

Chapter 6

Reporting Corporate Sustainability: The Challenges of Organisational and Political Rhetoric



Christopher Gorse, John Sturges, Nafa Duwebi, and Mike Bates

The political voice of sustainability has broken. Presidential change in the USA has led to it hardening its tone, re-prioritising its stance and bringing a marked loss of climate change emphasis. The UK, another globally important economy, also amended its discourse making regulatory changes and dropping its commitment to zero-carbon buildings. The UK's impending departure from the European Union (BREXIT) brings future disconnection from EU directives, which had tied the country to reduced emission commitments.

Political rhetoric and regulatory change brings uncertainty to those industrial organisations that have aligned their strategies to take advantage of sustainable practice. These developments are too recent to predict the impact on the industry and corporate sustainability; nevertheless, the position that industry has adopted prior to these changes is interesting. Will those organisations already committed to sustainability continue maintaining a social or corporate interest or will the changes bring sustainable and economic uncertainty?

A review of annual reports of multinational corporations for years 2010–2012 was undertaken to understand the strategic positions that companies were taking with regard to sustainability. More recent reports and observations are then considered to provide insight into how organisations, both construction and nonconstruction, are reporting their current position. The review reflects on the corporate approaches conveyed to the outside world, the departures from their reports and the lack of certainty that current political changes are having on companies that have set their vision on sustainability investment. The review finds a divergence between the corporate sustainability strategies and the emerging rhetoric from some governments.

C. Gorse (✉) · J. Sturges · N. Duwebi
Leeds Beckett University, Leeds Sustainability Institute, Leeds, UK
e-mail: C.Gorse@leedsbeckett.ac.uk

M. Bates
PLProjects, Meltham, Holmfirth, UK

6.1 Sustainability and Industrial Policy

In recent years, companies have been encouraged to improve their alignment with sustainability and social values (International Labour Office 2011). Evidence suggests that where companies trade on the open market, there are benefits in adopting sustainable practice. For example, there are differences in stock market performance between companies that are classed as 'low sustainability' and those classed as 'high sustainability' (Eccles et al. 2011). Similarly, Adams et al. (2014) noted performance differences when evaluating companies on the Dow Jones Sustainability Index between 2008 and 2009 and showed that those with low scores on the SAM index had poorer stock market performance and were less able to see and find shareholder value-creation opportunities. Eccles et al. (2011) reported that the benefits of those classed as 'high sustainability' companies were more strongly associated with the business to client sectors where companies competed on the basis of 'brand' and 'human capital' or were involved in extracting large amounts of natural resource. Early work also showed that companies adopting sustainable practice and committing to more environmental and social responsibility gain brand and reputation advantage, plus economic benefits in stock market value. However, many companies are reluctant to invest in sustainability, awaiting possible new legislation to support their endeavours.

Recently, most companies could be divided into two groups: those voluntarily adopting environmental and social policies and those maintaining a traditional model of maximising profits and responding to environmental concern only when required to by law and regulation (Eccles et al. 2011). However, the general message from governments and international offices then was that adopting sustainable practice would be beneficial and that those organising themselves for sustainable practice would be better positioned for the new markets coming along (International Labour Office 2011).

Upstill-Goddard et al. (2015) found that when gaining BES 6001 (BRE 2009) certification for responsible sourcing of products, the construction companies did not appear to adopt a strategic approach to certification, generally sticking with their existing environmental management systems rather than adapting to achieve greater recognition within the scheme. This is surprising, considering that companies may be competitively judged against the criteria.

In practice, for many companies tied to an ethical supply chain, organisational sustainability is now an established prerequisite, with prequalification questionnaires requiring environmental criteria to be met (Oke and Aigbavboa 2017; Hamani and Al-Hajj 2015). However, research on evaluating the value of strong environmental positions taken by companies when competing for work has found that the emphasis on sustainability was not a highly placed deciding factor. When evaluating tendering processes and ranking prequalification criteria, sustainability was not identified as a main or sub-criterion for bid evaluation and thus was not one of the factors listed that influenced success (Puri and Tiwari 2014).

Recently, it has been argued that sustainability is so important that it can no longer be ignored. Sustainability is integral to operation and survival and within stronger industry sectors is classed as innovative, forward thinking and capable of changing current markets. In some markets, it can be disruptive, creating a new way of working that displaces traditional practice. Innovation for sustainability is considered to be part of the ‘sixth wave of innovation’ and is something in which companies must engage if they are to be accepted by their peers and society (Silva and De Serio 2016). Different approaches to business operation, manufacturing and construction that are efficient, lean and have less environmental impact have a higher social value and can provide the brand image that sustains business activity and creates new markets; nevertheless, some of the major industries have appeared reluctant to engage.

Construction and contracting have been found to lag behind other sectors in the adoption of innovative practice (Peansupap and Walker 2004; Lamprinidi and Ringland 2008). Furthermore, the Global Reporting Initiative found that reporting the practice of sustainability was not well-established in construction when compared to other sectors, such as financial services or the electric utilities (Lamprinidi and Ringland 2008).

This chapter therefore seeks to examine the practices of heavy construction organisations and compare them with a sample of other multinational organisations, to interpret and better understand the corporate position companies are taking and their emphasis on sustainability. The discussion will also raise the question of how companies following a policy of sustainability may be affected by government rhetoric that places a different emphasis on future markets.

6.2 General Remarks on Sustainability

True sustainability is more than mere environmental impact mitigation; the aim is to leave the world as far as possible as we found it, for future generations’ benefit. To do this, we must avoid polluting the atmosphere and the water supply, two items often taken for granted and which in the past have assumed to be ‘free’. Early industry went in for such ‘externalising’ of costs, where they took what they required and left any mess for others to clear up and to bear the expense involved. To be sustainable, we should clear up our own pollution and not impose these costs on others who may lack the means to pay. Our impact on the planet can either be positive and a benefit or comes with a burden and price that others have to address.

