

CONCEPTUALISING SUSTAINABLE SUPPLY

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1. Sustainability and business

Sustainability has its roots in age-old agricultural practices, but the probably best known definition is by now that of the Brundtland Report (WCED, 1987: 8), which defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Following this definition, sustainability has three major implications. First, recognising the limitations in the ability of the environment to support present and future needs the environment can no longer be treated as a free good. Both the use of non-renewable resources and emissions of waste to air, water or soil should be reduced to a minimum. Secondly, sustainability entails recognising human needs, especially those of people in the poorest countries. This calls for a change of values, particularly in the richer countries, to limit consumption to a level that is ecologically sustainable and that all humans can attain. If developing countries reach the same level of growth as the developed countries had after the second world war, an environmental catastrophe would be immanent. Finally, sustainability requires intergenerational equity. The planning horizon for economic activity needs to be longer than that provided by the short-termism of the market economy. The Brundtland report thus stresses that sustainability is not just concerned with ecological issues, rather they need to be addressed simultaneously with social and economic problems, such as poverty and human rights abuses in the developing as well as unemployment and exclusion in the developed world.

The transition to sustainability carves out a significant role for industry, concerning two separate aspects. On the one hand, industry plays an enabling role, since it provides employment and products that are indispensable to an improved quality of life. The high standard of living enjoyed by the majority of the population in industrialised countries is in itself a result of industrial success. On the other hand, industry is also responsible for large scale environmental degradation and the exploitation of humans in many countries on the globe. This twin role of industry has led to a call for an urgent rethinking of management theory, where the organisation is to be conceived in its social and ecological context within the framework of sustainability (Shrivastava, 1994; Gladwin, Kennelly and Krause, 1995; Welford, 2000). This requires a change to the ontological status of organisations, as they need to be seen as being just one part of a larger universe. Management studies thus conceived would stress the systemic interconnectedness between organisations. “Such a view would see organizations both partially causing and being affected by biodiversity loss, climate change, freshwater scarcity, food insecurity, population growth, persistent poverty, gender bias, and explosion of megacities” (Gladwin, Kennelly and Krause, 1995: 897).

Many suggestions regarding sustainable development at company level concentrate on environmental sustainability, yet the concept has a much wider scope. Many models of sustainable companies are also developed with manufacturing companies in mind, yet the national economies of developed countries are moving towards an ever greater service sector contribution to GDP and employment. Hence management studies need to outline how service sector organisations can become sustainable too. In the financial services sector, for

example, companies need to pay greater attention to lending risks arising from environmental damage or socially unacceptable business practices of clients. Financial intermediaries can show that they attach value to the environment by offering new products, such as environmental investment funds (Jeucken, 2001). In this way they can offer financial incentives for their client companies to move towards sustainability and thus occupy an important multiplier position in the economy.

Sustainability further requires that not only production processes are considered but that their counter-part, consumption processes, receive attention too. As a first step 'throw-away' products should increasingly be replaced by products that last longer and create less waste over their life-cycle. Companies need to go further, however, and consider whether people really need their products in the first place. Production needs to be reconsidered, not as the making of something new, rather as the conversion of materials from one state into another. In other words, the production of something also always implies the destruction of something else. Such a less sanguine view of production leads Welford (1998) to introduce the concept of product justifiability. It suggests that companies need to carry out consultation with a wide range of stakeholders regarding the needs and costs of their products.

The demand side of sustainability could be addressed more comprehensively than currently possible by a move towards what Vergragt and van der Wel (1998) call 'service products', a move away from physical products to the offering of services with physical products fulfilling only an intermediary role in the meeting of a need. Such a service product allows the producer to scan the need fulfilment process and identify aspects where environmental issues could be addressed better than under the conventional sale of product mode. A car manufacturer, for example, could redefine itself as a provider of mobility and offer access to car-share pools rather than continue selling vehicles for individual ownership. In many industries such changes are viable today, but the challenge is to find solution that offer consumers the same level of comfort, the service provider a reasonable amount of profit and the natural environment a higher degree of protection.

An even greater challenge for the individual company is the incorporation of the social aspects of sustainability, the principles of intra-generational and inter-generational justice. A comprehensive framework is thus needed that combines economic, environmental and social aspects of sustainability and that is equally applicable to manufacturing and service sector companies. To address this gap, Welford, Young and Ytterhus (1998) develop their 'seven E's' framework. In order to move towards sustainability, an organisation needs to pay attention to:

- Environment: it needs to minimise the use of non-renewable resources and to monitor its environmental performance. Its products should be assessed by a life-cycle analysis and by a functionality assessment that determines whether there might not be an environmentally more benign way of offering the product's benefits. Components should be re-used and environmental impacts observed in the disposal of products.
- Economics: a profit or surplus is important for the continued existence of the company, but sustainability also requires an extension of the financial audit to show that profits have been accrued from good business practices rather than from exploiting nature or human beings. Companies have to strive to offer durable products of good quality. Business relationships should be mutually advantageous.

