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ENGAGING SMALL FIRMS IN SUSTAINABLE SUPPLY CHAINS: RESPONSIBLE SOURCING PRACTICES IN THE UK CONSTRUCTION INDUSTRY

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Abstract

Responsible sourcing (RS) provides a means to manage sustainability objectives by procuring materials with a certified provenance and is demonstrated typically through an organisation's procurement policy, via purchasing decisions and practices. In the UK, the government requires that 25% of construction products shall be from RS schemes by 2012; major contractors are raising this target to 100% by 2015 for major commodities such as aggregates, metals, steel, concrete, bricks and glass. There is a lack of research on industry preparedness for RS, so this paper reports on an industry survey and interviews that set out to explore the scope of RS, its drivers, benefits and challenges. It shows that material suppliers are leading the way, and although specifiers, clients and major contractors can drive change in the supply chain, there is a problem with a lack of participation from small and medium enterprises (SMEs) which warrants further research.

Keywords: Construction industry; building materials and products; Procurement; Projects; R&D; Responsible sourcing; Supply chain; Sustainability; SMEs.

1. INTRODUCTION

The context for this paper is the current status of industry and management practices for responsible sourcing (RS) of building products and materials in the UK construction industry. RS offers a novel way to improve the implementation and traceability of sustainability objectives throughout the project supply chain. The emergence of RS as a means to manage and ensure the attainment of sustainability objectives by procuring materials with a certified provenance offers potential for improved sustainable procurement practices and higher scores in established sustainability assessment tools (such as BREEAM and CEEQUAL). UK government initiatives for RS have changed the way that the construction materials supply chain is judged and a fast-increasing number of products is becoming certificated to new framework standards on responsible sourcing, but most of these are products manufactured by global materials suppliers and small and medium enterprises (SMEs) appear less able to attain the necessary certification which may leave them unable to compete and disadvantaged in the market place.

Construction projects are often subjected to stakeholder concerns about environmental impacts, labour and welfare conditions, bribery and corruption, so there is an opportunity to address these problems through sourcing products and materials responsibly. Although there is no one single definition for RS of construction products, it refers to the management of sustainability issues associated with materials in the construction supply chain, often from an ethical perspective. This paper reports new results on the current state of RS practices in the UK construction industry, with a particular focus on SMEs.

The aim of the research (undertaken via a survey and interview programme, mainly composed of contractors and manufacturers), was to contribute to the scant evidence base on RS in construction by improving understanding of:

1. the current scope and definitions of RS;
2. drivers and benefits;
3. who takes responsibility for RS on projects;
4. the current state of RS assessment and certification; and,
5. the role of company size and adoption in small and medium enterprises (SMEs)

2. ABOUT RESPONSIBLE SOURCING

Use of the term ‘responsible sourcing’ (RS) is relatively new due to the recent governmental sustainability strategy: Strategy for Sustainable Construction (HM Government, 2008), which encourages construction industry to select responsibly sourced products. RS is demonstrated typically through an organisation’s procurement policy, via its purchasing decisions and practices, and addresses a range of environmental, economic and social considerations. It can be perceived as taking an ethical approach throughout the supply chain, but does not pertain only to social issues. Baumgartner (2011:785) confirms that ‘*Sustainable development (SD) has, in its foundation, normative ethical as well as practical aspects. Regardless of the context of a system, problem or approach, SD is about enhancing the possibilities for improvement in the quality of life for all people on the planet...*’ Such attitudes are now enshrined in standards, for example, BS ISO 26000 (2010) urges equal consideration of ecological, economic and social development goals, together with broader scale adoption of principles of social responsibility.

Taylor (2008) suggests that responsible sourcing demonstrates that an organisation or industry '*accepts a broader responsibility for its licence to operate, beyond profit-maximising activities*', thereby seeking to '*avoid damage to bottom line economic performance by improving procurement policy, labour practices and management of environmental impacts*'. His interpretation underpinned the development of the first framework standard for responsible sourcing, BES 6001 (2009), which is also discussed later, but importantly now defines the responsible sourcing of construction products as: '*a holistic approach to managing a product from the point at which a material is mined or harvested in its raw state through manufacture and processing, through use, re-use and recycling, until its final disposal as waste with no further value*'.

RS will affect procurement policy, supply chain management, product manufacture and specification practices, but will necessarily improve both accountability and traceability in the supply chain. New (2004:271) asserts that '*...the notion of supply chain ethics cannot be swept away... buyers in particular will share some responsibility for the actions of suppliers*'. Indeed, in other sectors (such as fashion, food and mining), companies and industry partnerships have already reacted to concerns about environmental degradation, child labour, unsafe practices, bribery and corruption by setting up ethical or voluntary codes of conduct. Specific examples include well-known voluntary, ethical trading initiatives such as Fair Trade and Rainforest Alliance for various consumer goods, plus certification schemes for materials such as the Forest Stewardship Council (FSC). Although Roberts (2003:168) warns that the success of ethical sourcing codes of conduct will depend on the number of links in the network, reputational vulnerability and the power of different members in the network, a more recent study of four supply chains found that codes of conduct can improve communication flows and reduce moral hazard problems (Ciliberti et al, 2011). There are also supplier data exchange and auditing schemes, such as Sedex (www.sedex.org.uk) and StringTogether (<https://stringtogether.com>), used by companies in the clothing industry to handle detailed information on the provenance of materials, products and services, and new reporting mechanisms, such as FTSE4Good, the Global Reporting Initiative, and SA8000 from Social Accountability International, (www.sa-intl.org), to report, audit and compare performance.

2.1 The need for research on responsible sourcing in construction

Currently, there is a genuine lack of a research agenda on RS (as explained in Glass, 2011 and Glass et al, 2011) and very small body of evidence about its current status in the construction industry, ostensibly based around literature on calls for ethical procurement (e.g. Mustow, 2006). Although certification schemes exist, there is no indication of current levels of knowledge and awareness, the majority of certificates are held by major global materials companies (such as Cemex and Lafarge that, by no coincidence, are completely vertically integrated from quarry to construction site), rather than SMEs and there is no indication of how companies can best engage with RS practices. Furthermore, the UK Contractors' Group has recently agreed to pursue a target of 100% of materials from RS schemes by 2015, which could have serious implications for all materials suppliers and Tier 2/3 sub-contractors. There is a need for research to establish the current status of RS and examine practices of companies who have attained certification to BES 6001, while giving due consideration to the impact of RS on the project supply chain. Furthermore, given that over 90% of the companies within the UK construction industry can be classified as SMEs, this study also considers RS through the lens of environmental and sustainability practices within small businesses. To give a sense of the more recent literature in this field, Battisti and Perry's (2011:182) study of

50 SMEs' environmental practices in New Zealand differentiated businesses on whether they viewed environmental sustainability as a 'cost burden', a 'business opportunity', a 'bottom line' or a 'responsibility' and found them to be generally driven either by compliance or a mindfulness of the environment. Cassells and Lewis (2011) found that SME manufacturers' attitudes towards environmental responsibility are highly influential on practices, but also established an expectation that regulation would drive change.

