# *Monitoring systems for sustainability. What are they measuring?*

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**Submitted in fulfilment of the requirements for the degree of Doctor of Philosophy**

**November 2008**

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# List of abbreviations

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|---|---|
| **ABS** | Australian Bureau of Statistics |
| **ACCA** | Australian and New Zealand Awards for Sustainability Reporting |
| **ACT** | Australian Capital Territory |
| **AGL** | The Australian Gas Light Company |
| **ANAO** | Australian National Audit Office |
| **ARA** | Australasian Reporting Association |
| **EA** | Environment Australia |
| **ESAA** | The Energy Supply Association of Australia |
| **FME** | Free market environmentalists |
| **GBE** | Government business enterprises |
| **GDP** | Gross Domestic Product |
| **GNP** | Gross National Product |
| **GPI** | Genuine Progress Index |
| **GRI** | Global Reporting Initiative |
| **IAASB** | International Auditing and Assurance Standards Board |
| **IFAC** | International Federation of Accountants |
| **IISI** | International Iron and Steel Institute |
| **IMA** | International Aluminium Institute |
| **IPCC** | International Panel of Climate Change |
| **ISIN** | The International Sustainability Indicators Network |
| **IUCN** | International Union for the Conservation of Nature and Natural Resources |
| **MAP** | Measuring Australia's Progress |
| **NGO** | Non-Government Organisation |
| **NGO** | Non-Government Organisation |
| **OECD** | Organisation for Economic Development |
| **SDC** | Sustainable Development Commission |
| **UCSUSA** | Union of Concerned Scientists of United States of America |
| **UK** | United Kingdom |
| **UN** | United Nations |
| **UNCED** | The United Nations Conference on Environment and Development |
| **URPE** | Union for Radical Political Economics |
| **US** | United States |
| **WBCSD** | World Business Council of Sustainable Development |
| **WCED** | World Commission for Economic Development |
| **WCS** | World Conservation Strategy |

# Abstract

This thesis investigates how governments, corporations, and international non-government organisations conceive of, and report on sustainability. The development of sustainability reporting frameworks in Australia is critically compared with international models. The study seeks to discover whether sustainability indicators in the Australian context are derived from an epistemologically consistent framework. It is argued that the validity of current sustainability reporting systems is contestable.

Reporting systems for sustainability have been a key policy response by international organisations, governments, and corporations to emerging environmental, social and economic crises over the past decade. However, the challenge in developing sustainability measurement and monitoring tools is made difficult because the notion of sustainability is a contested concept. The most commonly quoted definition of sustainability from the *Brundtland Report* lacks the required conceptual clarity to inform how it could be measured. Moreover, the sustainability debate incorporates an array of approaches influenced by various theoretical frameworks. A lack of an operational definition of sustainability creates uncertainty surrounding the interpretation of sustainability and therefore confounds its measurement. Conversely, a defined theoretical underpinning to the concept of sustainability would provide clarity and coherence to what is to be measured by the indicators and in turn provide direction in terms of what these different measurement approaches should seek to accomplish. However, because the concept is generally poorly defined, current indicator systems are frequently flawed. Moreover, the validity of current monitoring systems must be questioned due to the dominance of the neoliberal and liberal discourses in debates over sustainability, which has privileged the economic dimension of the debate over environmental and social considerations. Privileging one dimension over others discourages serious analysis of the interdependence of the dimensions of sustainability on each other. It is questionable whether monitoring systems framed by the dominant discourses have a real ability to assess economic, environmental and social sustainability. It is argued that the current and future survival of our economy, society and environment requires a radical rethinking of the sustainability paradigm.

Suites of sustainability indicators typically include data on issues like unemployment, business investment, poverty, pollution and health status, which have been collected by diverse agencies using different methodologies. The original purpose of these indicators has not been the measurement of sustainability but other matters. For example, data collected for the measurement of unemployment or of air quality is commonly appropriated by sustainability reporting. It is argued that such sets of indicators are ill-suited to measuring sustainability unless the social, economic and environmental context in which they are collected is understood. If the purpose of sustainability indicators is to help understand the interrelated forces driving social, economic and environmental

change, then the indicators themselves should be derived from an epistemologically consistent conceptual framework, which seeks to address clearly defined phenomena if they are to actually provide indications of sustainability.

To illustrate this argument, case studies of corporate and government sustainability reporting are examined in relation to what is measured, how it is measured and why it is measured. This research also offers a comparison of Australian sustainability reporting against the international benchmark in this field at both national government and corporate levels. These case studies raise questions about whether current sustainability reporting practices have validity as genuine measures of sustainability and in particular whether they are derived from an epistemologically consistent framework. If the framers of reporting systems are not clear about how their measures conceptualise sustainability, then we can have little confidence in the ability of these systems to genuinely measure this phenomena.

# Declaration

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

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Kathryn Davidson

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Date

# Acknowledgements

The PhD process has been both an enjoyable and challenging one for me. Despite the hard work and frequent isolation, it has been a fulfilling and rewarding experience. This journey would not have been possible without the support of the University (particularly my school), supervisors, family and friends. These people have provided invaluable support, assistance and knowledge throughout the duration of this thesis.

To the staff of the School of Gender, Work, and Social Inquiry, through which I was enrolled, I express my extreme gratitude for the 'first class' support and assistance which you provided. I make special mention to Associate Professor Margie Ripper and Professor Margaret Allen for their invaluable advice and support.

Associate Professor Ray Broomhill and Associate Professor John Spoehr were my supervisors. This thesis has benefited enormously from their experience, knowledge and expertise. Their feedback and critiques were extremely helpful in shaping the course of this research and in developing the arguments underpinning it. Barbara Brougham was a great source of editorial support and I am grateful also for her warm friendship and encouragement.

To my friends Sanjugta Vas Dev, Roz Averis, Alpana Sivam, Sonia Martin and particularly Lou Wilson, who have at different times provided critical feedback, encouragement, and importantly friendship, thanks for your support and help.

Gratitude also goes to my family who have been an amazing source of support in caring for my child, and now children – especially my parents, younger sister, Julia, and my partner's mother, Mary.

Finally, to my boys, James, Josh, and my new arrival Ollie: thanks for loving, encouraging and supporting me, and providing time for me to write.

# Introduction

## The context of the study

The increasing application of measures of sustainability, triple bottom line reporting, and corporate social responsibility reports to government and corporate policy were the impetus for this study. Governments and corporations are applying these measures to demonstrate a commitment to social and environmental well-being now and into the future. The starting point of the research was an examination of the use of the term triple bottom line as a measure of sustainability. It quickly became apparent, however, that the use of this term tended to be rhetorical and not underpinned by a sound theoretical definition nor a methodology to assess the various 'bottom lines' of the economy, the environment, and society. Given that the triple bottom line originated in the sustainability debate, it seemed appropriate to focus the research, on not just the triple bottom line, but on the wider context: the concept of sustainability reporting itself.

Over the past ten years, reporting systems for sustainability have been a key policy response by international organisations, governments, and corporations to mounting concerns over climate change, environmental degradation and social and economic instability. The idea of 'sustainability' reporting is important as it potentially moves beyond reporting on individual economic, social and environmental issues to reporting on their interrelationships. Sustainability monitoring implies reporting on the viability and health of all systems, and, in turn, reporting on the pressure points between the systems.

In the course of this study the researcher has participated in the academic debate on sustainability monitoring. Eight peer-reviewed papers have been produced, five of which are sole authorship. The researcher has published in refereed international journals and presented peer-reviewed papers on this research to international and national conferences. Significant contributions to this debate include a paper presented in 2007 to the 7th International Conference of the European Society for Ecological Economics in Germany. The title of the paper was 'Monitoring sustainability: What are the current

monitoring systems telling us about sustainability?' Other contributions are outlined in Appendix 1.

## Research design

My argument on what sustainability monitoring systems measure will be developed in chapters one to three, and will be illustrated by reference to case studies in the latter chapters of my thesis as discussed in the methodology given in chapter four. My aim was to investigate how effectively international organisations, governments, corporations and non-government organisations conceive of, and report on, sustainability. My research sought to discover the extent to which sustainability monitoring systems are derived from an epistemologically coherent and analytically strong framework. An assessment has been made in the case studies of the capacity of current Australian reporting frameworks to acknowledge comprehensively the threats to economic, social and environmental sustainability. The objectives of my research were:

1 to critically review the literature on sustainability indicators

2 to map the ideologies present within the sustainability debate and analyse existing typologies that seek to organise these positions

3 to identify and critique the assumptions and theories of sustainability that underpin mainstream sustainability reporting systems

4 to identify international benchmarks in sustainability reporting systems

5 to undertake a critical interrogation of a selection of Australian reporting systems using the theoretical insights provided by this study and using the international benchmarks for comparison.

Within the case studies, the following three key research questions and component sub-questions were investigated:

5.1. What do these sustainability reporting systems attempt to measure?

   a. How do they conceptualise sustainability?

   b. What phenomenon are they seeking to measure?

5.2. How do organisations measure sustainability?

5.3. Do these frameworks have any validity as genuine measures of sustainability?

These questions are addressed in Chapter 2. The literature in this field suggests a lack of evidence of a clear theoretical consensus on the concept of sustainability, which has

implications for the clarity and coherence of what is measured by sustainability indicators. That is, lack of clearly articulated theoretical definitions casts uncertainty on what these different measurement approaches seek to accomplish. There is no agreed format to report on sustainability but as will be substantiated, sustainability reporting is strongly influenced by neoliberal ideology, while more radical approaches are marginalized. It is questionable whether monitoring systems framed by the dominant discourse have a real ability to assess economic, environmental and social sustainability.

## A summary of the argument and organisation of the thesis

The research outcomes presented in this thesis suggest that 'sustainability' is a contested concept, with a broad array of approaches influenced by various theoretical frameworks. It is argued that even the most commonly quoted definition of sustainability, from the *Brundtland Report*, lacks the conceptual clarity to inform how it could be interpreted, let alone measured. There is evidence that the concept of sustainability requires an effective theoretical underpinning to provide clarity and coherence about what is to be measured by the indicators and, in turn, to provide direction in terms of what these different measurement approaches should seek to accomplish.

The research evidence indicates that the concept is generally so poorly defined and so lacks conceptual and theoretical clarity that current indicator systems, including those used by governments, are frequently flawed. Suites of sustainability indicators typically include data on issues like unemployment, business investment, poverty, pollution and health status, which have been collected by diverse agencies, with equally diverse objectives, using different methodologies. It will be shown that the original purpose of these indicators has not been to measure sustainability but to generate information for other purposes. For example, data collected for the measurement of unemployment or of air quality is commonly appropriated by sustainability reporting. Yet, as is argued in this thesis, such sets of indicators are ill-suited to measuring sustainability unless the social, economic and environmental context in which they are collected is understood. If the purpose of sustainability indicators is to help understand the interrelated forces driving social, economic and environmental change, and to actually provide indications of sustainability, then the indicators themselves should be derived from an

epistemologically consistent conceptual framework which seeks to encapsulate clearly defined phenomena (Davidson 2004, p. 148; Davidson 2007, p. 73).

This research will suggest that indicators within suites, the most common form of sustainability monitoring, tend not to be considered in relation to each other and are essentially sets of disconnected measurements. Hence, the 'suites of indicators' approach as it is currently applied in many sustainability monitoring systems is epistemologically incoherent and cannot effectively measure sustainability. That is, sustainability monitoring systems should be based upon a coherent and meaningful definition of sustainability if they are to provide useful indications of sustainability.

Moreover, this current study questions the validity of existing monitoring systems in relation to the dominance of the neoliberal and liberal discourses in debates over sustainability, which have privileged the economic dimension of the debate over environmental and social considerations. It questions whether monitoring systems framed by the dominant discourses have a real ability to assess economic, environmental and social sustainability, and argues that privileging the economic dimension of sustainability entails ensuring that economic growth is not threatened by the outcome of measuring sustainability – that the economy is privileged within neoliberal and liberal ideologies, in particular, as an essential attribute of sustainability. Furthermore, acceptance of this argument allows governments and corporations to adopt a 'business as usual' approach and neglect critical assessment of evident tensions between a regime of continual economic growth and social and environmental sustainability. Lack of articulate definitions of sustainability evident in corporate and government monitoring systems and a failure to provide critical assessments of economic, social and environmental sustainability raise the important question of what these monitoring systems are actually measuring. Addressing this issue is the central concern of the study reported here.

The researcher's position on sustainability is aligned to radical social theory. It incorporates a critical assessment of the tensions between the dimensions of sustainability. A critical approach enables a nuanced discussion of how changes to one dimension of sustainability (i.e. a social, economic or environmental dimension) affects the other dimensions. This approach offers significant advantages over both neoliberal

and liberal approaches to monitoring sustainability. The latter offer a 'we can have it all' framework for understanding sustainability, which suggests that the relationship between the dimensions is necessarily harmonious. Acceptance of this assumption disallows questioning of such matters as the impact of unrestricted economic growth on the environment or the social fabric. In contrast, a radical-critical approach opens such matters for debate.

The thesis consists of three main sections. **Section One** provides a focus on indicators of sustainability. It incorporates an overview of the emergence of sustainability monitoring systems, significant contributions to the debate, and a critical review of the literature in this field of reporting. **Section Two** addresses the concept of sustainability and explores its various meanings. It is important to be clear about differing theoretical interpretations as the assumptions that underpin these monitoring systems influence what is measured. **Section Three** examines current sustainability monitoring systems. It identifies international benchmark reporting systems and offers case studies to illustrate the issues this research is investigating. The case studies compare monitoring systems for sustainability developed in Australia with international benchmarks. A comparative case study approach offers a practical situation to test the research questions. The case studies are four sustainability monitoring systems developed in Australia, comprising two government and two corporate attempts to measure sustainability, which are considered in relation to an international government sustainability monitoring system and the GRI.

In Section One, **Chapter 1** outlines the origins, history, and scope of sustainability monitoring systems. Influential sustainability monitoring systems initiatives are identified and how they have encouraged and contributed (or not) to the development of indicator frameworks is discussed. **Chapter 2** reviews key literature on sustainability monitoring systems. It is argued that the lack of coherence in many current sustainability monitoring systems stems from a profound lack of clarity about what is being measured in relation to what is meant by sustainability. It is also argued that the dominance of the neoliberal and liberal discourses in the development of mainstream sustainability monitoring systems has excluded more radical contributions to the sustainability debate to the detriment of the capacity of monitoring systems to measure sustainability.

Section Two seeks to identify and evaluate the different ways of conceptualising sustainability. **Chapter 3** maps the ideologies within the sustainability debate and

examines typologies that have been proposed to organise understandings of sustainability. These typologies will be applied to a comparative case study analysis to develop an understanding of how sustainability is conceptualised and how this influences what is measured. This chapter illuminates the dominant interpretation of sustainability and provides an account of the rise of this position. This chapter also includes a critique of the ideologies identified within the sustainability debate which informs this researcher's interpretation of sustainability and shows why this position might be useful in progressing sustainability monitoring systems. **Chapter 4** outlines the methodology for the thesis. The methodology chapter follows the review of the literature, and outlines research methods to be applied to the empirical component of the research.

Section Three examines current sustainability monitoring systems. It begins with **Chapter 5**, which identifies international benchmarks for government and corporate reporting systems. This chapter addresses the strengths and the limitations of these systems. These benchmarks provide points of comparison with the Australian case studies of monitoring sustainability. **Chapter 6** incorporates a study of corporate sustainability monitoring systems in Australia. Two corporate sustainability reports are reviewed, AGL and Origin Energy. **Chapter 7** incorporates a study of Australian national government sustainability monitoring systems. Two national government reporting systems are reviewed from two different agencies, Environment Australia (EA) and the Australian Bureau of Statistics (ABS). The purpose of the case studies is to identify how the developers of these monitoring systems conceptualise sustainability, what they seek to measure, how they measure sustainability, and whether their techniques have any validity or value as genuine measures of sustainability.

This dissertation concludes with a discussion of whether the epistemological link between the conceptualisation of sustainability and the indicators selected to measure it is sufficiently meaningful to assure the validity of current reporting systems as genuine measures of sustainability. It is argued in conclusion that the dominance of the neoliberal and liberal discourses in marginalising radical approaches to measuring sustainability has limited the capacity of current reporting systems to provide alternative assessments of the threats to economic, social and environmental sustainability. This thesis holds that the current and future survival of our society and environment requires a radical rethinking of the way sustainability is measured.

# Section 1: Indicators of sustainability

Section One addresses sustainability indicators. This section establishes why monitoring sustainability is important through an analysis of the literature on the development of indicator frameworks in Australia and internationally. It documents the emergence of sustainability monitoring systems and provides a chronology of significant contributions to their evolution. It reviews key literature on sustainability monitoring systems. It is intended to provide the reader with an overview of what sustainability indicators are and how they have been developed.

# Chapter 1 The growth of sustainability reporting

Monitoring sustainability is a relatively new phenomenon but has proliferated over the past ten years as international organisations, non-government organisations, governments, and corporations embark on efforts to develop systems by which they can monitor the impact of their activities on the environment, society and the economy (Briassoulis 2001, p. 409; Pinter, Hardi, & Bartelmus 2005, p. 2; Luckman 2006, p. 261; Macintosh & Wilkinson 2006, p. 8). With many institutions beginning to develop these systems, monitoring on different scales is expanding, beginning at the corporation and local community level, and then moving to more macro levels: national government and global organisations.

The purpose of this chapter is to examine the origins, history, and scope of these systems. It will identify influential sustainability monitoring systems and initiatives, and discuss how they have encouraged and contributed (or not) to the development of indicator frameworks in which meaningful monitoring can take place.