We should also be sparing in our use of resources; Dieter Helm’s words on natural and man-made capital are most apposite in this respect. Besides undesirable effluents and pollution, much manufacturing leads to the production of scrap or waste material as by-products. Improving processes to minimise scrap production

and the recycling of such scrap are obviously desirable. We should also, wherever possible, source our raw materials from those classes of materials that are:

- Renewable
- Recyclable
- Available in such large amounts that the effects of their depletion are minimal

To avoid placing undue strain on resources and energy, it is desirable to source materials and labour as close as possible to manufacturing activities. Products should be designed to facilitate disassembly after use to enable either re-engineering or recycling. Good design involves tailoring materials to applications where their properties are appropriate. For example, using polymers, which are chemically and thermodynamically very stable for transient and ephemeral uses, is a misuse of materials derived from oil, a non-renewable resource.

6.3 Definitions of Sustainability

Based on information provided by the Institute for Sustainable Development, the concept of sustainable development was firstly referred to in the book *Silent Spring* published in 1962 when Rachel Carson described the interactions between the environment, economy and well-being, and the book is regarded as a turning point in our understanding of sustainable development.

Almost 8 years later, debate turned to discussion of the ‘limits to growth’. The main question at that time centred on whether or not continuing economic growth would inevitably initiate dramatic environmental degradation and global societal breakdown. Reaching agreement on this subject was a complex task; however, following some years of debate and discussion, the resolution was reached that economic development could be sustained indefinitely but only if development is modified to take account of its ultimate dependence on the natural environment (Pezzey 1992a, b).

Although the essence of the concept of sustainable development is clear enough, its exact interpretation and definition has caused intense discussions. Ciegis (2004; 2008) suggests it is possible that the problem of terminology occurs in the concept’s dual nature, covering development as well as sustainability; we must also be commensurate that sustainability is a term that the human race coined for their benefit, even if the aim appears laudable to preserve the planet and its environment in a ‘natural state’. It is useful to attempt to understand the positions that are being taken when we refer to the term sustainability or sustainable development.

The literatures on sustainable development are mostly oriented towards separate sectors from which they are produced. It is worth noting that the concept of sustainable development is difficult to understand and define. Sustainability often has different meanings depending on the literature and the context in which it is used.

There are almost 50 definitions and circumscriptions of sustainability (Niels et al. 2005). A few examples are cited below:

World Bank (1987) Environment, growth and development. Development Committee Pamphlet 14, World Bank, Washington, DC

...satisfy the multiple criteria of sustainable growth, poverty alleviation, and sound environmental management.

...elevating concern about environmental matters...and developing the capacity to implement sound practices for environmental management...are [both] needed to reconcile, and, where appropriate, make trade-offs among the objectives of growth, poverty alleviation, and sound environmental management.

United Nations (2000). 'Cleaning Up Our Mining Act: A North-South Dialogue'

Sustainable development: a concept that implies the precautionary principle. A healthy and continued multi stakeholder consultation will go a long way towards ensuring sustainability.

O'Riordan and Yaeger (1994)

Sustainable development means adjusting economic growth to remain within bounds set by natural replenishable systems, subject to the scope for human ingenuity and adaptation via careful husbanding of critical resources and technological advance, coupled to the redistribution of resources and power in a manner that guarantees adequate conditions of liveability for all present and future generations.

United Nations Statistical Office (1992). 'SNA Draft Handbook on Integrated Environmental and Economic Accounting'

Sustainable development means that economic activities should only be extended as far as the level of maintenance of manmade and natural capital will permit. A narrower definition of sustainability excludes the substitution between natural and man-made assets and requires maintenance of the level of natural assets as well as manmade assets. A sustainable development seems to necessitate especially a sufficient water supply, a sufficient level of land quality (prevention of soil erosion), protection of existing ecosystems (e.g. the virgin tropical forests) and maintaining air and water quality (prevention of degradation by residuals). In these cases, the sustainability concept should not only imply constancy of the natural assets as a whole (with some possibility of substitution) but constancy of each type of natural asset (e.g. of the specific ecosystems).

Although, Pezzey (1992a, b) argues that sustainability is simply regarded by analysts and modellers as a requirement to keep the consumption above some subsistence minimum, most other definitions understand sustainability as providing an improvement, or at least maintaining, in the quality of human life, rather than just sustaining its existence. Digging deeper into the concept is necessary to progress towards clarity of a definition. Yet, the determination of the essence of 'sustainability' cannot be an easy task and a concept to address all cannot be rigidly defined. O'Riordan (1988) and others have pointed out that the term is not always used correctly, and so definitions have been provided to clarify the meanings used.

The best-known definition of sustainable development was that of Brundtland (1987), and this report gave wide currency to the concept. However, our modern notions of sustainability date from the early 1970s. The UN Conference on the Human Environment in Stockholm in 1972, which addressed pollution issues in the developed world, emphasised that the environment was a vital development issue,

while Third World countries were more concerned with poverty. The United Nations Environment Programme (UNEP) was created as a result of this conference.

Consequently, the concept of a 'sustainable society' first emerged in 1974 at an ecumenical study conference called by the World Council of Churches on Science and Technology for Human Development. The definition began by stating the conditions for social sustainability and the need for equity and democracy, rather than the more recent emphasis with environmental conditions. Interestingly, few people were aware of this work at the time, but it was the first time that concerns for global social and economic justice were given primary consideration. Previous conferences focused only on pollution and environmental issues and were perceived in the Third World as First World concerns and irrelevant to them. Only when the notion of equity and the social and economic dimensions were recognised could sustainability be seen as a truly international concern. So while the 1974 conference did not make a great initial impact, it was of primary importance and significance in the emergence of sustainability as we now understand it.

To further illustrate, the concept of 'sustainable development' surfaced in 1980 in the World Conservation Strategy published by the International Union for Conservation of Nature and Natural Resources. This document was written by a group of northern environmentalists and did not identify the political and economic conditions required to achieve sustainability. Because of these omissions, the document failed to place sustainable development firmly on the international agenda, and again, the document was seen as a First World luxury and not relevant to the Third World.