3. THE UK CONSTRUCTION INDUSTRY APPROACH

The '*Strategy for Sustainable Construction*' (HM Government, 2008) stated that, by 2012, 25% of products used in construction shall be from schemes recognised for responsible sourcing and asked for framework standards to be developed, which it described as '*...a documented set of criteria setting out the obligations of an organisation in managing the supply of construction products in accordance with a set of agreed principles of sustainability*'. Two such documents now exist:

- BES 6001 *Framework standard for the responsible sourcing of construction products v2* (BRE Global) details a series of organisational management, supply chain management and, environmental and social requirements; it covers:
 - Organisational management (responsible sourcing policy; legal compliance; quality management system; supplier management system)
 - Supply chain management requirements (Material traceability; environmental management systems; health and safety management systems)
 - Environmental and social requirements (greenhouse gas emissions; resource use; waste management; water extraction; life-cycle assessment; transport impacts; employment and skills; local communities)

For each item, it sets out specific criteria against which achievement can be scored; there is a threshold level of achievement which acts as a minimum standard and four levels of performance (see <http://www.greenbooklive.com/search/scheme.jsp?id=153> for a list of certified products).

- BS 8902 *Responsible sourcing sector certification schemes for construction products – Specification* (BSI, 2009), sought to create a 'standard for standards', defining responsible sourcing as 'management of sustainable development in the provision or procurement of a material or product'. This is a more straightforward document and contains a useful list of headings or issues that should be addressed in any responsible sourcing scheme, covering similar ground to BES 6001, above.

A responsible sourcing scheme enables individual manufacturers to gain accreditation for their products to a 'standard framework' for a particular product/material group (i.e. concrete, timber etc)¹. The manufacturer is then able to promote specific products as 'responsibly sourced', based on its achievement on the rating system used (e.g. 'Good', 'Very Good' etc).

¹ To attain this status, the manufacturer would need to seek accreditation from an approved body to carry out the approval process, such as an auditor or other company certified to UKAS. The cost of certification might be around £2-5,000, per product line, but if other management standards such as ISO 9001 or ISO 14001 needed to be attained to achieve an RS certificate, then the total cost to the manufacturer could run into tens of thousands of pounds. The manufacturer may then seek to recoup the cost by putting a premium on the newly-certified material (thereby promoting as a higher value brand) or by simply absorbing the cost within the business so as not to disadvantage the RS product in the marketplace and place it on a par with non-RS products. To date, the majority of companies have taken the latter approach.

This score can be used in established sustainability assessment tools, e.g. the Building Research Establishment Environmental Assessment Method (BREEAM, see www.breeam.org) and the Code for Sustainable Homes (CSH, see http://www.planningportal.gov.uk/uploads/code_for_sust_homes.pdf). CEEQUAL, the civil engineering environmental quality scheme, also makes specific reference to materials from responsible sourcing schemes in version 4 (section 8.3) (see www.ceequal.co.uk).

Furthermore, RS spans all three ‘triple bottom line’ aspects of sustainability, together with corporate responsibility, so a link is often made between RS and sustainable procurement, a term which carries significant weight in the construction industry, following publication of the ‘*Sustainable Procurement Action Plan*’ (DEFRA, 2007) which called for change in how the UK government estate, roads and the supply chain are procured to better address issues of low-carbon, water, waste and other sustainability objectives. Walker and Brammer (2009) define sustainable procurement as ‘*procurement that is consistent with the principles of sustainable development, such as ensuring a strong, healthy and just society, living within environmental limits, and promoting good governance*’. Although the notion of abiding by a set of principles clearly connects this with responsible sourcing, the terms are not interchangeable; rather, the responsible sourcing of construction products nests within an overall ethos of sustainable procurement. This is evidenced in BS 8903 *Principles and framework for procuring sustainably – Guide* (BSI, 2010), which cites responsible sourcing as an example of good practice in leadership and governance. However, Meehan and Bryde (2011:102) discuss the problem that purchasing from global supply chains poses for sustainable procurement, noting that: ‘*many supply chains transcend local and national boundaries, raising the possibility of inconsistency and conflict when making sourcing decisions*’. And in one of very few studies of this in respect of construction products, Mustow (2006:19) concludes that ‘*construction industry purchasers have only a limited amount of information to determine the ethical credentials of the products they buy*’. He calls for sector bodies to develop robust schemes and for manufacturers to use product labelling to help the industry’s customers practice more ethical purchasing behaviours.

4. RESEARCH APPROACH

As a result of the situation described above, research is needed to improve understanding of the current scope and definitions of RS; drivers and benefits; who takes responsibility for RS on projects; the current state of RS assessment and certification; and the role of company size and adoption in small and medium enterprises (SMEs). The research reported in this paper has collected new data from industry respondents and identified some critical new research directions. It was collected as part of two related research projects:

APRES network on responsible sourcing: Loughborough University is leading an Engineering and Physical Sciences Research Council funded academic-industry network (Action programme on responsible sourcing, APRES) to develop a coordinated research agenda on responsible sourcing (see <http://apres.lboro.ac.uk>). The overarching aim is to react to the challenges of delivering responsible sourcing, by creating a community ‘centre’ for knowledge-sharing of responsible sourcing practices, forging new research ideas and relationships. It provides an open and impartial discussion forum for industry and its customers, academics, government, professional bodies, trade associations and standard-setting bodies. A core group of companies and leading universities has signed up to the APRES network (Lend Lease, Building Research Establishment, Responsible Solutions, URS

Scott Wilson, University of Bath, University of Nottingham, University of Warwick), together with over 50 Associate Members.

Ready for responsible sourcing – SME training package: The aim of this research project was to develop a new suite of training resources on the responsible sourcing of construction products; see www.responsible-sourcing.co.uk. It targeted both demand-side specifiers (i.e. architects, engineers and contractors) and supply-side manufacturing enterprises. It was funded by Sustainable Construction innovation Network (iNet), which is funded by East Midlands Development Agency (*emda*) and the European Regional Development Fund (ERDF); the project partners were Loughborough University, the University of Nottingham and Responsible Solutions.

This research study used qualitative and quantitative research methods. Based on the research aim, the project team brainstormed a list of possible topics that the industry survey and interview protocol might include. These included: “*Company profile*”, “*Corporate sustainability and RS*”, “*Manufacturing and specifying for RS*”. From this list, draft questionnaires were developed and piloted with ten industry experts and experienced researchers, then the answer formatting options to forms were further examined for fitness-for-purpose, clarity and variety.

- An online questionnaire survey was used to obtain a broader view of industry opinions on RS (see Appendix I for the list of questions used); the main benefits of which are its ability to present questions in a neat and uniform way, offer a gateway for data collection and perform basic analyses on the received data. A link to the survey and explanatory email was circulated to a variety of stakeholders, including: materials manufacturers, contractors and specifiers – including architects and engineers, sustainable construction experts and advisory bodies, trade associations (such as Construction Products Association, covering 25,000 companies), regional bodies with a construction and/or sustainability remit; SME networks (Federation of Master Builders, 11,000 members) and peer/industry networks such as Cecop (several hundred professional designers and contractor members). Hence, while all efforts were made to increase response levels, it is difficult to estimate an accurate response rate for statistical purposes, which is a limitation of the data presented in the following section. The data analysis for the survey was predominantly descriptive, although a cross-tab was used to examine and differentiate answers.
- An interview protocol was developed for use with a sample of construction product manufacturers and specifiers. This comprised a heading, instructions to the interviewer, key research questions; probes to support key questions; space for recording the interviewer’s comments; and space for the researcher records reflective notes, in addition to audio recording of the interviews. The questions can be found in the appendices II and III. The data were transcribed, prepared for analysis and organised categorically and chronologically, reviewed repeatedly and continually coded (each responder was allocated an identity number). The transcribed data were then sorted and categorised into a number of themes under headings, as per Miles and Huberman (1994).

Because many of the question themes were asked to both the survey and interview respondents, respondent statements (from both questionnaires survey and interviews) were categorised into themes and analysed. The results section which follows attempts to draw together some of the key descriptive statistics and major themes; it is followed by a discussion which relates our study to relevant literature.