## 1.1 The conceptual shift from individual system reporting to sustainability monitoring

Over the last 50 years there has been a growing consensus that financial and economic reporting should be extended to consider a broader range of economic, social and environmental issues (Macintosh & Wilkinson 2006, p. 8; Higgins 2001, p. 51; Venning & Higgins 2001, p. 7). Traditional decision making frameworks that address economic growth with environmental remediation have gradually come to be regarded as inadequate to fulfil the needs of decision makers or the community. These monitoring systems do not facilitate fully informed decisions about matters that have not just economic consequences, but also social and environmental impacts (Venning & Higgins 2001, p. 10). Milne & Gray (2007, p. 199) state that the link between economic/financial and social/environmental is now widely accepted with the spheres inextricably intertwined. The need of policy makers to develop an understanding of, and to acknowledge, the interrelationship between the economy, society and the environment has contributed to the rise of sustainability and triple bottom line reporting to monitor the interaction of these three fundamental vectors (Macintosh & Wilkinson 2006, p. 3; Gibson

2005, p. 94; Luckman 2006, p. 261; Spangenberg, Pfahl, & Dellar 2002, p. 66; Bossel 1999, p. 13; Farrell & Hart 1998, p. 2; Maclaren cited in Hoernig & Seasons 2004, p. 87).

Conceptual shifts in the types of reporting models started to emerge in the late 1980s and early 1990s with a focus on measuring resource use (Higgins 2001, p. 51). Models with a focus on measuring resource use were designed to draw attention to natural resource limits. These models stress that economic and social development are constrained by the availability and use of natural resources. Examples of these types of models include the ecological footprint and life cycle assessment approaches. The ecological footprint model calculates the land required to support human activities. Life cycle assessment calculates the total environmental impact of a good or service (Higgins 2001, p. 54). Models continued to evolve to include a broader environmental perspective during this period. A notable example is the pressure-state-response model (PSR) developed in the early 1990s. This model reports on how pressure from human activities impacts on the state of the natural environmental and the role of state responses (i.e. government programs to address environmental issues) (Higgins 2001, p. 55).

Later developments have involved the establishment of general sets of criteria for sustainability. The Natural Step is one of the most recognised general criteria sets (Higgins 2001, p. 61). The Natural Step offers four broad criteria for sustainability by which the sustainability of a sector, enterprise, or region can be evaluated. This model was developed by Karl-Henrik Robert and a panel of Swedish scientists in 1989 (The Natural Step, n.d., online, p. 1).

General sets of criteria for sustainability established in the late 1980s eventually evolved into reporting systems for sustainability during the 1990s. The need for sustainability reporting was first officially recognised at the United Nations Earth Summit in 1992, as discussed in the summit report Agenda 21 (Macintosh & Wilkinson 2006, p. 9). This report called on countries and the international community to develop indicators of sustainable development. Agenda 21 acknowledged the limitations of the existing reporting practices, and pointed out that:

> there are serious deficiencies in the type and quality of information available to decision makers and acknowledges that commonly used indicators of progress, such

> as GDP and Gross National Product (GNP), do not provide adequate indicators of sustainability. (Macintosh & Wilkinson 2006, p. 9)

Agenda 21 encouraged governments to gather data on 'ecosystem, natural resources, pollution and socio-economic variables' and to identify sustainable development indicators (Macintosh & Wilkinson 2006, p. 9). The Agenda 21 report also identified the need for a consistent framework at national, regional and global levels. Moreover the framework should include a common set of indicators, regularly updated, and widely accessible reports and databases (UN Commission on Sustainable Development 2001, p. 2). Sustainability reporting has become a dominant model within government and corporation reporting in Australia and in the international context, as will be discussed in this chapter.

### 1.1.1 Reporting formats for sustainability

Sustainability monitoring systems have developed in three main formats: accounts based assessments, narrative assessments and suite-of-indicators assessments. Some monitoring systems incorporate more than one of these approaches (Macintosh & Wilkinson 2006, p. 4).

**Accounts based assessment.** Accounts based assessment 'convert(s) data on economic, social and environmental issues into a common unit (typically money or physical i.e. units) or an index in order to provide a picture of sustainability or a particular aspect of sustainability' (Macintosh & Wilkinson 2006, p. 4). There are two main types of these assessments, *one-number approaches* and *accounting frameworks*. As the name suggests, one-number approaches seek to generate a single composite indicator of sustainability or aspects of it. Some examples of these approaches include the Environmental Sustainability Index, Genuine Progress Indicator, the Environmentally Adjusted National Product and the Human Development Index. An accounting framework involves combining categories of information on sustainability into a unified system of accounts. Different aspects of sustainability are interpreted into a common measurement, generally monetary, and are also used to generate a single composite indicator such as the Genuine Progress Index (GPI)[1] (Macintosh & Wilkinson 2006, p. 5).

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[1] The Genuine Progress Index incorporates a range of factors that influence wellbeing and aggregates them into a single index (Hamilton 2003, p. 55).

**Narrative assessments.** Narrative reports are subjective, written evaluations of sustainability based on the reporting entity, which are sometimes combined with basic indicators. Statistical data is often limited and not the focus, and are generally applied to support the opinions expressed in the report. Corporate sustainability reports are commonly noted as taking this approach (Macintosh & Wilkinson 2006, p. 5).

**Suite-of-indicators.** The suite-of-indicators approach involves the presentation of a collection of data on various aspects of sustainability. The indicators are the focus of these frameworks. In general these frameworks leave judgements of the relative importance of different indicators and the overall state of the reporting entity for the reader to evaluate. There is no attempt to integrate or aggregate the indicators to provide an overall picture of sustainability (Macintosh & Wilkinson 2006, p. 5). Examples noted include organisational and geographical reporting systems such as *Are We Sustaining Australia?* produced by the Commonwealth Department of the Environment.

The most widely applied approach to reporting on sustainability is a combination of the suite-of-indicators and narrative assessments. This approach is generally adopted because of the methodological problems associated with accounts based assessments and the ambiguity associated with the concept of sustainability. These factors contribute to difficulties in aggregating the different dimensions of sustainability into one composite number (Macintosh and Wilkinson 2006, p. 5). This research will focus on the suites-of-indicators and narrative assessment frameworks as they are the most commonly applied sustainability reporting formats.

## 1.2 Attempts to monitor sustainability within an international context

At an international level sustainability monitoring systems have drawn interest from peak organisations, corporations and governments. The UN, the Global Reporting Initiative and other organisations have identified a consistent need for guidance and common frameworks. In the absence of government regulation, non-government organisations and professional societies have attempted to fill the gap by developing standards and guidelines. Professional societies have also been keen to promote best practice through an award system.

Sustainability indicator monitoring systems have proliferated since the Rio Earth Summit as Exhibit 1.1 illustrates. There exist suites-of-indicator and narrative approaches to sustainability reporting, which are much more widely applied than the composite index approach (Macintosh & Wilkinson 2006, p. 5). No national government has officially developed a single index of sustainability and all rely on sets of indicators supported by narrative assessment (OECD 2002, p. 11). Corporations, as well, have primarily adopted the Global Reporting Initiative guidelines, which also operate as a set of indicators combined with narrative assessment (Macintosh & Wilkinson 2006, p. 9; Luckman 2006, p. 261; KPMG 2005, p. 7).

**Exhibit 1.1 Chronological order of significant international indicator development**

| | |
|---|---|
| 1989 | The OECD initiated a program on environmental indicators that had a focus on monitoring progress towards a sustainable society. |
| 1992 | Outcome of UN Earth Summit was Agenda 21. Agenda 21 called upon countries and the international community to develop indicators of sustainable development. |
| 1993 | Sustainable Seattle, a community organisation, produced the first of three indicator reports. |
| 1994 | UNEP/SustainAbility released the benchmarking report, *Corporate Environmental reporting: A Measure of the Progress Business & Industry Towards Sustainable Development*. |
| 1995 | UN Commission on Sustainable Development (CSD) adopted a work program on *Indicators of Sustainable Development*. |
| 1996 | The development of the Bellagio Principles (core characteristics of sustainability indicator frameworks) by the International Institute for Sustainable Development (Canadian think tank). |
| 1997 | The Global Reporting Initiative was launched, a joint initiative of the US non-governmental organisation Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environment Program. The GRI provides guidance to the development of sustainability reports.<br>One of the first corporation reports was released by Interface Inc.<br>The World Bank released a report titled *Expanding the measure of wealth: indicators of environmentally sustainable development*.<br>The Association of Certified Chartered Accountants begins to identify and reward the best practice in the communication of sustainability performance in around 20 countries around the world through its award system. |
| 1998 | Royal Dutch/Shell Group released its first sustainability report.<br>Cooperative Bank, a UK based company, released its first sustainability report. |
| 1999 | The UK government was the first national governments to release a sustainable development monitoring system, *Quality of Life*.<br>The Global Reporting Initiative released its initial sustainability reporting guidelines.<br>The Sigma Guidelines were first launched in 1999 and again in 2003 by the BSI, Forum for the Future and AccountAbility. These guidelines aim to provide advice to companies looking to improve their sustainable development performance and disclosure.<br>Launch of *The Sustainability Report Program*. It is an independent, non-partisan, not-for-profit organization and it produces the online *Sustainability Report* to help Canadians identify critical sustainability issues and trends that affect our health, wealth and happiness and that of future generations.<br>The OECD held a conference *Towards Sustainable Development: Indicators to Measure Progress* in Rome. |
| 2000 | OECD released a publication *OECD Environmental Indicators: Towards Sustainable Development.*<br>*The Global Reporter* was released – the first international benchmark survey of corporate sustainability reporting. The top six companies included: BAA; Novo Nordisk; The Cooperative bank; British Telecom; BP Amoco; and Royal Dutch/Shell Group. |
| 2001 | The United Nations Commission on Sustainable Development (CSD) released its *Indicators for Sustainable Development* framework.<br>The *International Sustainability Indicators Network* was founded. |

| | |
|---|---|
| 2002 | The World Business Council for Sustainable Development released *Sustainable Development Reporting: Striking the Balance* guidelines.<br>The Global Reporting Initiative released its revised *Sustainability Reporting Guidelines*.<br>The Australian Government released its publication *Are we sustaining Australia?*<br>Redefining Progress and Earth Day Network released *A Community Indicator Guide*. |
| 2003 | The Institute of Social and Ethical Accountability, commonly referred to as AccountAbility, released the AA 1000 Assurance Standard for assurance on sustainability reports.<br>The International Federation of Accountants (IFAC) and the International Auditing and Assurance Standards Board (IAASB) released the International Standard on Assurance Engagements known as the ISAE 3000. This standard is intended to provide assurance on non-financial information, and is applicable to assurance engagements on sustainability reports.<br>The International Aluminium Institute's launched its *Aluminium for Future Generations* Sustainable Development Program. |
| 2004 | The UK Sustainable Development Commission released a report that critiqued the Governments progress on sustainable development. A chapter of this report considered its indicator framework. |
| 2005 | The UK government released a revised version of its sustainability indicator framework titled *Securing the Future*. |
| 2006 | The OECD undertook a review of national sustainable development strategies of OECD countries, *Good Practices in the National Sustainable Development Strategies of OECD Countries*. Many of these strategies now incorporate indicator frameworks.<br>The UN Commission for Sustainable Development released a revised sustainable development indicator set.<br>The Global Reporting Initiative released its revised *Sustainability Reporting Guidelines – G3*. |

National governments, corporations, peak representative bodies and non-government organisations have made significant contributions to the evolution of sustainability monitoring systems. Their contributions will now be reviewed.

**National governments.** National governments which were signatories to Agenda 21 agreed to prepare national sustainable development strategies, most of which encompass a monitoring system. Progress has been slow, however, in producing sustainable development strategies. In fact, only 12 percent of a total of 191 countries had implemented strategies by 2006 (UN DESA cited in OECD 2006b, p. 9). Promisingly, another 24 percent of governments were at the same time in the process of approving strategies or are actively developing them (OECD 2006b, p. 10). As part of their strategy, most countries have developed a set of indicators to monitor sustainable development (OECD 2006b, p. 28).

The United Kingdom was the first national government to release a sustainable development monitoring system in 1999. This indicator system encompasses both headline and supporting indicators. The United Kingdom's contribution has been significant, primarily as it was a first mover, but also because the monitoring system was updated in 2005 and incorporates new research and ideas. This monitoring system will be further discussed in Chapter 5.

The Sustainable Development Commission (SDC) has critiqued the 1999 UK government sustainability monitoring system. The SDC is a government-independent advisory body on sustainable development. It reports to the UK Prime Minister and First Ministers of the Devolved Administrations (Scotland and Wales). The aim of the Commission is to place sustainable development at the centre of government and corporate policy (SDC, n.d., online, p. 2).

In 2004 the SDC released a report that critiqued the government's progress on sustainable development, *We Must Try Harder*. A chapter of this report offers an analysis of the government's indicator framework. The report clarifies the strengths and limitations of the current monitoring system and some ideas and concerns raised in the report appear to have influenced the revised version of the UK government monitoring system released in 2005 titled *Securing the Future*. The SDC is important as it contests, as it did in its 2004 report, the neoliberal assumptions that underpin mainstream monitoring systems (for example, the SDC questioned the inclusion of GDP as an accurate measure of progress in a sustainable society).

Numerous other national governments have released sustainability monitoring systems (OECD 2006b, p. 27-28). Finland developed its set of sustainability indicators in 2000, which were revised in 2004. New Zealand released its New Zealand Programme of Action in 2003. This action plan sets out 40 indicators based on the themes of population change, environmental and ecosystem resilience, economic growth and innovation, skills and knowledge, living standards and health, consumption and resource use, and social cohesion. Switzerland monitors sustainable development using the MONET indicator system that was released in 2002. The MONET indicator system includes 115 indicators within 26 themes to monitor the current situation and trends. Norway uses an indicator

system established in 2003 to underpin the Norwegian Action Plan for Sustainable Development, National Agenda 21. The Austrian Strategy for Sustainable Development incorporates an indicator system released in 2002.

The Australian Government in 2002 released its indicator reporting system *Are We Sustaining Australia?* The aim of this reporting system was to evaluate the nation's performance in relation to the objectives of the *National Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 2002, online).

The European Commission (EC) formally endorsed its framework *Measuring Progress Towards a More Sustainable Europe* in 2005. This indicator set is the first framework for monitoring the EU sustainable development strategy (European Commission 2005, p. 3).

While the UK government *Securing the Future* monitoring system is recognised as the international benchmark (see Chapter 5), the agencies of other national governments have contributed to the evolution of sustainability reporting. A critical mass of reporting by national governments provides momentum and increases the possibility of further research and development in this field.

**Corporations.** While only a small percentage of corporations have adopted sustainability reporting, it is being taken up at an increasing rate. In 2002, among the top 250 companies of the *Global Fortune-500*, sustainability reporting increased 10 percent from the previous year (Woods 2003, p. 6). From 2002 to 2005 there was a 54 percent increase, resulting in 68 percent of the Global 250 companies reporting on sustainability. Moreover, 48 percent of the top 100 companies in 16 advanced countries issued sustainability reports in 2005, an increase of 36 percent from 2002 (KPMG 2005, p. 9). Within the economically advanced countries, Japan and the UK lead in the proportion of enterprises within the top 100 publicly listed companies developing sustainability reports, at 80 and 71 percent respectively. The international average is 41 percent for economically advanced countries (Commonwealth of Australia 2005, p. 4).

The increase in corporate reporting on sustainability has been driven by a number of factors. These factors include public questioning of the function of corporations and their responsibility to the community beyond creditors and shareholders (Macintosh &

Wilkinson 2006, p. 9) and stakeholders concerns about the social, economic and environmental performance of business (AccountAbility 2003, p. 2). Investors are also interested in emerging risk-related aspects of financial performance (AccountAbility 2003, p. 3). The inclusion of sustainability reporting within the accounting tool set for extended performance reporting (Chua 2005, p. 2) has also contributed to this process, as has the formalisation and evolution of the Global Reporting Initiative, which has released the third edition of its guidelines (Slater & Gilbert 2004, p. 41; Gee & Slater cited in Luckman 2006, p. 261) and the emergence of triple bottom line reporting[2] (Allen Consulting Group 2002, p. viii; Savitz & Weber 2006, p. xii).

Interface Inc. released one of the first corporation reports in 1997. The company was a leader in the commercial interiors market, offering floor coverings and fabrics. The aim of this measurement system for Interface was to enable an understanding of the impact of their business, and then to change behaviour for the good of the environment. The company used sustainability reporting to help answer the question 'Is our business making progress in its quest to become sustainable?' (Interface, n.d., online, p. 3).

Other corporations to follow Interface's lead included the Royal Dutch/Shell Group and the Cooperative Bank, both releasing their first sustainability reports in 1998 (Shell, n.d., online, p. 3; Co-operative Bank, n.d., online, p. 3). The first corporations to release a sustainability report in accordance with the Global Reporting Initiative guidelines were Heineken N.V, which has a global network of distributors and breweries, Roche, a healthcare company and John Laing, a leading investor, developer and operator of privately financed, public sector infrastructure projects. COGEMA, a French government-owned nuclear group, one of the largest suppliers of uranium in the world followed soon after as did the Banca Monte dei Paschi di Siena (BMPS), the oldest bank in the world. Each of these corporations released its first sustainability report in 2000 (S. Lamprinidi, personal communication, September 12, 2007). The actions of these early adopters have encouraged the growth of sustainability reporting.

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[2] The early 1990s saw the concept of the triple bottom line being coined by John Elkington, and well publicised in his book *Cannibals with Forks*, released in 1997.

**Peak representative bodies and non-government organisations.** Peak international organisations such as the United Nations and the OECD have played key roles in developing sustainability indicators.

*The United Nations.* It was previously noted that Agenda 21, a report resulting from the United Nations Earth Summit in 1992, called on countries and the international community to develop indicators of sustainable development. Agenda 21 acknowledged the limitations of the existing reporting practices, and encouraged governments to gather environmental and social data and to identify sustainable development indicators (Macintosh & Wilkinson 2006, p. 9). It also identified the need for a consistent reporting framework at national, regional and global levels (UN Commission on Sustainable Development 2001, p. 2). Accordingly, the United Nations Department of Economic and Social Affairs and the Commission on Sustainable Development (CSD) adopted a work program on *Indicators of Sustainable Development*, and in 2001 it released its *Indicators for Sustainable Development Framework*. This framework was revised in 2006. The initiative proposed a consistent framework that could be applied at national government level and that included a common set of indicators, regularly updated and widely accessible reports and databases (UN Commission on Sustainable Development 2001, p. 19). The evolution of this national government monitoring system is significant as it is allows for a uniform approach to be implemented. The benefits of a common framework are easier comparability between indicators, targets and performance (Pinter et al. 2005, p. 17).