In 1983 the United Nations set up the World Commission on Environment and Development (WCED) under the Norwegian, Gro Harlem Brundtland. This commission produced the now famous report *Our Common Future* in 1987, which achieved two important things; it made clear that sustainability is about equity, both for current and future generations, and it gave sustainability international recognition and a high prominence.

The Brundtland Report drew together many important considerations that had previously been aired separately: the increase in population; the heavy demands likely to be placed on the Earth's resources of materials and energy, environmental impacts, etc.; and, most importantly, the need to change the direction of development towards achieving a more just and equitable treatment of every nation's needs while conserving resources for future generations' benefit. They called this 'sustainable development', famously defined as 'development which meets the needs of today without compromising the ability of future generations to meet their own needs'. The report addressed peoples of both the developed and developing worlds in saying that 'business as usual' was not a viable option, and because of this the report was universally accepted, the terms 'sustainability' and 'sustainable development' became common currency, and people have come to recognise its importance.

An important consequence of this was the so-called Earth Summit held by the United Nations in Rio de Janeiro in 1992. The objective was to turn Brundtland's broad aims into workable, sustainable policies by the governments of the world. The

Kyoto meeting followed in 1997, when the protocol on carbon emissions was drawn up and signed by some, but not all, nations. A second Earth Summit was held in New York in 2002, the 10th anniversary of the Rio meeting. These three conferences promised much, but delivered much less. They needed the co-operation of all major governments, and this did not happen. For example, the Kyoto Protocol was never signed by the USA or China, which saw a limit on carbon emissions as potentially damaging to their industries. Concerted universal action at government level has not been achieved, but work on measuring sustainability has continued in academia, in research institutes and in industry.

While Brundtland provided a comprehensible definition of sustainable development and raised its profile, the report offered no easy ways of measuring or achieving sustainable solutions to mankind's problems. However, over the 30 years since its publication, scientists, engineers, economists, sociologists and political thinkers have all worked on the problem. Recognition of the social and economic dimensions besides the environmental one led to the work of Elkington (1997) with his triple bottom line approach. Traditionally, economists considered the 'bottom line' in financial terms only, while Elkington made clear that there are social and environmental costs as well and that no sustainable solution could ignore them. The triple bottom line approach has been enshrined in most of the work done in the last 20 years on ways of measuring and assessing the sustainability of solutions to business, industrial and political problems. While international co-operation has been somewhat disappointing, methods of assessing sustainability have been developed. The implementation of the broad concepts set out by Brundtland has been thought through and developed in detail into forms that can be taken up by companies and organisations. In developing these assessment methods, it is not merely a matter of balancing the social, economic and environmental factors, but rather working out the details of a true synthesis. One example of this work is that of Epstein and Roy (2003) who identified the following nine principles for improving sustainable performance:

1. Ethics: organisations should establish, promote, monitor and maintain ethical standards in the way they deal with the organisation's stakeholders.
2. Governance: this is a commitment to manage all resources effectively, recognising the manager's duty to focus on the interests of the organisation's stakeholders.
3. Transparency: the organisation provides timely disclosure of information about its products, services and activities, thus permitting stakeholders to make informed decisions.
4. Business relationships: the organisation engages in fair-trading practices with suppliers, distributors and partners.
5. Financial return: the organisation compensates providers of capital with a competitive return on investment and protection of organisation's assets.
6. Community involvement/economic development: the organisation fosters a mutually beneficial relationship between the organisation and community in which it is sensitive to the culture, context and needs of the community.

7. Value of products and services: the organisation respects the needs, desires and rights of its customers and strives to provide the highest levels of product and service value.
8. Employment practices: the organisation engages in human resource management practices that promote personal and professional employee development, diversity and empowerment.
9. Protection of the environment: the organisation strives to protect and restore the environment and promote sustainable development with products, processes, services and other activities.

Another example is due to Silviu and Schipper (2012), who identified various key principles derived from the concepts of sustainability, as follows:

- Sustainability is about balancing or harmonising social, environmental and economic interests.
- Sustainability is about both long- and short-term considerations.
- Sustainability is about local and global orientation.
- Sustainability involves consuming income not capital.
- Sustainability involves transparency and accountability.
- Sustainability is about personal values and ethics.

6.4 A Brief History of Industrialisation, Sustainability and Governance

The term sustainability attained prominence with the publication of the Brundtland Report in 1987. Since then, various authors, including Elkington (1999), Dresner (2008), Caradonna (2014) and Washington (2015), have reviewed its development. In tracing the origins of the ideas that led to our present conception, we can go back to the sixteenth century. Five hundred years ago, probably the most versatile material we possessed was timber, as it was used for the construction of buildings, of ships, as fuel and as a reducing agent for the smelting of iron. The countries of Northern Europe had great forests, and supplies of timber were readily available. However, as societies developed and populations expanded, demand for timber also grew and the rate of consumption increased, to the point where people became alarmed that their great forest areas were disappearing. Forests are highly visible assets, and their loss was noticed. While the concept of sustainability had not yet emerged, it was recognised that conservation steps were required to preserve forests; otherwise they would be lost, perhaps forever. Responsible people knew that mature forests could take a century or more to regenerate, and because of this, the earliest writings and legislation for the protection of woodlands date from the sixteenth century. In England, parliament passed the Act for the Preservation of Woods (1543) (Moorhouse 2005). The opening words of the Act make this clear:

The King our Sovereign perceiving and right well knowing the great decay of timber and woods universally within this his realm of England to be such, that unless speedy remedy in that behalf be provided, there is great and manifest likelihood of scarcity and lack, as well of timber for building, making, repairing and maintaining of houses and ships, and also for fuel and firewood for the necessary relief of the whole commonality of this his said realm.