5. RESULTS

A total of 51 organisations responded to the online survey, of which 17-19 of the responding companies could be classed as SMEs, based on the European Commission definition, including 3-5 micro-enterprises² (see Table 1). Estimates of the number of construction companies in the UK range from 175,000 – 200,000, with 99% of firms employing fewer than 60 people and 93% fewer than 14, according to the Federation of Master Builders. While this response rate may appear low, it indicates that small businesses are either unaware and wary of RS because they do not feel able to respond to questions about it. This is a clear limitation of the research as one of the objectives was to investigate the role of company size. That said, non-participation of small businesses in research studies is commonly reported, particularly in construction and those who did respond from SMEs were informed and able to comment meaningfully on the questions posed, so this is a fairly reliable sample, if not a completely representative one.

Table 1: Breakdown of survey responses by organisation size and turnover.

| Number of employees | Number of responses (%) | Company turnover | Number of responses (%) |
|---------------------|---|-----------------------|---|
| 1-10 | 3 (6.8%) | Up to £1.5m | 5 (11.6%) |
| 11-50 | 4 (9.1%) | £1.5m - £6.5m | 5 (11.6%) |
| 51-100 | 3 (6.8%) | £6.5m - £8.3m | 2 (4.7%) |
| 101-150 | 0 (0%) | £8.3m - £25m | 2 (4.7%) |
| 151-200 | 2 (4.5%) | £25m - £42m | 5 (11.6%) |
| 201-250 | 5 (11.4%) | More than £42m (€50m) | 24 (55.8%) – 12 had a turnover of £500-£1bn; two exceeded £7bn. |
| More than 250 | 27 (61.4%) - 13 of which employed 500-1000 and one employed over 50,000 | | |

The survey was complemented by 15 interviews with key specifiers (contractors and designers) and materials' manufacturers to discuss issues in more detail; the roles of all respondents are shown in Table 2. The majority of informants were senior level staff; over 20 were from contracting companies, 15 were based in material/product manufacturers and 12 were from specifiers.

Table 2: Respondents' roles within their organisations.

² **SME definition:** The European Commission adopted [Recommendation 2003/361/EC](#) on 6th May 2003, to take effect from 1st January 2005 (published in OJ L 124 of 20.5.2003, p.36).

- The Commission has a third category called Micro Enterprises. A micro enterprise has a headcount of less than 10, and a turnover or balance sheet total of not more than €2 million.
- A small enterprise has a headcount of less than 50, and a turnover or balance sheet total of not more than €10 million.
- A medium-sized enterprise has a headcount of less than 250 and a turnover of not more than €50 million or a balance sheet total of not more than €43 million.

| Position ³ | Number by method | |
|-----------------------------------|------------------|------------|
| | Survey | Interviews |
| Director/Manager/Responsible/Head | 28 | 13 |
| Supervisor/Leader/Trainer | 3 | - |
| Champion/Executive | 3 | - |
| Advisor | 2 | - |
| Designer/Engineer | 5 | - |
| Researcher/Scientist | 2 | 1 |
| Lecturer | 1 | - |
| Other | 1 | 1 |
| Unknown | 6 | - |
| Total number of informants | 66 | |

5.1 Understanding the scope of RS

The survey and interviews showed a range of understanding and awareness levels of RS in the UK construction industry, despite the freshness of the subject. Respondents understood RS to be part of sustainability, ethics, standards, quality and supply chain management, for example: one interviewee stated that RS meant: “*the product and user business are performing at high ethical, quality and safety standards for both business and supply chain*”, whereas others linked this with compliance, i.e.: “*sourcing the product and materials to meet with national and international standards... we look at environmental, social, ethical, health and safety issues related to manufacture and supply*”. Of the 36 survey respondents who opted to provide a definition, 18 cited sustainability and 11 mentioned supply chain management; several gave definitions which centred on procurement, for example: “*purchasing from a supplier that can demonstrate its products are manufactured ethically*”. Table 3 captures some of the responses and places them in context of relevant standards.

Table 3: Respondents’ comments on the scope of RS and relation to RS standards.

| Theme | | Respondents’ statements | Summary and alignment with BES 6001 |
|-----------------------|-------------|--|--|
| Sustainability | Environment | <i>Renewable sources; Sustainable products; Low transportation in CO2; Depleting natural resources; Production /transportation; Manner that minimise impact on the environment; Least impact on the environment; Environmental dimensions; Respect the proper definition of sustainability ; Waste recycling; Use and re-use until final disposal; Waste recycling; Responsibility for sourcing materials and products; Recycled and recyclable materials; Balanced societal/environmental impacts; Environmental criteria; Impact on the environment.</i> | These comments indicate the respondents’ showing good alignment in their answers with the relevant sections in BES 6001, i.e. Environmental and social requirements (greenhouse gas emissions; resource use; waste management; water extraction; life-cycle assessment; transport impacts; employment and skills; local communities) |

³ The respondents’ role descriptors included the terms: ‘environment/sustainability’ (11 people), ‘contracts/procurement (4 people) and ‘health/safety/quality’ (3); typical role names were ‘Director – Sustainability’, Sustainability Manager’.

| | | | |
|--|-----------|---|---|
| | Society | <i>Local sources; Locally sourced; Provide work for local community; Maximise return for the people involved; Opportunity of each category; Exploited individuals/resources; Enhance the social conditions of the supplying community; Ensure that people have not been exploited; Social dimension; Exploiting vulnerable people; Save environment and human; Positive impact on life; Social criteria.</i> | |
| | Economics | <i>Commercial dynamics; Price competitive; No limited categories of expenditure; Economical dimension; Economically and financially sound; Economical criteria.</i> | Economic issues are broadly absent from BES 6001, so here the respondents reflect the commercial drivers behind the standard, rather than criteria within it. |
| Supply chain management | | <i>Approach an organisation takes to manage procurement activities; Ordering only what you need; Procuring materials and products; Process of supply chain management; Point of origin and method of production; Understanding of whole supply chain; Product stewardship; Holistic approach to managing the social, environmental and economic impacts; Supply chain; Business requirements; Stage of the supply chain; Effective management; Appropriate environmental, legal, ethical quantity controls in place; Vetted and analysed products and services.</i> | The coverage of supply chain management requirements in BES 6001 (Material traceability; environmental management systems; health and safety management systems) are covered well by the respondents, but they also mention broader concepts such as product stewardship. |
| Ethics | | <i>Transparency; Fair trade; Responsible manner; Suppliers are treated ethically and with respect; Fair pay for workers; Ethical suppliers; Wages and working conditions; Ethos of supply chain management; Assurance; Principles; Guarantee; Being sustainable and ethical; Ethical, sustainable approach to procurement; Responsible manufacturer; Ethical and fair price; Ethically resourced; Products manufactured ethically sound.</i> | Ethics and human rights aspects are found within BES 6001 within the section on Organisational management (supplier management system), but the respondents seem to attribute a higher 'weighting' to such terms, based on the number of mentions found here. |
| Standards and quality assurance | | <i>Sustainable policies and standards; Aspiration laid down in the Code for Sustainable Homes; Labour standards; Meeting legislation; Standardisation and certification by 3rd party; Fully legally compliant, transparent fair and third party certified; Health and Safety.</i> | Again, these responses show the respondents are aware of the role of standards in achieving RS and the broader legislative and policy context within the industry. |

