

New Zealand Trade & Enterprise Sustainability Benchmarking Project

Benchmarking in the supply chain



March 2010

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1. Context

Many New Zealand companies are exporting into a wide variety of international markets, each containing cultural differences that inherently influence availability of choice, criteria for purchasing-decisions, and ultimately what people will spend their money on. Increasingly, those decision-making criteria include a sustainability perspective, often seen as an extension to the 'quality' choice.¹ This also offers consumers an opportunity to be part of the solution in addressing intractable global issues such as climate change and water scarcity, as opposed to consumption being seen as part of the problem. Consumers can 'encourage innovation in businesses by demanding low-carbon products and services, and can bolster the efforts of politicians to take radical steps towards a lower carbon world.'²

But customers are becoming sophisticated about their purchasing habits and 'sustainability savvy' consumers have an increasing awareness of 'green wash' (used to describe the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service). Marketing claims without substantial attempts to put in place performance changing management practices and processes are insufficient. As a result, consumers are making the connection between brand and corporate reputation. Partly in response to this demand for corporate information, increased credibility and greater accountability, traceability in the supply chain (where a product or its components can be traced back to its origin) has become a critical differentiator in the market.

But excessive amounts of information are unwanted by consumers. Building trust through credible certification or third party assurance of some sort, has become a corporate necessity. An explosion in the use of eco-labels to guide consumer decisions is partly a response to this need for credibility. However for corporates, it makes choosing which label to use, a considerable difficulty.

Being able to recognise and anticipate these changing global trends allows companies to tailor their approach and be better positioned as fundamental changes in the marketplace occur. However, just back-engineering sustainability considerations into existing supply chain strategies will not achieve much more than incremental problem-solving.³

Corporate sustainability is a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments. Corporate sustainability leaders achieve long-term shareholder value by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully reducing and avoiding sustainability costs and risks.⁴

¹ The Hartman Group, *North American Sustainability Consumer Perceptions of New Zealand Imports*, Spring 2009

² The University of Manchester Sustainable Consumption Institute, *Consumers, business and climate change* October 2009

³ United Nations Environment Programme, *SustainAbility and the UN Global Compact, Unchaining value – innovative approaches to sustainable supply* 2008

⁴ http://www.sustainability-index.com/07_html/sustainability/corpsustainability.html

Purpose of the report

The purpose of this report is to present the high level findings of a sustainability benchmarking project recently undertaken for New Zealand Trade and Enterprise (NZTE). The project involved working with five New Zealand based companies and although individual reports were provided to each company, there are some overall conclusions that may prove useful to many other New Zealand based companies exporting to Europe and the United States (US).

The companies in the project were all at differing stages in their understanding of sustainability and the opportunities it presents, much like many other businesses in New Zealand. Therefore, the feedback in this report is focused on providing high level information that will appeal to a wide range of companies, but specific enough to give more support in specific areas (for example, the supply chain).

There are many drivers for companies to address sustainability. They will vary in specificity from company to company and industry sector to industry sector, but global trends in the marketplace mean that horizon scanning on the other side of the world will stand New Zealand based companies in good stead. Drivers generally include:

Reduced risk – broadening the definition of risk to an enterprise-wide view helps to encourage ‘outside-the-box’ thinking. Those companies that are scanning the horizon for early changes are more likely to anticipate risk, than those companies waiting for legislation to change the marketplace.

Reduced cost – it follows that by anticipating broader risks, a company is also likely to be more attuned to the possible costs of those risks. Likewise, a company with an innovative, opportunity focused culture will try to identify creative ways to cut costs. An example might be anticipating carbon emissions legislation, and having a carbon management strategy and programme in place to develop a response prior to legislation. Another example might be recognising changing consumer desires for sustainable products and fulfilling a need in the marketplace.

Identification of new business opportunities – innovation breeds creative solutions. Companies with a culture that fosters staff to think creatively, are more likely to develop new revenue streams that are aligned with corporate ethos. A great example of this is Interface’s ‘solar made’ synthetic carpet that was the output of a creative thinking process, despite the initial lack of a business case for installing a solar array.