In Germany, the earliest writings on silviculture date from 1713 (von Carlowitz 1713). In Japan Tokugawa Ieyasu founded the Tokugawa Shogunate in 1603, effectively unifying Japan, ending decades of internecine warfare and ushering in a long period of peace and prosperity. This led to a great increase in building construction, sharply increasing the demand for timber. The threat of deforestation loomed, and the Shogun's government adopted enlightened steps to remedy the situation (Diamond 2005). Their policy was implemented in three stages. Firstly, logged land was closed off to allow forests to regenerate. Secondly, guard posts were established on all roads and rivers to check on people shipping timber. These guards monitored the woodlands to ensure that the rules were obeyed. Finally, the government specified and updated the rules. The Shogun controlled a quarter of Japan's forests, and he issued the rules about timber use. These measures proved to be very effective. It has been pointed out that historically, many societies that cut down all of their trees were unable to survive (Diamond 2005); thus governance over our natural resources not only impacts on economy but on the survival of communities.

China began its headlong drive to industrialise in the 1980s. This began slowly, but then the pace rapidly picked up so that timber consumption increased sharply and the threat of deforestation began to appear. In the mid-1990s the Chinese government issued an edict limiting the use of local timber to prevent deforestation occurring.

The next contribution to the sustainability concept was that of Malthus (1798); his famous theory was published in 1798 about looming mass starvation. He was a clergyman who had studied crop yields and population statistics, and he predicted that the human population would eventually be limited by starvation, unless more food could be produced. In his review of the development and evolution of the principles of sustainability, Dresner (2008) identified the work of Malthus over 200 years ago as the beginning of the appearance of the term. His review outlines the relative importance of all the factors involved including population, consumption and depletion of resources, environmental impacts as well as the social and economic dimensions.

However, during the nineteenth century, Spanish colonists in South America discovered the existence of huge cave systems in Peru, which had provided nesting sites for millions of bats and birds over tens of thousands of years. These caves were filled to a great depth by very nitrogen-rich droppings. This guano made excellent fertiliser, and a large and growing fleet of ships began plying between South America and Europe bringing large cargos of guano for use as fertiliser. Many fortunes were made from this trade, and as a result, crop yields improved and the threat of starvation receded.

By the end of the nineteenth century, people became nervous about what would happen when guano supplies were exhausted, and this concern motivated a German

chemist called Fritz Haber to develop a laboratory-scale process to synthesise ammonia (NH_3) from hydrogen and nitrogen. Nitrogen exists as a diatomic molecule (N_2) in the Earth's atmosphere in large quantities, composing 79% of the Earth's atmosphere. Splitting this molecule is an extremely endothermic process, and Haber had to employ a combination of high temperature and high pressure to do it. He then teamed up with a German chemical engineer called Robert Bosch, and together they developed an industrial-scale process to manufacture ammonia in tonnage quantities. This process came on stream in 1913, but its wide-scale exploitation only occurred after the Second World War. Highly nitrogenous, artificial fertilisers have been used in Europe, in North America and in China, and in fact, these fertilisers have been over-used to the point where nitrogen pollution has become a major problem.

In the late nineteenth century, the Swedish chemist Arrhenius predicted that with industrialisation, the CO_2 content of the Earth's atmosphere would increase and warming would occur. This has happened; in 1900, the CO_2 content of the air was around 275 parts per million (p.p.m.), whereas today it stands at over 400 p.p.m., a huge increase and the driver for current global warming. Studies of ice cores have traced how the CO_2 content of the atmosphere has changed over many thousands of years, changes that have been correlated with past temperature regimes.

The problems of atmospheric, water and soil pollution were identified as industrialisation developed during the late nineteenth and early twentieth centuries. The winter 'smog' problem was recognised and correctly ascribed to uncontrolled smoke emissions from houses and from industry. Fish disappeared from rivers due to uncontrolled release of industrial effluents into rivers and streams. The construction of buildings on 'brown field' sites was inhibited because of pollution by toxic species in the soils of former industrial areas. Appropriate legislation was enacted and enforced by factory inspectors and environmental officers from local councils, and these problems have been ameliorated in the UK.

As the scale of human impact has grown, so has the realisation that these factors are all interlinked and are all connected to the growth in the Earth's human population. Much effort has been devoted to both the measurement and assessment of these impacts, but their scale has continued to grow over the years since publication of the Brundtland Report. Indeed, some people have become so concerned that they have even questioned whether *Homo sapiens* can survive beyond the twenty-first century (Rees 2003).

A new approach to sustainability has been proposed by Rockström et al. (2009); his research group has identified human impact on a global scale in nine key areas, and these are:

- Biodiversity loss
- Climate change
- Nitrogen misuse
- Land use

- Fresh water supplies
- Toxic species release
- Aerosol particles
- Ocean acidification
- Damage to ozone layer

From the global picture, they have identified those areas where urgent action is required, many of these areas being interlinked. For example, land use impacts upon biodiversity. The trend in agriculture has been to create ever-larger fields so that farmers can take advantage of the latest agricultural machinery. However, removal of hedgerows has reduced biodiversity by destroying the habitats of numerous insects, small creatures and birds. Most of these creatures had a beneficial effect in controlling pests, and farmers now use pesticides as well as fertilisers. Heavy machinery can cause soil compaction, which leads in turn to greater soil erosion and run-off of fine soil particles and nitrogen during rainfall. So in this one example, land use, biodiversity and nitrogen pollution are interlinked.

It may seem surprising that biodiversity should be placed so high in this list, but we now recognise that we are part of the planet's ecosystem and do not control it. The mark of a healthy ecosystem is that it contains a large number of species, and if we lose too many, the ecosystems on which we depend will not be able to cope with the demands that we place upon them. We are only now learning to recognise which species can signal danger if they are lost. There is a sense in which the CO₂/climate change lobby (important as it is) have captured the sustainability topic to the exclusion of other factors. The Rockström approach is therefore very useful in reminding of the other factors that are also important. More recently, the International Institute for Sustainable Development (IISD) outlined the timeline of sustainable development as shown (Tables 6.1 and 6.2):

These reports and events are of major media and political interest but without recognition within the major industry sectors little will change. It is important to understand how sustainability as a company attribute is being adopted by different organisations and companies.