5.2 Examining the drivers and benefits

More than two-thirds of the interviewees stated that RS was highly important to their business. It was the manufacturers that used phrases such as “*extremely important*” and “*very important*”, whereas specifiers (i.e. contractors and designers) described RS as “*important*” or “*customer-led*”. More than half (54%) of the survey respondents believed that RS would be “*Of utmost importance*” in the next five years and 70% that RS was going to be beneficial to their core business activities. Manufacturers felt that “*having BES 6001 has made it easier to*

sell more even in a very difficult year”; it had also enhanced their reputation and confidence. 29 of the 51 survey respondents described the benefits of RS; for example, being at the forefront of the market, gaining competitive advantage, showing evidence of duty/CSR and helping towards continuous improvement. One respondent captured the benefits by saying: *“(RS) can improve the rigour of procurement processes, prompt a fuller consideration of whole-life costs, provide a basis for joint improvement activity with suppliers and build reputational capital.”* One of the interviewed manufacturers explained the background to this: *“If you take the main drivers of responsible sourcing, some of these came out from BRE documentation in terms of things like BREEAM, the Government’s Code for Sustainable Homes... (for which) you get credits for choosing products coming from RS schemes for the key elements of the building.”* Hence, the manufacturer gains a better corporate reputation and more sales from having certified products and the client/building owner attains a higher score in BREEAM, CSH and CEEQUAL assessment schemes by selecting such products. For example, one manufacturer had sought accreditation specifically to gain recognition for products in the Code for Sustainable Homes and increase sales, he said: *“We are very focused on having green credentials. Knowing that we had such a high percentage of recycled material we decided to try for the next level. Also we have a management team that is ready... if you don’t have that it wouldn’t have worked; it has to come from the top”*.

5.3 Taking responsibility for RS on a project

According to the survey respondents and interviewees, clients⁴ and specifiers⁵ shared responsibility for the selection of RS products on a project. Many felt that everyone had a role to play, e.g. one manufacturer said: *“everybody in the supply chain has a degree of responsibility... the client has responsibility in procurement because (and) the specifier’s responsibility is in specifying the right material.”* 53% of the survey respondents thought clients should take the lead, followed by 12% citing architects and 6% selecting contractors. Indeed, by probing such answers, most interviewees tended to converge on specifiers and/or clients as particularly important. There was a clear sense that some clients were more likely to take a leading role (as ‘early adopters’), whereas others would latterly be driven by cost, legislation or market forces. Contractors believed that architects and clients were driving the process, but were not always convinced that these parties fully understood what RS meant and in any case, their specification was unlikely to go much further beyond a basic product specification; it would often fall to the contractor to actually select a particular manufacturer and product line. One contractor explained: *“the Client or specifier has the most power to drive RS. We, as a main contractor, do influence that products used are responsibly sourced if we think they (client/designer) are not using products as they should be – we try to influence our clients to source responsibly where we can”*.

5.4 The current state of assessment and certification for RS

The survey respondents were asked about their awareness of RS credits within the three assessment schemes mentioned previously; 67% were aware of RS credits in BREEAM, 50% CSH and 33% CEEQUAL (although the latter could be due to a bias towards building contractors rather than civil engineering contractors in the sample). This indicates an important gap in specifiers’ knowledge of RS and points towards a key barrier to RS becoming more mainstreamed. Furthermore, the product certification standard (BES 6001)

⁴ In the construction industry, the term client refers to the end customer(s) for the building project which could be a public or private sector organisation, an owner-occupier or a property developer; hence, the term may or may not pertain to the end user of a building.

⁵ The term specifier typically refers to the building designer (i.e. architect, engineer), but may also apply to the main contractor, depending on whom is responsible for the selection of building materials/products.

was launched in 2008, but less than half of the survey respondents (44%) had heard of it and only eight had actually specified materials with a BES 6001 certificate. That said, more than half of them were actually aware that aggregates, cement, concrete products and reinforcement were available through RS schemes; one even thought that there should be a responsibly sourced option for all product types. Seven manufacturers with certification to BES 6001 were included in the interview programme to ensure a balanced response. They considered certification to be an important addition to the construction industry, but raised concerns about the cost and process of attaining the certificate and the fact that RS accounts for only a small percentage of credits available in schemes like BREEAM, CSH and CEEQUAL. That said, the interviewed manufacturers perceived BES 6001 as vital in ‘setting the bar’ at an appropriate level to ensure differentiation, saying that the standard has to remain meaningful. The interview findings also showed that, apart from ‘point scoring’, there are a broader range of driving forces for manufacturers to seek RS accreditation, some of which are internal and the remaining are external (see Table 4); these include corporate reputation, competitors, stakeholder and customer pressure.

Table 4: Drivers for seeking responsible sourcing accreditation.

| Drivers | Respondents’ statements | Summary |
|-----------------|---|---|
| Internal | <i>“to show what we can do; to be seen as leader in the market; ambition to be No. 1; to identify how to get better; framework for managing our procurement in certain aspects that is better for the business; our intention to increase sales; recognition of Code for Sustainable Homes; we are very focused on having green credentials; we have a management team that is ready to drive that... it has to come from the top.”</i> | The main drivers are: <ul style="list-style-type: none"> • Company ambition • Improving marketing messaging • Acknowledging and positioning against industry strategies |
| External | <i>“marketing and commercial advantages; to meet with strategies and standards; UK Strategy for Sustainable Construction; we hold standard certifications we decided to go for another one that gathers them all to answer all questions; market place pressure; stakeholder pressure; drive to remain competitive.”</i> | The main drivers are: <ul style="list-style-type: none"> • Perceived competitive advantage • Pressure from industry/ government strategies • Market/customer and/or peer pressure from within the sector |

There is clearly an increasing demand for RS-certified products in the marketplace: during the time of the research, the number of BES 6001 certificates issued rose from 10 to 43 by early 2011. Although many had been attained by large, multi-national materials companies, the most recent additions to the BES 6001 list (perhaps the start of the ‘early majority’) include small businesses and specialist contractors, indicating a broadening of the scope of the scheme. Several interviewees have also predicted that the shape of the construction materials supply chain will be fundamentally changed by RS within the next few years, suggesting that product companies without certification will be at risk of losing market share.

5.5 Company size and adoption in small and medium enterprises (SMEs)

Given that most BES 6001 certificates are held by major materials companies, we asked survey respondents and interviewees: “*What might be holding SMEs back from getting involved in responsible sourcing?*” and “*Do you think that large companies are more or less likely than SMEs to engage with the idea of responsible sourcing?*” One third of the survey respondents were SMEs, but of all the respondents, 75% thought that large companies were at an advantage compared to SMEs. Responses from the survey typically cited SME’s lack of understanding, poor management and that large companies tending to ‘pick up on PR-worthy schemes first’.

Some interviewees thought that SME’s may not know that BES 6001 exists or about its relationship with the Code for Sustainable Homes or BREEAM. They cited SMEs’ lack of involvement in trade associations and forums as a particular cause of their lack of access to information. By far the most commonly cited reason in the survey and interviews was that large manufacturing companies simply had far greater ‘resources’ than SMEs to pursue certification. They said: “*Large companies have more money to invest in these things, to have a system in place is not cheap and needs a lot of expense; bigger companies deal with bigger customers who care about RS; smaller companies deal with a lot of smaller customers who may not be aware*”. One manufacturer thought that: “*Resources (financial and human) could be a major driver for SMEs not to go for BES 6001*”. Another noted that: “*if they (SMEs) are on the small side, everybody has a niche, everybody has a job and normally there is a fear, if you stop you will lose ground*”.