Enhanced brand value – The building of a brand rests on more than marketing hype. Customers are increasingly connecting brand with corporate reputation.

Protection of reputation – likewise, brand value and by extension, reputation, can be significantly damaged by lack of attention to management practices that support the vision, ethos and corporate values that are often extolled by companies. Developing external credibility is key.

Better stakeholder relationships – engaging with those stakeholders who influence, or are influenced by your company, is business common sense. By

engaging (two way) as opposed to communicating (one way), the value of the conversations become deeper and more meaningful, ultimately building trust.

Higher stock ratings – a well-managed company is one that fully identifies potential risks, has management practices in place to mitigate risk and recognise opportunities, engages with a wide range of stakeholders to better understand its impacts and where value is fully articulated – all characteristics that are synonymous with companies that pay attention to sustainability.

Inclusion in sustainability indices – global markets reward companies that have a long-term focus. A pre-requisite for inclusion in the Dow Jones Sustainability Index is that a company has integrated sustainability throughout its business model and business practices.

Attracting and retaining the right kind of staff – increasingly, students and jobseekers are looking for companies that demonstrate a commitment to long term values, through corporate culture, business practices and processes, and the public face in the market.

This report presupposes that New Zealand companies recognise the need, are prepared to take advantage and grow their own business in response, and are keen to understand how they can differentiate themselves in a global market where competition is fierce and resources are growing more scarce. It does not try to prove the business case for sustainability, nor demonstrate the need for companies to address sustainability. It does, however, provide some high level suggestions for New Zealand companies to consider when integrating sustainability into their business model.

2. Sustainability benchmarking project - background

Since 2007 NZTE has been running a sustainability work programme. The aim of the programme has been to:

- Assist New Zealand businesses to understand how sustainability is changing the global business environment and its importance for international competitiveness; and
- Work strategically with companies to help them participate sustainably and profitably in overseas markets.

As part of this programme, NZTE recently commissioned PricewaterhouseCoopers (PwC) to undertake a sustainability benchmarking project with five New Zealand based companies. The key aims of this piece of work were to:

- Assist companies in understanding why their value chain impacts are important to end consumers;
- Identify critical sustainability impacts within their supply chains;
- Develop guidance that might prove useful in engaging with suppliers; and
- Understand how to integrate the value derived from these practices, into external communications.

By also comparing these companies against international examples of corporate best practice, New Zealand based companies have been provided with tailored business intelligence that is designed to enhance their particular offering.

Project methodology

The sustainability benchmarking project was undertaken with five New Zealand based companies that were selected because:

- They were already actively engaged in sustainability as part of their business strategy;
- They were operating in North America and/or Europe, the offshore markets that are the focus of the NZTE sustainability work programme;
- They were existing NZTE clients and were willing to work with NZTE on sustainability; and
- Specific agreed sustainability activities with the companies have the potential to add economic value for the businesses.

A meeting was set up with each company to discuss the wider benchmarking project, its aims and objectives, identify the possibilities for the individual pieces of work, and finally to narrow down the nature of the work required. The outcome of each of these meetings was an agreed brief that outlined exactly what work would be undertaken and what the nature of the output would be, in most cases a tailored report.

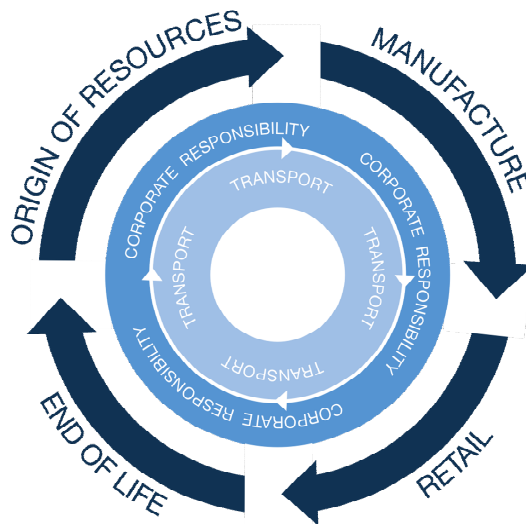
In general, the work looked at identifying:

- The high level stages of the supply chain and creating a framework for considering the different impacts of that supply chain;
- Social, environmental and economic impacts throughout the supply chain;
- How to influence supply chain partners to recognise and address sustainability;
- Elements of sustainable business practice relevant at the different stages;
- How these fit into a wider organisational approach;
- What should be considered when using these in the public space (such as branding, marketing and communications); and
- Benchmarking against international best practice examples.

These tasks have now been completed and each company has received an individualised report. However, the project work with the five companies has elicited a wealth of information that may be useful to a wider range of companies. This report is the culmination of that advice and gathers together key messages.

3. Supply chain framework

One of the first tasks was to make sense of the many different strands of this work. Because the majority of work was connected to the integration of sustainability into the supply chain, a framework for supply chain impacts was developed.



Although this graphic simplifies the supply chain, it provides a neat framework that is designed to summarise the four key stages in the life cycle of a product or service. Using this generic framework allows common themes to be explored across different industries, highlights some critical pitfalls to be avoided and articulates high level recommendations that will be useful to many types of companies planning to export. It also allows a deeper scrutiny by outlining some of the critical concepts that need to be addressed at each stage.

A high level summary of the four stages of the life cycle is outlined below:

Origin of resources

At a high level, this stage of the supply chain encapsulates the source materials, resources or raw ingredients that are used throughout the life cycle of the product, and how they are mined or grown.

For example, the main raw ingredient required for the manufacture of woollen carpet is wool. This stage therefore covers the on-farm practices that support the growing of that wool. For synthetic carpets this stage would cover the origin of the raw materials (petrochemicals) and the extraction from fossil fuels.

Manufacture

Converting the raw materials into a finished product may involve a range of manufacturing steps. For example, in the aquaculture industry, the processing of seafood requires different food production lines depending on the ultimate end product. In the woollen industry, wool needs to be cleaned and turned into yarn, undergoing a number of different mechanical steps.

Retail

This stage of the value chain is the connection of a product with the end user – be it business to consumer (B2C) or business to business (B2B). Considerations in this stage include:

- Nature of the product design and how it meets customer needs;
- Marketing and pricing of the product or service, including nature of the target customer;
- Branding of the product and how affinity is induced;
- How credibility and trust is developed; and
- Consumer use of the product.

End of Life

The final stage of the value chain encompasses the end of the product or service's useful life. In a more traditional business model, this stage is disconnected from the producer. However, with increasing responsibilities for materials throughout their life cycle, producers need to consider solutions at the end of a product's life and integrate these into their product design and overall business model. Some useful examples of this type of systems thinking are included throughout the report.

There are two additional, overarching aspects which have presence throughout the entire supply chain and are equally as important:

Corporate responsibility

This refers to the organisational approach to sustainability and to what extent it is embedded throughout the organisation's culture. There are a number of different elements that are summarised below:

Vision - an overarching vision that reaches throughout the company contributes drive and direction, acting as a rudder for staff and providing a sense of purpose. A sustainable organisation will have a vision based on the company's goals and values. This generates the cultural 'glue' that helps the organisation run as a well oiled machine, but also that holds the organisation together in tough times.

Strategy and governance - developing a solid business strategy that delivers on the business goals is the cornerstone of good business. Building a clear governance structure that will allow staff to deliver that strategy is critical. It provides direction on decision making, establishes management practices and identifies metrics for benchmarking performance.

Management practices - the development of systems to manage business processes - the inputs, practices and outputs - taking into account social and environmental impacts. In addition to the impacts of the business' management procedures, other management practices to be considered include:

- Procurement
- Health and safety
- Risk
- Investor relations
- Energy
- Waste
- Human resources and learning

- Public policy and regulatory affairs
- Social investment

Reporting - timely internal and public reporting on social, environmental and economic impacts and performance, to include measurement against agreed metrics. Comparability of metrics over a period of time allows continuous improvement.