The United Nations Environmental Program has also been active in forming joint partnerships to develop initiatives. The United Nations Environmental Program and the US non-governmental organisation Coalition for Environmentally Responsible Economies (CERES) jointly launched the Global Reporting Initiative (GRI) in 1997. The GRI was developed in response to the need for a consistent, rigorous, comparable, and credible sustainable reporting framework. The GRI initially focused on corporate monitoring similar to the expectations of financial reporting. The authors of the GRI argue that this type of reporting is required to capture the context of sustainability and understand the interrelationships between various elements of the concept, as sustainability requires linkages between the components of a set of performance measures (GRI 2002, p. 9). The evolution of the GRI is significant as it is the measurement system that is most commonly applied by corporations (Macintosh & Wilkinson 2006, p. 9; Crawford cited in Luckman

2006, p. 261; Grafe-Buckens & Jankowska cited in Luckman 2006, p. 261; KPMG 2005, p. 7).

The United Nations Environmental Program has also formed a partnership with SustainAbility, a private consultancy firm based in London. In 1996 they launched *Corporate Environmental Reporting: A Measure of the Progress Business & Industry Towards Sustainable Development.* With sustainability evolving, in 2000 they launched *The Global Reporter*, the first international benchmark survey of corporate sustainability reporting. This benchmark survey allows corporations to position the quality of their reports against other business enterprises (UNEP/SustainAbility 2000). In the absence of a regulated approach, this benchmark enables corporations to assess the quality of their reports.

*The OECD.* Along with the UN, the OECD has played a critical role in developing sustainability indicators. In 1989, following the *Brundtland Report*, the OECD initiated a program on environmental indicators. A key focus of this program was monitoring progress towards sustainable development and integrating indicators into sectoral policy in key sectors such as transport, energy, economic and resource management. The program also sought to decouple environmental pressure from economic growth (OECD 2003, p. 6; Macintosh & Wilkinson 2006, p. 8). Nevertheless the historical limitations of sustainability reporting suggest that further research and development is required to ensure analytically strong frameworks.

In 1999 the OECD held the Towards Sustainable Development: Indicators to Measure Progress Conference, attended by approximately 150 participants from OECD countries and other international organisations and institutions. The theme of the conference was indicators and the measurement of various components of sustainable development. An outcome was the conference proceedings, published as the book *Towards Sustainable Development: Indicators to Measure Progress.* The proceedings provide a valuable contribution to the debate as conference participants detail their experiences in developing indicator systems for sustainable development, from which others can learn the pitfalls and the successes.

Another notable publication from the OECD was the *Good Practices in the National Sustainable Development Strategies of OECD Countries* in 2006. A section of this report considers the rise of national government reporting systems for sustainable development,

and the strengths and weaknesses of these emerging systems. This report's contribution is important as it attempts to identify best practice in national sustainable development strategies, of which monitoring systems are a key part.

*Peak representative bodies.* International peak business councils, professional societies and think tanks have also begun to develop sustainability indicators. The main peak international business council, World Business Council for Sustainable Development, in 2002 released a guideline for sustainable reporting titled: *Sustainable Development Reporting: Striking the Balance*. The Council undertook this project to provide companies with guidance on why, how and what to report based on their members' experiences and practices. WBCSD encourages its members to produce sustainability reports (WBCSD 2002, p.4). The guidelines encourage sustainability reporting by illustrating the added economic value reporting can deliver.

Professional societies have played a role developing standards and rewarding good practice. The two main standards that have been released are those of the International Federation of Accountants (IFAC), published in 2003, and the International Auditing and Assurance Standards Board (IAASB), released as the International Standard on Assurance Engagements (ISAE 3000). The ISAE 3000 is intended to provide assurance on non-financial information and is applicable to assurance engagements on sustainability reports (IFAC, n.d., online, p. 3).

In 2003 the Institute of Social and Ethical Accountability, the international professional body for accountability, commonly referred to as AccountAbility, released the AA 1000 Assurance Standard for assurance on sustainability reports. AccountAbility define their role as that of an innovation hub**,** developing and promoting new tools and systems which enable people to hold to account those individuals and institutions whose decisions and actions affect their lives (AccountAbility, n.d., online, p. 2). These standards are important in the absence of regulation or an agreed reporting framework as their aim is to provide assurance on non-financial information.

*Award systems.* The development of an award system to illuminate best practice reporting systems has evolved in most developed countries. In 1997 the Association of Certified Chartered Accountants also began to identify and reward the best practice in the

communication of sustainability performance in 20 countries around the world. The Association also has an award system that recognises excellence in sustainability reporting. Examples include: the ACCA Hong Kong Awards for Sustainability Reporting; the European Sustainability Reporting Awards; the ACCA Australian and New Zealand Awards for Sustainability Reporting; and the ACCA UK Awards for Sustainability Reporting (ACCA, n.d., online, p. 6). The creation of an award system demonstrates that the accounting profession recognises sustainability reporting as a new form of business reporting.

*Industry associations.* Industry associations have also played an active role in the development of sustainability reporting systems through combined industry reporting. An industry level contribution is particularly significant internationally because it brings together regional and national associations and adds value to the programs undertaken at this level. The International Aluminium Institute has developed the *Aluminium for Future Generations Sustainable Development Program*. The program was launched in 2003. It is a voluntary global undertaking by the Members of the International Aluminium Institute. Its overall objective is to position the industry to be able to continue its global growth, while minimising its environmental footprint. The initiative comprises 12 voluntary objectives, including four newly agreed in 2005, and 22 performance indicators. The aim of the Institute is to encourage a continual improvement in sustainability performance by the industry. The development of this international program is significant because it is supported by 26 CEOs whose companies represent over 75 percent of the world's aluminium production (IAI, n.d., online, p. 2).

Another international association, the International Iron and Steel Institute (IISI) also reports on sustainability indicators. It presents sustainability indicators, within its annual report *Steel: The Foundation of a Sustainable Future.* The report released in 2005 represents 35 companies from four continents and 30 countries, contributing 38 percent of the world's raw steel production (IISI, n.d., online, p. 5).

*Non-government organisations.* Non-government organisations have also contributed to the development of monitoring systems. Sustainable Seattle, established in 1991, is a non-profit organisation dedicated to enhancing the long term quality of life in the Seattle/King

County area. This indicator framework is particularly significant because it was one of the first, if not the first non-government organisation, to release a monitoring system for sustainability. As a result Sustainable Seattle is acknowledged worldwide as a leader in the development of regional sustainability indicators based on citizens' values and goals for their communities. As early as 1993 Sustainable Seattle produced the first of three indicator reports. The organisation produced two other reports in 1995 and 1998. The organisation decided after the 1998 report to direct energy into other projects (Sustainable Northwest & Oregon Solutions cited in Holden 2001, p. 221). However, in 2004 the program was renewed and in 2005 a set of indicators was released. Its mission is 'to move the King County region toward sustainability with compelling indicators and strategies for action' (Sustainable Seattle, n.d., online, p. 2).

The Coalition for Environmentally Responsible Economies (US non-governmental organisation) and the UN jointly launched the GRI as previously mentioned. The contribution of the Global Reporting Initiative to reporting on sustainability has been particularly noted.

Redefining Progress, a public policy think tank dedicated to finding solutions that ensure a sustainable and equitable world for future generations, and Earth Day Network, which promotes environmental citizenship and year round progressive action worldwide, released *A Community Indicator Guide* in 2002. This guide provides a process that a community can use to identify key concerns and gather data to enhance their community's ecological and social well-being (Redefining Progress and Earth Day Network 2002, p. 1). This coalition enables community organisations to participate in developing sustainability indicators. Other guides are available for corporations and governments but this guide is offered to communities.

At the international level, the International Sustainability Indicators Network was founded in 2001. A range of organisations – governments; philanthropic foundation, and private business – provide financial support to this network. The Network's aim is to connect people who work on or are interested in using sustainability indicators to measure progress toward sustainability in their communities, companies, countries, and the world (ISIN, n.d., online, p. 2). The network has enhanced the quality and quantity of indicators and sustainability reports (*The Sustainability Report*, n.d., online, p. 1).

At a country level, the Sustainability Reporting Program was established in Canada in 2001. This is an independent, non-partisan, not-for-profit organisation. Its aim is to produce an online sustainability report to help Canadians see critical sustainability issues and trends that affect present health, wealth and happiness and that of future generations. The Canadian program also encompasses a sustainability indicators network to link practitioners in environment and sustainability reporting with sources of expertise (*The Sustainability Report*, n.d., online, p. 1).

## 1.3 Overview of attempts to monitor sustainability in Australia

A significant number of reporting frameworks have evolved over a short time period in Australia (see Exhibit 1.2). This review of Australian sustainability monitoring systems will broadly outline three types of sustainability reporting: government, corporations, and other organisations. The review of monitoring systems will be followed with an account of other significant initiatives such as the release of publications, standards and awards.

**Exhibit 1.2 Chronological order of significant Australian indicator development**

| | |
|---|---|
| 1997 | Australasian Reporting, which was instigated to improve the standards of financial reporting in Australia adopted a special category to award excellence in sustainability reporting. |
| 2000 | Since 2000 Commonwealth government agencies have been required under the Environment Protection and Biodiversity Conservation Act to report environmental performance and their contribution to Ecological Sustainable Development.<br>Newcastle City Council's Indicators of a Sustainability Community project. |
| 2001 | The Queensland Government released its first annual *Priorities in Progress* report, which outlines performance achieved against the Government's priorities, along with policy responses in major economic, social, environmental and strategic governance areas.<br>WMC Resources released a sustainability report, one of the first in the mining sector. |
| 2002 | The Australian Bureau of Statistics (ABS) released the publication *Measuring Australia's Progress* (MAP).<br>Environment Australia released *Are we sustaining Australia?* This monitoring systems reports the nation's performance to be monitored in relation to the objectives of the National Strategy for Ecological Sustainable Development<br>Monash University is seen to be the leader in sustainability reporting within the tertiary education sector and released their first report in 2002 as an individual report.<br>The Commonwealth government released a report titled *Triple Bottom Line Measurement and Reporting in Australia*, prepared by The Allen Consulting Group.<br>Origin Energy released its first sustainability report, one of the first in the energy sector.<br>The City of Melbourne and the International Council for Local Environmental Initiatives Australia/New Zealand launched the first set of Triple Bottom Line (TBL) tools currently in use at the City of Melbourne. |
| 2003 | The Commonwealth of Australia released a report titled *The State of Sustainability Reporting in Australia*. Two further updates have been released since then.<br>Group 100 (an association of Australia's senior finance executives) released a report titles: *Sustainability: A Guide to Triple Bottom Line Reporting*. |
| 2004 | The South Australian Government released its State Strategic Plan in 2004 which covers the three dimensions of sustainability, but not classified as a monitoring system for sustainability.<br>The Government of ACT *Measuring Our Progress: Canberra's Journey to Sustainability*.<br>Westpac released a Stakeholders Impact Report that aligns sustainability reporting with financial reporting. Westpac was the first of the four main banks in Australia to release a sustainability reporting system of some description.<br>The ABS updated the publication *Measuring Australia's Progress* (MAP). |
| 2005 | The Australian Conservation Foundation first released a sustainability report in 2005.<br>The CPA Australia released a report titled *Sustainability Reporting Practices, Performances, and Potential*, written by the University of Sydney.<br>Release of the *Outer Eastern Regional Sustainability Indicator*s Report (Victoria).<br>The Australian Minerals Industry Framework for sustainable development *Enduring Value* was released. |
| 2006 | The ABS updated the publication *Measuring Australia's Progress* (MAP). |

Following international trends, government, corporations and non-government organisations have been active in developing sustainability monitoring systems. Moreover, other initiatives have been undertaken that support the evolution of sustainability reporting.

**National government reporting systems.** Two of the most dominant national government frameworks emerged from different agencies in 2002. The Australian Bureau of Statistics released *Measuring Australia's Progress* (MAP); and Environment Australia released *Are We Sustaining Australia?* Scholars have suggested similarities between the two indicator systems, with a potential for confusion and duplication (Macintosh & Wilkinson 2006, p. 48). However, support is given to the continuation of both programs as their varying emphases could benefit the overall contribution to sustainability reporting.

*Measures of Australia's Progress.* The *Measures of Australia's Progress* (MAP) publication was first produced in 2002 and updated in 2004 and 2006. MAP is a facts-based publication that includes indicators that encompass key aspects of Australia's economic, social and environmental progress. The indicators are a selection of statistical facts that are intended to allow readers to make their own assessment of whether life in Australia is getting better.

The MAP publication within the Australian context is considered by scholars as an important and significant contribution to reporting across the three pillars of sustainability:

> Without doubt, the MAP program is a landmark in geographic reporting in Australia. Not only do MAP reports provide information across the three pillars of sustainability, the indicators that have been selected are relatively comprehensive, the system is sensitive to change and, possibly most importantly, it is now regular and timely. There are still gaps in data sets, and headline indicators have not yet been developed for several of the headline dimensions (e.g. housing and social attachment). However, the MAP reports are an important achievement. (Macintosh & Wilkinson 2006, p. 32)

As Macintosh & Wilkinson (2006, p. 32) suggest, MAP is seen to be a comprehensive national geographical framework, but, importantly, it has been updated at regular intervals, in comparison to the second significant national government geographical framework.

*Are We Sustaining Australia?* The *Are We Sustaining Australia? Report Against Headline Sustainability Indicators* produced by the Commonwealth Department of the Environment and Heritage (now referred to as Environment Australia) in 2002 aims to evaluate the nation's performance in relation to the objectives of the *National Strategy for*

*Ecologically Sustainable Development*. The core objectives of this strategy are (Commonwealth of Australia 1992, online):

- to enhance individual and community wellbeing and welfare by following a path of economic development that safeguards the welfare of future generations
- to provide for equity within and between generations
- to protect biological diversity and maintain essential ecological processes and life-support systems.

This framework assists in the development of a national sustainability monitoring system by allowing Australia to make a contribution to research and development in this field.

**Commonwealth government agencies.** The Commonwealth government has attempted to make sustainability reporting mandatory for national government agencies. Since 2000, Commonwealth government agencies have been required to report environmental performance and their contribution to ecologically sustainable development. Examples include the Department of Environment and Heritage and Department of Family and Community Services, each of which has produced organisation reports. It has been discovered, however, that compliance is low and that there is considerable scope for improvement (ANAO cited in Macintosh & Wilkinson 2006, p. 40). The quality and nature of Commonwealth reporting systems varies considerably. The focus of the reporting appears to be on internal operations such as paper use, electricity consumption and staff turnover, which are historical, well-known indicators (Macintosh & Wilkinson 2006, p. 39). The requirement of agencies to report on contributions to ecologically sustainable development suggests that the national government considers it an important policy issue.

**State and territory governments.** State and territory governments have also developed various forms of monitoring systems that report on aspects of sustainability. The comprehensiveness and quality varies between the monitoring systems, and the focus, not unlike the two Commonwealth government frameworks, also differs. Monitoring systems with a focus on incorporating economic, social and environmental reporting will be considered in this review to provide an indication of the type and scope of work being undertaken in this area.

*Queensland.* The Queensland government produces an annual *Priorities in Progress* report, which outlines performance achieved against the government's priorities, along with policy responses in major economic, social, environmental and strategic governance areas. The government developed this report to demonstrate its commitment to engaging with the community, delivering high quality services and maintaining accountability. The report also identifies issues to be considered by the government, including policy development and resource allocation decisions to enable improvement in service delivery. The first report was published in 2001 and six subsequent reports have followed (Queensland Government 2006, p. iii). The report is important because it provides a process which has been implemented over a period of time that reports on the performance of the government's priorities and policies. However, the process does not include an indicator monitoring system.

*Tasmania. Tasmania Together* was launched by the Tasmania government in 2001. *Tasmania Together* is a 20 year social, economic and environmental plan for Tasmania. It is a community-based vision for the state, which includes one vision, 12 goals and 143 benchmarks to shape government policy, service delivery and budgets. *Tasmania Together* is linked to planning in the business and community sector, and monitored and promoted by an independent statutory authority.

The plan has 12 headline indicators for each of the goals. These indicators were first reported against in 2007. The plan was developed by the Tasmanian government to outline the vision for themselves and future generations and to provide a mechanism to measure progress towards that vision (Tasmanian Government 2006, p. 2). It is significant because it provides a long term vision incorporating social, economic and environmental aspects and measures of progress towards that vision.

*South Australia.* The South Australian government released its *State Strategic Plan* in 2004. The plan addresses the three dimensions of sustainability but is not classified as a monitoring system for sustainability. This government wished to develop a 10 year plan for everyone in the state to work towards common goals. Two years into the plan an update of progress was undertaken by an independent group of experts. The six objectives of the current plan are: increasing prosperity; improving well-being; attaining

sustainability; fostering creativity; building community; and expanding opportunity. The plan incorporates 98 targets against which progress is monitored (Government of South Australia 2007a, p. 3). This plan is significant because in South Australia it is the first of its kind that considers economic, social, and environmental goals and targets in one combined plan.

*Victoria.* The Victorian government initiated the *Growing Victoria Together* project in 2001. This project expresses the government's broad vision for the future. This vision is meant to provide a basis for involving Victorians in the challenge of creating a future based on fairness, prosperity and sustainability. The plan will organise government actions to help to create these outcomes (Victorian Government 2004, p. 1).

No monitoring system is incorporated into this project. However, the Victorian government also produced the *Victoria's Environmental Sustainability Framework* in 2005. The framework outlines key environmental challenges, explains environmental sustainability and identifies strategic directions. The plan also sets out objectives and interim targets and identifies how to action the framework. The government released this framework to provide directions for government, business and the community to build environmental considerations into their policies and activities. The Victorian government wishes to make environmental sustainability a priority for government. The plan takes a long-term, whole of government approach to developing sustainability indicators (Victoria Government 2005, p. 8).

*Australian Capital Territory (ACT).* The ACT government has had two attempts at monitoring progress and sustainability. In 1999 they released a reported titled *State of the Territory Report: Improving our Quality of Life* in Canberra and in 2004 *Measuring our Progress: Canberra's Journey to Sustainability*. The latter report provides an expression of what sustainability might mean for the ACT and a 'snapshot' of progress. It measures progress against a set of 11 core sustainability dimensions using 29 headline indicators and 50 supplementary indicators that have been derived through research and community consultation. The reporting on progress to sustainability reflects a commitment within the ACT government's policy on sustainability. It states that there is

no agreed approach to this reporting, but wishes to contribute to this learning process (ACT Government 2004, p. 4).