The role of the senior manager was cited as a key driver for change in businesses which had embraced RS. One manufacturer explained his experiences: “*Our senior managers are obsessed about sustainability... but I once worked for a company where we could not even get (a leading certification body) in because the Managing Director would not allow us the time to stop, look at what we are doing and move us forward.*” Indeed, the affordability of RS certification for small manufacturers was raised by another interviewee, who noted that an assessment “*will cost at least £4,000 per site*”, but it was not just the auditor’s charges which were of concern. It is clear from the list of products certified to BES 6001 that the majority were made by large companies with certified management systems (such as ISO 9001 and ISO 14001) in place prior to seeking certification. One manufacturer explained:

“Initially larger companies are more likely to engage with the idea of Responsible Sourcing. BES 6001 certification is not simple or easy to obtain; having certified management systems, e.g. ISO 9001, ISO 14001 and ISO 18001, is almost a prerequisite. These are expensive to obtain and maintain and may deter SMEs from using BES 6001 as a route to demonstrating Responsible Sourcing.”

As well as implementing management systems, the interviewees named several other drivers which they felt would propel SMEs to consider and embed RS in their businesses; these included legislation, awareness, emotional drivers, management and incentives. Although legislation could help by expanding the market for RS products, it may also hinder by excluding slower-to-react companies such as SMEs. One specifier explained that: “*I don’t think that legislation is the right way, it may be a way but I don’t think it is the right one.*” Another interviewee thought that: “*... legislation or codes will just take competitiveness out of the market place.*” He went on to say that: “*There are so many different priority areas, responsible sourcing is one, CO₂ is another key one, resource use, waste... all of these areas are parts of the quite complex sustainability web.*” The notion of legislative pressure resulted in some interviewees calling for support and incentives in return;

“If (an SME) cannot afford it then somebody else should help; ...it could be the government for example. The government is pushing for sustainability, why can’t they help then? ...if we use the legislation from one side and incentives/help from the other side, people will be encouraged to go for responsible sourcing.”

The idea of raising awareness among SMEs also resulted in debate, while it was generally seen as necessary, some questioned who should take responsibility: *“...should it be the government, industry, academia? ...perhaps it should be everybody: clients, suppliers, but I think to get any of this going, you’ve got to raise awareness.”* Others believed that the only motivator to pursue certification would be a threat to ‘the bottom line’ caused by losing work as a result of not having the right credentials. But the notion of duty and doing the right thing caused several interviewees to refer to the need for emotionally challenging images and movies to raise awareness of the long-term harm that might be caused by not responsibly sourcing materials. One said: *“Some small companies who have the right leadership will be influenced by the emotional driver when they see a movie with scary images, but not all”*. Finally, one interviewee believed the key was in training, to get SMEs to: *“sit down and attend a training course...I’d like to see some sort of compliance which is more realistic for some of these guys.”*

The interviewees were then asked to provide advice to help SME manufacturers achieve RS certification and to help SME contractors to use only responsibly sourced materials; these can be categorised into four main areas and are shown in Table 5.

Table 5: Suggested actions that SMEs could take to embed RS in the business.

| Category | Actions |
|------------------------|--|
| Supply chain | <ul style="list-style-type: none"> • Check your supply chain • Look for responsibly sourced suppliers • Look at what your supply chain partners may need in the future |
| Management systems | <ul style="list-style-type: none"> • Review your management systems • Introduce management systems • Get ISO 14001, 18001, particularly for your most critical units and operations • Find a way of budgeting for it. |
| Standards | <ul style="list-style-type: none"> • Focus on things where you can score more • Get certification (or comparable verification), otherwise you will be left behind |
| Education and training | <ul style="list-style-type: none"> • Become a member of your trade association to get the right information • Make it your culture; it is not an add-on, you have to embrace it • Do it because you want to do it • Acquire knowledge, what does RS mean for you? • Get closer to an ethical or fair trade body |

Finally, there was a general belief that within the next five years SMEs would start considering responsible sourcing due to market and peer pressure, and at the time of writing two smaller businesses had recently attained BES 6001, so there is some evidence that the tide may be turning albeit very slowly.

6. DISCUSSION – CRITICAL RESEARCH DIRECTIONS

The results from the industry survey and interviews were incorporated in training materials for SMEs and launched in the UK at the national trade show ‘Ecobuild’ (March 2011), but the findings also enable us to identify a number of important areas that warrant further consideration and research effort, a few of which are outlined here and grounded in the extant literature.

6.1 Definition and participation

Based on the literature, Seuring and Muller (2008) make an important distinction between ‘supplier management for risk and performance’ and ‘supply chain management for sustainable products’; interestingly RS spans both such concepts because it includes supplier auditing, management systems and life-cycle assessment (although the latter is optional), but in fact the potential scope of RS is so broad that there is confusion. There did appear to be genuine concern among our respondents that the construction sector is yet to alight on a precise definition of what it means by RS. Descriptions oscillated around sustainability, supply chain management and ethics. One interviewee suggested that: “...*responsible sourcing is a sort of moral issue. It is about doing the right thing, having the visibility of issues that you have in your supply chain and actually how you manage those*”. This demonstrates a link with emerging literature on ethics and corporate responsibility in construction, such as Murray and Dainty (2009), Fewings (2009), Jones et al (2010) and Loosemore and Phua (2011). One of the survey respondents said RS was all about: “*showing how responsible we are... it is our duty to give something back and be advocates for the correct procurement of materials*”. The idea of duty was clearly a strong driver for some, but not enough for all, hence the extensive discussion of the role of legislation in our results. But legislation here may be a red herring; in fact, the market power of sustainability assessment schemes (such as BREEAM) mean that ‘credit chasing’ is commonplace among project teams, desperately seeking an extra few points to meet a higher threshold. Hence, market forces may be much more relevant, at least in the short-term.

6.2 The role of management systems and standards

Likewise, the emphasis on certificated management systems was a powerful theme in our research. Certainly the ‘early adopters’ of RS consisted in the main of large companies with integrated management systems and certification for quality, environmental and health and safety management already in place (e.g. ISO 14001, 2004); these features made the BES 6001 assessment process somewhat easier for them because they already had the right systems in place. The importance of management systems is echoed by Holton et al (2010) in their recent study of sustainability management in material manufacturing companies. Speaking about ISO 14001, Curkovic and Sroufe (2011:87) maintain that it gives ‘significant benefits internally and externally’ and in the right hands can be a tool for sustainability in the supply chain, but it does not ensure a level playing field. While management systems certainly act as a vital stepping stone towards better engagement with RS, improved capabilities and market reputation, there was a feeling among some interviewees that standards like BES 6001 represent a ‘tick box’ approach which belies the complexity of sustainable supply chains and the full scope of what can be entailed by RS; just like the ‘code mania’ reported by Thorsen and Jeppesen (2011), the phenomenon of being hit by a multitude of codes of conduct simultaneously.

But simply having BES 6001 does not guarantee that the material or product is responsibly sourced, it just provides a framework of certain criteria and is not comprehensive, customisable or values-driven. Moreover, it is restricted to major building products and elements; Appleby (2011:324) recognises that ‘there are no credits associated with the responsible sourcing of building services’ and what of plant, labour or overalls? It is pertinent that Linton et al (2007:1080) have also recognised the issue of scope when they reflected that: *‘(sustainable) supply chains must be explicitly extended to include by-products of the supply chain, to consider the entire life-cycle of the product’*.