Credibility - Third party assurance plays a major role in maintaining the credibility of a business. It is important to ensure that claims made regarding brands and through public reporting are substantiated both by sufficient information and independent certification. This can be achieved for a number of metrics, for example waste elimination, greenhouse gas inventory and materials used in manufacture.

Transport

Critical in most product and service orientated companies, the use of transportation to move goods to market or access clients to provide services, can have considerable impacts, particularly from a New Zealand market perspective. The concept of 'food miles' as understood by European and United States markets, is that distance from market has greater perceived environmental impacts than actual impacts. This is further discussed in the report.

4. Recommendations arising from the project

Although much of the work done in the sub-projects was tailored, with the detail being less relevant to other companies, there are high level recommendations that are relevant to many businesses. This section of the report is designed to put forward a series of general recommendations, using the supply chain framework, that will be relevant to New Zealand based companies exporting to international markets and using sustainability as a differentiating factor.

The specific material used for assessing impacts at each stage of the value chain has been included as an Appendix at the end of the report for those companies that may find it useful. This is in the form of a series of questions that can be used in the supply chain to not only map impact, but also try to influence it.

Corporate responsibility

Addressing sustainability within your organisation can be conducted in a number of different ways, but the most important thing to remember is that it is the start of a journey, rather than necessarily an outcome. This isn't a prescriptive list but covers some of the key items that will help instil a change in culture:

- Upskill your people – help them to develop an awareness of why you want to address sustainability. This might be in the form of reading a particular book (*Confessions of a radical industrialist* by Ray Anderson with Robin Hines is a good start), developing a learning programme for senior executives or asking a visionary leader to inspire your staff by coming to speak.

- Develop a corporate vision with key internal stakeholders. This helps you define sustainability appropriately to your business (not someone else's), and it develops a mindset. It should then cascade into business strategy.
- Create a governance structure that is appropriate to your business, bearing in mind that it will probably need to evolve as your vision becomes real. Who is going to lead it internally? How will you embed this into culture?
- Decide on the material impacts of your business – what are the big ticket items on your bottom line that influence sustainability? If you are an oil company, this may be climate change; if you are a pharmaceutical company it may be equitable access to medicines; a food producer, it could be distance to market. Brainstorm them with your team and then prioritise them. Address them in bite-sized chunks.
- Empower your staff to develop their own ideas to address the impacts you have identified. The best solutions often come from the shopfloor.
- Develop a set of corporate targets. This will help your staff to put in place management practices, begin to record data and measure performance. This provides you with non-financial information that can be used externally for investor groups, internally to stimulate competition and strategically to prove your business case. An example of this would be to develop your organisational carbon footprint.

Supply chain framework

In addition to thinking about your organisational approach, it is important to consider the impacts of your product or service. Traditional thinking would have your responsibility start when the product or ingredient comes into your sphere of control, and finish when it moves out of your control. An innovative way of understanding your supply chain, that may also unlock significant potential (including possible new revenue streams), is to use a systems thinking approach. This considers how parts or components of a system are interconnected and examines the linkages between them, realising that separating a component away from the others will change how it operates. By standing back and viewing the supply chain systemically or holistically, it allows big picture thinking and potentially identifying further leverage points.

Some of the practical actions to help you do this with your supply chain include:

- Map the critical stages of the supply chain to fully understand where they connect, even those stages not within your control. This provides you with an idea of where you fit into a wider system, and to appreciate your supply chain partners' priorities as well as your own.
- Identify who the critical supply chain partners are and evaluate the quality of your relationship with them. What level of influence do you exert and how could you alter that?
- Create an engagement plan where you develop a relationship with partners at every critical step in your supply chain. This may include not only supply chain partners, but also other stakeholders with business intelligence about the process, system and sustainability impacts, for example members of civil society, consumer groups or other project actors. The ultimate aim is to encourage all supply chain partners to think of themselves as part of a business ecosystem, where everybody is striving to generate a common product (despite the fact they may only be providing a component). This helps people to see it as a 'value chain', rather than a supply chain.

