Sustainable supply chain management

In a nutshell

Summary

Best practice is to manage the supply chain, in particular ingredients or raw materials, by choosing one or more of the following three approaches:

- green procurement, i.e. selecting suppliers that fulfil identified environmental performance criteria[1],
- · adapting recipes to remove unsustainable ingredients,
- supporting existing suppliers in improving their environmental performance.

Additionally, for those food and beverage manufacturers using substantial amounts of water as an ingredient (e.g. beverage manufacturers), it is best practice to firstly assess the risks posed, by the production site, to the local water resources. Afterwards, a water resource sustainability programme can be put in place, detailing specific actions that can be taken to support the preservation of the local water resources.

All food and beverage manufacturing Processing of coffee Manufacturing of olive oil Manufacture of soft drinks Manufacture of beer Manufacturing Manufacture of fruit juice Manufacture of bread, biscuits and cakes

Applicability

Sustainable supply chain management can have some limitations: (i) the green procurement approach assumes that 'green' choices are available; (ii) recipes can be adapted if unsustainable ingredients can be removed with equivalent, more sustainable alternatives; and (iii) it may not always be possible to influence the performance of existing suppliers, e.g. due to small volumes of products purchased by an SME. However, the three approaches presented are in most cases broadly applicable.

Environmental performance indicators

- Percentage of ingredients or products (e.g. packaging) meeting the company's specific sustainability criteria or complying with existing sustainability standards (% by number or value in EUR)
- Percentage of ingredients or products (e.g. packaging) sourced via green procurement (% by number or value in EUR)
- Percentage of suppliers engaged in sustainability improvement programmes (% by number of suppliers or value in EUR of products they supply)
- Percentage of suppliers with environmental management systems in place (% by number of suppliers or value in EUR of products they supply)

	Benchmarks of excellence
N/A	

[1] The environmental performance criteria used in green procurement may be based on certifications, standards, ecolabels, private initiatives/cooperation or the results of sustainability assessments (see best practice on performing an environmental sustainability assessment of products and/or operations) developed internally or externally.

Description

According to a UK study, primary food production accounts for about one-third of the total food chain's carbon footprint. Collectively, the industries which process, manufacture, distribute and sell food account for a further third and consumers are responsible for the remaining third (Parliament.UK 2012a). These estimates are supported in a recent life cycle assessment (LCA) undertaken for **PepsiCo**'s Tropicana orange juice brand. As Figure 1 shows, agricultural fertiliser alone accounts for 35% of the product's total impact.

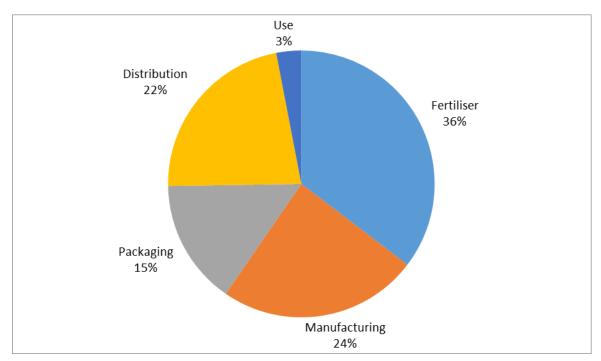


Figure 1: PepsiCo's Tropicana Orange Juice life cycle assessment (PepsiCo 2010)

The way manufacturers procure their supplies, particularly ingredients, is therefore significant in terms of environmental impact. Frontrunner manufacturers, especially larger ones, recognise that, thanks to their purchasing influence, they are often in a position not only to improve the impacts of their products and processes, but also those of their suppliers[1].

This best practice examines three ways that frontrunners manage their supply chain to be more sustainable:

- 1. Green procurement
- 2. Adapting recipes to remove unsustainable ingredients

3. Improving the performance of existing suppliers

These are each described in turn although a frontrunner may not restrict itself to just one but may choose a multi-option approach (presented below in more detail). In such a case, a more comprehensive and complete sustainable supply chain management can be achieved.

Finally, different considerations on sustainable sourcing of ingredients can be contemplated when dealing with water, for those food and beverage manufacturers using substantial amounts. How to best manage the sustainable sourcing of water is outlined as the last item in this section of the best practice.