- **Employment:** since work is a source of meaningful occupation and income as well as status and recognition, a sustainable society cannot be built on large-scale unemployment. Hence companies have to ensure that a high level of employment is maintained. They need to offer fair wages and clean and healthy working environments. Improvements in technology should be used to enhance, not to replace jobs.
- **Empowerment:** employees should be treated as human beings, not merely as factors of production. The company should encourage participation of employees in decision-making; it should share ownership and profits in a fair way.
- **Ethics:** in a sustainable society, business activities are only justifiable, if they meet legitimate needs of stakeholders. To achieve these, any organisation will have to work by a clear set of organisational values, which will be published and reassessed periodically. The organisation needs to be open and honest in its dealings with stakeholders.
- **Equity:** within the organisation, employee rights and equal opportunities will be observed, while equity issues beyond the organisational garden fence concern the treatment of third world employees, indigenous populations and human rights violations. The distribution of organisational benefits needs to be fair. Where possible the firm should get involved in charitable work and sponsorship.
- **Education** is at the core of sustainable development. Businesses need to be aware that they too have an educational impact on employees, customers, suppliers and other stakeholders. They should provide suitable information and where possible contribute to the education process of stakeholders, e.g. via the transfer of technical knowledge. They could also become involved in wider community initiatives.

These seven factors then need to be assessed across both supply-side and demand-side aspects of sustainability. In terms of supply, both supplier performance and own practices need to be considered, whereas in terms of demand the company needs to assess how it manages the provision of its products or services and what steps it takes to influence consumer choice in the direction of sustainability.

Some authors have suggested that sustainability can lead to a double dividend of economic gain and ecological and social improvement (Porter and van der Linde, 1995). Sustainability is presented as a source of future competitive advantage, which is to be complemented by public policy signals that push and pull organisations towards sustainability. Such an argument is perhaps useful in persuading management to adopt a more holistic perspective, but other authors are less optimistic about the double dividend. Howes, Skea and Whelan (1997) suggest that the availability of clean technology, and hence the scope for environmental improvement, varies between industries and companies. Some industries, especially mature ones, are operating near the theoretical limits of resource efficiency and would not have much scope for further improvement. The success stories regarding corporate environmental and social initiatives also mostly come from large corporations, whereas smaller companies often lack the resources and are only at a stage of compliance with the law. Sustainability innovation may just pick the low-hanging fruits, and the successful initial steps might not lead to a continuous improvement process.

The literature on sustainability and business has been called “technicist” in orientation (Newton and Harte, 1997), because the successful change towards a organisation with a lower environmental and social impact is presented as being just a matter of adopting the appropriate environmental technology and management system. In reality, however, many of the instruments may not correlate with environmental improvement. Accreditation to ISO 14001, for example, could in theory acknowledge little more than legal compliance. While the general image is evoked that any company can achieve environmental excellence, the presented cases often deal with companies in specific sectors, predominantly in either those that directly benefit from increased environmental attention, such as waste management or pollution abatement technology, or companies that have been under the environmental spotlight. There also is ideological “tension between the promotion of a deregulated market that is implied in neo-liberal visions of enterprise and the desire for a greener world” (Newton and Harte, 1997: 84).

Some of these shortfalls result from limitations in the concept of sustainability itself, in particular the biological criteria that form the basis of sustainability do not necessarily overlap with the way in which corporations and their key actors operate (Räsänen, Meriläinen and Lovio, 1994; Welford, 2000). Furthermore, the Brundtland Report definition of sustainability is rather vague. The time horizon for future generations is not discussed, neither is the role of the natural environment in the development process. It offers no objective boundaries for needs, hence these cannot be called ‘genuine’ or ‘false’ and sustainability becomes a matter of political strife (Starik and Rands, 1995).

The concept of sustainability is thus not free from limitations, but it nonetheless emphasises the embedded character of economic activity. Sustainability demonstrates the need for a firm to combine excellence in the creation of its products and services with attention to environmental and social consequences of its operations. Furthermore, the concept has received political support from a number of important national and international decision-making bodies, including the UK Government, the United Nations and the European Union. The EU, for example, adopted its strategy for sustainable development at the Gothenburg summit in June 2001, which aims to dovetail policies for economically, socially and environmentally sustainable development.