*Western Australia.* The Western Australian government released a *Sustainability Strategy* in 2003, which was the first comprehensive strategy at a state level in Australia. In this strategy it committed to developing state of sustainability reporting (Government of Western Australia 2003, p. 4). To date, this commitment has not been achieved.

**Regional and local level development.** A limited number of initiatives have developed at a regional level. A notable example is the *Outer Eastern Regional Sustainability Indicat*ors project in Victoria. This initiative is significant as it is a collaborative regional project between the City of Knox, the City of Maroondah, the Shire of Yarra Ranges and the Centre for Regional Development at Swinburne University of Technology. The indicator project aims to monitor a community vision of sustainability (Indicators of Outer Eastern Melbourne, n.d., online, p. 1).

Some specific local government initiatives have also appeared. The Newcastle City Council's *Indicators of a Sustainability Community Project* considers what the community values rather than accepting that economic growth is all that counts. The reporting system consists of 15 characteristics and 25 indicators (Australia Institute 2000, p. 1). Sutherland Shire Council, located in the southern suburbs of Sydney, releases an annual *State of the Shire* report, which consists of indicators that report on the three dimensions of sustainability (Macintosh & Wilkinson 2006, p. 39). While development of sustainability indicators frameworks at the local government level is limited, these contributions are valuable as they consider sustainability at a different scale, with a stronger focus on local issues.

**Corporations.** Corporations – private, publicly listed and state owned – are also developing reports. A contribution to sustainability reporting at this level is important as it provides a micro analysis of sustainability within the context of an entity and its flow on impacts on society, the environment and the economy.

In Australia, only 23 percent of companies produce sustainability reports, considerably below the international average of 41 percent for economically advanced countries

(Commonwealth of Australia 2005, p. 4). In fact, in Australia in 2003 only 24 corporations produced a discrete sustainability report (Jones, Frost & Loftus 2005, p. 6). S&P/ASX 300 companies have demonstrated a much greater commitment in reporting than private and unlisted companies. Sustainability reporting is also more common for foreign owned companies. This suggests Australian companies are lagging behind their overseas counterparts (Commonwealth of Australia 2005, p. 3). Some of the first corporations to release a sustainability report include:

- WMC Resources, sustainability report (2001)
- Origin Energy, sustainability report (2002), one of the first in the energy sector
- The Australian Gas Light Company (AGL), sustainability report (2004)
- Westpac, social impact report (2002)
- Westpac, stakeholder impact report (2004)
- National Australia Bank, corporate social responsibility report (2004)
- ANZ, sustainability report (2005) (Macintosh & Wilkinson 2006, p. 42).

A number of state owned companies or government business enterprises (GBEs) are producing sustainability reports. Forests NSW, Sydney Water Corporation, and the Ports Corporation of Queensland have all produced sustainability reports, and some subsequent reports. Jones et al. (2005, p. 15) believe that the high number of government business enterprises releasing these reports is because 'many GBEs have a high exposure to environmental risks, and are already subject to government regulation and codes'. Examples given to illustrate this observation are Energy Australia, Integral Energy and the Western Power Corporation. All sit within the electricity supply industry and are members of the Energy Supply Association of Australia that has environmental codes of practice and produces triple bottom line reporting guidelines for the electricity industry.

There is considerable diversity in the scope and form among the companies preparing these reports (Jones et al. 2005, p. 6-12). However, within the context of Australian companies lagging behind their international counterparts, the contributions of these first movers have created a presence for this type of reporting in this country.

**Other organisations.**

*Business associations.* It appears only one peak business association has been active in developing industry reports for sustainability. The Australian Aluminium Council released its first sustainability report in 2004 with a focus on environmental issues (Macintosh & Wilkinson 2006, p. 47). This report provides a narrative assessment, with no defined indicator monitoring system. This development is important, however, as its contributes to the International Aluminium Institute's reporting program, which ensures Australia is represented in this initiative.

*Not-for-profit sector.* Within the not-for-profit sector sustainability reporting also appears to be limited. Macintosh & Wilkinson (2006, p. 43) suggest this reflects the lack of resources available to some groups. Furthermore, the objectives of many not-for-profit organisations are to promote social, environmental and economic progress, which inturn makes it difficult to distinguish their efforts to report sustainability as many of these objectives are already reported on.

The Australian Conservation Foundation (ACF) first released a sustainability report in 2005. It is the only environmental group to produce such a report. It is an annual report that provides an appraisal of how well the organisation has performed in terms of environmental campaigning, its financial performance, and social impact. The ACF believes it is important to see how well it sustains itself. This reporting process provides two main benefits: transparency and self-assessment, and keeping outcomes focused and relevant (ACF 2005, p. 2). The report format is pr**e**dominately in a narrative, with a selection of indicators incorporated throughout the report. No indicator monitoring system is included in this reporting system.

*Universities.* Only a few universities have established comprehensive sustainability reporting, including Monash University, the University of Newcastle and the Australian National University. Within these three universities, Monash University is seen to be the leader in sustainability reporting within the tertiary education sector due to the detailed nature of the assessment of the university's economic, social and environmental performance in its report. Monash uses a narrative approach, which assesses issues such as staff profile, human rights, student engagement, energy use,

greenhouse emissions and water use. Their approach also has set targets for achieving sustainability (Macintosh & Wilkinson 2006, p. 43). The university's first report was released in 2002 as an individual report; the second in 2004 was integrated into the annual report (Monash University 2006, p. 1). Reporting by the university sector provides another important contribution to the growth and nature of sustainability reporting.

**Other initiatives.** Initiatives have evolved to support sustainability reporting, including publications, guidelines, standards and awards. The Commonwealth government has released several publications on the topic of sustainability reporting. In 2002 it released a report titled *Triple Bottom Line Measurement and Reporting in Australia*, prepared by The Allen Consulting Group. In 2003 it released a report titled *The State of Sustainability Reporting in Australia*. KPMG, Deni Greene Consulting Services and the Centre for Australia Ethical Research prepared this report. Two further updates have been released since then.

In 2003 the Group 100 (an association of Australia's senior finance executives) released a report titled *Sustainability: A Guide to Triple Bottom Line Reporting*. In 2005 the CPA Australia released a report titled *Sustainability Reporting Practices, Performances, and Potential* written by the University of Sydney. These reports are a reference to sustainability reporting as they provide information and guidance within an Australian context.

Peak business associations have also being active in developing guidelines for their members. Examples include the Minerals Council of Australia guidelines for sustainable development released in 2005 that require a commitment to annual public sustainability reporting by members. The report titled *Enduring Value* suggests that members either self-select from the GRI or self-develop (Minerals Council of Australia 2005, p. 6). The Energy Supply Association of Australia's (ESAA) has also developed the Code of Sustainability *Practice* to complement the efforts of their member businesses in committing to sustainable practice. The ESAA Code builds on the ESAA *Code of Environmental Practice* and supports the activities of ESAA member companies in developing sustainable businesses (AGL 2005, p. 3).

An award system for sustainability reporting was established in 1997 by Australasian Reporting, an independent, not-for-profit organisation supported by volunteer

professionals from the business community and professional bodies concerned about the quality of financial and business reporting. This organisation was established to improve the standards of financial reporting in Australia and adopted a special category for excellence in sustainability reporting. The criteria against which they assess reports include completeness, credibility and communication (see ARA, n.d., online, p. 2). As already noted, award systems provide an opportunity to clarify best practice and promote sustainability reporting at the corporate level. Interestingly this award system was developed well before corporations started to release sustainability reports, which were not common before 2001.

Two main standards for sustainability reporting have developed or are being adopted. Standards Australia has published the Standard DRO3422: *General Guidelines on the Verification, Validation and Assurance of Environmental and Sustainability Reports.* Standards Australia is recognised as the peak non-government standards development body in Australia (Standards Australia, n.d., online, p. 1). The Australian Auditing Standards have the scope to be applied to the audit of sustainability reports (KPMG 2005, p. 46). As noted earlier these standards are important in terms of regulation and because they offer an agreed format to help provide assurance on non-financial information.

**In summary,** it is evident from the numerous monitoring systems that have evolved over the past 15 years that sustainability reporting has become increasingly adopted by governments, corporations and community organisations in Australia. Organisations and entities have approached this need for a new form of reporting from different perspectives. In general, reporting considers the economic, social and environmental impacts of any entity's decisions, policies and activities.

National government sustainability reporting is developing with different levels of intensity. The Australian government released a monitoring system for sustainability in 2002, *Are We Sustaining Australia?* However, at the time of writing, data have not been updated since the inception of the monitoring system. This indicates that there is limited government investment or interest in this monitoring system. Nevertheless Commonwealth government agencies are now required to report on their contribution to ecologically sustainable development. As discussed, the quality and focus of the reporting systems varies considerably between agencies. Variations in the quality of reporting

between agencies might be attributed to the lack of a uniform framework to report against.

At the state level, organisational reporting is ad hoc. Only two states have established comprehensive reporting systems, which include all the dimensions of sustainability. In the ACT, legislation requires public authorities to report annually against their contribution to ecologically sustainable development. In Western Australia the annual reporting framework for government agencies was reviewed in 2003 with the intention of incorporating sustainability reporting, including key performance indicators (Government of Western Australia 2003, p. 53). While the WA *Sustainability Strategy* was released in 2003 this requirement is yet to be implemented. Incorporating sustainability reporting within legislation, strategy and plans provides a strong indication that governments wish to pursue this type of reporting, but are feeling their way in these early stages.

Local council reporting is increasing, but the number is small overall. Knox, Melbourne, Moreland and Manningham in Victoria, Wollongong City Council in New South Wales and Redland Shire Council in Queensland are at the forefront of the move to sustainability reporting at this level. Macintosh & Wilkinson (2006) comment that a:

> …low number of Council's preparing reports is perhaps to be expected given the costs of preparing sustainability reports, the limited resources available to many local councils, the lack of relevant expertise and the absence of statutory requirements to prepare them. (p. 41)

Australian corporations are lagging behind international benchmarks in sustainability reporting in respect to the number of corporations producing reports. Moreover, research has identified considerable diversity in the scope and form of reports being prepared by Australian corporations.

Overall, sustainability reporting has emerged in an ad hoc manner. Monitoring systems have been established where data have not been updated since their inception. Many vary in their focus (eg quality of life, sustainability, and progress are all terms that are used to represent the interrelationships between economic, social and environmental factors) and there is a lack of consistent reporting formats between the same levels of governments. This has resulted in significant variations in the quality and approaches that have been

applied to sustainability reporting. It also indicates a lack of uniformity that makes comparisons between the reporting systems difficult. It is unsurprising then that peak industry associations, consultants and other specialists such as universities and governments have supported the development of initiatives to improve the quality and quantity of sustainability reports in Australia.

## 1.4 Conclusion

The development of sustainability reporting systems and support for their development has evolved in a very short period of time. The need for this new reporting approach is reflected in the sheer proliferation of sustainability reporting systems and the development of supporting initiatives. Reporting systems are being developed by governments, corporations, and other organisations, such as universities and non-government entities. This process represents a conceptual shift in reporting from single system reporting to reporting on natural resources (to demonstrate their limits) and to broad environmental models that consider not only the state of the environment but human impacts and responses to such degradation. The reporting process has evolved to a point where monitoring systems now report on economic, social and environmental factors.

At a government level there is a trend to encourage sustainability reporting within legislation, policy and plans, but it is not mandatory. Some peak industry and business associations encourage sustainability reporting, and extend it to a requirement for membership. Alongside organisations developing the actual monitoring systems is the evolution of supporting initiatives to improve the quantity and quality of the reporting. Peak international organisations, business organisations, non-government and the private sector are playing an active role in the development of these guidelines and self-regulating standards. The lack of a uniform process has resulted in various guidelines and standards with duplicate initiatives.

The current reporting systems have evolved in an ad hoc manner, varying in focus, completeness and quality because of a lack of guidance from regulation or from agreed reporting frameworks. This is represented by reporting systems that have not been revised since inception and the varying focus of reporting frameworks that are all

attempting to some degree to report on economic, social and environmental factors but without a consistent approach. This ad hoc approach has resulted in significant variations in quality, as well as a lack of uniformity that disallows both comparisons and/or linkages between the reporting systems. Nevertheless, the development of sustainability reporting is still in an early stage, and the proliferation of initiatives will no doubt contribute to awareness of sustainability reporting and the further development of such monitoring systems. The next chapter will consider the debate over sustainability monitoring further by examining literature critical of sustainability reporting systems and identifying the key issues with current practices in this field.

# Chapter 2 A critical review of sustainability reporting systems

## 2.1 Introduction

Chapter 1 outlined the rapid rise of sustainability reporting by corporations, national governments, and international organisation. Peak business organisations, non-government organisation and the private sector have contributed to sustainability reporting by developing guidelines, awards and standards. Chapter 2 unpacks the construction of sustainability reporting systems, which are characterised by a lack of conceptual clarity that has implications for how indicators are selected and how sustainability is measured. It is argued that sustainability is a contested concept and poorly defined. This chapter is a prelude to Chapter 3, which maps the ideologies present in the debate over sustainability and develops a political economy typology as an organising framework. Appendix 2 provides an overview of the literature reviewed on sustainability monitoring systems.

In the literature on sustainability reporting systems much concern exists about the lack of clarity on the definition of sustainability. The meaning has not been well articulated nor is there any consensus about the meaning of sustainability. It follows that how to implement or measure it must also be vague. This has led inevitably to confusion when considering the conceptual underpinnings for its measurement. Sustainability is, in other words, understood through a variety of different theoretical frameworks and is a contested concept. These matters have contributed to the perpetuation of conceptual models that are inadequate to operationalise the measurement of sustainability. Such models lack an epistemologically coherent process for the selection of indicators (Lele 1991; Sumner 2004; Pinter et al. 2005; Luckman 2006; Bossel 1999).

More radical critiques suggest that the phenomenon that current monitoring systems are attempting to measure is closely aligned with the liberal discourse on sustainability. Whilst the liberal discourse might address some of the concerns of the radical critique of sustainability, it continues to privilege the economic dimension over the environment or social concerns. The liberal discourse whilst politically more to the centre, retains the key attributes of the hard right neoliberal discourse. The dominance of these ideological

positions has marginalised radical understandings of sustainability, such as the limits to growth thesis. The dominance of these discourses in sustainability measurement that privileges one dimension, the economy, over social and environmental concerns raises the question of whether current monitoring systems offer valid measures that are capable of assessing the risks to a sustainable society and environment (Clapp and Dauvergne 2005, p. 178; Norman & MacDonald 2004, p. 6; Gray & Bebbington 2005, p. 2; SDC 2004; Voisey et al. 1997; McGregor 2003b).

This chapter will discuss this issue in relation to defining sustainability and the problems of conceptual confusion and incoherent frameworks. The lack of consensus on a common reporting framework for selection of indicators will be examined in terms of the implications for the reporting of sustainability. This chapter will also consider the technical challenges of data availability and quality and the effectiveness of monitoring systems in informing policy development. Chapter 2 will also address the influence of ideology on sustainability monitoring debates and the motives for corporations to report on sustainability.

## 2.2 Background and context: Defining sustainability

Chapter 1 discussed the way in which the application of sustainability reporting has evolved in an ad hoc fashion, varying in focus, completeness and quality. Some scholars have attributed this evolution to both a lack of theoretical clarity and conceptual confusion within the current development of monitoring systems.

### 2.2.1 Theoretical clarity and the definition of sustainability

An examination of the literature on sustainability monitoring reveals that developing sustainability measurement and monitoring tools is difficult because sustainability is a contested concept. That is, finding agreement on the definition is confounded by ideological differences. As will be discussed in Chapter 3, sustainability monitoring systems are influenced by a broad range of perspectives from neoliberalism on the right to more liberal approaches towards the centre and radical social theory on the left. Neoliberal perspectives on sustainability dominate the current debate and have heavily influenced mainstream national and international monitoring systems. These perspectives position economic sustainability as the dominant dimension. More liberal understandings

go some way to incorporating social and environmental factors but are hindered in holistically representing the dimensions of sustainability because this approach retains an adherence to neoclassical economic theory. Radical social theory presents the most holistic interpretation of sustainability. It values social and environmental sustainability and seeks a redefinition of the relationship of the economy to the other dimensions.

Sumner (2004, p. 117) suggests there are two main questions that have hindered defining sustainable development and interfere with a clear conceptual understanding of its measurement. The questions are: *How broad should the definition be?* and *What is to be sustained within sustainable development?* Sumner (2004, p. 117) further stresses that a definition of sustainable development is important for measuring sustainability because 'a definition is an essential underpinning for an indicator, acting as a conceptual launch pad'. Due to the lack of clarity and agreement on a definition of sustainable development there is no clear conceptual launch pad from which to operationalise its measurement. Indeed if there is no definitive means to assess whether a given indicator actually measures sustainability, then that indicator lacks legitimacy.

The International Institute for Sustainable Development (IISD) (1999, p. 4) also raises concern over the uncertainty of the scope of what sustainability encompasses. The Institute explains that because sustainability is value based, agreement is difficult. The concept can vary between cultures and change over time, and what is needed or required may be regarded differently over time. The IISD identifies issues of time-scale and the need to capture aspects of a complex system within the definition. They also stress that there is still much to be learnt about measuring complex systems.

Pinter et al. (2005, p. 16) concur with Sumner and the IISD that the lack of agreement on a definition of sustainability has translated into conceptual uncertainty within monitoring systems for sustainability. They specifically raise concerns over the variety of the monitoring systems that signal ambiguity in regard to the specific elements of sustainability selected for inclusion. Pinter et al. (2005) argue that this lack of agreement on a definition of sustainability leads to further difficulties in understanding how the systems interrelate, which creates additional confusion over the appropriate choice of indicators.