Green procurement

With green procurement, frontrunners use rules, certifications, standards, ecolabels or the results of sustainability assessments (see best practice on performing an environmental sustainability assessment for products and/or operations) – developed internally or externally - to guide purchasing strategies. Although the particular ingredients and other raw materials procured may not change, the manufacturer may switch supplier so as to cut environmental impacts. Voluntary commitments and standards for sustainable sourcing include initiatives for many raw materials, both wild and cultivated, whose cultivation and/or harvesting is considered problematic – both socially and environmentally.

Among the more prominent not-for-profit initiatives and certification schemes available for manufacturers to guide purchasing decisions are:

- The Roundtable on Sustainable Palm Oil,
- UTZ certification (cocoa, coffee and tea)
- The Rainforest Alliance certification (food, beverages and paper products derived from forest environments)
- Marine Conservation Society certification
- Global GAP
- The Sustainable Agriculture Initiative (SAI) Platform

The larger manufacturers have themselves developed tools and guides for encouraging green procurement such as the SAI Platform, launched in 2002 by **Danone**, **Nestlé** and **Unilever** to promote sustainable agriculture. The Platform, which today unites some 50 actors in the agrifood sector (Danone, 2013), publishes a practitioners guide on sustainable sourcing of agricultural raw materials.

Danone's 'Forest Footprint' policy is an example of best practice in green procurement. It starts with a corporate commitment to eliminate 'the deforestation impacts of its supply chain, and to a reforestation programme, between now and 2020' (Danone, 2013). The policy evaluates deforestation risks related to the raw materials used directly or indirectly and suggests actions guided by a risk assessment and in collaboration with the NGO Rainforest Alliance. Six key commodities have been identified as priorities:

- paper and cardboard packaging,
- 2. palm oil
- 3. soy for animal feed
- 4. wood energy
- 5. sugar cane
- 6. bio-sourced raw materials for packaging.

Similarly, the Food & Drink Federation (FDF), a trade association representing UK manufacturers, has produced a five-point guide to sustainable ingredient sourcing to help its members manage risks throughout the supply chain (Stones, 2012). The FDF guide is designed to assist small and medium-sized businesses with limited resources to develop effective procurement practices and is currently being piloted with two small Scottish manufacturers, **Dean's of Huntly** and **Innovate Foods**, in partnership with Resource Efficient Scotland. The FDF is also developing a new tool with WRAP (UK Waste & Resources Action Programme) to help manufacturers of any size trade off the risks and impacts of different raw materials commodities in their supply chain (Food and Drink Federation, 2014).

Adapting recipes to remove unsustainable ingredients

An approach closely related to green procurement is the changing of product recipes so as to avoid the use of ingredients deemed unsustainable. In this case, an ingredient may be substituted with a similar one or removed altogether. Again, the decision as to which ingredients should be removed or substituted is guided by internally or externally formulated rules, standards and/or analyses.

The FDF guide discussed in the previous section also includes options to switch ingredients.

M&J Seafood in the UK was asked by the National Trust – a conservation charity - to completely review their fish and seafood offering. In particular, they wanted to review the key issues regarding origin, sustainability and capture methods, followed by a complete product review (M&J Seafood, 2013).

Improving the performance of existing suppliers

A different approach in sustainable supply chain management is for the manufacturer to continue procuring ingredients from the same suppliers, but to attempt to improve the suppliers' performance. This can be done in three main ways:

- a. Requiring certification of suppliers and/or their products according to existing sustainability standards such as those previously listed.
- b. Imposing own standards/requirements
- c. Cooperating with existing suppliers to improve their environmental performance

The Swiss-headquartered food and drinks giant **Nestlé** is an example of a manufacturer taking a multipronged approach to sustainable supply chain management. For instance:

- It adopts the principles of 'green procurement' in using its own sourcing guidelines when procuring twelve 'priority commodities' such as milk, coffee, cocoa, palm oil and soy.
- The company also recently rolled out EcodEX (Ecodesign for Sustainable Product Development and Introduction), an LCA-based tool enabling product development teams to systematically assess the environmental performance of a product faster and earlier in the design process, and to make fact-based decisions. EcodEX allows different scenarios to be compared using accurate data specific to the food and beverage industry as well as indicators that meet ISO requirements.
- It has developed a 'suppliers code' or 'responsible sourcing audit programme' against which it regularly audits suppliers, via independent third-party assurance companies, to ensure compliance. Where suppliers are struggling, Nestlé claims to work with them to improve rather than simply switching, a philosophy it brands 'Creating Shared Value' (Nestlé, 2013a).
- Farmer Connect Programme. Supporting farming communities in sourcing agricultural raw materials, providing technical assistance on sustainable production methods and optimising the delivery of raw materials to the factories (Nestlé, 2013b).
- Sustainable agriculture initiative. Sharing best practices and lessons learned.