2. The importance of supply management

Sustainable economic activity has made some headway in terms of environmentally sustainable production of goods and services. Environmental management standards, such as ISO 14001 and EMAS, give some assurance that a company’s internal processes take account of environmental implications. As argued above, however, sustainability concerns both production and consumption processes. Hence this article shall focus on sustainable consumption, in particular on organisational buying processes. This focus is the more justified as organisational buying outweighs consumer spending in industrialised economies. For example, UK consumers in the mid-1990s spent an estimated £400 billion per annum, whereas private sector purchasing amounted to more than £750 billion (Green, Morton and New, 1996). A focus on organisational buying is also warranted because of its increasingly global nature, where the economic implications of organisational buying reach far beyond the site where the procurement manager is working.

Any organisation is a member of some kind of supply chain or network and the numerous production, marketing or sourcing decisions it makes lead to a myriad of implications,

including implications for the natural environment, the working conditions in the supply base or the local community of supplier companies. The supply chain needs to be perceived as a system consisting of several elements and the relationships between them, namely (1) actors, including both organisations and individuals, (2) activities, the technical, commercial or administrative activities of the individual firms in the system, and (3) resources, including both tangible resources of personnel, equipment or capital, and intangible resources of knowledge, organisational learning or market image (IMP Group and Hakansson, 1982; see also Schary and Skjott-Larsen, 2001; Lambert, 2001). The coordination of these shall be termed supply management for the purposes of this article.

Supply management has undergone an extraordinary transformation in recent years. From a routine clerical perspective concerned with little more than purchase price and continuity of supply, the function's outlook has mutated first into a commercial orientation with an emphasis on cost savings and then into a proactive strategic outlook that is fully integrated into the competitive strategy of the company (Burt, Dobler and Starling, 2003; Hall and Braithwaite, 2001; Baily *et al.*, 1998). This strategic orientation has been accompanied by an emphasis on longer-term relationships with key suppliers instead of the traditional adversarial relationship. Although there is some doubt as to whether partnerships lead to a more even distribution of benefits between buying and supplying companies, the rhetoric of partnership should be of interest of those studying sustainability, since it is the short-termism of the market economy that is often blamed for environmental degradation and violation of stakeholder rights.

Supply management plays an increasingly important economic role, as for manufacturing companies bought-in materials and components today account for the largest share of total company expenditure. By 2000 the average US manufacturing company spent some 65% of total expenditure on bought-in components and materials (Burt, Dobler and Starling, 2003). Such a high level of expenditure offers an important leverage effect, where modest savings in the costs of bought-in materials and components can make a similar contribution to company profits as a huge increase in sales would. The economic importance of supply management is expected to grow further as manufacturers increasingly turn into assemblers and outsource ever larger parts of their value chain activities. This trend has important repercussions for sustainability, as outsourcing also leads to an increase in sourcing from developing and newly industrialised countries, which usually have less stringent environmental and worker protection legislation.

The supply management function is responsible for the management of all external resources and hence plays an important gate-keeping role. The importance of this gate-keeping role in terms of guaranteeing the quality of incoming goods has for some time been stressed in the total quality management literature (e.g. Deming, 1986). In the same vein, supply management can influence both the environmental quality of incoming goods and their impact on the quality of life of important stakeholders in the supply chain. While the financial benefits of increased outsourcing accrue first and foremost to manufacturing companies, the gate-keeping role applies to all organisations. In other words, sustainability and supply management are an important topic for both manufacturing and service sector organisations.

This argument can also be extended to public sector procurement. The United States federal government, for example, spends some \$200 billion annually on goods and services and an additional \$240 billion a year, indirectly, through grant disbursements. This makes it the single largest consumer of goods and services in the country and probably in the world (US

Environmental Protection Agency, 2004). Similarly, across the European Union money spent by public authorities in public procurement is equal to 16% of EU-wide GDP. These huge sums can have a dramatic impact in terms of environment protection and social equality. Acknowledging such responsibility, former US President Bill Clinton signed Executive Order 13101 'Greening the Government through Waste Prevention, Recycling and Federal Acquisition' in 1998, which requires federal agencies to take account of a broad range of environmental factors in the planning of their procurement.

