and that some element of working up through various certification levels is apparent. This is another area of enquiry that is deserving of future research.

Flower miles

Cut flowers are predominantly air-freighted and this concerns 'carbon campaigners' who are concerned about the food miles or 'flower miles' of these goods. Plans by Tesco and Marks and Spencer to place airplane symbols on air-freighted items worry the Kenyan growers, especially in light of the comparative carbon study of Dutch and Kenyan roses (Riungu, 2007). The International Institute for Environment and Development notes that the livelihoods of more than one million Africans are supported by the British consumption of fresh fruits and vegetables and this accounts for less than 0.1 % of the UK's total carbon emissions (MacGregor and Vorley, 2007; Murray, 2007).

There are further contradictions in this industry that are not easily represented on simplistic labels. Flowers imported to a wholesaler in the Netherlands from Kenya are considered to have come from Europe for subsequent labelling purposes (Hickman, 2006) and if transported by road from the warehouse to the UK have both the carbon footprint of air freight and road transport but appear on the packaging to have come from a more local source. This further complicates the choice between those labelled air freighted and those considered local.

The impact of production rather than transportation is also very relevant for this industry, especially associated with seasonality. Some organic box schemes stock imported produce, but only when local alternatives are not available (Allen, 2005). A similar approach could be used for flowers whereby only those that were in season and not grown in artificial conditions would be traded off against the imports of Fairtrade flowers. There may be some capacity to build in a form of targeted selection through 'ecological triage' (after Holt and Viney, 2001), where season and species play a key role.

In Kenya and Zambia there are few incentives in the domestic market to adopt 'pro-development' practices without a clear business case and pressures from export markets are described as patchy (Kivuitu *et al*, 2006). External requirements, such as those promoted by a labelling system, are likely to push some organisations into responding. The proliferation of current flower certification schemes reflects this. However none of these are currently fit for purpose if the criteria in use are to include carbon footprinting although some have some basic environmental criteria. Future research should examine these codes in more detail and identify opportunities to incorporate criteria that address this emerging agenda of 'miles' and carbon footprint.

In light of the lack of current guidance for flower producers the industry themselves are trying to respond. Foster (2007) notes that flower companies are drawing up eco-friendly guidelines to address mounting consumer concern over flower miles and Interflora are consulting with organisations such as the Carbon Neutral Company. Little information as yet exists on the make up of any of these future schemes and given that there are already multiple flower certification schemes in place this suggests developing a uniform consensus may be problematic.

A Call for Research

Some research questions have been proposed in the previous section. In this section, we identify additional areas and opportunities for research into the topic of 'flower' and 'food' miles.

Currently there is little structured, empirical research on the full costs and benefits of the flower industry in Kenya or elsewhere in the world. While specific issue based studies have taken place on aspects such as labour conditions the remainder of the literature on this industry is dominated by journalistic articles.

The well documented abuses within the flower industry have led to a number of specific campaigns such as the *Fairness in Flowers* campaign by the International Labour Rights Fund. Both NGOs and the flower industry have responded to criticism of their environmental and social impacts by developing a range of certification schemes, standards and labelling initiatives. Such initiatives hope to reassure consumers and their intermediaries of the social, environmental and economic legitimacy of their product. Legitimacy theory can be used to explain environmental and social disclosures, reflecting an agreement to operate within certain bounds imposed by society (Campbell *et al.* 2003). Voluntary disclosures may be used to build up legitimacy or repair it after public criticism. Certification to a voluntary standard or label is an expression of legitimacy. Organisations use this to bridge a perceived legitimacy gap or to reassure stakeholders of their legitimacy within these limits. However the acceptable limits of this system are not necessarily static. Public opinion on environmental issues may demonstrate punctuated equilibrium (after Baumgartner and Jones, 1993; Romanelli and Tushman, 1994), moving these acceptable limits in response to external factors that influence consumer behaviour.

Consumer consumption patterns may consider higher order aspects such as Fairtrade or wider concepts of ethical consumerism. Harrison *et al* (2005) argue that consumerism becomes a site of political debate once basic needs are met and focus shifts to concerns of self image, the need to know and self actualisation reflected by consumptive behaviour. This evolution represents a shift to post-materialist values as discussed by Ingelhart (1971) in his interpretation of Maslow's (1968) hierarchy of needs. Whereby, increasing material affluence leads individuals and society to a hierarchical pursuit of value based goals. Barnett *et al* (2005) expands on the moral debate between the ethics of consumption or ethical consumption. Whereby, the first concerns judgements of the morality of the whole system of capitalist commodity production and can be linked to movements such as voluntary simplicity and the slow food movement with an objective to reduce total consumption. Whereas, in the latter consumption is the medium for moral evaluation and choice and the focus is not necessarily on reducing consumption but on alternative consumption choices, reflected through consumer boycotts, ethical audits, responding to corporate social responsibility initiatives and Fairtrade. Consumer ethical practice and research is required in this arena.