In an attempt to provide theoretical clarity to the applied understanding of sustainability in monitoring systems, scholars draw upon the typology of weak and strong sustainability to categorise the ideological position of indicator frameworks (see Sumner 2004, p. 118; McGregor 2003b, p. 30; Diesendorf & Hamilton 1997, p. 290 – 293). Sumner (2004) provides a brief explanation of these two definitions of sustainability, one described as sustaining consumption/utility for future generations – weak sustainability – and the other advocating the protection of non-economic factors, i.e. natural capital, for future generations – strong sustainability.

He defines indicators of weak sustainability as economic measures that 'are based largely upon defining SD (*sustainable development*) as a flow – sustaining (non-declining) future consumption (utility) at current levels and measured through adjusting national economic accounts' (Sumner 2004, p. 119). These indicators represent the 'current outward-orientated liberalisation-led economic growth development model to be sustainable' (Sumner 2004, p. 119). Indicators of strong sustainability are described as non-economic measures: 'measured through sustaining the environment (natural capital) itself' (Sumner 2004, p. 119). An example of a strong sustainability indicator is the ecological footprint, which refers to the area required to support average per capita consumption (Sumner 2004, p. 119). The debate over weak and strong definitions of sustainability will be addressed further in Chapter 3.

### 2.2.2 Conceptual confusion between similar terms

Chapter 1 referred to the terminologies applied to reporting on social, economic and environmental aspects, including progress, sustainability, quality of life, and corporate social responsibility. It was noted that governments often interchange the terms sustainability, progress and quality of life in their reports. The UK government, for example, developed a sustainability strategy. Its correlating indicator framework was initially termed *Quality of Life*, and latter re-named *Securing the Future*. Corporations often interchange the term sustainability with corporate social responsibility, corporate responsibility and triple bottom line reporting. A report released by KPMG (2005, p. 6) groups all of these differently termed corporate reports together under 'the general term of corporate responsibility'[3]. However, some scholars perceive that conceptual differences

[3] KPMG define corporate responsibility in reporting as:

are present between these terms (Neumayer cited in Sumner 2004, p. 118; Savitz & Weber 2006, p. xi).

At a government level, conceptual differences have been noted between the terms sustainability and progress. Neumayer (cited in Sumner 2004, p. 118) states that progress and sustainability 'should remain conceptually separated because what affects the former is not necessarily the same as what affects the later and vice versa'. In this sense, progress refers to total current stock and sustainability refers to total future capital stock.

Moreover, at the corporate level some scholars have identified fundamental differences between the concepts of corporate social responsibility and sustainability. Savitz & Weber (2006, p. xi) describe sustainability as sometimes confused with other widely used terms like corporate responsibility. They argue that corporate social responsibility refers to the company's obligations to society at large or benefits to social groups outside of business. Moreover, Savitz & Weber (2006) suggest that this term differs from sustainability. It is a concept that places equal importance on the benefits enjoyed by the corporation itself, while sustainability considers a unified way of addressing a wide array of business concerns and impacts on the natural environment, workers' rights, consumer protection and corporate governance. The latter definition of sustainability is limited in terms of its consideration of the ecological dimension. It does however differentiate between the concept of sustainable ecology and sustainable business practices that include the environment.

Savitz & Weber (2006, p. 21) argue that there is a fundamental misunderstanding about corporate sustainability: it is not about philanthropy. Sustainability is about maintaining current and future species on earth but philanthropy is a charitable act (as described by Turner 1984, p. 508). While Savitz & Weber (2006, p. 21) do not have an issue with corporate charity, they argue that if the company is already operating in a sustainable

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> Companies [referring] to sustainability, sustainable development, corporate social responsibility and corporate responsibility, to name a few. All of these terms broadly cover the topics of social, environmental and economic performance with differing levels of detail. For the purpose of the survey, we refer to all such activities and related reports by the general term Corporate Responsibility (KPMG 2005, p. 6).

manner there is no need to 'give back' to the community as the business operations do not deprive the community, but enrich it.

### 2.2.3 Typology for categorising indicators

Conventional representations of sustainability as comprising relatively separate economic, social and environmental dimensions tend to restrict integrated thinking across policy domains and research expertise. Gibson (2005, p. 94) explains that the suite-of-indicators approach to measuring sustainability has broadly applied the typology of the three main areas of interest: economic, social and environmental. Gibson (2005) sees decision makers 'struggling to understand the overall implications of separate ecological, social and economic assessment reports that are integrated only by the staples holding the documents together' (p. 94). He explains that this categorisation approach is based on conventional modern policy and disciplinary categories, which reinforce the divisions in policy mandates and research expertise that has frustrated more integrated thinkers. Spangenberg et al. (2002, p. 66) concur that this categorisation approach represents established interests, and that the operationalisation of sustainability requires linking activities that are absent from the dominant model.

McGregor (2003b) also argues that this conventional representation does not provide a true picture of the whole system. He argues that 'Without the planet's basic life support there can be no society and no economy, so the social system therefore is contained within the ecological system' (McGregor 2003b, p. 30). Based on this understanding the systems cannot be considered in isolation. Stilwell (2002, p. 15) suggests strongly that this view disadvantages the environment as it is not seen as central to support life.

Bossel (1999, p. 8) adds that systems based theoretical models are not currently being applied and therefore monitoring systems are not reflecting the operation and viability of the total system. A systems view is important as it captures and promotes an understanding of essential relationships. Bossel (1999, p. 14) suggests a model consisting of three tasks is required to appreciate the total system and its components. This model would identify the major systems relevant to sustainable development and develop an approach for identifying indicators of the viability and sustainability of these systems, whilst determining how to apply this information for assessing viability and sustainability.

Bossel (1999, p. 13) also argues that the lack of a systems based approach and a failure to consider consideration of the interrelationships between the economy, environment and the society contributes to an adhoc process for indicator selection. He feels that the indicators reflect the specific expertise and research interests of their authors rather than a more balanced approach that accounts for the various dimensions of sustainability. Bossel (1999) observes that some frameworks tend to incorporate many indicators that measure essentially the same concern while other important issues are not measured.

Holden (2001, p. 24) suggests the current approach also results in long lists of indicators that do not identify the linkages among them. Rotmans (2006) supports these claims and believes that the current tool kit is inadequate to address the multi-dimensional complexity of sustainable development. She explains that the notion of sustainability warrants new requirements for models and tools, specifically, 'in terms of trade-offs between multiple scales and multiple generations, and between socio-economic-technological and ecological processes' (p. 39).

It is of interest that organisations and entities that apply this categorisation framework state that they do so because it provides a starting point that is comprehensible to many and is seen as a reasonable entry point into a complex issue (GRI 2002, p. 9). In other words, the organising framework represents a best-fit to guide the selection of indicator frameworks (UN Commission on Sustainable Development 2001, p. 14) and is a compromise between a potential oversimplification of a one-number approach and a complex accounting framework approach (ABS 2006, p. 9).

### 2.2.4 Selecting indicators

At the start of the chapter it was noted that where there is not a clear definition of sustainability the result is a lack of an epistemologically consistent process for the selection of indicators. The lack of a concise, commonly agreed definition of sustainability, nor a consensus on what the relationship between the dimensions of sustainability are has contributed to the development of diverse criteria for selecting indicators, many of which are quite incoherent. In some frameworks criteria for selecting indicators are not specified at all. Farrell and Hart (1998, p. 2) have suggested that little research has been undertaken

on the development of criteria for selecting sustainability indicators. Their argument is reflected in the multiplicity of criteria that are being applied to the selection of indicators.

Farrell and Hart (1998, p. 2) suggest that indicators should focus on a broad range of concerns. These concerns might include furthering inter- and intragenerational equity, not exceeding the carrying capacity of natural resources and ecosystems and reducing the impact that human activities have on the environment (particularly the rates at which renewable and non-renewable resources are used). Other areas that might be addressed include integrating long-term economic, social and environmental goals and preserving biological, cultural, and economic diversity.

The Montreal Process on the other hand provides criteria to specifically guide conservation and sustainable management of temperate and boreal forests. These criteria include the conservation of biological diversity, maintenance of productive capacity of forest ecosystems and the maintenance of forest ecosystem health and vitality. Other criteria in the Montreal Process include conservation and maintenance of forest contribution to global carbon cycles and the maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies (Higgins 2001, p. 62).

The Standing Committee on Agriculture and Resource Management (SCARM 1998) like the Montreal Process provides criteria with a specific focus, in this case being criteria to develop and report on a set of sustainability indicators for agriculture in Australia. The five criteria are long-term viability and resilience of farm economies; quality of farm management skills; socio-economic viability of rural communities; minimisation of off-site environmental impacts; and enhancement of the resource base (Higgins 2001, p. 65).

The lack of consistency and clarity present within the selection criteria of many monitoring systems contributes further to the lack of theoretical direction in the measurement of sustainability. In some cases, for example the GRI the international benchmark for corporate sustainability reporting, no guidance is provided on how to select the most appropriate indicators or what mix of indicators is required to be able to accurately report on sustainability (Veleva & Ellenbecker 2000, p. 112). In a case such as this it is difficult to ascertain the decision making process that is used to incorporate indicators and in turn their role in reporting on sustainability.

Other scholars have argued that the frequent use of commonly applied criteria has led to the exclusion of indicators requiring new data to be collected. Spangenberg and Bonniot (cited in Spangenberg et al. 2002, p. 64) argue that the emphasis within the current indicator selection criteria on feasibility, timeliness and issues relevant to the jurisdiction restricts the selection of indicators to ones for which data is already available. They observe that the tendency to report on available data sets leads to the inclusion of well-recognised indicators and excludes the development of new ones. This approach is described as one which 'can hardly react proactively to potential threats of the future, or at least in due time when first symptoms become visible' (Spangenberg and Bonniot cited in Spangenberg et al. 2002, p. 64).

The tendency of indicator frameworks to draw on data that has been collected for another purpose rather than data that has been specifically collected in order to measure sustainability has been observed by other scholars. A survey conducted by Jones et al. (2005, pp. 6-12) to review sustainability reports indicates that the reports are primarily drawing on already collected data, which in many cases is required anyway for other legislative purposes. The issue of sustainability reporting data collected for a different purpose is also raised by Norman and MacDonald (2004, p. 5). They observe that much of the data required for monitoring systems is already gathered by the standard departments within any large organisation. Human resource departments, for example, typically collect and maintain records on employee turnover, employee-demographic information by gender and/or ethnicity, measures of employee satisfaction, customer satisfaction, and relationships with suppliers. Norman and MacDonald (2004, p. 5) argue that the rise of sustainability and/or triple bottom line reporting has led to data being externally verified and reported, and gathered within one document. But the implementation of this reporting in their opinion has not resulted in changes in the types of data that are considered in the decision making process.

## 2.3 A common framework to monitor sustainability

The difficulties of finding agreement on a definition of sustainability have also restricted the development of a common framework to monitor sustainability. Scholars have suggested that there are reasons to support a common framework to monitor

sustainability. Some of the reasons forwarded in support of a common framework for measuring sustainability include the desirability of a shared terminology, making it easier to compare indicators, targets and performance and increased opportunities for collaboration (Pinter et al. 2005, p. 17). Nevertheless the OECD (2006a, p. 34) and the International Institute for Sustainable Development (1999, p. 4) point out that it is difficult for countries to agree on a common set of indicators due to differences in their natural attributes, industrial structure, and political, cultural and social context.

Indicator lists also vary due to varying policies and priorities. Pinter et al. (2005, p. 16) also argue that the ability to compare indicator systems is restricted by the way various indicator frameworks are applied in practice. Practitioners in any given country or situation may choose a different variable or methodology to monitor an issue. Pinter et al. (2005, p. 17) raise the question of whether it is politically feasible to attain such a framework. This concern relates to the differences between regions, organisations and cultures, and the varying purposes for developing indicator frameworks. The authors conclude that the idea of sustainability is subject to a degree of interpretation, which presents a challenge. Achieving even the most basic interpretation of sustainability requires cooperative action and a common framework in which environment and governance mechanisms can develop and emerge to support cooperation among all stakeholders.

The lack of a common framework to monitor sustainability has, in some instances, perpetuated the problem of no framework being applied at all. A survey of sustainability monitoring practices by Jones et al. (2005, p. 6-12) observe that over half of their survey respondents did not apply a framework as part of the development of monitoring systems. Their data were generated by surveying the top 500 listed companies in Australia entities, eight Commonwealth and eight state government business enterprises[4], and 35 local government authorities[5]. The report does not seek to draw out any conclusions from these findings.

[4] The government business enterprises were chosen for inclusion were chosen for the sample due to their significant impact on the environment and/or society.

[5] The sample of 35 councils was derived from the 721 local government authorities in Australia, one council selected from each of the 22 classifications of local government. The other 13 chosen as illustrative of the diversity of the range of areas, populations, local road lengths, income from rates and financial assistance grants per capita.

Even though difficulties do exist for reaching agreement on a definition, international organisations have proposed common frameworks to be implemented, with the corporation attempts generally considered to be more successful than the proposed national government framework. In Chapter 1 it was noted that both the United Nations and the GRI have suggested a common framework to report sustainability (UN Commission on Sustainable Development 2001, p. 2; Macintosh & Wilkinson 2006, p. 9). The United Nations responded with a framework capable of being applied by national governments. However, as will be explored in Chapter 5, this framework has not been widely taken up. The GRI responded predominately to corporate requirements, and as discussed in Chapter 1 it is widely acknowledged as the benchmark for corporate reporting (Grafe-Buckens & Jankowska cited in Luckman 2006, p. 261; Crawford cited in Luckman 2006, p. 261; Macintosh & Wilkinson 2006, p. 9; KPMG 2005, p. 7). However not all corporations apply GRI guidelines, and in many cases only parts are applied (see Chapter 6).

## 2.4 Government and corporation approaches to reporting

It is clear a lack of conceptual and theoretical clarity over defining and giving meaning to sustainability creates confusion over indicator selection. Radical critiques of the sustainability debate illustrate that both the corporate and government sectors are consistently applying sustainability practices that are difficult to distinguish from prior practices. Critics note that corporations define sustainability in a non-controversial manner, which leads to little critical analysis of various elements of sustainability within the corporate reporting system (Clapp and Dauvergne 2005, p. 178; Norman & MacDonald 2004, p. 6; Gray & Bebbington 2005, p. 2). Furthermore, many government indicators relate to measures of conventionally assessed, economic GDP-based growth (SDC 2004; Voisey et al. 1997; McGregor 2003b), which only serve to reinforce the limitations of the current the neoliberal and liberal models for measuring sustainability. These concerns relate to the dominant influence of neoliberal and liberal discourses on sustainability evident in mainstream monitoring systems. Whilst the liberal discourse evident in monitoring systems such as that developed by the GRI and the UK government's *Securing the Future* monitoring system (see Chapter 5) suggests a move to address some of the concerns of radical critiques, this discourse continues to privilege the

economic dimension over the environment and the social dimension, which suggests there might be limitations on the capacity of such models to consider cross-dimensional measures of sustainability. The dominance of the neoliberal and liberal discourses in the sustainability debate will be discussed further in Chapter 3 and 4, in relation to the debate over sustainable development and the limited capacity of the neoliberal model to assess risks to sustainability.

### 2.4.1 Government approaches to reporting

At a government reporting level, critics have argued that a more radical approach is required in terms of how sustainability is measured. That is, social and environmental indicators should be given equivalent status in public policy development to the conventional measurement of economic growth and that consideration be given to limiting growth (SDC 2004; Voisey et al. 1997; McGregor 2003b). Both the Australian and the United Kingdom monitoring systems for sustainability provide examples that are pertinent to this issue.

**Australia.** The Australian government sustainability monitoring systems have been criticised for the application of the conventional sustainability typology to categorise indicators and for having insufficient targets to address sustainability. These monitoring systems have also been critiqued for a reliance on GDP as a measure of economic performance. McGregor (2003b, p. 33) notes that three out of the five Australian Government economic indicators relate to measures of GDP-based growth. Moreover, the use of GDP as an indicator of the health and wealth of a nation is problematic because GDP 'does not distinguish between costs and benefits, between productive and destructive activities or between sustainable and unsustainable developments' (p. 34). He further explains that there is 'increasing evidence that in developed countries, such as the UK, Canada, USA and Australia, Gross Domestic Product (GDP) growth is not a good measure of increased individual and community wellbeing' (p. 33).

McGregor (2003b, p. 30) also raises concerns about the Australian monitoring system categorising indicators according to conventional policy and research practice. Indicators are located within the categories of economic, social and environmental. This practice does not present an accurate picture of the whole system, the parts of which cannot be

represented in isolation. As a result, the indicators fail to communicate sufficiently the role of the environment, described as basic life support for the earth.

McGregor (2003b, p. 31) also argues that there are insufficient targets to progress sustainability within this monitoring system. An example of this phenomenon is the representation of air quality. Presently the indicators show an improving trend, but this improvement may not be enough to avoid significant health problems if it fails to happen quickly enough.

**The United Kingdom.** In the UK the government monitoring system has been criticised for measuring the nation's economic health using conventional practices. A need has been identified for indicators to better reflect key priorities of sustainability principles and policy. Moreover, indicator targets have been deemed to be insufficient to adequately advance sustainability (SDC 2004; Young 1994; Voisey et al. 1997). A recent report by the United Kingdom Sustainable Development Commission (SDC) states that economic progress needs to be redefined and monitored in ways that 'obviate the very obvious social and environmental penalties of the current economic growth model' (SDC 2004, p. 15). These views are supported by Voisey et al. (1997, p. 43) who remark that the United Kingdom government has been criticised for its choice of standard economic indicators and its failure to relate these to social and environmental objectives in the long term (Voisey et al. 1997, p. 43). The broader radical agenda of sustainability, as described by Mullaney and Pinfield (cited in Voisey et al. 1997, p. 43), which includes quality of life, is not directly monitored in the UK government framework, even though these areas are reflected in the title of the 1999 strategy and monitoring system.

A compounding factor is that the UK Sustainable Development Commission believes the UK government is only partially committed to sustainability and the growth imperative is still covertly active in the current reporting framework (SDC 2004, p. 25). As early as 1989 Paul Elkins (Elkins cited in Elkins 1996) raised the issue of the 'need for a shift in policy emphasis from growth to sustainability if environmental problems are to be adequately addressed' (p. 62). In 2004, 15 years after Elkins made this observation, the same criticism is still leveled at the UK government by the Sustainable Development Commission indicating that no shift in policy has yet occurred.