In the European Union, the Commission had in the past been rather sceptical of environmental considerations in public procurement, seeing them as a potential violation of Single European Market rules. However, in March 2004 the Council of the European Union and the European Parliament adopted the new public procurement directive, which now enables the integration of environmental considerations into public procurement. This important change of law follows rulings by the European Court of Justice that it is acceptable to make use of an ecological award criterion in public procurement, even if it doesn't provide an immediate economic benefit for the contracting authority.

Given the huge implications supply chain activities can have in terms of environment protection and social conditions in local communities where suppliers are based, the argument is made here that attention to the supply chain is an indispensable element a sustainable economy. This argument applies as much to manufacturing companies as it does to service and public sector organisations.

3. Conceptualising sustainable supply

The previous sections have argued that attention to supply chain management issues are an indispensable element of sustainability. However, the question arises whether sustainability can be achieved at the level of a single organisational function, rather than at the level of the whole organisation or even the entire national economy. Sustainable development implies desirable social change, and the Brundtland Report specifically refers to issues like food security, access to democratic processes, health care and population control. Lamming, Faruk and Cousins (1999) argue that these issues should be properly the concern of governments and not be applied to individual businesses. Sustainable development also requires an infinite time horizon, which is again inadequate for the practical requirements of business decision making. Thus Lamming, Faruk and Cousins (1999: 178) suggest that "sustainability is meaningful *only* at the global level and that to attempt to affect it at the corporate level leads inevitably to rhetoric and sophistry."

However, such an argument has to be rejected on both descriptive and prescriptive grounds. In descriptive terms, the suggestion is not borne out by the empirical situation. The sourcing decisions of many companies, especially of MNCs, do have an impact on social conditions and environmental protection. Such an impact is most obvious in Third World sourcing, for example, in accusations of child labour used in the manufacture of textiles and toys. The environmental and social impact of sourcing decisions is also visible in industrialised countries. For example, when Wrangler announced the closure of its manufacturing plant in the Scottish town of Falkirk in 1999 to move production to Eastern Europe the resulting loss of 500 jobs dealt a heavy blow to an already ailing local economy.

The argument that sustainability should only be addressed at the global political level has to be discarded on prescriptive grounds too. Companies, in particular large MNCs, clearly have

the power to influence social conditions and the state of the natural environment in the countries they source from. This power needs to go hand in hand with the obligation to use it in a responsible manner. The claim that companies should not address social issues is rather reminiscent of earlier claims that business should not address environmental issues as these too were once seen as a matter for national governments only. Today, however, only a minority of companies would claim that they do not have a responsibility for their environmental impact.

Sustainable supply management is, of course, not an aim in its own right. It has to be integrated into the organisational strategy and philosophy of the buying organisation. Under the conditions of a competitive market economy it would be naïve to expect organisations to foreground sustainable supply over their own long-term future. This, however, is not to say that it is not useful to study what contribution supply management could make to a more sustainable organisation and, in turn, to a sustainable society. In order to develop a framework for more sustainable supply, the following section will apply the 'seven E's' framework developed by Welford, Young and Ytterhus (1998) to supply chain management issues, namely the factors: economics, environment, employment, empowerment, ethics, equity and education.

A first element of the framework is economics. Profit is indispensable for the survival of a firm, but parts of it need to be re-invested into the business too. From a macro-economic point of view, sustainability requires that profits are made in a just way, from the sale of quality products or services, rather than from exploitation of the firm's workforce or supply base. A major contribution to the economic element of sustainable supply has already been mentioned, namely the startling transformation of the supply management function. By determining the quality of the input, the function largely determines the quality of the firm's output. Furthermore, in manufacturing companies purchasing accounts for some 65% of total expenditure or more, which offers a huge potential for a supply management contribution to the economic success of the buying firm. Hence the function has a clear potential for making a significant contribution to the ongoing survival of the buying firm. However, sustainability requires that the economic situation of the supply base should be considered too. Here too supply management can make a contribution to secure the ongoing survival of suppliers and to enable them to benefit from the supply relationship as well.

In terms of the natural environment, organisations should make only minimal use of non-renewable resources and avoid polluting air, water and soil as far as possible. This is again an area for a prime contribution to sustainability by supply management. Supply management can pursue a number of avenues here: it can buy environmentally friendlier products, components or services, sending a market signal to encourage suppliers of such products or components. Supply management can influence the production processes of the supply base, for example by requiring suppliers to undertake environmental improvements, to phase out certain chemicals or require accreditation to an environmental management standard. The environment can be used as a criterion in the supplier selection and evaluation process. Furthermore, supply management can also apply its environmental expertise within the company, for example, in cross-functional teams that work on design for environment or design for recyclability.