6.5 General Observations from Company Annual Sustainability Reports

A review of a number of company annual sustainability reports, from different sectors, offers a brief insight into how changes are being made to shape operating procedures to make organisations less environmentally damaging, more sustainable and socially acceptable. The extracts provide a flavour of how different the 'on-the-ground' approaches are. A few examples from different sectors are provided in the section below:

Table 6.1 Sustainable development timeline

Sustainable development timeline
1962 <i>Silent Spring</i>
1967 Environmental Defence Fund (EDF)
1969 National Environmental Policy Act
1970 First Earth Day
1971 International Institute for Environment and Development (IIED)
1972 UN Conference on the Human Environment and UNEP
1977 UN Conference on Desertification
1980 Independent Commission on International Development Issues
1980 Global 2000 Report
1982 The UN World Charter for Nature
1985 Climate Change
1987 Montreal Protocol on Substances that Deplete the Ozone Layer
1987 Our Common Future (Brundtland Report)
1988 Intergovernmental Panel on Climate Change (IPCC)
1989 Stockholm Environment Institute
1990 International Institute for Sustainable Development (IISD)
1990 Regional Environmental Centre for Central and Eastern Europe
1990 UN Summit for Children
1991 Global Environment Facility
1992 The Business Council for Sustainable Development
1992 Earth Summit
1993 First meeting of the UN Commission on Sustainable Development
1996 ISO 14001
1999 Launch of the Dow Jones Sustainability Indexes
2000 UN Millennium Development Goals
2002 World Summit on Sustainable Development
2002 Global Reporting Initiative
2005 Kyoto Protocol enters into force
2005 Wal-Mart institutes global sustainability strategy
2010 The Economics of Ecosystems and Biodiversity final report
2012 One of the first of the Millennium Development Goal targets is achieved
2012 Rio +20
2015 Paris Agreement UNFCCC
Duwebi (2017)

Table 6.2 Heavy construction sector

Company in the SAM index	Number of reports found containing relevant references to sustainability
Acciona	2 (3)
Fomento de Construcciones y Contratas	3 (4)
GS Engineering and Construction	1(1)
ASC	0 (0)
Hyundai E&C	0 (0)

6.6 Automotive, Mining Industry, Mobile Telephone Industry and Banking

Daimler, in the automotive sector, recently issued a directive to make the utilisation of as much recycled material as possible mandatory in the manufacture of their new vehicles. Since Daimler is highly regarded as a quality brand in this market, this commitment sends a powerful signal regarding the use of recycled materials to others in the sector.

The automotive sector has suffered recent emission scandals; sustainability commitments beyond emissions will assume greater importance as it attempts to rebuild its reputation. Once the statement goes public, social discourse through the web follows, with companies being held socially and publically accountable through the media. It will be interesting to see how such statements are measured in future years; nevertheless, a practical commitment has been made by Daimler and others in the industry.

Traditionally, mining has not had a good environmental image. However, most global mining organisations are now taking action to improve their reputation and bring positive impact to local economies. Formerly, once the minerals, ores and other materials were extracted, mine workings were usually abandoned leaving unsightly and often hazardous conditions. These companies now need to show more social responsibility, and their practices are changing. In their 2012 sustainability report, Anglo-American published and cited practice to be adopted when a new deposit of minerals or ores is identified for exploitation. The new site is surveyed in detail, and a full inventory of all the flora, fauna and natural features is recorded. Where necessary, samples of the plants are taken for cultivation and storage so that the site can be returned to its pristine state once mining operations have ceased. Clearly, while the geological impact is felt, the natural fauna, flora and wildlife are preserved. This in itself is a step forward, but Anglo-American also demonstrate good social awareness, recognising that a healthy and well-educated local workforce will benefit them. To this end, they help to fund local infrastructure, health clinics, schools, housing and other amenities necessary to create a community that becomes mutually beneficial from the mining activity. Where roads are constructed as part of mining and processing needs, the road is built to a sufficient standard to form part of the local infrastructure once mining operations have ceased.

Industries are much more aware of the waste of resources and are taking steps to curtail and recycle such waste. Subtle changes to mass-production processes can have a major impact. China Mobile, of the telecommunications sector, issued a directive to reduce the amount of plastic waste in the manufacture, processing and packaging of their products. A modern mobile phone handset will weigh perhaps 100 grammes, but as production is large, into the millions, the waste produced and plastic used are substantial. 10,000 handsets will weigh perhaps 1 tonne. In a recent report, China Mobile claimed to have improved manufacturing measures and achieved a reduction in plastic waste of around 8000 tonnes per annum. The adoption of such measures has a considerable impact.

It is interesting that changes to business processes that affect the way the consumer or customer interfaces with the supplier of a product or service can have a huge impact on the energy consumed and the travel needs required to access the service. The Itau Bank of Brazil recently provided details of how they contribute to sustainability by introducing operating systems designed to reduce the number of journeys that customers need to make to their local bank using their personal banking systems. In their investment banking systems, they have an investment appraisal set-up which analyses requests for investment funds in terms of sustainability and environmental impact, and those proposals deemed to be environmentally damaging will not be funded. Effective weeding out of such proposals represents a major contribution to improving sustainability.

6.7 Adoption of the Sustainability Term in Industry

In the late 2000s, increasing attention was given to sustainability by industries in the USA and EU, and progress towards more sustainable development rests on the balanced achievement of economic development, social advancement and environmental protection. Industry's main concern at that time was achieving green economy, green industry and green growth to help achieve sustainable development and move consumption and production into a more sustainable path in the long term.

Green industry mainly focused on the industrial production and development that promotes environmental, climate and social consideration into operations. Therefore, the main aim is about greening industry through a continuous improvement of environmental performance regardless of sector type or locations. United Nations Industrial Development Organization (UNIDO) also referred to the need for achieving green industry by reducing the environmental impact of processes and products throughout:

- Improving production efficiency: using resources more efficiently and optimising the productive use of natural resources
- Enhancing environmental performance: minimising environmental impact by reducing waste generation, emissions and environmentally sound management of residual wastes
- Minimising health risks: caused by environmental emissions, along with the provision of goods and services that minimise the occurrence of such emissions

Another helpful element is green technology. Promoting best environmentally sound technologies helps in improving the production of goods that reduce negative environmental impact. A green industry technology recognised by UNIDO is 'one which is incorporated or woven into the economic, social and environmental structures and best serves the interests of the community, country or region that employs it'. Some examples of green technology can be illustrated in the creation of tools and mechanisms to improve water productivity technology in order to reduce water consumption, also those innovative technologies to increase energy efficiency.