Insufficient targets to be able to significantly progress sustainability have been noted by the United Kingdom Sustainable Development Commission in relation to the UK government's counties reporting system (SDC 2004, p. 10). For example, on the issue of climate change, the UK government's medium and long term greenhouse gas reduction targets drive a range of policy goals and aspirations for behavioural change, however the types of targets are limited (SDC 2004, p. 12).

Pinter et al. (2005, p. 16) also point to indecision among indicator framers about how to link specific indicators to time-bound targets and thresholds. In a survey undertaken by the United Nations Economic and Social Council, national governments complained that there was a lack of concrete targets to measure sustainability (UN Economic and Social Council 2004, p. 12).

### 2.4.2 Corporate approaches to reporting

At a corporate level, critics point out that corporations emphasise reporting on the economic system to the detriment of critically reporting impacts on society and the environment. Jones et al. (2005, pp. 6-12) have suggested that corporations present information in an overwhelmingly positive manner. Even bad economic or environmental news tends to be reframed in positive terms. These findings concur with the 'social greens' argument presented by Clapp and Dauvergne (2005) that 'corporations are able to take the green high road mainly because they have managed to redefine sustainable development in a way that fits their own existing practices' (p. 178). Milne & Gray (2007) concur with this finding, and state:

> …sustainability is avoided by the very manner in which corporate organisations do engage with notions of sustainability and the way in which corporate organisations do translate and define the concept to make it consistent with what many organisations currently do. (p. 194)

Norman & MacDonald (2004, p. 6) agree with these views, and raise concerns that corporations have defined sustainable development in a way that allows the principles of concepts such as sustainability (in this case the triple bottom line) to sound plausible while remaining vague and non-committal. This allows conservative executives to support sustainability or other like concepts since they are defined in a non-controversial manner. Norman & MacDonald (2004) cite the example of Johnson & Johnson, a corporation that has consistently performed financially well in comparison to its rivals.

Six decades ago the company announced that its primary stakeholders, in this order, were its customers, employees and the communities in which it operated. These stakeholders were placed explicitly ahead of its stockholders in company documents. This company believes that if it operates according to these principles, the stockholders will receive a fair return. As Norman and MacDonald (2004) state 'these words were written in the 1940s and are hardly revolutionary today' (p. 6). For Johnson & Johnson they still stand for sustainability.

Moreover, Gray and Bebbington (2005) have remarked that 'many leading corporations have adopted the language of sustainable development as their own and have, if anything, stepped up the level of claims of the sustainability of their companies' operations' (p. 1). They then highlight the fact that while claims are made about the sustainability of these companies 'the business community seems strangely reluctant to produce convincing evidence to support its claims…' (p. 1). To illustrate this point the researchers draw on the following example:

> Within the context of reporting, if corporations are either sustainable or on the path to sustainability, they appear unwilling to share this evidence in their reporting. Eco-efficiency may reduce the use of environmental resources per unit, however it fails to capture the total environmental resources of the organisation. To date no companies have provided an environmental footprint that could report on this overall impact. As well, no corporation has yet reported on the corporation's full impact on social justice. Most concentrate on a few stakeholders, primarily employees and community giving. (Gray & Bebbington, 2005, p. 8)

Other researchers support these findings. Jones et al. (2005, p. 1) note also the lack of adequate disclosure on social and/or environmental issues within corporation reports. KPMG (2005, p. 5) report that the inclusion in company documents of the wider economic impacts of the organisation from a broader sustainability perspective is limited. While 61 percent of respondents report on financial information, such as profits, only 25 percent report on the economic impacts of their business from a sustainability perspective.

Gray & Bebbington (2005, p. 2) also question the current paradigm by which western corporations operate, which they regard as one of the reasons achieving social and environmental sustainability is difficult. Western corporations are perpetually encouraged to increase growth and profitability. Only in the most unlikely circumstances can such growth be sustainable within a real world of finite resources, labour and capital. Therefore practices such as eco-efficiency are unlikely to reduce the total environmental

footprint of an organisation because most environmental change occurs within the paradigm of cost and risk reduction with an aim always to improving growth and profits (Gray & Bebbington 2005, p. 2). Nevertheless an efficient allocation of resources is important, but as Milne & Gray (2007) further identify this factor does not allow:

> … a fair distribution of resources and opportunities between the current generation and between present and future generations, and a scale of economic activity relative to its ecological life support systems. (p. 195)

However, as Milne & Gray (2007) further identify within the context of the current paradigm, no corporation would wish to incorporate such principles. They argue:

> After all, why would any corporation voluntarily wish to admit that it is probably contributing to humanity's exceeding of the ecological carrying capacity of the planet, and in need of being phased out in the interests of environmental sustainability, greater social equity, and the sake of future generations? ( p. 196)

Moreover, Broomhill (2006, p. 19) argues that legal responsibilities of the corporation and obligations to shareholders restrict their ability to engage in Corporate Social Responsibility or philanthropic activities. He also identifies that corporations use the existence of legal constraints activities to justify not adopting CSR. However Broomhill reveals that *Australian Joint Parliamentary Inquiry on Corporations and Financial Service* concludes 'there is nothing in the current legislation which genuinely constrains directors who wish to contribute to the long term development of their corporations by taking account of the interests of stakeholders other than shareholders' (Commonwealth Government of Australia 2006, p. 91). But as Broomhill concludes 'Whether or not this conclusion by the Parliamentary Committee allays the concerns, or overcomes the resistance, of the various commentators on this issue remains to be seen' (p, 20).

As a consequence of the application of the current paradigm, Gray & Milne (2002, p. 5) believe that sustainability reporting by corporations might be more effective if there were a shift towards accounting for ecosystems and communities. They argue that a sustainable enterprise could be conceptualised as 'one that leaves the natural environment and social justice no worse off at the end of the accounting period than it was at the beginning of that period' (Gray & Milne 2002, p. 6).

## 2.5 Motives to report on sustainability

An understanding of the motivation for developing a monitoring system for sustainability provides insight into why a corporation believes it is important or not to report on sustainability. Motivations influence how they understand sustainability, and the likely expected outcomes from the indicator frameworks, i.e. aspects reported upon.

### 2.5.1 Why corporations' report on sustainability

The literature points to various factors driving the decision of corporations to report on sustainability: economic firstly, along with legal and voluntary obligations, social and political pressure for visibility, and altruism (Macintosh & Wilkinson 2006, p. 26). Two recent surveys of corporations have identified that the derived economic benefit is the main motivator for producing a sustainability report (Macintosh & Wilkinson 2006, p. 26; KPMG 2005, p. 18). The derived economic benefit offers a compelling business case to pursue triple bottom line or sustainability reporting (WBCSD 2002, pp. 10-12; WBCSD 2005, p. 9; Group 100 2003, p. 6; Allen Consulting Group 2002, p. xi).

**Economic benefits.** Statements from companies embracing the concept of sustainable development support survey results that suggest that the dominant motivator for corporations to report on sustainability is to gain economic benefit. For example:

> Shell reports on the benefits and value creation of integrating sustainable development principles into its business operations. The group identifies four key levers: reduced costs, increased options (new markets, evolving business portfolios), new customers and reduced risks. (Shell online cited in WBCSD 2002, p. 10)
> In its online statement of business practice, The way we work, Rio Tinto identifies sustainable development as a means of raising performance standards, including financial results and shareholder value. It sees competitive advantage by minimising risk, maintaining and creating market access, reducing and managing environmental effects, working with host communities and building a good reputation. The group also recognises that a sustainable development response to social expectations translates into corporate strength. (Rio Tinto online cited in WBCSD 2002, p. 12)

Shell and Rio Tinto expect economic benefits from implementing sustainable development practices to include:

- reduced costs;
- access to new and current markets and customers;
- reduced risk;

- raising performance standards, particularly financial results and shareholder value and;
- community relationships; and minimising environmental impact.

The research discussed above is supported by survey findings conducted by KPMG in 2005. The survey established that the most common driver for sustainability was economic, with 74 percent of companies acknowledging their economic bottom line motivated their actions. The economic reasons identified in the KPMG survey for reporting on sustainability 'were either directly linked to increased shareholder value or market share or indirectly linked through increased business opportunities, innovation, reputation and reduced risk' (KPMG 2005, p. 18). A study conducted by the Centre for Australian Ethical Research also found that economic reasons played a dominate role in a corporations' decision to report. This study found that reputation enhancement was the most strongly cited perceived benefit (Macintosh & Wilkinson 2006, p. 26).

The Allen Consulting Group (2002, p. xi) also believes there is a strong business case to pursue triple bottom line reporting. They differentiate the economic benefits between the soft business case and tangible financial benefits. The soft business case for implementing these concepts includes benefits like management and performance improvement by using data, reputation enhancement, market differentiation, greater social legitimacy and the securing of 'a licence to operate' (p. xi). Moreover, The Allen Consulting Group argue that there are less tangible financial benefits, including shareholder value, revenue, access to capital, operational efficiency and market growth related to triple bottom line reporting. However, quantifying these benefits in dollar terms has its difficulties and depends on a huge range of variables. Market growth in particular is commented on in the literature as less certain, mainly because many of the variables to ensure these benefits are external to the company. Those that are internal are not easily disaggregated (Allen Consulting Group 2002, p. xi).

The World Business Council for Sustainable Development cite other potential business benefits including employee recruitment and retention, risk management and process and product innovation (WBCSD 2005, p. 9). Group 100 (2003, p. 6), an association of Australia's senior finance executives from the nation's business enterprises, also notes that

publication of a triple bottom line report can position the corporation as an employer of choice, and enhance employee loyalty, reduce staff turnover and increase a company's ability to attract high quality employees. Group 100 (2003, p. 6) also comment that purportedly sustainable businesses practices help align stakeholder needs with management focus and create a sound basis for stakeholder dialogue.

Macintosh & Wilkinson (2006) provide a more critical perspective for some of the derived economic benefits. They describe sustainability reporting as an important marketing and communication tool as it allows corporations to communicate with stakeholders on their terms. This allows the corporation to 'control the release of information and can shape the message' (p. 24). Macintosh and Wilkinson (2006, p. 25) point out, however, that there is no conclusive evidence that sustainability reporting moderates fluctuations in share price. Papmehl (2002, p. 25) also indicates that there is no direct causal relationship between the adoption of the triple bottom line ethos and enhanced share price. This is due to the fact that direct financial benefits are not apparent to share buyers. However, there may be indirect financial benefits from triple bottom line reporting. Papmehl (2002) explains that 'few would argue that an unfavourable image, wrought by irresponsible environmental and social practices, would negatively affect the company's ability to create shareholders' value' (p. 25).

Macintosh & Wilkinson (2006, p. 24) cite three other reasons other than economic that are drivers to report on sustainability: legal and voluntary obligations; social and political pressure; and altruistic reasons.

**Legal and voluntary obligations.** Companies are very occasionally required by law to report on non-financial performance indicators. For example; the Norwegian *Accounting Act* requires 'the inclusion in the Directors' report of several social, environmental and health and safety issues and the implementation of measures that can prevent or reduce negative impacts and trends (KPMG 2005, p. 41). Germany also has laws that extend reporting duties to non-financial performance indicators. Australia's laws do not extend to include such attributes in reporting frameworks (KPMG 2005, p. 41). However, while there are no mandatory sustainability reporting requirements, there are a number of requirements concerning social and environmental issues. An example within the Australian context is the requirement through the National Pollution Inventory to submit

a report on the level of certain substances or emissions of pollutants. In some instances corporations themselves may choose to sign onto a voluntary program or code that requires the release of a sustainability report, such as the Australian Minerals Industry Code for Environmental Management (KPMG 2005, p. 26).

**Altruism.** Macintosh & Wilkinson (2006) make the point that some corporations may report on non-financial performance indicators because 'directors simply believe it is the right thing to do' (p. 24). But they later note that two recent studies have questioned motives to report, and results suggest that economic reasons play a dominant role in the decision to report.

**Social and political pressure.** Social and political pressure may lead to a corporation voluntarily developing a sustainability report (Macintosh & Wilkinson 2006, p. 24). Jones et al. (2005, pp. 6-12) have noted that a stand alone sustainability/triple bottom line report, not attached to an annual report, was more likely to be prepared by larger companies, which suggests that a relationship between size and political visibility could be factors in the decision to report in this way. The type of industry sector most likely to report is not described. But, the survey respondents consisted of industries related to manufacturing, including chemical, construction materials, containers and packaging, metals and mining, and paper and forest products.

Data collected by KPMG (2005, p. 12) supports the observations of Jones et al. (2005, pp. 6-12) in terms of industries most likely to report. The KPMG research indicates that among the top 100 companies in 16 countries, sectors where 50 percent or more of companies produced a corporate responsibility[6] report included utilities, mining, chemicals and synthetics, oil and gas, and forestry, pulp and paper. This data provides an indication of the sectors more likely to produce a sustainability report, but information on political visibility and size is not provided.

## 2.6 Impact and effectiveness of reporting systems approaches

Several authors have demonstrated that the impact of reporting systems on policy development is affected by a range of factors. Pinter et al. (2005, p. 3), for example, argue that responsibility for sustainability indicators is given to environmental agencies that are

[6] KPMG define corporate responsibility to include among many concepts sustainability and sustainable development (KPMG 2005, p. 6).

not given sufficient mandate, capacity and influence to ensure that the indicators efficiently inform key policy decisions. Dover (cited in Hezri 2004, p. 358) argues that the links between sustainability indicators and policy demand different approaches to those supporting links between policy and environmental reporting. The operationalisation of sustainability requires a broader process to advance the integration of environmental, social and economic factors in policy making. This integration requires the creation of policy processes, institutional settings and organisational structures that allow for integration of environmental, social and economic factors.

An interesting example of how effective, or ineffective, monitoring systems are in terms of influencing policy comes from the UK where the government made a commitment in its sustainability monitoring system *A Better Quality of Life* that when a trend in any headline indicator was unacceptable the government would adjust policies accordingly. This commitment has not been consistently honoured, as was evidenced in the early 2000s when indicators showed that the levels of solid waste going into landfill were rising but no policy response followed. The UK Sustainable Development Commission has therefore suggested that a more effective machinery for acting on adverse trends is required (SDC 2004, p. 15). The SDC does not offer an explicit analysis of why government commitments are not honoured, but it has raised concerns about the UK government's overall commitment to sustainability. The SDC argues that the government commitment is generalised and patchy as evidenced in the way it has delivered the changes that are necessary to achieve a sustainable society. The SDC believes the UK government is incorporating sustainability under the banner of conventional economic growth imperatives, suggesting a 'business as usual' approach (SDC 2004, p. 26).

### 2.6.1 Voluntary versus regulatory approach to corporate reporting

The issues discussed above are also evident in the debate over mandatory versus voluntary reporting. The debate concerns calls for mandatory reporting and an argument that voluntary reporting predicts minimum compliance with sustainability criteria (WBCSD/Accountability 2004, p. 22 & 44). Mandatory reporting is contentious but it is seen by some scholars as possibly the only viable option for regulating sustainability reporting practices (Dickinson 2005, p. 15).

Arguments for voluntary reporting are varied, but two stand out. It is argued, for one, that voluntary reporting allows for increased variability in monitoring systems and encourages the trial of innovative reporting practices. With the field in its early development stage, this trial phase is believed to be important to progress reporting frameworks. The GRI is cited as an example of a system developed through a trial period and practitioner feedback (Dickinson 2005, p. 15).

Gray & Milne (2002, p. 2) discuss an argument presented by business for a voluntary approach to sustainable development activity and reporting. The business argument holds that the natural environment and social justice are secure within the control of business because sustainable development is an extension of good business practices.

Arguments for mandatory reporting are varied. Supporters argue, for example, that mandatory reporting brings all organisations into the reporting agenda. Regulation provides a minimum standard, to which all must adhere (Dickinson 2005, p. 15).

More radical critics suggest that the commonly applied voluntary approach to corporate reporting may not result in the outcomes required for a sustainable future (Gray & Milne 2002, p. 3; Clapp & Dauvergne 2005, p. 174). Gray & Milne (2002, p. 3) suggest that the business argument that sustainable practices are an extension of good business practices is problematic. The economic crisis which occurred late in 2008, for example, was in large part caused by the argument on the part of many US legislators that fiscal responsibility and good risk management would be undertaken by financial institutions because these are hallmarks of good business practice, and responsible businesses would naturally self-regulate and did not need to have regulation imposed. Radical advocates for sustainability note that if a voluntary approach works well for the company, society and the environment then reporting should be widespread within all major companies and to the highest standard but this manifestly is not the case.

Clapp and Dauvergne (2005, p. 174) arguing from a social greens perspective hold that a voluntary approach creates uncertainty about whether actions and promises will be adhered to and allows corporations to remain unaccountable for the claims made in voluntary reports. They also explain that companies have advertised themselves as being pro-environment even when their practices have not reflected this claim (p. 178). CorpWatch, an organisation that investigates and exposes corporate violations, have

reported evidence on corporate practices, which suggests that companies should be held accountable for their actions and society should not rely on promises (cited in Clapp and Dauvergne 2005, p. 178).

### 2.6.2 Disclosure of social and environmental issues within corporate reports

It is clear from the literature reviewed here that corporate reluctance to report on areas that might have an impact on profits or their corporate image limit effective corporate reporting on sustainability. Jones et al. (2005) speculate that the lack of adequate disclosure on social and/or environment issues within corporation reports can be attributed to the 'inability or reluctance of organisations to modify or develop tools, processes and frameworks through which they can report their direct and indirect economic, social and environmental impacts to stakeholders' (p. 19). The need to develop more accessible approaches and guidelines, which would facilitate wider reporting practices has been identified as a gap in the knowledge base in this area (Jones et al. 2005, p. 19). In this context, Labuschagne, Brent & van Erck (2003, p. 379) suggest some modifications to improve the Global Reporting Initiative guidelines, the most commonly applied corporate framework. They argue for the inclusion of equity, community cohesion, stakeholder participation and capacity development as indicators. Suggested improvements to internal impacts include greater reporting on employee health and safety (p. 379).