As a non-essential item purchasing cut flowers demonstrates a moral choice - to consume. The next decision on which particular product is selected is the one that the voluntary certification schemes hope to influence. The decision criteria that shape purchase choice are influenced by individual circumstances, product knowledge and individual moral views. All lobbying campaigns such as *Fairness in Flowers* seek to either inform or shape those moral views and hence affect choice.

However these judgements are rarely simplistic and isolated. Perhaps the plethora of certification programmes may further complicate the decision process. The substance and veracity of social environmental standards or codes of behaviour is by no means uniform, but rather represent a spectre of different approaches.

It remains to be seen how the trade off between promotion of Fairtrade principles and a more protectionist approach to sourcing locally will be fought out on the supermarket shelves. A study by Cowe and Williams (2000) of 2000 people in the UK identified five consumer segments, with three offering potential markets to Fairtrade products. Their evidence suggests up to 30% of the sample was particularly motivated to buy ethical goods but this accounted for 1-3% of individual markets which they named the 30:3 syndrome. How this is affected by the overlapping concerns of the 'environmental' movement and whether this will cause sub-segmentation remains an area for future enquiry.

Few studies have examined the symbiosis or divergence between ethical consumers and those that consider environmental criteria (Codron *et al*, 2006). Three key questions do need to be posed (Codron *et al*, 2006):

- Do consumers who buy products of organic or integrated agriculture share common values with those consumers who buy products having an ethical/fair-trade dimension?
- Is the relation between the concerns/values and the purchasing behavior of consumers similar between the environmental and ethical/fair-trade domains?
- Do consumers buying environmentally friendly goods perceive the problem that such an action addresses with the same sense of immediacy and urgency as do those buying ethical/fair-trade products?

These initial questions can serve as part of an agenda for future research. The questions posed are valid to the subject of this paper and are crucial in the debate surrounding the tradeoffs that are likely to occur in the market place when consumers consider a decision between food/flower miles and Fairtrade.

Conclusion

This paper uses the cut flower industry to discuss a complex and emerging issue that cuts to the heart of the CSR debate and crystallised some of the hard choices that will need to be considered as we enter the this carbon conscious age. This paper contributes to this debate, not by presenting answers but by elucidating some of these complexities and asking more questions. Specific to the flower industry we should consider the following:

- It is clear that fully understanding the impact of the flower industry on development is necessary. This understanding requires a systematic evaluation of the costs and benefits of this industry in a range of case study regions.
- The current certification schemes need to be reviewed in light of the new imperative on carbon impact. An analysis of the overlap between these codes of conduct, their uptake and how they can be adapted is necessary.
- There is some evidence of using different certification standards as a 'ladder' of progress - an examination of farms level of certification and whether there are patterns and implications to this would be a fruitful research area.

- Alternatives to reduce the 91% of emissions from air transport of Kenya flowers should be examined.
- Alternative product options (such as dried flowers) could be explored alongside an analysis of other markets within the region.

At a more general level there are critical questions that need to be explored in the general debate about carbon and development trade-offs.

- It is crucial that we explore the relationship, and trade offs, between the consumer's ethical values and environmental motivations.
- The definition of local needs to be explored and analysed.
- The general carbon labelling schemes that are being developed need to be examined in light of considerations of international trade and development.
- The role of the Southern hemisphere in the global carbon equation and how they act as a carbon sink as a possible offset against use of air-fright could be explored.
- Ways to equitably compare carbon across the life cycle of a product need to be developed.
- Classification of different retail products in a way that considers carbon and development and possible stratified levels of assessment.

The drive to reduce the impact of the global transportation of food and other retail products may have the potential to significantly impact some of the most vulnerable parts of the world. Consumers, businesses and governments are faced with competing priorities within the environmental and social responsibility agenda and this may lead to prioritisation of one more so than another. This issue is the dilemma that lies at the heart of the flower miles debate and signals the complexity of the task we face when adding a carbon imperative to global supply chains.

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Endnotes

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ⁱⁱ Fairtrade http://www.fairtrade.org.uk/about_sales.htm [10 June 2007]

ⁱⁱⁱ See www.sustainablefood.ournews.html

^{iv} Flowers and Plants Association <http://www.flowers.org.uk/industry/uk-market.htm> [29 May 2007]

^v Horticultural Ethical Business Initiative <http://www.hebi.or.ke/hebi-profile.htm> [10 June 2007]

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