Illycaffè SpA (illy) with global headquarters in Trieste, Italy, reports that it manages the entire coffee supply chain. This approach is certified by an independent third-party body (DNV) and through the Responsible Supply Chain Process, which certifies that it (Illycaffé 2014):

- purchases 100% of its green coffee straight from coffee growers:
- activates a knowledge transfer to coffee producers in order to constantly improve their product's quality;
- guarantees a payment higher than market average to reward the coffee growers.

The Italian company **Barilla** offers an additional example of working closely with suppliers. As discussed in the best practice on performing an environmental sustainability of products and/or operations, this manufacturer of pasta and other baked goods strives to use 'real' rather than standard LCA values for ingredients such as durum wheat products, and these are gathered directly from the supplier. This relationship can then be harnessed in a targeted ways to drive down the values.

In January 2013, the breakfast cereals maker **Kellogg** launched its 'Origins Farmer' programme supporting European farmers who grow grains for Kellogg, enabling access to best practice (Kellogg 2014). Kellogg's uses the following approach to responsible sourcing:

- 1. All suppliers: self-certify to the Kellogg's global supplier code of conduct through the supplier management portal
- 2. All direct and indirect suppliers: will be internally assessed based on the inherent risk of their crop, product and / or country
- 3. All 'high-risk' suppliers: will be asked to sign up for Sedex (see below) and complete a self-assessment to further clarify risk
- 4. Any suppliers that still demonstrate 'high risk': will be asked to provide or complete an audit for verification of compliance with Kellogg's global supplier code of practice

Danone is endeavouring to promote more sustainable agricultural practices across its worldwide supply base. Initiatives include (Danone, 2013):

- The 'DanRISE evaluation tool' for evaluating dairy farm sustainability, developed by the University of Bern (Switzerland, which covers diverse dairy production models from subsistence farming to large farming operations. Recently tested in six countries (in Europe, America and Asia), the tool addresses Health, Economy, Nature and Social dimensions.
- Collaborations with other large manufacturers 'to define a shared vision of sustainable milk production'.
- A guide to adopting sustainable agriculture for the subsidiaries and their partners around the world has been published, in cooperation with more than 20 international experts in the field.
- The 'FaRMS' (Farmers Relationship Management Software) programme which covers 50% of direct milk intake
 (across 14 subsidiaries) and represents almost 3,500 million litres of milk. FaRMS supports producers who
 implement best environmental practices and includes systematic monitoring of farms across nine key environmental
 criteria (e.g. waste management, use of crop protection products, energy and water consumption).

Like other large multinational manufacturers, **Mondel?z International**, is also taking a proactive approach to improving the sustainability of those supplying its core ingredients, such as cocoa, coffee and wheat (Mondel?z International, 2013). For instance, in 2008, the corporation created 'Harmony', a sustainable partnership with multiple players across the wheat chain including farmers, millers, scientists and NGOs. The initiative aims to promote local biodiversity and better environmental practices in wheat production, and now involves 1,700 European farmers who are committed 'to follow more respectful agricultural practices' including:

- · adhering to proper soil management,
- limiting fertilisers and pesticides,
- preventing excessive water use

dedicating 3% of wheat field surface to sowing flowers to attract bees, butterflies and other pollinators.

As of 2013, 44% of Mondel?z International's Western European biscuits were made with Harmony wheat with a target of 75 % by 2015. Reported environmental benefits include:

- farmers using approximately 20% less pesticides vs. standard agriculture
- 10 million more bees counted!

Sedex (Supplier Ethical Data Exchange) (Sedex 2014) facilitates the selection of more sustainable suppliers and drives overall improvement in the supply chain. This not for profit membership organisation launched in 2004 provides a collaborative platform for sharing ethical supply chain data, easing the burden on suppliers. Sedex offers a secure, online database allowing members to store, share and report on information in four areas:

- 1. Labour Standards
- 2. Health & Safety
- 3. The Environment
- 4. Business Ethics

While suppliers do not have to meet a minimum environmental performance threshold to join Sedex, their participation demonstrates transparency and a willingness to improve. In addition, Sedex offers users a self-audit tool with results measured against similar organisations on the database, to deliver

a high, medium or low risk profile. Sedex now covers 25 industry sectors and has over 30,000 supplier members.