Employment is crucial to the quality of life and in a market economy part of the responsibility to provide meaningful employment falls on private sector companies. From a sustainability point of view, this includes providing meaningful work in the supply chain too. Supply

management can make an important contribution by making sure the supply base meet, and where necessary exceed, national legislation on working conditions, fair wages, working hours and health and safety issues. In the supply chain too, improvements in technology should be used to enhance and not to replace jobs. British DIY retailer B&Q, for example, insisted that its Indian suppliers of brass casting items improve their working conditions. Suppliers were asked to improve ventilation and fume extraction in lacquering units and to provide better dust extraction in polishing units (B&Q, 1998). In response to prolonged criticism regarding the working conditions in its suppliers, Gap Inc. published its first ever Social Responsibility Report¹ for the year 2003. It covers eight major areas: local labour laws, the environment, discrimination, forced labour, child labour, wages and working hours, working conditions and freedom of association. Gap reports that the worst and most persistent of the violations led the company to terminate business with 136 factories of some 3,000 factories in total.

As far as empowerment is concerned, sustainability requires that all members of the value chain should feel part of a common endeavour. Again there is scope for supply management to make a contribution. The purchasing manager of a specialist textiles manufacturer commented in an interview with the author on his internal contribution to the working of the company: “I am responsible to make sure that every person in here is seen as my internal customer, and if I can get to a stage where there is total customer satisfaction internally, then I know that I’m doing my job well.” Such concern for employee well-being can also be transferred to the supply base, where supply management can use its influence to change management practices in the supply base. The managers could, for example, encourage the participation of supplier employees in decision-making, they could encourage employee share ownership and employee profit sharing.

From an ethical point of view, a company should set itself a clear set of organisational values, then publish and periodically re-assess these. It should be open and honest in dealings with its stakeholders. This leads to the classical ethical dilemmas in purchasing and supply (Wood, 1995). Ethical issues begin with gifts and corporate hospitality, which might colour the professional judgement of purchasing staff. Hence many companies introduced a policy for all staff to report anything other than gifts of a nominal value. Once sealed bids in a competitive tendering process have been received, supply chain managers should not go back to selected suppliers to re-negotiate better conditions in the light of competitor offers. Ethical issues can also arise in the communication with suppliers, where supply managers should demand only the amount and type of information needed to make a sourcing decision. Many large corporations require open book costing of their suppliers, where they work out the component price on the basis of the supplier’s cost structure plus a profit margin. This type of negotiation can, however, cement a power relationship to the disadvantage of the supplier.

Equity requires concern for employee rights and equal opportunities in supply base. Those involved in supply management should insist on a fair distribution of benefits along the value chain. An important trendsetter here is the Fairtrade Foundation.² Set up by a number of UK charities, its aim is to strengthen the economic position of small agricultural producers in developing countries by buying direct from the farmers at prices that are set at a level that is considered fair, even if this means paying significantly more than world market prices. Fairtrade also helps farmers to strengthen their producer organisations and to market their

¹ <http://ccbn.mobular.net/ccbn/7/645/696/index.html>

² <http://www.fairtrade.org.uk/>

produce directly to consumers in developed countries, which again improves their economic position. The additional income generated by the more favourable conditions can be invested into business improvements, into social or environmental projects. Currently some 250 products are available in the UK, including coffee, tea, fresh fruit, chocolate, juice, honey and wine.

Last but not least, sustainability requires education. Progress towards a more sustainable world crucially depends on communicating the challenges of sustainability as well as making people aware of the means that exist for tackling these. Companies need to be aware that they too have an educational impact on employees, customers, suppliers and other stakeholders. They can provide needed information and where possible contribute to the education of stakeholders, for example via the transfer of technical knowledge. The link between the supply chain and education is demonstrated, for example, by the Rugmark Foundation³, which is a global non-profit organisation working to end child labour in the carpet industry and to offer educational opportunities to children in India, Nepal, and Pakistan. Its Rugmark label demonstrates to consumers that the carpet has not been produced by illegal child labour. The label also verifies that a portion of the carpet price goes to the rehabilitation and education of former child weavers. However, education in the supply chain is not just a Third World issue. The buying manager of a specialist textiles manufacturer based in the UK expects suppliers to invest a certain percentage of the money they receive into the training of their staff. In several cases unsatisfactory training efforts had been a factor in deciding against awarding a certain supplier a contract.

Having discussed the individual factors of the seven E framework, the following table will give an overview of the individual factors, their operationalisation as well as a few examples.