- Brainstorm internally to identify what you understand to be the critical environmental and social impacts across the value chain at all the different stages. Challenge your thinking by testing it with other stakeholder groups (possibly externally). This prepares you for the conversations that will be difficult – tackling the impacts with your supply chain partners.

Origin of resources

Every product traded has raw ingredients that originate from somewhere in the world. This may range from fossil fuels mined out of the earth in Indonesia, or wool grown on a sheep's back through to chemical ingredients required in medicines. Obtaining these resources or materials causes environmental and social impacts. However, the nature of the process undertaken to extract or grow that raw material also has wider impacts that apply to the entire life cycle of the product.

- List all raw ingredients used in product manufacture and their toxicity (including items such as cleaning products, lubricants, etc.).
- Fully assess social and environmental impacts of their creation. This may require further investigation to better understand the origin of some raw materials, for example a wide variety of product ingredients for shampoo are likely to originate from many different processes.
- List regulations that need to be considered in the manufacturing process (such as labour, environmental, Health & Safety, animal welfare, etc.). Include compliance as a baseline, however it is also wise to consider future legislative impact and the prospect of adopting a best practice approach to legislation (anticipating instead of reacting to it).
- Identify the ecological footprint (carbon, water and biodiversity) of your raw ingredients or materials. This lets you know what you are adding to the 'life cycle' of your product, and what you could influence through modified procurement practices. For example, if the choice between suppliers comes down to one that provides you with the data for your carbon footprint (so you don't have to do it) and another who doesn't, the decision becomes much easier.

Manufacturing

Manufacture of a product generally involves use of physical machinery and/or chemical processes. It is largely an energy intensive stage of the life cycle of a product, although not always. In many cases, it is also very water intensive. For a country such as New Zealand, one might perceive that water availability is less of an issue. However from a regional perspective, water users are in competition and from a global perspective, water scarcity is a major problem.

Measuring resource use is the first important step in being aware of the amounts being used and then in reducing it.

- Map out the different stages of your manufacturing process, identifying whether this occurs in-house or is outsourced. At the same time, work out the relationship you have with the supply chain partner and define what degree of influence you have over the relationship. This gives you a clear idea of what you are manufacturing, where you are and who is doing it for you. It also gives you business intelligence about how you can manipulate your supply chain to better

meet your overall outcomes (for example, consolidating the number of suppliers you deal with may make negotiating contracts easier, or obtaining footprint figures less challenging).

- Identify the key resources used and produced in the manufacturing process – energy, water, waste, chemicals, etc. Make an estimate of how much of each you are using/producing.
- Select a champion and empower them to put management practices in place which measure your resource use and waste produced. Complete a first year baseline so you can put a stake in the ground.
- Investigate the competition, either in your industry sector, or internationally (depending on your business and appetite for challenge) and find out what they are doing. Set targets to keep you motivated and assure your stakeholders you are doing something.
- Measure your performance and report on it – at least internally, if not externally.

Retail

Whether your business model is B2B or B2C, how you engage with your customer is pivotal to your sales success. There are many ways to engage with customers – visually (e.g. labels), verbally (e.g. demonstrations), through the media (e.g. TV adverts), etc. One method of engagement that is increasingly important, is through association – such as connection with your corporate reputation. If a customer does not trust you (the company) or your brand, they are very unlikely to conduct repeat purchases of your product. However, if you can develop a reputation that invokes trust and credibility, they are more likely to come back for more. Clearly, there is a whole industry that researches how customers make purchasing decisions, and how businesses can adapt their product to suit, but there are some fundamental steps to consider in order to tap into the growing demand for sustainability.