Many food and drinks frontrunners will consult Sedex when deciding on a supplier or as a tool for driving improvement. For instance, the UK drinks maker **Diageo** reports that in 2014 it audited 17% of 'potential high risk' supplier sites registered on Sedex, up from 12% in 2013 (Diageo, 2014). Another recent example is **Lion** whose portfolio includes brands of alcohol, dairy and soy beverages in Australia and New Zealand. In December 2013, the manufacturer partnered with Sedex to establish a database of suppliers and a process for monitoring ethical sourcing governance and controls. Like Diageo, Lion's stated aim is to identify opportunities to drive improvements across its network of suppliers (Lion, 2013; Durrant, 2014).

Multi option approach

Frontrunners in sustainable supply chain management can also combine two or three of the above mentioned single approaches in order to achieve an even better environmental performance of the supply chain. Firstly, a food and beverage producer can change or develop new product recipes in order to avoid the use of unsustainable ingredients. As seen above, an ingredient may be substituted with a similar one or completely removed. Secondly, for the ingredients and products needed, food and beverage manufacturers can use rules, certifications, standards, ecolabels or the results of sustainability assessments to guide the purchasing strategies. Finally, for the suppliers identified, food and beverage manufacturers can work in cooperation in order to improve their environmental performance.

For instance, in the case of **Lebensbaum** (organic tea, spices and coffee producer), an integrated supply chain management and vendor rating system has been implemented. The approach aims at sustainable procurement of products, ensuring their quality, and also includes sustainable long-term partnerships with suppliers improving their environmental performance.

The system integrates both suppliers of crops and packaging material and sets binding and development oriented environmental and social criteria.

The system comprises:

- a binding Code of Conduct for all suppliers,
- a request for external certification of the products according to certain available standards,
- a regular detailed survey of the management standards and practices applied by suppliers,
- a vendor rating system,
- a monitoring and auditing system,
- cooperation with suppliers for improving their environmental performance.

At all stages four dimensions are integrated: quality, reliability, environmental and social performance. The system ensures 100% procurement from suppliers meeting the sustainability requirements of Lebensbaum and that 100% of crops are sourced from organic farming. In addition, the system continuously improves the relations with suppliers through long-term cooperation and specific social and environmental development targets (Lebensbaum, 2015 pers. comm.).

Sustainable water sourcing

Different considerations on sustainable sourcing of ingredients can be borne in mind when dealing with water. Water can be the main ingredient for a number of companies in the food and beverage manufacturing sector, such as those producing drinks (e.g. beer, soft drinks). However, water has different characteristics compared to the traditional ingredients addressed so far in this best practice. In fact, water is usually supplied from nearby sources and different tools compared to those presented above are needed to ensure its sustainable sourcing. Companies in the food and beverage manufacturing sector requiring substantial amounts of water for their production processes can improve their environmental performance by establishing water stress mitigation risk measures for protecting the local ecosystems and communities. An assessment of the risks the water sources are encountering due to the production site should first be carried out. Afterwards, a water resource sustainability programme can be put in place, detailing specific actions that can be taken to support the preservation of the local water sources. Such measures can mainly include action to preserve the watershed level and can be carried out in cooperation with local administration and organisations. Companies can identify measures which could contribute to replenish the water they use thanks to, for example, rainwater harvesting, improving agricultural water use efficiency (especially in developing countries), establishing state of the art waste water treatment plants, and protecting and restoring the natural environment in order to re-establish the natural water cycle.

[1] The manufacture of retailer 'own label' products is outside the scope of this best practice having already been covered in the 'Best Environmental Management Practice in the Retail Trade Sector' available at http://susproc.jrc.ec.europa.eu/activities/emas/documents/RetailTradeSector.pdf The focus here is on the manufacturers themselves who use their own influence to manage their supply chain, rather than being managed themselves by their own retailer customers.