³ <http://www.rugmark.org/index.html>

Table 1. The 7 E framework for sustainable supply

	Element	Operationalisation	Examples
1	Economics	Contribution to a 'just' profit for the buying firm Benefits for the supply base too	Supplier conference at paper maker leads to improved product and higher sales
2	Environment	Buy greener product, component or service Insist on greener supplier production processes	Buy solvent-free components Require certification to ISO 14001 or EMAS
3	Employment	Provide meaningful work in the supply chain Encourage health and safety at work	B&Q insists on improved working conditions at Indian brass casting suppliers
4	Empowerment	Contribution to employee satisfaction internally and supplier employee satisfaction externally Encourage employee participation and profit sharing in the supply base	The Day Chocolate Company provides cocoa farmers in Ghana with direct access to the UK chocolate market
5	Ethics	Communicate organisational values to stakeholders Be open and honest in dealings with stakeholders	Declare gifts Where sealed bids are used, don't afterwards re-open negotiations with selected suppliers
6	Equity	Demonstrate concern for employee rights and equal opportunities in supply base Insist on fair distribution of benefits along the value chain	Fairtrade offers income protection against declining world market prices
7	Education	Contribute to the education of supplier employees and their communities	Rugmark label guarantees share of carpet price goes towards schooling for former weaving children

The seven E- framework of sustainable supply is, of course, a set of ideals. Its aim is to develop a model that is applicable to all organisational buying processes, whether undertaken by manufacturing or service sector companies, whether in the private or in the public sector. Hence not all factors will be applicable to all organisations, nonetheless it provides a starting point for practitioners and academics who are concerned with making supply more sustainable.

4. Case studies of sustainable supply

Having outlined the ingredients of sustainable supply in general terms, the remainder of the article is devoted to gauging what progress has already been made in organisational buying and what factors might hamper supply management attention to more sustainable supply. The

following section will provide some case studies of private and public sector organisations that have introduced measures to make their buying more sustainable.

Introducing returnable containers for hazardous chemicals

A first case concerns the manufacturing plant of a multinational manufacturer of pigments and dyes headquartered in Switzerland. The plant in question is located in Scotland and has some 800 employees. It introduced a number of initiatives whereby one-way containers for hazardous chemicals it buys were replaced by returnable ones. One of the initiatives concerned a chemical called dichlorobenzidine dihydrochloride, which the plant buys from a supplier in Japan. Traditionally the chemical was supplied in fibreboard kegs, which were landfilled. As they were contaminated with the chemical they contain, the kegs were classified as registered waste. The plant entered into negotiations with the supplier to develop a returnable container. After three years of work, the new container went into operation. It cuts out the need to landfill some 30,000 contaminated kegs per year. Additionally, the chemical is now directly discharged into sealed equipment, which reduces operator exposure to the chemical. The company's purchasing manager explains the motives for introducing returnable containers [interview with the author]:

The saving of not purchasing fibreboard kegs was offset by the need to purchase these expensive returnable containers, and it was worked out that we needed something like five to six uses to break even. But the objective was not to save money, the objective was to improve the environment, not only for operator exposure but also for landfill reasons. ... Pigments made from dichlorobenzidine dihydrochloride were always subject to scrutiny by the various environmental people, and by moving to this system we were removing totally any risk of exposure to the operator. And that was the drive ... This is an example of us being ahead of legislation.

Unbundling the motives behind the environmental initiative, there is some desire to be seen as a good corporate citizen, but this goes back to health and safety considerations. These in turn are motivated by regulation, the threat thereof or a desire to implement expected legislation at the organisation's own pace. Thus regulation emerges as the overarching motive. It is also expressed that environmental measures, if possible, should not create additional costs. At the time of introducing the packaging, the purchasing manager of the pigments and dyes plant feared that the initiative could lock the company into the relationship with the Japanese supplier. It turned out later that the concern was unfounded, as within a few months the container pioneered by the manufacturer and its supplier had become industry standard and does not restrict the selection of suppliers anymore.

The Day Chocolate Company and the Kuapa Kokoo cocoa growing cooperative⁴

In the early 1990s, a group of cocoa growers in Ghana, West Africa, set up a farmers' cooperative to trade its own cocoa and to manage the selling process more efficiently than the government cocoa agents. The cooperative is called Kuapa Kokoo - which means good cocoa growers - and has given itself the mission to empower farmers in their efforts to gain a dignified livelihood, to increase women's participation in all of Kuapa's activities and to develop the environmentally friendly cultivation of cocoa.