- Confirm your target audience, your core brand messages and the main avenues you are using to reinforce them. Is your brand linked with your corporate reputation or are you trying to develop separate brands that are disconnected? Corporate reputation can often best be leveraged to reinforce brand.
- Undertake market research in your chosen markets to ensure you are targeting the right type of customers with your product. Gain as much information about your target as possible. Put yourself in your target customers' shoes – understand their motivations, learn to anticipate what they want and adapt your product development process to match the pace of change.
- Once you have developed your marketing message, learn how to provide credibility. It might be through independent certification processes, third party assurance, or the use of eco-labels, but building credibility is key to retaining your reputation in the marketplace. Link back to your business practices and processes – building credibility is directly linked to measuring your impacts, reducing them and proving performance.
- Develop an engagement exercise - ask people's advice, maintain a connection and build trust. This helps to protect your reputation in the longer term, and provides you with business intelligence in the shorter term.

End of Life

In a traditional business model, manufacturing processes produce waste. The product itself also often has a finite length of time it can be used for. End of life therefore refers to the outputs of the manufacturing stage, be it product, or waste.

In a world where resources are increasingly constrained, thinking outside the box often elicits different ways of approaching a problem. Considering a product as part of a wider system is a good way of thinking about this. Systems thinking essentially considers a problem more comprehensively – standing back to see a broader picture and re-thinking how to deal with the complexity (a really good framework for considering sustainability through a systems thinking approach is The Natural Step).

Another approach to consider is the whole life cycle, where all the activities that go into making, selling, using, transporting and disposing of a product are mapped, evaluated and measured. Being better equipped with the relevant information leads to better decision-making.

- Consider mapping the life cycle of your product/one of your products to identify the full range of impacts. Increasingly, this is the way international markets are going, with companies asking detailed questions of their supply chain partners. Wal-Mart in the US recently announced the intention to count carbon emissions throughout the supply chain, an exercise that requires the co-operation of all partners. Tesco in the UK has integrated questions about packaging and organisational emissions into their supply chain engagement.
- When designing new products, engage a wider group of internal people to ensure that a broad perspective is applied, for example, include legal, sustainability, financial, business development and science as well as design. Equip them to think laterally by using systems thinking. Consider waste products as technical nutrients to close the loop of your life cycle.
- Develop a Research and Development programme which is designed to target efficiencies within product design.
- Report your progress so that customers know you are addressing the issues and consumers can see your efforts, so that you build credibility and brand loyalty.

Transportation

Particularly pertinent for New Zealand based companies, the movement of goods and services to market (wherever that may be in the world), is increasingly a decision-making factor for customers. Just like New Zealanders are encouraged to buy local products, other countries follow the same logic. This perception is potentially a major barrier to New Zealand-made products breaking into distant markets. Potentially, it is also a significant opportunity to differentiate.

- Once you have mapped the life cycle of your product(s), work out where you use transportation to move it, what mode you are using and how much it is costing you (both in terms of fuel used but also as part of your emissions inventory).
- Map who your transportation suppliers are and conduct an exercise to re-evaluate their organisational approach to sustainability. Opportunities to change the mode of transportation you are using may be limited, but you can impact your supply chain by requiring them to track mileage for your carbon footprint, for example.

- Integrate transport considerations into your product design stage.

5. Conclusion

The changing role of consumers has influenced the global corporate mindset. Greater scrutiny of corporate behaviour and the demand for more sustainable goods and services has encouraged companies to pay more attention to their practices and processes, and endeavour to meet, and continue meeting, that new demand. Evolving from a narrow approach to supply chain thinking, to one where all supply chain partners co-operate and see a value chain, is an important step for companies to make. Particularly for companies in New Zealand, this step requires consideration of a range of different trends that are still evolving, but in many cases well-established in other markets.

However, there are many examples of New Zealand based companies that have recognised the changing global environment and have instigated a corporate culture that relishes the challenge. Adopting a nimble approach and engaging a wider range of stakeholders is likely to pay dividends in the long run.