6.3 Transparency and reporting

Interestingly, some of our respondents believed that transparency on performance was the common requirement for a product to be described as responsibly sourced. The notion that business should be more transparent and accountable is now firmly embedded in international practice. Lozano and Huisinigh (2011), for example, recognise this but call for better alignment in sustainability reporting standards and more consideration of what they term ‘inter-linked issues’. Commentators like GRI (2010:43) and Lueneberger and Goleman (2010:7) go further, respectively foreseeing ‘integrated storytelling’ and ‘radical transparency’ in years to come, which only serves to reinforce the potential future role for RS as an important aspect in construction product businesses’ communications with supply chain partners and customers. Ciliberti et al (2011) conclude that codes of conduct or other means to improve communication flows in supply chains are needed to overcome ‘information asymmetry’ between different actors. We also envisage greater and greater pressure on companies and projects to disclose information on environmental and social indicators; this opens up opportunities for IT support tools that go beyond data exchange and help companies communicate their RS performance with stakeholders in a live and interactive way. Furthermore, there is also scope for additional research to examine where construction materials companies and supply chains stand on corporate responsibility reporting (CR), for example, using Heikkurinen and Forsman-Hugg’s (2011) four-phase model of passive, reactive and proactive, entrepreneurial, and creative CR to create a preparedness model for RS certification.

6.4 An ongoing struggle to support SMEs

The feedback from our participants suggests that SMEs need support and incentives, but whether these should come from government or larger companies in the supply chain is not very clear. Curkovic and Sroufe (2011) also note the positive role played by business associations and groups, but there is more extensive evidence in sustainable purchasing literature that any coaching or mentoring should come from the larger or ‘focal’ company in the supply chain (van Bommel, 2011). Certainly this was the case for one of the interviewees, a large contractor, whose representative reported extensive outreach and support for Tier 2/3 sub-contractors and suppliers. But the lower tiers of the construction project supply chain have little understanding of RS and struggle to release resources to investigate it, thereby cementing their disadvantage in the market place. Indeed, in their study of global supply chains, Thorsen and Jeppesen (2011:33) found that SMEs were *‘hit harder by the consequences of responsible supply chain practices’* and limited by financial and human resource constraints; they also cite the problem of ‘code mania’ as mentioned previously. All of these observations are congruent with our findings in the UK; the majority of our respondents reported concerns about the cost or resources involved in seeking certification, whether this was for BES 6001 (or any of the platform ISO standards such as 9001 and 14001). Certainly the concept of an absence of ‘resource slack’ in SMEs is understood, but becomes even more entrenched when there is an attitude-action disconnect in the business

(difference between what is said and what is done), as reported by Lewis and Cassells (2011). Our work has not uncovered any evidence of this, but a study could be worthwhile among SME product manufacturers, for example.

In their seminal paper on sustainable supply chains, Linton et al (2007:1080) called for *'research into the operational implications of various policies and how business can integrate sustainability...'*. Our research has explored this through the lens of responsible sourcing with a focus on the position of SMEs, so we now move to comment on integration. Klassen and Fraser Johnson (2004) believe that sustainable supply chains need both strategic and tactical capabilities; this is difficult enough, but when RS is considered in terms of their model of environmental and supply chain orientation, then the situation is even more challenging for SMEs because of the partnering required in a material or product chain-of-custody. This may be why vertically-integrated major materials companies have experienced a relatively easy journey to RS certification, but a resource-based analysis would be worthwhile to corroborate this. That said, a recent paper by van Bommel (2011) proposes a new framework for analysing sustainability in supply networks. He notes that, regardless of size, a company's 'innovation power' will determine its strategy on the development of sustainable products. This leads us to suggest that the materials companies currently holding BES 6001 certificates might serve as useful case studies to explore whether or not company size or indeed 'innovation power' are determining factors in RS integration.

7. CONCLUSIONS AND RECOMMENDATIONS

Responsible sourcing is an effective means of ensuring that all three aspects of sustainability are managed in the construction supply chain, with particular respect to the procurement of materials. It is already embedded in commonly used sustainability assessment tools and the list of responsibly sourced materials is growing steadily. RS is part of sustainable procurement and helps supply chains to audit and improve transparency and traceability. This is an important development for the construction industry, because it rewards those who take their roles in the sustainable and ethical supply chain seriously and represents a major step towards better inclusion of sustainability parameters in decision-making on materials. RS also aligns broadly with the idea that *'Developing and implementing better systems that reduce wastefulness through improved quality of products, processes and systems is the key to a more sustainable society.'* (Lindsey, 2011:564). But RS is a complex issue composed of social, ethical and moral, and economical factors which requires the involvement of manufacturers, clients, contractors and designers. Our research has found that:

- While many people have heard of 'responsible sourcing' of construction products, there was a lack of awareness of certified products and inconsistent awareness of credits for responsible sourcing in BREEAM, the Code for Sustainable Homes and CEEQUAL. It was also clear that people did not fully appreciate which materials are available through certified schemes.
- There is an imbalance (asymmetry) in the supply chain at present with larger manufacturers and major contractors being well-informed and pro-active, and very few small companies participating in RS certification.
- There is no one party that should be solely responsible for implementing RS, as everyone is involved in the process. However, it is the clients and specifiers (i.e. contractors and designers) who are thought to have the most influence, due to their critical involvement in selecting construction products. It is ironic then that these

groups do appear, at least on the face of it, to have a lesser understanding of RS schemes.

- There are specific concerns about the supply chain in terms of procurement, management systems and transparency. It is pertinent that to attain RS certification, there must be a robust chain-of-custody in the supply chain and this remains a major hurdle for many manufacturers and suppliers (outside of the major global players), some of whom face the '*triple challenge of long supply chains, diffuse sources and powerful intermediaries*' (Roberts, 2003:168).

These findings form an important early part of the evidence base on RS in the construction supply chain. While the paper does not contradict earlier research on sustainable purchasing and the role of management systems in supporting change towards more sustainable practices, it also contributes to the literature around the continuing challenges faced by small businesses in competing in a marketplace that is becoming more accustomed to sustainability concepts. The outcomes from this work have also supported the development of the 'ReAdy' training package for small businesses, mentioned in section 4.

Importantly, the outcomes have to define the direction of future research on RS; although a number of areas for further work have already been mentioned, potential research directions focusing on RS within the SME domain might entail explorations of: 1) the nature and meaning of 'responsibility' in the construction supply-chain; 2) the project supply-chain relationship between major contractors and their SME suppliers to examine how best engagement can be improved; 3) accounting for RS – a balanced assessment of the costs of implementation versus the value benefits of so doing; and, 4) attitude-action disconnects in manufacturing SMEs towards RS of construction products. On a final note, Ketola (2010:334) states that '*Fair Business = Fair Supply (Trade) + Fair Production + Fair Sales*', but in the UK at the moment, the construction industry seems only to be able to offer a small fraction of the 'Fair Supply' needed to achieve the government and industry's fast-approaching responsible sourcing targets. We hope that the findings and observations set out in this paper will begin to describe a new research agenda to support this goal.

WORD COUNT = 7977.