Environmental benefits

The manufacturer **United Biscuits** cut the salt content by up to 60% and saturated fat by up to 80% in its 'McVitie's biscuits' brand. The reformulations yielded a 40% reduction in use of palm oil and reduced rainforest destruction while adding GBP 4 million (aproximately EUR 5 million) to sales value, with sales of biscuits up by more than 5% (Product Sustainability Forum, 2013b).

Unilever, achieves its stated target of ensuring that 100% of the agricultural raw materials it uses are 'sustainably sourced', by working closely with farmers, notably through the 'Knorr Sustainability Partnership Fund' which contributes funds towards complex sustainable agriculture projects that its suppliers would otherwise have been unable to tackle. Table 1 shows Unilever's progress towards this 100% target for a number of key raw materials.

Table 1: Unilever's progress on sustainable sourcing

Raw material	% sustainably sourced by end 2013
Palm Oil	100%
Paper/Board	62%
Soy	12-25%
Теа	53-83%
Fruit	25%
Veg	76%
Сосоа	70%
Sugar	49%
Sunflower Oil	23%
Rapeseed Oil	39%
Dairy	31%

Source: SAI Platform, 2013

Danone, is also working with suppliers to improve performance. In 2008, it launched its 'Nature' programme in France with the reduction of environmental impacts among its commitments. **Danone Dairy France** is now collaborating with 3,000 farmers to understand and improve their impacts on biodiversity and global warming. Part of work involves research into alternative feed for cows which aims to reduce methane emissions by up to 10% (Added Value, 2012).

In the UK, the oven potato chips manufacturer **McCain Foods** similarly works with its farmers to reduce the environmental impact providing continuous feedback to growers thus allowing them to target improvements. McCain Foods recently developed a new potato variety which cut irrigation needs from ten times per season to eight. In addition, the requirement for fertiliser and pesticides was reduced while improving yield (Stratos, 2013).

McCain Foods also collaborated with a competitor PepsiCo-Fritolay (who own the Walkers potato crisps brand) to improve the agricultural practices of potato suppliers using the 'Cool Farm Tool' (CFT) (Haverkort & Hillier, 2011). CFT is a spreadsheet computer programme originally developed for farmers by Unilever and the University of Aberdeen (CFT 2014) for calculating the amount of greenhouse gas generated in the production of one tonne of crop. By varying parameters, users of the tool can understand the best ways to cut emissions. The tool was also used by the American manufacturer **Heinz** to target tomato procurement from 270,000 acres in California. CFT estimated average on-farm emissions at 23kg CO₂eq per US short ton. The tool identified that increasing adoption of both reduced tillage and cover crops had the highest reduction potential – these measures were deemed feasible in the Californian context, and have since been adopted (Heinz, 2012).

Nestlé has worked with farmers and government officials to fund training and support for new water technologies to reduce the impact of raw materials, and a programme involving new technology to decrease water consumption has produced dramatic results. Coffee suppliers just a few years ago used an average of 40 litres of water for each kilogram of coffee produced. Now that ratio is down to 3-5 litres of water per kilogram of finished coffee, a saving of almost 300,000 cubic metres of water annually (Sustainable brands 2013).

In 2009, **Innocent Drinks** undertook a project to identify how climate change would impact on the growing of the fruit they use for their smoothies. Subsequent trials commenced in 2010 to identify the farming practices that would help mango trees in India adjust to the changed climate. The initial results at the end of the first harvest season showed (Innocent 2013):

- A reduction of 50% in agrochemical use;
- 25% to 50% greater fruit retention and also a slightly larger fruit size

Finally, implementing measures which allow increased water sourcing sustainability improves the levels of watersheds and reduces water stress to natural environments.

Side effects

Marks and Spencer (M&S 2013) reports that:

'All social and economic needs as well as environmental impacts have to be considered as falling within the scope of sustainable food production. This should also include consideration of the benefits and disadvantages resulting from different production systems such as organic, genetic modification, high animal welfare regimes and intensive agriculture and livestock farming'

Switching to apparently more sustainable ingredients can potentially have negative effects. For instance, alternatives to palm oil such as soya and rapeseed oil may entail more intensive land use (Balch, 2013)

Applicability

Green procurement

There are almost no limitations to the implementation of green procurement principles by food and beverage manufacturers. In practice, however, especially when green procurement relies on existing labels or certification scheme, the availability of sufficient amount of the ingredient to be procured on the market and the price differential should be attentively studied.