⁴ The information on the Day Chocolate Company is taken from the key note speech by Bob Doherty to the 2004 International Sustainable Development Conference, 29/30 March 2004, Manchester, UK, and the company's website <http://www.divinechocolate.com/>

The cocoa farmers, who were already getting a fair trade price from some international customers, voted at their 1997 AGM to invest in a chocolate bar of their own. Realising that the largest share of value lies not in the cocoa growing but in retailing the finished chocolate, they decided that did not want to remain solely in the fair trade niche market. Rather they would produce a mainstream chocolate bar to compete with other brands in the UK market, which is worth almost £4 billion. Together with Twin, a UK-based fair trade organisation, Kuapa set up the Day Chocolate Company, which also received support of the Body Shop, Christian Aid and Comic Relief as well as a business loan guaranteed by the UK Government's Department for International Development.

In October 1998, the Divine chocolate brand, made from Kuapa's best quality fairly traded cocoa beans was launched, to be followed by Double, a crispy milk chocolate bar for children. Today the Divine brand is stocked by all major UK supermarkets, and Double is sold by independent news agents and video store outlets. Taken together, the products of the Day Chocolate Company are sold in some 15,700 retail outlets in the UK (Ronchi, 2002). The company also produces educational material to raise fair trade awareness in schools, which is designed and supported by UK charity Comic Relief.

The Day Chocolate Company is unique in the fair trade world in that the Kuapa Kokoo farmers own 33% of the shares in the Day Chocolate company. Their cooperative thus has a significant input into decisions about how the chocolate made from their cocoa is produced and sold. Two representatives from Kuapa Kokoo are Directors on the company's Board, and one out of four Board Meetings every year is held in Ghana. As shareholders, the farmers also receive a share of the profits from the sale of the company's products.

Sustainable procurement at the Environment Agency in England and Wales

The Environment Agency⁵ for England and Wales was established in 1995 and operates as part of the UK Department for Environment, Food and Rural Affairs. It employs around 11,000 staff and in 2002/03 had a total expenditure of around £780 million (Environment Agency, 2003). The Environment Agency's remit covers the whole of England and Wales; about 15 million hectares of land, 36,000 kilometres of rivers, 5,000 kilometres of coastline and 2 million hectares of coastal waters. The Agency's principal aim is to protect and enhance the natural environment and in doing so to make a contribution towards the objective of achieving sustainable development. Some of its key environmental goals are to improve air and water quality, to create an enhanced environment for wildlife, to achieve a better quality of life by regenerating run-down areas, as well as working with business to green its operations and products.

In 2002/03 the Agency spent some £460 million with suppliers and contractors. The products with the greatest environmental and social impact are aggregates, chemicals, construction projects, energy, horticulture, machinery, electronic equipment, timber, vehicles and waste management (Environment Agency, 2002). The agency adopted a framework for sustainable procurement, which requires procurement to meet the standard procurement imperatives regarding quality, cost and delivery schedule, etc., but not by exploiting labour, undermining local cultures, damaging future economic and social prosperity, exhausting natural resources nor by polluting air, land and water.

⁵ <http://www.environment-agency.gov.uk/>

The Agency adopted a two-tier approach to sustainable procurement. The top 25 suppliers in volume terms, which account for approximately 50% of spend, have been invited for joint environmental development work. Detailed meetings of their directors with the Environment Agency were arranged to explore the supplier environmental agenda, to promote a culture of continuous improvement and to identify potential help the supplier might need. The emphasis on sustainability is also to be driven down the supply chain. One civil engineering contractor commented: "Having the Environment Agency's skilled staff available to help us assess our performance helped us focus on subcontractor training and development as a priority for the next year"(Environment Agency, 2003: 12).

In a second phase, the Agency's top 500 suppliers were benchmarked on environmental and ethical grounds. A telephone questionnaire sought to identify potential risk areas and to identify achievements against the situation in 1999. The questionnaire also captured the nature of the company, its size and diversity of ownership and management, its environmental management practices and attitudes as well as its policy on and management of overseas operations. The suppliers were again asked to provide an overview of environmental and social impacts of their own purchasing. Furthermore, the level and nature of support the supplier might need from the Environment Agency was assessed.

The Agency also provides information and training on sustainable procurement to its suppliers. It designed a CD ROM environmental best practice training tool and published briefings on sustainability issues in commodity buying for items ranging from electronics to aggregates, like sand. For these efforts, it won an award for excellence in ethical purchasing from the Chartered Institute of Purchasing and Supply.