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Appendix I: Online survey questions (and answer formats)

| A: COMPANY PROFILE | |
|--|--|
| 1. What is your company's primary activity? <i>(please select one option)</i> | <input type="checkbox"/> Architecture <input type="checkbox"/> Client <input type="checkbox"/> Engineering design <input type="checkbox"/> Manufacturing – construction products <input type="checkbox"/> Manufacturing – other <input type="checkbox"/> Contracting <input type="checkbox"/> Surveyors <input type="checkbox"/> Other (please state) |
| 2. What is your role in the company? <i>(please state)</i> | <i>Free text</i> |
| 3. Where is your company/office based? <i>(please select any that apply)</i> | <input type="checkbox"/> Derbyshire <input type="checkbox"/> Leicestershire <input type="checkbox"/> Lincolnshire <input type="checkbox"/> Northamptonshire <input type="checkbox"/> Nottinghamshire <input type="checkbox"/> Rutland <input type="checkbox"/> Other (please state) |
| 4. How many people are employed in your company? <i>(please select one option)</i> | <input type="checkbox"/> 1-10 <input type="checkbox"/> 11-50 <input type="checkbox"/> 51-100 <input type="checkbox"/> 101-150 <input type="checkbox"/> 151-200 <input type="checkbox"/> 201-250 <input type="checkbox"/> More than 250 (please state) |
| 5. What is the annual turnover of your company? <i>(please select one option)</i> | <input type="checkbox"/> Up to £1.5million <input type="checkbox"/> £1.5m – £6.5m <input type="checkbox"/> £6.5m – £8.3m <input type="checkbox"/> £8.3m – £25m <input type="checkbox"/> £26m – £42m <input type="checkbox"/> More than £42m (please state) |
| 6. What construction sectors does your company operate in/supply to? <i>(please tick any that apply)</i> | <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Road and rail <input type="checkbox"/> Power and utilities <input type="checkbox"/> Public sector <input type="checkbox"/> Other (please state) |
| 7. What regions does your company operate/supply to? <i>(please tick any that apply)</i> | <input type="checkbox"/> Local <input type="checkbox"/> Regional <input type="checkbox"/> National (UK) <input type="checkbox"/> European <input type="checkbox"/> International |
| B: RESPONSIBLE SOURCING AND SUSTAINABLE PROCUREMENT | |
| 1. Does your company have a sustainability policy? | <input type="checkbox"/> YES |

| | |
|---|---|
| | <input type="checkbox"/> NO |
| 2. Does your company have a corporate social responsibility (CSR) policy? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 3. Does your company have a sustainable procurement or ethical purchasing policy? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 4. Does your company have any of its activities certified against the following quality assurance standards? <i>(please tick all that apply)</i> | <input type="checkbox"/> ISO 9001 <input type="checkbox"/> Other (please state) |
| 5. Does your company have any of its activities certified against the following environmental standards? <i>(please tick all that apply)</i> | <input type="checkbox"/> BS8555: 2003 Environmental management system <input type="checkbox"/> EMAS (Eco-management and audit scheme) <input type="checkbox"/> ISO 14001: 2004 Environmental management standard <input type="checkbox"/> Other (please state) |
| 6. Does your company have any of its activities certified against the following health and safety standards? <i>(please tick all that apply)</i> | <input type="checkbox"/> OHSAS 18001 <input type="checkbox"/> Other (please state) |
| 7. Does your company have documented management systems for any of these standards? | |
| 8. To what extent are you familiar with the term 'responsible sourcing'? <i>(please tick one only)</i> | <input type="checkbox"/> Never heard of it <input type="checkbox"/> Not very familiar (just heard of it) <input type="checkbox"/> Slightly familiar with it <input type="checkbox"/> Very familiar with it <input type="checkbox"/> It's part of my day job |
| a. If you are familiar, in what context have you heard the term used? <i>(please tick all that apply)</i> | <input type="checkbox"/> Clothing and textile production <input type="checkbox"/> Construction products <input type="checkbox"/> Food and drink (e.g. FairTrade) <input type="checkbox"/> Timber supply chain (e.g. Forestry Stewardship Council) <input type="checkbox"/> Other (please state) |
| b. If you are familiar, what does 'responsible sourcing' mean to you? <i>(please state)</i> | Free text |
| C: RECOGNITION FOR RESPONSIBLE SOURCING | |
| 1. Are you aware that, as part of BREEAM (the Building Research Establishment Environmental Assessment Method), specifiers can get 'credits' for selecting goods from certified 'responsible sourcing schemes'? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 2. Are you aware that, as part of the Code for Sustainable Homes, specifiers can get 'credits' for selecting goods from certified 'responsible sourcing schemes'? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 3. Are you aware that, as part of CEEQUAL (the Civil Engineering Environmental Quality Awards scheme), specifiers can get 'credits' for selecting goods from certified 'responsible sourcing schemes'? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 4. Are you aware that the UK government and industry | <input type="checkbox"/> YES |

| | |
|---|--|
| have agreed that, by 2012, 25% of all construction products should be procured via responsible sourcing schemes? | <input type="checkbox"/> NO |
| a. Do you think this is an achievable target? | <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> MAYBE |
| b. Why is that? (please state) | (Free text) |
| D: STANDARDS FOR CONSTRUCTION PRODUCTS | |
| 1. Responsible sourcing of construction products can be defined as the integration of social, environmental and other factors into procurement decisions. | |
| a. Who do you think should take responsibility for this on a building project? (<i>please tick one option only</i>) | <input type="checkbox"/> Architects <input type="checkbox"/> Clients <input type="checkbox"/> Contractors <input type="checkbox"/> Engineers <input type="checkbox"/> Product suppliers/manufacturers <input type="checkbox"/> Trade associations <input type="checkbox"/> Other (please state) |
| b. Why is that? (<i>please state</i>) | Free text |
| 2. Have you heard of <i>BS 8902: 2009, Responsible sourcing of construction products: framework standard</i> ? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 3. Have you heard of <i>BES 6001 – the Framework Standard for Responsible Sourcing</i> ? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| a. If yes, have you ever supplied or specified materials that are certified to BES 6001? | <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> I DON'T KNOW |
| i. Please identify which materials from this list (<i>tick any that apply</i>). | <input type="checkbox"/> Aggregates <input type="checkbox"/> Asphalt <input type="checkbox"/> Cement (packed or bulk) <input type="checkbox"/> Clay bricks <input type="checkbox"/> Fly ash <input type="checkbox"/> Lightweight blocks <input type="checkbox"/> Mortars <input type="checkbox"/> Precast concrete (and dense blocks) <input type="checkbox"/> Ready-mixed concrete <input type="checkbox"/> Steel reinforcement <input type="checkbox"/> Other (please state) |
| b. If no, which of the following products do you think can be purchased through certified responsible sourcing schemes? (<i>tick any that apply</i>) | <input type="checkbox"/> Aggregates <input type="checkbox"/> Asphalt <input type="checkbox"/> Cement (packed or bulk) <input type="checkbox"/> Clay bricks <input type="checkbox"/> Fly ash <input type="checkbox"/> Lightweight blocks <input type="checkbox"/> Mortars <input type="checkbox"/> Precast concrete (and dense blocks) |