Adapting recipes to remove unsustainable ingredients

The specific product manufactured will govern whether or not ingredients can be removed or recipes adapted. For example, in the wine industry there is little leeway to change basic ingredients such as the type of grape used due to regulation, standards and customer expectations, but scope may exist to vary certain 'processing aids and additives', such as those for removing cloudiness (Wine and Spirits Federation, 2014 pers. comm.)

Improving the performance of existing suppliers

A number of situations exist where manufacturers may be unable to influence the performance of their suppliers. The main barrier may simply be a lack of influence in the relationship. This is especially true for small and medium-sized manufacturers who procure raw materials from much larger suppliers; in such cases the latter suppliers may choose to resist or ignore calls from these smaller customers to improve performance. Similarly, if there is only one supplier for a specific and vital ingredient in a recipe, the purchaser may have little power to change the supplier's performance.

A different problem is encountered in the purchase of ingredients across lengthy or complex globalised supply chains. A good example is procurement of fish and other seafood from Asia. The fish may have been netted illegally, in a marine reserve, for example, by a small vessel, perhaps loaded onto larger ships where it is mixed in with other fish before being landed at port and further mixed, before finally being transported to a European manufacturer. In such situations, it is impossible for the manufacturer to trace the supply chain in order to identify who originally netted the fish, let alone influence the method of capture.

A final important consideration is the availability of resources in the broad sense. Even where a supplier is receptive to change, both the manufacturer and supplier may need to invest significant time and money in improving environmental performance. Not only may complex and expensive environmental assessments be needed but the changes they simply, such as investment in new equipment, may be onerous and require technical expertise beyond the capability of either the manufacturer or supplier.

The foregoing discussion suggests that this approach to sustainable supply chain management is most likely to apply in the following situations:

- Short, simple supply chains
- A large manufacturer and a smaller, more receptive, supplier one or both of which have sufficient financial and/or technical resources

Sustainable water sourcing

Measures to improve water sourcing sustainability are applicable to companies in the food and beverage manufacturing sector requiring substantial amounts of water for their production processes. Sometimes companies of limited size may encounter difficulties in engaging with local administrations and organisations in order to cooperate on any of the measures planned. However, a number of actions aimed at preserving the watershed, which can be carried out without their support, are also possible.

Economics

Illy reports that the investment to monitor and provide the green coffee supply chain with the specific support activities cost EUR 3.2 million over the three years from 2011 to 2013.

As discussed above, a new lower saturated fat and salt reformulation boosted sales of the McVitie's biscuits brand by more than 5% adding GBP 4million (aproximately EUR 5million) to its sales value, although **United Biscuits** invested over GBP 14 million in the project (Product Sustainability Forum, 2013b).

As the **Danone Dairy France** example demonstrates, the substantial investment of time and resources in working closer with suppliers can pay off financially with boosted sales (Added Value, 2012), although a crucial success factor was that the initiative was communicated clearly to customers.

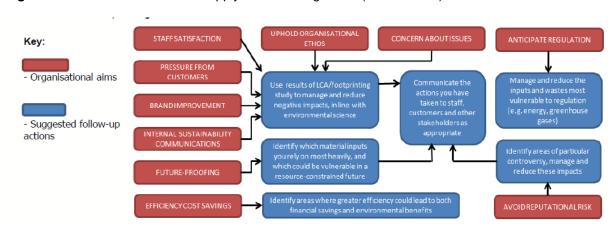
Driving forces for implementation

Consumer pressure is becoming a significant driver for sustainable procurement. For example, the Ministry of Economic Affairs (2014) in the Netherlands reports that Dutch consumers are becoming more environmentally conscious with sales of food produced in an environmentally friendly way rising by 10 % in 2013. The sales of sustainable seafood and eggs are

especially on the increase with one in every three eggs or seafood products having a certification label on pack.

Best practice on environmental sustainability assessment, included a flow chart developed by WRAP identifying the key drivers for carrying out an assessment. This is worth reproducing here (Figure 2) as the motivating factors for sustainable supply chain management – indicated by the red 'organisational aims' – are, arguably, identical. The actions taken - the blue 'suggested follow-up actions' – can equally be applied to suppliers' operations so as to address unsustainable practices.