An industry-level initiative: the Forest Stewardship Council

The Forest Stewardship Council⁶, FSC, is an independent, not-for-profit organisation based in Bonn, Germany, which promotes environmentally appropriate, socially beneficial and economically viable management of the world's forests. Its most visible activity is to provide trademark accreditation for companies and organisations interested in responsible forestry.

The FSC standard can be awarded where forests have been inspected and certified against strict standards based on the organisation's 10 Principles of Forest Stewardship. These principles include guaranteeing legal and customary rights of indigenous peoples to own, use and manage their lands (Principle 3), managing forestry operations in such a way that it maintains or enhances the long-term social and economic well-being of forest workers and local communities (Principle 4) or managing the forest so that its biological diversity and associated values (water resources, soil and fragile ecosystems and landscapes) are preserved (Principle 6). The forestry inspections are undertaken by independent organisations, such as the Soil Association, which are themselves accredited by the FSC.

In terms of its organisational structure, FSC aims to retain its independence by giving equal weight in its governance structure to environmental, social and economic interests as well as a maintaining a balance of interests between developing and developed countries. FSC operates through a network of national working groups in more than 30 countries. In the United Kingdom, FSC UK is a registered charity, the work of which is supported by WWF,

⁶ <http://www.fsc.org/fsc>

Greenpeace, Friends of the Earth, the Woodland Trust and other non-governmental organisations.

Today some 42 million hectares of forests in more than 60 countries are certified to FSC standards and several thousand forestry products carry the FSC trademark. In the UK more than 10,000 FSC labelled product lines are available, ranging from garden furniture and tools, through wall paper, paper and pencils to even coffins. FSC certification is increasingly required by major retailers in Europe, North America, South America and Asia so they can assure their customers about the origin of the products they are buying. From a supply chain management point of view, the procurement manager of a British manufacturer of quality paper commented on the advantages of Forest Stewardship Council accreditation [interview with the author]:

It allows a better understanding of what we do in our industry, but also it does give us a bit of a commercial advantage as well, because we were one of the few companies that were prepared to work with it.

5. Conclusions

Supply management is becoming an increasingly important organisational function, particularly in manufacturing companies and in the public sector. The function acts as gate keeper, who determines the quality of incoming goods – including their environmental and social impact. Sustainability requires attention to supply issues, because to be truly sustainable an organisation needs to be sustainable in both its production and consumption activities. Moving to a more sustainable organisation is thus impossible without active supply management involvement. In this respect this article counters the argument that sustainability can be meaningfully addressed only at the level of a national or even the global economy; rather it is argued here that both the organisational and functional levels require attention if sustainability is to be achieved.

Despite this need for attention to sustainability, the actual requirements to be made of organisations remain rather hazy. This is not surprising as the concept of sustainability itself has led to a whole array of competing interpretations. To support both organisations in adopting and academics in researching sustainability, a comprehensive framework has been presented that combines economic, environmental and social aspects of sustainable supply and that is equally applicable to manufacturing, service sector and public sector organisations. This framework is based on the seven E's model of sustainability presented by Welford, Young and Ytterhus (1998) and applies the criteria of economics, environment, employment, empowerment, ethics, equity and education to organisational buying processes.

Profitable business relations are a prerequisite to sustainable supply, but profits need to have been accrued from good business practices along the value chain. The environmental credentials of incoming goods as well as of supplier production processes need to be addressed. Sustainable supply further requires fair wages and healthy working environments in all companies along the value chain. Employees of buyer and supplier need to maintain ethical standards. Buying organisations should encourage their suppliers to allow their employees to participate in decision-making and to share ownership. Sustainable supply furthermore concerns education, where buying firms can contribute to the education process of stakeholders. The scope and the potential impact of these measures are most clearly visible

in sourcing from third world countries, but they can equally well be applied to the industrialised world.

Case study evidence from organisation aiming to address sustainable supply demonstrates that considerable efforts have been undertaken in both the private and public sectors. However, these efforts are not necessarily consistent over the life-cycle of a product, where some phases receive more attention than others. The application of sustainable supply criteria is also not consistent over all aspects of sustainability. Often the impact on the natural environment is considered, while addressing social aspects is less common. The challenge arises thus to address all sustainability factors, not just individual ones. Furthermore, sustainable supply cannot be undertaken without reference to the cost of the required initiatives, since private sector organisations are subjected to the pressures of the market economy and the public sector has its budget constraints. Hence – and this has been shown by the case studies too – sustainable supply requires public pressure to push it along by changing organisational priorities.

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