Appendix I

Vision and strategy

- How do you (and your supply chain partners) embrace the opportunity that sustainability represents?
- What is your organisational vision/mission and are your stakeholders aware of it?
- Do you have internally developed values that mean something to all staff?
- Have you practically translated the vision/mission into a strategy and are your staff clear on how they should strive to achieve it?
- What governance structure have you put in place to achieve those overall aims and is it proving successful?
- What learning do you have in place to equip your people with the right skills for their tasks?
- How would you describe the organisational culture you work in?
- Do staff feel as empowered as management think they are?
- Do you regularly meet to update everybody and reward progress?
- How do the board work together?
- Have you considered succession planning throughout the organisation?

Management practices

- What are the material social and environmental impacts across your supply chain?
- How do you try to influence your supply chain?
- Do you stipulate sustainability conditions in your procurement contracts with key suppliers?
- Do you provide advice and support to value chain partners?
- How have you achieved the setting of prices and margins to promote efficiency and profitability across the chain?
- How do you ensure adherence to laws and regulations in New Zealand?
- How do you ensure you and your supply chain partners meet international laws and regulations in other countries?
- How do you ensure your supply chain partners meet international laws and regulations?
- Do you have a H&S management programme? Do you audit suppliers for theirs?
- What is your definition of risk – is it enterprise-wide?
- How does the process recognise unanticipated risks (such as sustainability or reputation risks) that have impacted other companies?
- What kind of questions have investors or lenders been asking regarding your sustainable business practices (including for example your carbon footprint)?
- What process do you have in place to feed these kinds of questions into your strategic decision-making?
- Do you conduct a carbon emissions inventory?
- Is your inventory audited? What value does this present?
- How have you reduced your waste outputs as an organisation?
- What processes do you have in place to stimulate learning new skills?
- How do you empower your staff?
- How do you influence public policy?
- Do you have an anti-bribery policy/stance?
- How have you been involved in the community?
- What is your role in local wealth creation?

Reporting

- What data do you collect?
- Do you have a set of indicators that you can judge performance on?
- Does a life cycle analysis guide manufacturing and product design decisions?
- How does this impact your supply chain dynamics?
- Do you report non-financial information publicly? How?
- What tools do you use to prepare reports?

Credibility

- What constitutes credibility in your view?
- How do you source credibility?
- Does this provide you with value?
- How do you ensure that value built, is integrated and maintained in the end product? What control do you have over this?

Transport

- Has the supply chain been mapped?
- How many manufacturing sites are there?
- Has transport between the supply chain partners been mapped?
- What modes of transport are used? Has air transport been involved in the supply chain?
- What data is collected regarding transport impacts? Do you track transport distances and what are they? Has this been input into a life cycle analysis?
- How has this influenced supply chain decision-making?
- What changes have you made to your supply chain to reduce your transportation emissions?
- Is transport included in your organisational emissions inventory and your product emissions inventory?
- Who owns the transport used and are they committed to sustainability? (e.g. do they offset their emissions)

Manufacturing - general

- What aspect of the manufacturing process is in-house?
- What aspects of the manufacturing process are out-sourced?
- How many different suppliers are there in the value chain and who are they?
- What influence do you have over the value chain – are there existing relationships at each stage and how strong are they?
- What level of sustainability understanding is there in supply chain organisations?
- What level of appetite exists to better understand how it potentially impacts their business model?
- Where are the manufacturing facilities geographically located across the supply chain, are they in countries where social and environmental standards are different?
- What targets are set to improve environmental and social impacts throughout the process?
- Is there evidence of performance improvement across these parameters?
- Is there a code of conduct in place?
- What kind of audit procedures are undertaken? Which other firms are already requiring audits?
- Does the facility already engage with local NGOs, if so, who are they?
- What is the range of the risk assessment – is it enterprise-wide?
- What type of machinery is involved in the process, how old is the technology and does it need updating?

- Is the lifecycle of machinery reviewed before new machinery is purchased?
- Are the buildings in which the machinery is housed certified by the Green Building Council, LEED (US)⁵ or BREEAM (UK)⁶?
- What practices and policies are in place to reduce emissions in buildings?
- Can any of the manufacturing facilities produce their own electricity?
- What national and international social and environmental laws and regulations are met?
- Are social policies in place for labour and health and safety?
- Is there a feedback loop from manufacturing floor through to head office?
- How is product design scrutinised to re-engineer the process?