Other critics note that for corporations to report on the external impacts of their business activities requires acknowledgement of the wider consequences of doing business. Murray, Dey & Lensen (2006, p. 6) argue that reporting on social sustainability should require that a corporation acknowledge the social impact of the enterprise in order that it might understand and take responsibility for the social consequences – good and bad – of doing business in the communities affected by the enterprise. In relation to this point, survey results from the South African process industry indicate that 'the paradigm shift of businesses taking responsibility for their social impacts upon external communities has not yet taken place' (Labuschagne et al. 2003, p. 379). This survey included references to 'community capital'. Community capital is described by Labuschagne et al. (2003) as:

> the effect of an operational initiative on the social and institutional relationships and networks of trust, reciprocity, and support as well as the typical characteristics of the community. (p. 379)

However community capital was not considered to be of consequence by more than 30 percent of respondents to the survey (Labuschagne et al. 2003, p. 379). Community capital studies consider the impact of the enterprise on the community in terms of aesthetics, noise and odour levels and cultural properties. Other factors considered include social pathologies (induced or increased), security (induced or increased crime), economic welfare (induced business opportunities) and the impact on poverty and social cohesion.

## 2.7 Technical challenges

Like all evolving reporting systems, technical issues also provide challenges to the development of measurement and reporting frameworks. These challenges are related mainly to problems with data availability, quality, and lack of methodologies to measure attributes. Data availability and quality is further complicated by the lack of common definitions of sustainability and the absence of long-term, consistent monitoring mechanisms to supply data (Pinter et al. 2005, p. 4).

Many aspects of sustainability are quite difficult to measure, which restricts the attributes for measurement that can be included in these monitoring systems. Little research has been undertaken on how to monitor items such as company-community partnerships, investment in the local community, job creation and quality of life. These are all areas in which corporate activities can have an impact but are difficult to measure and evaluate (Veleva & Ellenbecker 2000, p. 104). Many of these items may not be quantifiable and may posses an element of subjectivity (Veleva & Ellenbecker 2000, p. 106). Milne (1996, p. 135) concurs that little research has being undertaking on development of methodologies to incorporate social costs and benefits associated with corporate activities.

Technical issues are present with reporting sustainability at such a micro level. To situate the reporting entity within the context of sustainability, benchmarks need to be readily available to identify impact. Allens Consulting (2002, p. 101) identify that industry benchmarks are limited. Milne (1996, p. 135) raises the issue that reporting of sustainability at this level requires the aggregate of not only its cumulative impact but as well knowledge of all other firms using the resource. As a consequence if this data is not available it may place excessive information requirements and costs on single firms.

Technical challenges are also present in the application of reporting formats. Reporting formats for sustainability monitoring systems were identified in Chapter 2 as: accounts based assessments, narrative assessments and suite-of-indicators assessments. Some monitoring systems incorporate more than one of these approaches (Macintosh & Wilkinson 2006, p. 4).

The literature in this field suggests that the most widely applied approach to reporting on sustainability is a combination of the suite-of-indicators and narrative assessments (Macintosh and Wilkinson 2006, p. 5; ABS 2004, p. 7). Examples noted include organisational and geographical reporting systems such as *Are We Sustaining Australia?* produced by the Commonwealth Department of the Environment. Macintosh and Wilkinson (2006, p. 5) suggest the reasons for this outcome are the theoretical and methodological problems associated with accounts based assessments and one-number approaches.

A discussion of the limitations of one-number and accounts based assessments follows. Macintosh and Wilkinson (2006, p. 5) and the ABS (2004, p. 7) note that aggregating components into one index or an accounting framework is difficult due to the presence of different units, i.e. years, dollars, physical volumes. To obtain consistency between the varied units requires calculating a weighted or unweighted mean or a common unit of measurement. This leads to the issue that a level of judgement is required in the development of weights or common unit of measurement, which can bias the overall outcome. This could lead to misleading signals if the theoretical influence is not well documented. Moreover, developing a common measurement based on past practices has involved using the dollar value. There is a strong debate about extending the scope of economic valuation into non-economic areas. Converting non-economic areas into monetary units involves 'assumptions, extrapolations, and judgements that distort the result' (Dalal-Clayton & Sadler 2004, p. 24). Furthermore, the ABS (2004, p. 7) explains that a composite index might oversimplify this complex system by aggregating data of different units into one number. However, this weakness is also a strength of this reporting format. A one-number approach or set of accounts is directly comparable with widely used measures, i.e. GDP and GPI (Dalal-Clayton & Sadler 2004, p. 24).

The suites of indicators format as the most widely applied approach clearly has strengths. It has been commended as 'potentially more transparent, consistent and useful for decision making than other approaches but whether they fulfil their potential depends on how well they are designed' (Dalal-Clayton & Sadler 2004, p. 27). Good design requires systematic methods to select the indicators. These types of methods communicate 'the selection and arrangement of issues covered by the assessment and the values involved' (Dalal-Clayton & Sadler 2004, p. 27). The incorporation of these methods enables a level of transparency not present within other formats (Dalal-Clayton & Sadler 2004, p. 27).

The development of meaningful indicators has been described as the key to the operationalisation of sustainability monitoring. Sustainability indicators are an important part of the decision making process for governments. The International Panel on Climate Change (IPCC) (2001, p. 635) describes indicators to monitor sustainability as 'indispensable to make the concept of sustainable development operational'. The panel further believes that indicators are important for decision making as they provide an understanding of what sustainability means in operational terms and perform as explanatory tools, translating meaning into practical terms. Indicators enable an assessment of progress to meet the goals and objectives of sustainability (IPCC 2001, p. 635). Pearce (cited in IPCC 2001, p. 635) and Bossel (1999, p. xi) concur, arguing that to embrace the path of sustainable development requires goals and a sense of direction, and that indicators inform whether we are on or off the path. Macintosh and Wilkinson (2006, p. 11) and the UN Commission (2001, p. 9) note the various benefits that arise from the establishment of indicators. Indicators:

- contribute to the closure of information gaps
- assist with the development of new benchmarks
- provide the required information for policy development
- bring important issues to the political agenda
- identify trends
- promote a national dialogue on sustainable development
- state the concept of sustainable development in practical terms.

However the suites of indicators reporting format is not without its problems. The ABS explain the criteria used to select indicators still retains an element of value judgement, 'both in choosing the dimensions of progress to include and in choosing the statistical measures for those dimensions of progress' (2004, p. 7). Moreover, indicators cannot be included for every aspect. This is because consensus has not yet been reached on how the concept is to be measured (for example, in relation to the health of family and communities). Macintosh & Wilkinson (2006, p. 14) suggest that while linkages between the indicators may in some cases be discussed, there is never an attempt to integrate the indicators to provide an aggregated statement of the performance or condition of sustainability.

The strength of narrative assessment is that it attempts to provide a written evaluation of the sustainability or condition of the relevant entity or area. Its strengths lie in providing more familiarity with the topic and flexibility in reporting. The assessment can be tailored to the technical skills of its audience. Moreover, the architects can explain topics which they have data on in accessible language (Dalal-Clayton & Sadler 2004, p. 25). However when this approach involves drawing on statistical information from secondary sources to address topics of interest as seems to be common practice, the indicators included may change over a period of time. This makes it difficult to compare reports developed within and between different reporting entities (Macintosh & Wilkinson 2006, p. 14). Moreover, the flexibility of this assessment approach also represents a weakness. Unsystematic choice of topics for inclusion creates confusion, which limits transparency and consistency and reduces the validity and usefulness of these assessments for decision making (Dalal-Clayton & Sadler 2004, p. 26).

## 2.8 Conclusion

The emergence of sustainability reporting has been rapid over the past 10 years. It has developed at three main institutional levels: the corporation, the national government and international organisations. This review of the literature has raised a number of issues regarding the development of indicators for monitoring sustainability. The review has identified suites-of-indicators and narrative assessments as the most commonly applied approaches to measuring sustainability. In general it was revealed in Chapter 1 that

corporations are most likely to apply the narrative assessment approach, and governments to apply the suites of indicators reporting format, although combinations of both approaches are common.

Broadly, a variety of theoretical and methodological issues have been raised over the application of the suites of indicators and narrative assessment approaches to the monitoring of sustainability. Of particular concern is the evident lack of a clear theoretical consensus on the concept of sustainability, which has implications for the clarity and coherence of what is measured by the indicators. Incoherent measurements in turn suggest a lack of direction in terms of what these different measurement approaches seek to accomplish. The literature in this field indicates that many aspects of sustainability are quite difficult to measure. Nevertheless, the epistemological link between the concept and the indicator is essential for validity of the measurement of the phenomenon.

Uncertainty about what and how to measure sustainability has implications for the elements of sustainability that are reported on. That is, there are doubts about process by which indicators are selected and the extent to which they are conceptually consistent with the element being measured. Moreover it is clear that the most widely applied organising structures do not capture the complexities of sustainability, that is, the interrelations between the environmental, economic, and social dimensions. These organising structures are embedded within conventional policy and disciplinary categories, reinforcing 'silos' in policy mandates and research expertise. Such a process does not facilitate integrated thinking or holistic conceptual analysis. Overall the limitations of these monitoring systems suggest they cannot provide an adequate understanding of sustainability and are likely to impinge on the ability of businesses or governments to operationalise sustainability policies.

Moreover monitoring systems are situated within various theoretical frameworks, which have implications for what they measure. In this sense some models privilege the economic dimension of sustainability over others because of their theoretical orientation. Ideological motives can influence what is measured and the nature of the analysis. It has been argued that corporations generally situate their monitoring frameworks within a conservative paradigm, with economics as the focus. This approach lends itself a 'business

as usual approach'. While financial information is well reported, adequate disclosure, particularly of social and environmental impacts, is less forthcoming. An appreciation of the theoretical perspective adopted in corporate sustainability reporting provides insight into the likely validity of their measures of sustainability.

Nevertheless it is important to be aware that corporations exist to make a profit for their owners (usually shareholders). Environmental and social sustainability can sometimes conflict with economic sustainability for corporations. Conflicts between the dimensions of sustainability tend to be suppressed in corporate reporting to avoid alarming shareholders. Governments, on the other hand, exist to serve 'communities', which include corporations and citizens. The functions of government are broader and not focused on profit making. However governments are influenced by powerful interest groups, including corporations.

The tension between making a profit and environmental or social outcomes has not traditionally been an aspect of government analysis and reporting on sustainability. Governments do have to manage the economy, however, and address social and environmental issues. Generally speaking the area where government sustainability reporting models appear open to criticism is reluctance to report too deeply on the inherent tensions between economic growth and social and environmental sustainability because it might draw attention to the need for behaviour change on the part of corporations as well as citizens.

It is clear there are shortcomings in the corporate approach to sustainability reporting. Concerns have been raised about the tendency of corporate reporting to define sustainability in a manner that fits existing business practices to avoid having to critically consider and report on their impact on communities and the environment. As a consequence of this practice there has been a deficit in critical assessment of economic, social and environmental sustainability by corporations. It has been observed that corporations have reported their sustainability performances in an overwhelmingly positive manner, thus potentially misrepresenting the situation. Moreover, as corporate sustainability monitoring is a voluntary activity enterprises are not accountable for the

claims made in these reports. That is, corporations can market themselves as pro-environment but corporate practices do not necessarily reflect their claims.

Critics of the government sustainability reporting frameworks, particularly in the UK and Australia, have identified issues that require attention. Concerns have been raised over the choice of indicators and whether they are appropriate for measuring sustainability. Other issues have been raised over the practice of prioritising the GDP-growth indicator in sustainability reports because of its limitations in monitoring growth from a sustainable perspective. There are also questions as to whether indicator targets are sufficiently robust to promote sustainability because at this stage it appears the monitoring systems have only limited capacity to provide triggers for policy changes. That is, governments do not appear to adjust policies when the headline indicators are moving in the wrong direction. Nor do governments question whether a positive trend in a measure of sustainability is indeed sufficient to adequately advance sustainability.

Many of the issues raised here are related to the dominance of liberal understandings of sustainability (and its hard right variant, the neoliberal discourse on sustainability) in indicator development framework, which will be unpacked further in later chapters.

An understanding of the theoretical and ideological perspective that is applied to monitoring systems is important as its influence over indicator selection is critical. A theoretical perspective provides direction as to how sustainability is understood and applied within indicator systems. The theoretical assumptions that underpin the indicator frameworks influence how these frameworks are structured and what they attempt to measure. It is thus necessary to unpack these assumptions to assess the value of current and emerging sustainability monitoring systems and their contribution to the measurement of sustainability.

The literature reviewed thus far has addressed the research questions as follows. In relation to the research question how do sustainability monitoring systems conceptualise sustainability, and in turn what phenomenon are they seeking to measure? The literature reviewed suggests that current monitoring systems lack a well articulated definition of sustainability. The absence of a clear conceptual launch pad has implications for the

selection of the phenomena that are measured and the epistemological coherence of the framework.

In addressing the question, how do organisations measure sustainability, in review of the literature has identified three key formats, with combinations of the suites of indicators approach and narrative assessment being the most dominant applications.

A review of the literature to answer the third research question, whether these frameworks have any validity as genuine measures of sustainability, suggests that liberalism and its further to the right variant, neoliberalism are the dominant discourses in the sustainability debate and have strongly influenced the current mainstream monitoring systems, while marginalising more radical approaches. Both liberalism and its variant, neoliberalism privilege the economic dimension over environmental and social considerations. Privileging one dimension over others discourages serious analysis of the interdependence of the dimensions on each other. It is thus questionable whether monitoring systems framed by the dominant discourse have a real ability to assess economic, environmental and social sustainability.

As this chapter has highlighted, sustainability is a contested concept, and the difficulty for its measurement lies in obtaining agreement on a common approach. The second section of this thesis begins with Chapter 3. This chapter will consider the meaning of sustainability as it is addressed in the literature on this topic. Understanding the various meanings of sustainability and the ideological assumptions that underpin them is important as the applied theoretical position influences how sustainability is measured and what is measured. This chapter will also make a case for an alternative approach to monitoring sustainability and show why this approach might be useful in advancing the development of sustainability monitoring systems.

## Section 2: The concept of sustainability

Section Two addresses the concept of sustainability and explores its various meanings. This section discusses the differing theoretical interpretations of sustainability and their ideological roots and unpacks how the assumptions that underpin these monitoring systems influence what is measured. The rise of the mainstream, neoliberal understanding of sustainability, the concept of sustainable development, is also discussed. An understanding of the political and historical account of the rise of sustainable development is important, as it provides an insight into how neoliberalism and later, liberalism have become dominant in the debate over sustainability monitoring.

As noted in Chapter 2, the dominance of the neoliberal discourse has affected the development of current mainstream monitoring systems. Whilst benchmark monitoring systems such as the GRI and the UK government *Securing the Future* monitoring system (see Chapter 5) might be more appropriately understood as being situated in the centrist liberal discourse, such systems retain the core assumptions of the right of centre neoliberal discourse with implications for the capacity of these systems to provide guidance to advance a sustainable economy, environment and society.

# Chapter 3 The meaning of sustainability

## 3.1 Introduction

In Chapter 2 it was argued that sustainability monitoring systems generally lack a comprehensive definition of sustainability. This fact alone makes any effort to measure sustainability difficult because monitoring systems require a conceptual launch pad to underpin their measurement. Moreover sustainability continues to be a contested concept with varying ideological positions evident in the debate, which influence how and what is measured. As a concept, sustainability suffers from vague and inadequate theorising on the part of business, environmentalists, government and the community.

Sustainability is, therefore, a contested concept. This chapter will offer a typology of the ideological positions present in the debate. This typology will be applied to the monitoring systems reviewed in the case studies offered later in this thesis to illustrate the underlying ideologies and how these understandings influence what is measured. This process will provide insight into how sustainability is conceptualised and measured. The theoretical paradigms deployed will give insights into what is meant by sustainability by the framers of the monitoring systems, and hence what they are seeking to measure.

The literature on sustainability is extensive and therefore provides a challenge in identifying ideologies present in the debate. To address this challenge the approach adopted by this research was to draw on existing typologies that categorise the different ways of defining sustainability.

Three typologies that characterise the ideological positions in the sustainability debate will be critically reviewed in this chapter. The purpose of this review is to propose a political economy framework or typology to make sense of the case study data that is reviewed in later chapters. The research seeks a clear framework that addresses the broad ideological debates to identify the theoretical underpinnings of monitoring systems for sustainability. This chapter will also provide an account of the rise of the dominant interpretation of sustainability, sustainable development, positioned within neoliberal ideology.

## 3.2 Frameworks to categorise the approaches to sustainability

The most common framework for categorising the various interpretations of sustainability discussed in the literature is the weak versus strong sustainability typology (see Hatch 2001, p. 82; Pearce & Warford 1993, p. 15; Bell & Morse 1999, p. 13; Neumayer 2003, p. 22). Sumner (2004, p. 118) explains that the concept of strong and weak sustainability originated with Pearce, Markandya and Barbier (1989) who proposed that weak sustainability is typified by the infinite substitutability of the various forms of capital. On the other hand strong sustainability is supported by the idea of the non-substitutability of natural capital. This categorisation framework provides a simple typology that categorises broadly two paradigms of the sustainability debate.

The matrix of approach to sustainability proposed by McManus (1996) provides a very extensive consideration different theoretical frameworks, ideologies and a specific example of an interpretation from one organisation. McManus (1996, p. 57) states that the development of his matrix was driven by the need to communicate a broader view of the interpretations of sustainability beyond economic-centred approaches and to address the risk of excessive simplification of the debate. This matrix incorporates the ideological spectrum of the sustainability debate and provides a broader representation of its complexity.

Clapp and Dauvergne (2005, p. 3) outline a third approach. This is the 'four environmental worldviews' framework that covers more ground than the two categories of weak and strong. However, this typology only takes into account a narrow proportion of the sustainability debate. It considers the causes and consequences of environmental change that flow on to affect both the economic and social system. It also provides an alternative categorisation approach to the aforementioned frameworks.

These three typologies will be reviewed to identify the various ideological positions present in the sustainability debate. In turn the identified lessons learnt from each of these typologies will be drawn on to form a new typology to categorise the various ideological positions present in the debate.

### 3.2.1 Weak and strong sustainability

In general, the literature on weak and strong sustainability positions sustainability as being interpreted within two extremes – a mainstream neoliberal interpretation at one

extreme and critical approaches at the other (Hatch 2001, p. 82; Pearce & Warford 1993, p. 15; Bell & Morse 1999, p. 13).