| | |
|--|--|
| | <input type="checkbox"/> Ready-mixed concrete <input type="checkbox"/> Steel reinforcement <input type="checkbox"/> Structural steel <input type="checkbox"/> Structural timber <input type="checkbox"/> Other (please state) |
| E: RESPONSIBLE SOURCING AND SMEs | |
| 1. To what extent do you think responsible sourcing is relevant to your company? <i>(please tick one only)</i> | <input type="checkbox"/> Not at all relevant <input type="checkbox"/> Slightly relevant <input type="checkbox"/> Very relevant <input type="checkbox"/> Completely relevant <input type="checkbox"/> Don't know |
| 2. To what extent do you think responsible sourcing is relevant to your customers? <i>(please tick one only)</i> | <input type="checkbox"/> Not at all relevant <input type="checkbox"/> Slightly relevant <input type="checkbox"/> Very relevant <input type="checkbox"/> Completely relevant <input type="checkbox"/> Don't know/not sure |
| 3. Within the business, responsible sourcing can include reporting on legal compliance, management systems, traceability and more specific aspects such as waste management, transport impacts and life-cycle assessment. Who do you think would typically take responsibility for this in your business? <i>(please tick one option only)</i> | <input type="checkbox"/> CEO/MD <input type="checkbox"/> Environmental Manager <input type="checkbox"/> Purchasing/Procurement Manager <input type="checkbox"/> Other (please state) |
| 4. In the future, how important do you imagine responsible sourcing will be? <i>(please tick one only)</i> | <input type="checkbox"/> Of no importance <input type="checkbox"/> Of some importance <input type="checkbox"/> Of utmost importance <input type="checkbox"/> Don't know/not sure |
| 5. Which of the following would be affected if responsible sourcing did become more widely adopted? <i>(please tick any that apply)</i> | <input type="checkbox"/> Clients' budgets <input type="checkbox"/> Construction costs <input type="checkbox"/> Design time <input type="checkbox"/> Procurement process <input type="checkbox"/> Products/materials availability <input type="checkbox"/> Other (please state) <input type="checkbox"/> Other (please state) |
| 6. What overall effect do you think responsible sourcing would have on your core business activity? <i>(please tick one only)</i> | <input type="checkbox"/> Positive effect <input type="checkbox"/> Negative effect <input type="checkbox"/> No difference at all <input type="checkbox"/> Don't know/not sure |
| a. Why is that? <i>(please state)</i> | Free text |
| 7. Do you think that large companies would be more or less likely than SMEs to engage with the idea of responsible sourcing? <i>(please tick one only)</i> | <input type="checkbox"/> Less likely <input type="checkbox"/> More likely <input type="checkbox"/> No different <input type="checkbox"/> Don't know/not sure |
| a. Why is that? <i>(please state)</i> | Free text |
| F: TRAINING NEEDS AND PREFERENCES | |

| | |
|--|--|
| 1. Do you think your company would benefit from specific training on responsible sourcing? | <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> MAYBE |
| 2. Which of the following training formats does your company use? <i>(Please tick any that apply).</i> | <input type="checkbox"/> A book or publication. <input type="checkbox"/> A presentation or conference away from your own premises <input type="checkbox"/> A recognised college course or other formal qualification <input type="checkbox"/> In-house delivery of training at your premises <input type="checkbox"/> Web-based or distance learning with downloadable guidance documents <input type="checkbox"/> Other (please state) |
| 3. Which of the following training formats would be most appropriate to learn more about responsible sourcing? <i>(Please tick any that apply).</i> | <input type="checkbox"/> A book or publication. <input type="checkbox"/> A presentation or conference away from your own premises <input type="checkbox"/> A recognised college course or other formal qualification <input type="checkbox"/> In-house delivery of training at your premises <input type="checkbox"/> Web-based or distance learning with downloadable guidance documents <input type="checkbox"/> Other (please state) |
| 4. If you were invited to a training workshop on responsible sourcing, which of these locations would you prefer?). | |
| 5. If you were invited to a training workshop on responsible sourcing, which of these durations would you prefer? <i>(Please rank from 1-6, where 1 is MOST preferable and 6 is LEAST preferable).</i> | <input type="checkbox"/> Less than half-day <input type="checkbox"/> Half-day (morning) <input type="checkbox"/> Half-day (afternoon) <input type="checkbox"/> One full-day <input type="checkbox"/> Two consecutive days <input type="checkbox"/> Two non-consecutive days |
| G: CLOSING QUESTIONS | |
| 1. Would you like to receive details of forthcoming training events on responsible sourcing for construction SMEs in the East Midlands? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| a. If yes, please provide your email address here: | Free text |
| 2. Would you like to receive a summary PDF of the results from this survey? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| a. If yes, please provide your email address here: | Free text |

Appendix II: Interview questions for construction product manufacturers

Section 1 : Company profile

1. What is your company's primary activity?
2. What is your role in the company?
3. Where is your company/office based?
4. How many people are employed in your company?
5. What is the annual turnover of your company?
6. What construction sectors does your company operate in/supply to?
7. What regions does your company operate/supply to?

Section 2 : Corporate sustainability, RS and procurement

1. Does your company have
 - a. A sustainability strategy/policy?
 - b. A corporate social responsibility (CSR) policy/strategy?
 - c. A sustainable procurement or ethical purchasing policy?
2. Does your company have any documented management systems for quality, environmental, and/or health and safety management?
3. Does your company have management systems certified against the following?
 - a. Quality assurance standards (if so which one/s)?
 - b. Environmental standards (if so which one/s)?
 - c. Health and safety standards (if so which one/s)?
4. What does 'responsible sourcing' mean to you?
5. How important is 'responsible sourcing' to your company?
6. Does your company make a link (formal or otherwise) between responsible sourcing and sustainable procurement?

Section 3 : Manufacturing for responsible sourcing

1. Who do you think should take overall responsibility for RS on a building construction or civil infrastructure project?
2. Is your company part of a sector scheme for RS?
 - a. If so, which one and what do you think of it?
3. When did your company first decide to seek product certification via BES 6001 (or alternate)?
 - a. What were the driving forces behind this decision (internal and external)?
 - b. Who took responsibility for BES 6001 in your company? Why?
4. Please describe the process from your point of view:
 - a. When did you achieve BES 6001 (or alternate)?
 - b. Did you achieve the level you expected/wanted?
 - c. What changes needed to be made? (e.g. staff, processes etc)
 - d. What issues did you have with it? What worked well? What didn't?
 - e. Has it made a difference to business? Are customers asking for it? Have there been any unintended benefits from it?
 - f. Looking back, is there anything you'd do differently now?
5. Why do you think all the companies currently holding BES 6001 are all major/MNCs and not SMEs?

Section 4 : Responsible Sourcing and SMEs

1. Do you think that large companies are more or less likely than SMEs to engage with the idea of responsible sourcing?
2. What do you think might be preventing or holding back SMEs from getting involved?
3. How might this be overcome?
4. In your supply chain, how would you characterise the involvement of SMEs in RS?
 - a. Suppliers?
 - b. Specifiers?
5. What would you specifically advise SMEs to do to improve their RS performance?
6. Do you think that SMEs would benefit from additional training on RS?
7. What might that include/involve?

Appendix III: Interview questions for specifiers

Section 1 : Company profile

1. What is your company's primary activity?
2. What is your role in the company?
3. Where is your company/office based?
4. How many people are employed in your company?
5. What is the annual turnover of your company?
6. What construction sectors does your company operate in/supply to?
7. What regions does your company operate/supply to?

Section 2 : Corporate sustainability, RS and procurement

1. Does your company have
 - a. A sustainability strategy/policy?
 - b. A corporate social responsibility (CSR) policy/strategy?
 - c. A sustainable procurement or ethical purchasing policy?
2. Does your company have any documented management systems for quality, environmental, and/or health and safety management?
3. Does your company have management systems certified against the following?
 - a. Quality assurance standards (if so which one/s)?
 - b. Environmental standards (if so which one/s)?
 - c. Health and safety standards (if so which one/s)?
4. What does 'responsible sourcing' mean to you?
5. How important is 'responsible sourcing' to your company?
6. Does your company make a link (formal or otherwise) between responsible sourcing and sustainable procurement?

Section 3 : Specifying for responsible sourcing

1. Who do you think should take overall responsibility for RS on a building construction or civil infrastructure project?
2. To what extent are your clients aware of responsible sourcing?
 - a. What concerns them in particular about RS?
 - b. Do they expect you to take the lead on it?
3. Have you lead/participated in any specific supply-chain/supplier certification schemes?
 - a. If so, which one/s?
 - b. What were the driving forces behind this?
4. What construction products do you think can be purchased through certified RS schemes? (please give generic products or manufacturers/brand names).
5. Have you ever specified materials certified to BES6001 (or alternate) on any projects?
 - a. If so, which one/s?
 - b. Was this for BREEAM, CEEQUAL or CfSH?
 - c. What were the driving forces behind this decision?