Manufacturing - detailed

- Are any metrics measured for the amount of inputs and outputs of the system? Have there been improvements?
- Has chemical use been mapped throughout the manufacturing process?
- What data exists for the quantity of chemical usage across the life cycle?
- What chemicals are used, are any biodegradable or environmentally friendly alternatives available?
- How are chemicals used and monitored and how can they be reduced?
- Is energy use mapped? How much energy is used and how can it be reduced?
- Can the plant generate any of its own energy?
- What process is in place to reduce the amount of water used?
- What waste is produced and how is it managed?
- How are impacts on the environment monitored and improved?
- Is any animal testing carried out?
- How are labour rights dealt with?
- What machinery is required for these processes?
- What is the lifecycle of the machinery? Is the cost of the machinery being balanced with least environmental impact option available?
- What lubricants and dyes are being used? Are non-toxic alternatives available?
- Is continual research and development being completed on ways to reduce the environmental impacts of the manufacturing stage?

Retail

- What are your relationship like with retail partners and designers, what level of influence and collaboration exists?
- To what extent do designers integrate both the qualities of the Zque brand and sustainability impacts into the design stage of product design?
- How is design innovation lead by consideration of materials and resources?
- Is there consideration of packaging in the ultimate design?
- How do retailers strengthen the relationship with their consumers by offering solutions to environmental and social problems? How do they do this?
- Are you aware of the different environmental marketing claims in different countries?
- Do you conform with guidance on environmental marketing claims in different countries?

⁵ LEED is the Leadership in Energy and Environmental Design which is a Green Building Rating System, developed by the U.S. Green Building Council (USGBC). LEED provides standards for environmentally sustainable design, construction and operation of buildings.

⁶ BREEAM is a voluntary Environmental Assessment Method rating for green buildings that was established in the UK by the BRE. BRE is the Building Research Establishment which carries out research, consultancy and testing for the construction and built environment sectors, funded by the building industry.

- Do you conduct consumer market surveys to help strengthen your brand? Do you have a target consumer and what do they respond to?
- What control do you have over the retail face of your brand?
- Have long term commitments with the retailer been entered into to achieve consistent fair prices for the growers

End of Life

- What % of your product is biodegradable?
- What % of your product and packaging is recyclable?
- What are the opportunities for downcycling?
- Have you completed a life cycle assessment of your product?
- What R&D programmes do you have in place to consider the life cycle and minimise the impacts?
- What is your definition of waste?
- How is it disposed of?
- What metrics do you have in place to monitor your performance?
- What information is marketed to consumers about the end of life of your product?

Appendix II

Restrictions

- This Report has been prepared solely for the purposes stated herein and should not be relied upon for any other purpose. We accept no liability to any party should it be used for any purpose other than that for which it was prepared.
- To the fullest extent permitted by law, PwC accepts no duty of care to any third party in connection with the provision of this Report and/or any related information or explanation (together, the "Information"). Accordingly, regardless of the form of action, whether in contract, tort (including without limitation, negligence) or otherwise, and to the extent permitted by applicable law, PwC accepts no liability of any kind to any third party and disclaims all responsibility for the consequences of any third party acting or refraining to act in reliance on the Information.
- We have not independently verified the accuracy of information provided to us, and have not conducted any form of audit in respect of the Company. Accordingly, we express no opinion on the reliability, accuracy, or completeness of the information provided to us and upon which we have relied.
- The statements and opinions expressed herein have been made in good faith, and on the basis that all information relied upon is true and accurate in all material respects, and not misleading by reason of omission or otherwise.
- The statements and opinions expressed in this report are based on information available as at the date of the report.
- We reserve the right, but will be under no obligation, to review or amend our Report, if any additional information, which was in existence on the date of this report was not brought to our attention, or subsequently comes to light.

This report is issued pursuant to the terms and conditions set out in our engagement letter and the Term.