Figure 2: Drivers for sustainable supply chain management (WRAP 2013)



The relative importance of drivers will vary with the manufacturer but frontrunners will be attentive to, and seek to address, *all* of these imperatives. For the largest companies, 'future proofing' is a particular concern. Unilever, for example, purchases 12% of the world's black tea supply and the continuing prosperity of its tea business depends on ensuring the future stability of this resource (Stratos, 2013).

There may be other driving factors too. For instance, the reformulation of the McVitie's brand by **United Biscuits** was initially driven by health rather than environmental concerns (Product Sustainability Forum, 2013b). While for **McCain Foods** 'improved yield' was a key benefit of close cooperation with potato growers (Stratos, 2013) which, in addition to reducing environmental impacts per unit of product (e.g. the use of pesticides, fertilisers, water, etc.) also saves costs.

Productivity gains also drove, or at least were an added benefit of, **Danone Dairy France**'s 'Nature' initiative. By working with suppliers to improve environmental performance through 'diagnostic audits', the manufacturer could improve the farmers' quality, productivity and competitiveness. Furthermore, Nature, which was accompanied by a targeted publicity drive, 'achieved 17% awareness amongst Danone consumers and boosted image perceptions of the brand by 20% amongst those who remembered the campaign.' The Nature-branded yogurt product 'went from negative year on year sales to double-digit growth following the campaign' (Added Value, 2012).

Reference organisations

Examples of companies with advanced practices in the different areas of sustainable supply chain management addressed in this best practice are:

Green Procurement

- Danone
- Nestlé

Unilever

Removal of unsustainable ingredients

M&J Seafood

Improving performance of existing suppliers

- Barilla
- Danone
- Heinz
- Illycaffè
- Innocent
- Kellogg
- McCain
- Mondel?z international
- Nestlé

Sustainable sourcing of water

- Coca-Cola
- PepsiCo

Literature

- Added Value website. 2012. Danone's Recipe for Sustainable Innovation, January 11, 2012
- Available at: http://added-value.com/danones-recipe-for-sustainable-innovation/ Accessed September 2014
- Balch, O., 2013. Sustainable palm oil: how successful is RSPO certification? The Guardian. 4 July 2013. Available at: http://www.theguardian.com/sustainable-business/sustainable-palm-oil-successful-rspo-certification Accessed September 2014
- Bernard Matthews. 2012. Corporate Responsibility Actions And Commitments. Available at: http://www.bernardmatthews.com/business/includes/11024_BM_CSR_Doc_WEB.PDF Accessed September 2014
- CFT 2014. Cool Farm Tool. Available at: http://www.coolfarmtool.org/CoolFarmTool Accessed 7 November 2014
- Danone. 2013. Sustainability Report . Available at: http://www.danone.com/no_cache/en/publications/pdownload/8672/ Accessed 7 November 2014

- Diageo. 2014. Annual Report. Available at: http://www.diageo.com/Lists/Resources/Attachments/2316/2014%20Annual%20Report.pdf Accessed September 2014
- Durrant, C., 2014. Lion partners with Sedex to strengthen ethical sourcing standards. Sedex website. Published: August 26, 2014. Available at: http://www.sedexglobal.com/lion-partners-with-sedex-to-strengthen-ethical-sourcing-standards/ Accessed September 2014
- Emerald Insights 2013. Testing the theory of constraints in UK local food supply chains. Available at: http://www.emeraldinsight.com/doi/abs/10.1108/IJOPM-05-2011-0192 Accessed September 2014
- Food and Drink Federation UK, 2014. Personal communication.
- Haverkort, A. J., & Hillier, J. G., 2011. Cool Farm Tool Potato: Model Description and Performance of Four Production Systems. Potato Research, vol. 54, pp. 355–369. DOI 10.1007/s11540-011-9194-1. Available at: http://www.coolfarmtool.org/reports/CFTP_research_paper.pdf Accessed September 2014
- Heinz. 2012. Cool Farming Options, Heinz, Cool Farm Tool Assessment, California Field-grown tomatoes, February 2012. Available at: http://www.coolfarmtool.org/reports/Heinz_CFO_Report_UK_Feb_2012.pdf Accessed September 2014
- Illycaffé 2014. The sustainable supply chain process. Available at: http://valuereport.illy.com/en/?page=the-sustainable-supply-chain-process Accessed September 2014
- Innocent Drinks 2013. Our approach to being sustainable. Available at: http://assets.innocentdrinks.co.uk/innocentsustainability.pdf Accessed September 2014
- Kellogg 2014. What we believe. Available at: http://www.kelloggs.co.uk/en_GB/whatwebelieve/sustainability.html Accessed September 2014
- Lebensbaum 2015. Personal communication on 11 March 2015.
- Lion. 2013. Lion's Sustainability Story. FY13 Sustainability Report. Available at: http://www.lionco.com/wp-content/uploads/2014/04/Lion_Report_2013_Full.pdf Accessed September 2014
- M&J Seafood 2013. M&J Case Study The National Trust. Available at: http://www.mjseafood.com/sustainability/case-studies/the-national-trust/
- M&S 2013. Marks and Spencer response to the European Commission consultation on sustainable food systems.
 Available at: http://corporate.marksandspencer.com/documents/government-consultations/2013-ec-consultation-on-sustainable-food.pdf Accessed September 2014
- Nestlé. 2013a. Creating Shared Value and meeting our commitments. Nestlé in society. Full report.