Moreover, encouraging companies from different sectors to take more responsibility for their operation and participate in so-called design for environment (DfE) was found to be helpful in producing more durable, reusable and recyclable goods, products and services.

Very soon after deciding to explore how large corporations integrated sustainability principles into their management, it was found that the leading companies published annual company reports which included substantial sections dealing specifically with sustainability. Many of these companies also published separate annual sustainability reports, all of which were downloadable. Much can be gained from company reports, not least a public commitment by the company to practise and change. It has been recognised that these reports can potentially form the basis of a study and continuous reflection. This initial insight is just that, but over time, reflections on how the content of these reports change and how practice relates to the reports will become of increasing public and political interest. The global corporate giants have huge influence, but equally they are exposed to public criticism which can affect the markets they serve.

6.8 Product Life Cycle and Unexpected Consequences

Nowadays, it is usually necessary to consider the product life cycle in judging whether a product and process is sustainable. The second half of the twentieth century was occupied with cleaning up the results of early industry's failure to consider the fate of its products once they left the factory gates and were sold. Victorian manufacturers considered that their responsibilities ended with the sale of their products. Nowadays, manufacturers are increasingly compelled to consider their products' end-of-life scenarios, in other words, 'cradle to cradle' approach to consider the whole 'extended life cycle'.

It is important to consider both the process and the product when judging whether something is sustainable. For example, the product may be deemed to be a good contribution to the achievement of sustainability, but the process by which it is produced may not be or indeed be harmful. An example of this is low-energy light bulb manufacture, promoted in the *Code for Sustainable Homes*. Such light bulbs are filled with mercury vapour and are manufactured in China where health and safety legislation has been minimal or non-existent. People living in the city around the plant where the bulbs are made are suffering from major health problems caused by mercuric poisoning. The light bulbs are used in Western Europe in huge numbers, while the people of China pay a high price in ill health; therefore this process cannot be regarded as truly sustainable. A more holistic approach is needed. Governments can have a great influence on the markets that develop; recently we have seen some changes that are challenging sustainability and the direction that companies may be willing to take.

6.9 Sustainability: Recent Political Developments and Reactions

A degree of political uncertainty in energy and sustainability policy has been brought about as a result of recent political developments such as BREXIT and the US election (Watson 2017). Companies are concerned that their markets will be affected, and leading firms, including Kingfisher, BAM and ARUP, have lobbied the UK government to use its Clean Growth Plan and other political tools to tackle emissions from buildings (letter to Greg Clark, Secretary of State, WWF 2017).

Concern has been raised by the head of energy and climate change at WWF:

The low carbon economy represents a huge opportunity for UK businesses so it's no wonder that they're desperately looking for longer term clarity that will enable them to invest in the technologies that we know can help to tackle climate change.... (Bairstow 2017)

A change in direction of the USA was signalled recently as the president signed an executive order placing economic and employment concerns above those of the climate change agenda (Merica 2017). President Trump argued that both growth in business and tackling issues of climate change can sit alongside each other, which is not so dissimilar to the position set out by the UK's Chancellor of the Exchequer in its 'Fixing the foundations' review.

Productivity is the challenge of our time. It is what makes nations stronger, and families richer. Growth comes either from more employment, or higher productivity... ..we need to focus on world-beating productivity, to drive the next phase of our growth and raise living standards. (Osborne 2015 p.3)

There is evidence that the UK Department for International Trade is prioritising trade and growth ahead of climate change and illegal wildlife trade, in the wake of the BREXIT vote (Shipman 2017). In both the USA and UK, this discourse signals a relaxation of some the climate change legislation in favour of trade and economic growth.

As a result of this discussion, the question arises: if companies have positioned themselves for sustainability, what impact will the political uncertainty have on their market value? As these political changes are so recent, this research will not be able to expose evidence to reliably address this; however, the insights into company activity through their policies will provide useful context to explore the investments that companies have made. As time unfolds, future study will be able to explore how such events impact on an organisation position and how the statements which organisation make change in response to political positions. Notwithstanding these recent changes, it is useful to look back at the positions that companies have taken and why there is so much concern over recent political statements.

6.10 Analysis of Company Reports: Research Method

The work presented here represents part of a recently completed study (Duwebi 2017), which reviewed multinational global company reports and also a reflection in the light of the recent political changes to the sustainability agenda. The review exposes the position companies were taking and the strategy that they were adopting during the period 2010–2012.

In this research, ten industry sectors, based on the Dow Jones Sustainability and Robeco SAM Sustainability Index, were reviewed. In each sector, the five highest-ranking companies identified from the SAM index were selected and related reports captured and the content assessed. While this study limits the research to those companies considered most sustainable by the index, it is of interest to know the sustainability positions these companies are reporting and how their experiences compare. For any organisation, future events can unfold as predicted, but also, and just as importantly, in unpredictable ways. It is of interest to reflect on the sustainable positions adopted in the reports and the events that have unfolded.

6.11 Sample Considered

The ten sectors considered for this research project were:

- Aerospace and defence
- Automobile
- Banks
- Chemical
- Food and drug retailers
- Heavy construction industry
- Mining industry
- Mobile and telecommunications
- Oil and gas producer
- Pharmaceutical

However, this section will just consider three sectors, the heavy construction sector, with the mobile and chemical sectors for comparison purposes. It will examine how the various company's interpretations of sustainability align with the Brundtland definition and also how they have positioned themselves in taking up the sustainability agenda, prior to the most recent political developments.

In selecting the sample, purposive sampling was adopted to capture an insight into the sustainability rhetoric of the higher ranking organisations. The review of archival research data provides insight into that reported and also provides a baseline against which any deviation between planned and actual activity can be interrogated.