Available at: http://www.nestle.com/asset-library/documents/library/documents/corporate_social_responsibility/nestle-csv-full-report-2013-en.pdf Accessed September 2014

- Nestlé. 2013b. The Nestlé policy on environmental sustainability. Available at: http://www.nestle.com/asset-library/documents/library/documents/environmental_sustainability/nestl%C3%A9%20policy%20on%20environmental%20susAccessed September 2014
- Parliament.UK 2012. The sustainable food problem. Available at: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenvaud/879/87904.htm Accessed September 2014
- Parliament.UK 2012b. Improving accessibility. Available at: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmenvaud/879/87906.htm Accessed September 2014
- PepsiCo 2010. PepsiCo launches ground breaking pilot program to reduce carbon footprint of Tropicana. PepsiCo press release. March 18, 2010. Available at: http://www.pepsicotogo.com/Story/PepsiCo-Launches-Groundbreaking-Pilot-Program-to-Reduce-Carbon-Footprint-of-Trop03182010.aspx Accessed September 2014
- Premier Food (2012). Available at: http://www.premierfoods.co.uk/sustainability/buying-responsibly/our-approach/sugar/liquid-sugar/ Accessed September 2014

• Product Sustainability Forum. 2013a. Hotspots, opportunities & initiatives. Bananas. Version 1.1. July 2013. Available at: http://www.wrap.org.uk/sites/files/wrap/Bananas%20v1.1.pdf

Accessed September 2014

- Product Sustainability Forum. 2013b. Hotspots, opportunities & initiatives. Biscuits (sweet). Version 1.1. May 2013.
 Available at: http://www.wrap.org.uk/sites/files/wrap/Biscuits%20(sweet)%20v1.pdf Accessed September 2014
- SAI Platform. 2013. Sustainable Sourcing of Agricultural Raw Materials a Practitioner's Guide

Available at: http://www.bsr.org/files/fba/sustainable-sourcing-guide.pdf Accessed September 2014

- Sedex 2014. Available at: http://www.sedexglobal.com/ [Accessed 16 September 2014]
- Stones, M., 2012. FDF launches sustainable food ingredient sourcing guide. Food Manufacture (website).
- Available at: http://www.foodmanufacture.co.uk/Supply-Chain/FDF-launches-sustainable-food-ingredient-sourcing-guide-Accessed-September 2014
- Stratos. 2013. The Recipe For Sustainable Food. Available at: http://www.stratos-sts.com/wp-content/uploads/2013/04/2013_04_Recipe-For-Sustainble-Food.pdf Accessed September 2014
- Sustainable Brands 2013. Nestlé ramps up sustainable design efforts throughout brand portfolio. Available at: http://www.sustainablebrands.com/news_and_views/articles/nestl%C3%A9-ramps-sustainable-design-efforts-throughout-brand-portfolio Accessed September 2014
- The Ministry of Economic Affairs (2014). Dutch consumers are buying more sustainable food than before. Available at: http://www.asc-aqua.org/index.cfm?act=update.detail&uid=207&lng=1 [Accessed 16 September 2014]
- The Welsh Government 2012. Local sourcing. Available at: http://wales.gov.uk/topics/environmentcountryside/foodandfisheries/foodpolicyandstrategy/localsourcing/?lang=en
 Accessed September 2014
- Wine and Spirits Federation UK, 2014. Personal communication.