The work is cross-sectional in that each report provides a snapshot of the company activities at that moment in time and across companies and is also longitudinal in that annual reports for 3 years 2010–2012 were investigated (Duwebi 2017). In light of recent political changes and to capture any trends or departures, more recent reports were discussed, but not investigated to the same degree as the main body of data reviewed. Threads of enquiry were followed, with the discussion following points of related interest. The more recent evaluation must be considered as an insight and prompt for further research rather than systematic enquiry.

Different types of company reports were recognised as information sources for this study and included risk management reports, citizenship reports, corporate social responsibility (CSR) reports, sustainable development (SD) reports, corporate reports (CR), beyond the mine (BTM) reports and summary review reports. Overall, 308 reports were included for review.

6.12 Industrial Definitions of Sustainability: Alignment with Brundtland

With the aid of NVivo software, queries relative to the facet were used to explore and extract related data. It was recognised that many of the company reports were not produced with sustainability or the management of sustainability in mind. The method of searching and querying was iterative, looking for terms, capturing information, recognising different related terms used (compared with those initially searched) and then repeating the search, using broader search terms. In this review, we stick to those terms which address sustainability and do not drill down to the level of detail beyond sustainability terms that were reported by Duwebi (2017).

6.13 Discussion: Sustainability Within Company Reports

Analysis of the raw data relating to use of the term ‘sustainability’ showed that its use is not limited to environmental and humanitarian definitions, as would be expected. Thus, the context within which the term is used is fundamental to its interpretation. The information surrounding the word sustainability was expected to be of more relevance than the term itself. Considering the context of individual words is a logical step in developing understanding, and, in most cases, it becomes relatively easy to distinguish the nature of a word’s meaning and intent as the surrounding discourse is considered. Thus once the term sustainability is used within any document, it is important to consider the context and how companies articulate the position into their operation and processes. The occurrence of discourse related to sustainability was noted and recorded in the tables below (Tables 6.2, 6.3 and 6.4).

Table 6.3 Automobile sector

Company in the SAM index	Number of reports found containing relevant references to sustainability
BMW	5 (9)
Daimler	6 (9)
Fiat	1(1)
VW	1 (1)
Toyota	0 (0)

Table 6.4 Chemical sector

Company in the SAM index	Number of reports found containing relevant references to sustainability
AkzoNobel	1 (1)
BASF	1 (1)
Bayer	6 (9)
DMS	3 (17)
Dow chemical	0 (0)

Not all heavy construction companies are making commitments or use of the term sustainability. At present, the leading organisations in this sector are not seen to be lagging behind those in other sectors. In the larger sample of research, industries such as aerospace, banking, food and drugs, mobile sector, oil sector, automobile, chemical, mining and pharmaceutical were reviewed. In comparison with these, the degree to which the heavy construction sector use ‘sustainability’ rhetoric within their reports is comparable to that used in mining and pharmaceuticals. It is interesting that those companies using a greater amount of sustainability discourse were the chemical and automobile sectors. Within these sectors, the top listed companies were most explicit about their commitments, placing greater emphasis on how they are progressing in this respect.

BMW’s (annual report 2010, p.171) dialogue aligns closely with the philosophical content of the Brundtland definition, giving equal consideration to ecological, social and economic development. They also use the term sustainability from an organisational perspective, referring to the relevance of corporate sustainability and its importance in three areas: resources, reputation and risk.

Similarly, Daimler (Daimler Annual Report 2010, p.251) defines sustainability in line with Brundtland, as:

Using natural resources in such a way that they continue to be available to fulfil the needs of future generations. In the view of the Daimler Group, sustainable business operations have to give due consideration to economic, ecological and social aspects.

Also, the following year’s Daimler Sustainability Report (2011, p.10) defines sustainability as:

Responsible corporate behaviour that leads to long-term business success and is in harmony with society and the environment. The company moves toward its goals by making sustainability a firmly integrated aspect of their operations and by requiring and promoting a

strong sense of responsibility for sustainable operations among all of their managers and employees throughout the Group. They include their business partners in this process and participate in continuous dialogue on these issues with their stakeholders.

With a lesser degree of emphasis than the previous two, Volkswagen's report (2012a, b) (p.16) interprets sustainability as:

A call for a balance of economic, environmental and social objectives.

The comments from the Volkswagen group preceded the emission violations, which started to emerge following a 'tip-off' in 2014. However, it is claimed that some of the cars affected were in production as early as 2009 (Atiyen 2017). A recent review of the affair concluded that the root cause of the 'unethical scandal goes back to business culture and structure of the company'. This suggests that compliance-based business ethics, like those used by Volkswagen, are failing to treat employees ethically and present employees with the dilemma of either losing their jobs or taking unethical action. The difference between the report and actual company culture and practice that led to the problem is evidenced through the emission scandal and company confession. Volkswagen attracted all the opprobrium for this, but they were following EU-wide policy in the drive to reduce carbon dioxide emissions. Government policy was based on the single issue of carbon dioxide to the exclusion of all else, including air quality and health considerations. Other manufacturers have since owned up to similar practices, and this incident points up the dangers inherent in maintaining a single-issue focus by governments.

Returning to company reports from other automotive companies, the Fiat Group believes that:

Sustainability is not an objective in and of itself, but rather a journey of continuous improvement essential for long-term growth. (Fiat S.P.A. Sustainability Report (2011) p.12)

Fiat makes no specific reference to the three aspects of the triple bottom line in any one part of their reports; instead, they refer to the three elements either independently, or as shown below, with social and environmental aspects being considered.

Over the years, the Group's sustainability strategy has resulted in a variety of projects designed to promote increasingly sustainable mobility, help protect the environment and natural resources, ensure the health and safety of employees, invest in their professional development, and build a constructive relationship with local communities and commercial partners. The desire to continue growing in harmony with people and the environment is embodied in the Sustainability Plan. (Fiat S.P.A. Sustainability Report (2011) p.12)

The comment places emphasis on a culture of growing professional development.

This sector also provided the highest number of references to sustainability.

In their annual report 2010 (p.205), BASF Corporation aligns to the Brundtland definition of sustainable development. Meanwhile, the AkzoNobel 2012 report (p.163) only makes an oblique reference to global sustainability. They see sustainability as connected to every area of business, stating that:

By doing more with less, sustainability value will be fundamentally connected to business value. We are making sustainability profitable by tailoring solutions to our customers' needs today and in the future and by future-proofing our supply chain.

Another chemical corporation DSM (Dutch State Mines) introduced their approach and understanding of sustainability in their integrated annual reports 2010 as a way of creating brighter lives for people today and in future through connecting their unique competencies in life and material sciences to create solutions that nourish, protect and improve performance. DSM focuses on the triple bottom line of economic performance, environmental quality and social responsibility pursued simultaneously to create value for all stakeholders. Furthermore, in the same report (p.11), they state why the commitment is important for the company's future: 'sustainability will be the key differentiator and value driver over the coming decades'.

In similar vein, the Bayer 2010 sustainability report (p.6) refers to the importance of creating a balance between the three aspects of sustainability by stating that 'we can only be successful in the long term if we take ecological and social needs into account as well as economic considerations'.

All of the positional statements commit to sustainable development to ensure readiness for future markets.

6.14 Heavy Construction

Within the companies listed, the evidence suggests that the heavy construction sector is as cognisant of sustainability as other sectors and is concerned with improving its social, economic and environmental sustainability indicators.

Acciona's 2010 annual report (p. 10) referred to the company's commitment to sustainability as going beyond generating economic value and stated that 'we aim to contribute to development with a balanced business model for the benefit of future generations'. They then suggest that the company's sustainability master plan 2010–2013 (annual report 2010) rests on six pillars: innovation, environment, engagement with society, people, the value chain and governance, all aimed at achieving concrete goals of sustainability.

Fomento de Construcciones Contratas (annual report 2012) refers to the importance of sustainability in both construction product and process. This report (p. 447) states that 'sustainable construction refers not only to managing environmental impact while the works are being executed, but also to management of the "product" throughout its useful life'.

GS Engineering and Construction (annual integrated report 2012, p. 6) differs from this view and instead interprets sustainability as 'creating value that can be shared among various stakeholders, as well as fulfilling their responsibilities as a corporate citizen'. Their vision of sustainability (annual integrated report, p. 7) relies on 'maximising organisational competence based on core values of great innovation, great challenges and great partnerships to earn trust to grow as a

sustainable global company'. The aim is defined as 'Pursue Growth by Creating Sustainable Value Together' (Annual integrated report 2012).

The research shows that the use of the term, related terms and expressions, linked to sustainability (environmental, social and economic) creates company principles that add benefit when considering future markets.

6.15 Later Information: Acciona – A More Recent Enquiry

A review of Acciona annual report in 2015a found no reference to 'sustainability', but there is a significant shift from earlier reports. The growth in renewable energy and the need for strategic positioning with emergent markets, which need to be sustainable, were recognised as a key business driver. The company has shifted from an acknowledgement of sustainability issues to one where it has positioned itself to take advantage of emergent economies and the need to engage with sustainable energy supply and also to adopt sustainable practice. Their sustainability report (2015b) complements their annual report. It details training and development initiatives – performance incentives linked to sustainability – and covers many aspects of practice and makes strong commitments. Interestingly, this was done even after the preceding years were seen as financially challenging and where the company had to restructure itself. Sustainability and business development are no longer seen in opposition but very much one and the same.

Acciona has assumed these challenges (United Nations General Assembly Sustainable Development Goals) as its own, and incorporated them into its business model... .. (with a plan) to make Acciona a carbon neutral company. (Acciona Sustainability Report 2015b)

A key value remains a 'concern for the environment':

ACCIONA sees the fight against climate change, sustainable use of natural resources and protection of biodiversity as the main principles of its environmental strategy. Acciona (2015a), p.13

To play a leading role in transforming the planet's infrastructure and in sustainable energy, while focusing on having a strong balance sheet, remunerating our shareholders appropriately, and constantly seeking growth opportunities. Acciona Annual (2015a), p.10

In this line, last September, the United Nations approved the 17 sustainable development goals that will guide the investment agenda for governments, multilateral funds and private investors towards emerging economies in order to outfit them with infrastructure that contributes to their development.

In this context. The integration of our construction, service and water businesses into a single Infrastructure division and the steps taken to enhance the selection of business opportunities, as well as risk and contract management, have begun to produce results, since order intake increased by 22% and our backlog by 13% in 2015. Acciona (2015b), p.9

The reports and discussion show deeper commitments being made to a sustainable agenda and are interesting in that where companies like VW diverge from these, market and legal consequences follow. We now witness political changes that the companies will be responding to in future. The reports and positions taken by the organisations over the next decade, in response to these changes, will be interesting.

6.16 Conclusion

The reports show that international corporations are making reference to, adopting and in some organisations embracing the concept of sustainability including its environmental, social and economic dimensions.

Over the years, many have positioned themselves for sustainability and the emergence of related markets. The review of Acciona's more recent company reports in 2015 shows that the company has aligned the whole operation to embrace sustainability and makes the company ready for the emergence of the new energy and sustainability markets. Some remain cynical that such statements are still part of relationship propaganda; however, such public commitments expose the organisation and make them publically or socially accountable.

Reports for 2016 are not yet available, so the evidence of how companies will react to recent political changes and relaxation of legislation cannot be reported. However, at a UK domestic level, there is some evidence of government lobbying, by construction firms, requesting clarity and change for the industry in the form of the Clean Growth Plan. It is clear that over the years, commerce has acknowledged the need to develop sustainable policies and to invest to be ready to engage. The lack of clarity is concerning for those in the industry that have invested to ensure that they can continue to operate when sustainability legislation is introduced, whatever effect the government policy changes will have when the company's sustainability investments have potential to mature.

The indications from recent political changes show that governments are prioritising economic growth and trade ahead of climate change and environmental protection measures.

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