**Weak sustainability**. Weak sustainability (WS), as its name suggests, refers to the least demanding societal change within the sustainability paradigm. This is because it is closely associated with the dominant mainstream paradigm, market liberalism. In this understanding all forms of capital are seen as having a similar, unlimited substitutability, meaning it is the value of the aggregate capital that is passed on to future generations that is of importance (Pearce, Markandya & Barbier 1989, p. 48). Specifically the definition of WS 'requires keeping total net investment, suitably defined to encompass all relevant forms of capital, above zero' (Neumayer 2003, p. 22).

The key element of WS, unlimited substitutability, is made possible by one or more of the following factors being enforced (Neumayer 2003, pp. 22-23):

- super-abundant supply of natural resources
- equal to or greater than unit elasticity for substituting man-made capital for resources in the production function, even in the limit of extremely high output-resource ratios (unit = one percent drop in price is equal to a one percent increase in quantity)
- technical progress overcoming any resource constraint.

Neumayer (2003, p. 23) suggests that some readers may be uncomfortable with the substitution of natural capital with the production of consumption goods because the assumption that natural capital is substitutable does not recognise its uniqueness and its role in the whole biosystem. The belief behind these assumptions, in particular, unit elasticity[7] and technological progress, is that economic growth will solve environmental constraints by advancing technology, cooperation and adaptation (Adams 1990, p. 6). Market liberals believe that economic growth will lead to rising incomes that will result in environmental improvement through the further implementation of technology to address environmental issues (Clapp & Dauvergne 2005, p. 4).

Weak sustainability should be understood as a paradigm of resource optimism and is often described as economic sustainability because of the emphasis upon the allocation of

[7] Unit elasticity refers to 'an increase or decrease in price will leave total revenue unchanged' (Jackson & Mclever 2004, p. 150)

resources and levels of consumption, and financial value as a key element of system quality (Bell & Morse 1999, p. 13). Weak sustainability is underpinned by a neoclassical economic theory, although conceptually it does differ from this theory with regard to two main features: natural capital is seen as an input into the production of consumption goods and also a direct source of utility, and WS denies the validity of a potential Pareto optimum situation[8]. Currently present value maximisation and sustainability are in conflict with each other, and there is an argument that compensation is required for future generations that will be adversely affected by actions benefiting current generations (Neumayer 2003, p. 23).

Neumayer (2003) believes that WS is 'better than traditional neoclassical economics, but it is still a far cry from what is needed for SD (*sustainable development*)' (p. 24). From a neoclassical economic perspective, ecology and society are subsystems of the economy, resulting in the dominance of emphasis on economic growth. The ecological subsystem is regarded as 'a source of resources and a sink for wastes, with its primary purpose being that of enabling economic growth to continue, implicitly without limit' (Peat 2003, p. 40).

Turner (1993) (cited in Kearins & Springett 2003, p. 190) interprets the business application of weak sustainability as the *maneggiare* approach. He defines this approach as one in which business controls both the language and practice of sustainable development with its economic interests firmly to the fore. This approach can be adopted by businesses and allowed by national leaders without significant changes in values, core technologies or organisational shape (Kearins & Springett 2003, p. 190).

**Strong sustainability**. Strong sustainability (SS) emphasises the importance of natural capital, in particular to the support system of the Earth. The origins of strong sustainability lie with Herman Daly and his book *The Steady-State Economy* (1972). The steady-state economy has its roots in ecological economics, and Daly is one of the founders of the International Society for Ecological Economics (Neumayer 2003, p. 24). Ecological economists believe that, like neoclassical economists, efficient allocation is important, but this aspect is secondary to issues of scale and distribution (Daly & Farley 2004, p. 6). Daly & Farley (2004) describe this new approach to economics as being about

[8] Pareto Optimum is when economic allocations can be made that leave at least one person better off without making anyone else worse off (Daley & Farley 2004, p. 133).

gaining a better understanding of nature's limits and then allowing our economy to develop within these limits, both biophysical and moral (p. xxi).

Strong sustainability does not necessarily ensure preservation of nature as it requires keeping the aggregate value of natural capital constant. The problem with this definition is substitutability within natural capital is not constrained. For example, this definition allows for accepting a bigger hole in the ozone layer in exchange for an increased number of whales (Neumayer 2003, p. 22-23).

The literature does offer a second interpretation of strong sustainability in which some natural capital is regarded as non-substitutable and is, therefore, termed *critical natural capital* (Neumayer 2003, p. 25). The rules for preserving critical natural capital are (Daly cited in Neumayer 2003):

- Use renewable resources in ways that ensure their stock does not deteriorate. The upper limit of harvest is to the maximum sustainable yield.
- The environment is a sink for pollution only to the extent that its natural absorptive capacity does not deteriorate over time. (p. 25)

However, Neumayer (2003, pp. 25-26) states that some critics of SS believe that the availability of non-renewable natural resources is already at its limit, and therefore past resource depletion cannot be sustained into the future. Some argue that there is a need to compensate the future for its reduced availability of non-renewable resources by investing in replacement alternatives.

Neumayer (2003, p. 26) argues that the second interpretation of strong sustainability is the one to be pursued because of the assumption of the non-substitutability of critical natural capital. The main reasons for supporting non-substitutability are a combination of the following factors (Turner & Pearce cited in Neumayer 2003):

- There exists uncertainty and ignorance about the detrimental consequences of depleting natural capital.
- Loss of natural capital is often irreversible.
- Basic life-support functions are provided through some forms of natural capital.
- There is high aversion to losses of natural capital.
  A strong sustainability advocate will not accept being compensated for any

environmental degradation by increased consumption opportunities (Spash cited in Neumayer 2003, p. 26).

In summary the substitutability assumption clearly differentiates weak sustainability from strong sustainability. Strong sustainability implies that rising consumption cannot compensate future generations for environmental degradation. The reason is that a declining stock of directly relevant renewable resources cannot be substituted for by a rising stock of pollution (Neumayer 2003, p. 26). Clearly proponents of strong sustainability are pessimistic about the environmental consequences of economic growth, the opposite to proponents of weak sustainability who are optimistic about this relationship.

### 3.2.2 Four environmental worldviews

The four environmental worldviews typology proposed by Clapp and Dauvergne (2005, p. 3) does not provide such a broad categorisation typology as weak sustainability versus strong sustainability. It nevertheless provides an overarching framework and defines the main ideologies in the debate.

Clapp and Dauvergne (2005, p. 3) outline what they see as the four main worldviews on global environmental change and their relationship to the global political economy. While the emphasis is not on sustainability as such, it does capture a critical component of this debate relating to environmental change and the global political economy. The four main world views highlighted by these scholars are those of: market liberals, institutionalists, bioenvironmentalists, and social greens. They were chosen because these categories are transdisciplinary, and capture a cross-section of views to encapsulate the understandings of political science, economics, development studies, environmental studies, political geography and sociology. This selection is felt to be broad enough to capture a good cross-section of the literature, ensuring new insights into the sources and possible solutions to environmental change.

Clapp & Dauvergne (2005) categorise the four main worldviews on global environmental change and their relationship to the global political economy into a matrix format (see Table 3.1). The matrix has a focus on the following: a global environmental crisis; causes of problems; impact of globalisation; the way forward. These factors are considered significant to understanding global environment change, as well as understanding the

controversies surrounding it. The authors state that issues that inform the relationship between the global political economy and the environment are often technical and scientific, but increasingly socio-economic. Moreover political factors are contributing to understanding the causes and consequences of global environmental change.

**Market liberals.** Market liberal ideology is underpinned by neoclassical economic theory. Economic growth and high per capita incomes are seen as essential for human welfare and therefore the maintenance of sustainable development. Market liberals frequently draw upon optimistic critiques of the environmental situation but recognise that environmental problems are indeed serious. Environmental limits are not seen as necessary, however, because human capital is seen to have no limits as it is assumed humans will be able to overcome natural environmental limits through technological breakthroughs.

The main drivers of environmental degradation are seen to be lack of economic growth, poverty, distortions and failures of the market, and bad policies such as subsidies. It is thought that restrictive trade and investment policies and lack of secure property rights impede the ability of the market to enhance economic growth and address the issue of poverty.

Solutions to environmental issues represented by advances in technology, application of market based mechanisms, cooperation and adaptation are strongly advocated. Corporations are held to adequately advance sustainability through voluntary approaches, albeit market based incentives should be applied to encourage the development of clean technologies (Clapp & Dauvergne 2005, pp. 4-7).

**Institutionalists.** Institutionalist thinking is embedded in the fields of political science and international relations. Institutionalists believe the lack of global cooperation is a fundamental cause of environmental degradation because the nation-state has authority within its boundaries and generally will not take action contrary to interests of the nation or state. Many of the broad assumptions and arguments of market liberals are also similar to those of the institutionalists. Common beliefs include the value of economic growth, globalisation, trade, foreign investment, technology, and the notion of sustainable development. The point of difference between market liberals and institutionalists is that

market liberals stress the benefits and dynamic solutions of free markets and technology whereas institutionalists emphasise the need for stronger global institutions and normative regulation, as well as sufficient state and local capacity to constrain and direct the global political economy. Institutionalists are also more concerned than market liberals about environmental scarcity, population growth, and the growing inequalities between and within states. They advocate for the application of the precautionary principle[9], due to their concerns for the threat of serious or irreversible environmental damage (Clapp & Dauvergne 2005, pp. 7-9).

**Bioenvironmentalists.** Bioenvironmentalists are inspired by the laws of physical science. They stress the biological limits of the earth to support life. The main pressures on the environment are seen by bioenvironmentalists as population growth and further economic growth. Bioenvironmentalists see economic growth as leading to more consumption of natural resources, resulting in increased stress on the earth's limited resources. Population growth places pressures on the planet's finite resources and is the focus of this argument.

The way forward is to create a new economy that recognises limits to growth, as well as limits to population growth and a reduction in consumption levels. This perspective holds that it is important to internalise the value of nonhuman life and it is important to develop collective coercion to control greed, exploitation, and reproduction (Clapp & Dauvergne 2005, pp. 9-11).

**Social greens.** Social greens understand environmental issues as driven by processes of inequality and domination. Unequal access to resources is equated with unequal exposure to environmental harms. Large scale and rapid industrialisation is seen to drive inequality primarily through over consumption by the rich while simultaneously contributing to poverty and environmental degradation.

Social greens have some similar views to bioenvironmentalists particularly in regard to the arguments on the physical limits to economic growth. However, social greens' focus is

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[9] The precautionary principle refers to 'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation' (Commonwealth Government of Australia 1999, p. 172).

on over consumption , which is believed to be a far greater problem than over population. This is also because reductions in population growth are seen as diminishing the self-determination of women and the poor.

A common thread in social green thinking is the relationship and consequences of inequality to the environment. Social greens argue for the empowerment of voices marginalised by processes of economic globalisation. Social greens hold that the way forward is to oppose industrialism and reverse economic globalisation to restore local community autonomy and empower those voices that have been marginalised. This new system will promote ecological justice and local and indigenous knowledge systems (Clapp & Dauvergne 2005, pp. 11-16).

**Table 3.1 Summary of Four Environmental Worldviews Model**

NOTE:
This table is included on page 78 of the print copy of the thesis held in the University of Adelaide Library.

Source: Clapp & Dauvergne 2005, pp. 11-16.

### 3.2.3 A matrix of approaches to sustainability

The third framework that will be considered has been developed by McManus (1996, p. 57). The matrix outlines specific approaches to sustainability and addresses their similarities and differences on the issue. Incorporated in the matrix are the following approaches: free market environmentalist, market interventionism, steady-state theory, smaller scale advocacy, eco-feminism, eco-Marxism, mirror nature, the constant natural capital stocks criterion, and the Brundtland Commission approach. This list points to a mixture of ideologies, theoretical frameworks, and individual organisational interpretation of sustainability. It is an extensive list, as McManus (1996, p. 57) wished to

ensure that there was no excessive simplification. A brief description of each of these strands will proceed. These descriptions are followed by a discussion of McManus' (1996) categorisation of the strands of sustainability into a matrix format (see Table 3.2).

**Free market environmentalists (FME).** Free market environmentalists believe that market-based economies will provide adequate protection of the environment, and acceptable societal outcomes. For example the goal of conserving fish species is best achieved by private ownership of the 'commons' (i.e. fisheries) for the pursuit of profit. Technological progress is seen to overcome social and environmental problems. These technological solutions are believed to evolve through the motivator of profit. The terminology of *sustainable development* rather than sustainability is used in this understanding. Sustainable development underpinned by neoclassical economic theory has economic growth as a clear and dominant objective, and this is consistent with the perspective of free market environmentalists (FME). FME are strong critics of concepts like intergenerational equity, because it is interpreted as allowing future generations the right to exploit resources which could be exploited today. Moreover, it is not considered that future generations will also exercise stewardship rather than exploitation for later generations (McManus 1996, p. 58). In summary, FME aims to sustain economic growth, humanity and valued individual species. Its vision is for the economy to be driven by the profit motive and high growth rates. It argues that the conservation of individual species will result from private protection processes driven by market conditions (McManus 1996, p. 60).

**Market interventionists or green signallers.** Market interventionists or green signallers, like FMEs, have confidence in the free market, but they acknowledge that the market does not always send appropriate signals from a sustainability perspective. Market mechanisms like green taxes or incentives should be applied to correct inappropriate signals. Green signallers also have faith in technological progress to overcome problems, but rely more on the green signals. The latter include taxes on pollution to provide a financial incentive to change, or to fund the research and development of green technologies (McManus 1996, p. 59). The aim of green signaller is to sustain humans mainly through the operations of a sustainable economic system. Their vision allows for

market imperfections to be rectified through the use of signals, such as a tax on pollution or financial incentives for green research and development (McManus 1996, p. 60).

**Steady state economy**. The idea of the steady-state economy is associated with a market based economy but the terminology of growth is replaced by developments with an emphasis on quality rather than quantity. Proponents aim to develop a sustainable level of physical resources (McManus 1996, p. 59). A steady-state economy refers to a constant, not static, stock of wealth and people at levels which are believed to be sufficient for a long and good life. The throughput at which these stocks are maintained should be at such a level that there is the capacity to regenerate and not exceed the absorptive capabilities of the ecosystem (Daly et al. 2004, p. 55). This approach is underpinned by the principles of thermodynamic laws. Advocates argue for limiting population growth, although a constant stock of population is considered desirable because 'scale' is considered within the growth equation (McManus 1996, p. 59).

**Small scale theorists.** Small scale theorists, such as social ecologists and bio-regionalists, consider scale to be one of the major issues of sustainability. They advocate for the means of transition to sustainability to be moved to the local level. Eco-efficiency is seen as an alternative to centralised approaches. Small scale theorists argue for the reduction of energy consumption and waste discharge per unit at the local level. This approach does not consider the social structure of the ownership and use of technology (McManus 1996, p. 64). The theorists' vision involves the development of smaller bioregional units which have political autonomy. Communities are meant to have more autonomy and to strive for self sufficiency, which results in a reduction in trade and commerce (McManus 1996, p. 61).

**Eco-feminism.** Eco-feminism positions patriarchy as a major impediment to developing sustainability. Eco-feminism is underpinned by feminist values. It emphasises reframing male based discourses to incorporate the experiences of women, including the under-valued work of women in informal sectors of the economy. While there are many derivatives of eco-feminism, the essence of this approach considers both the social and environmental inequalities produced by capitalism. It suggests that the negative externalities of capitalism are tied to a fundamental masculine propensity to dominate

and control the environment, children, other men and particularly women (McManus 1996, p. 64). Proponents of eco-feminism seek to revalue matriarchal practices and knowledge, reduce hierarchies and violence, and increase nurturing and participation (McManus 1996, p. 63).

**Eco-Marxist.** An eco-Marxist approach generally adopts neo-Marxist analytical tools to understand contemporary capitalism and its relationship to the environment. Eco-Marxism articulates a sustainable future based on socialist approaches and values (McManus 1996, p. 65). It does not valorise the market as the allocator of resources and opportunities. It calls for a higher degree of redistribution, less hierarchy, and less conspicuous consumption. Historically, eco-Marxists would have considered substituting human made capital for natural capital without recognising limits to growth. But increasingly these thoughts are being reconsidered (McManus 1996, pp. 60-61). Its aim is to sustain humans, especially the oppressed, and other species.

**The mirror nature approach**. The mirror nature approach is associated particularly with physicists, biologists and deep ecologists, who advocate for sustainability to be achieved by human beings mirroring the processes of nature. While this approach does include the thermodynamic school of economics, it also has a wider view that considers non-economically focused perspectives of sustainability. Not unlike the small scale approach, this view also pays little attention to social constructs and power. Population control is a point of concern (McManus 1996, p. 65). Technology is seen as a problem and not a boon, as it has enabled humans to overcome natural constraints. Unsurprisingly, the mirror nature approach recognises limits to growth, and does not argue that human made capital can be substituted for natural capital. This approach is about the creation of smaller societies living with nature and in accordance with natural philosophies (McManus 1996, p. 60-61).

**Constant natural capital stock theory.** The constant natural capital stock theory holds that each generation should inherit an adequate per capita stock of self producing natural capital no less than that inherited by the previous generation. This approach is seen as an extended version of strong sustainability (McManus 1996, p. 65). Technological progress is regarded as a problem since by providing solutions to serious issues in the form of green technology; additional and undesirable growth continues to be stimulated

(McManus 1996, pp. 60-61). The aim is to sustain the Earth, its biosphere and all living systems in a form needing only the minimal requirements for human survival (McManus 1996, p. 63).

**The Bruntland Commission.** The Bruntland Commission approach to sustainability monitoring has had a significant impact on the debate and will be discussed in detail in in this chapter. This approach is underpinned by neo-liberalism and applies neoclassical economic theory to environmental and social issues. Growth is to continue, but in a socially and environmentally benign way. The Commission argues that there is a strong role for technology in helping the world to meet sustainable development objectives and in providing solutions to environmental issues. The philosophy of the Commission is focussed on sustaining humans. Its vision is to reconcile the inequalities between the Northern and Southern hemispheres by linking green principles in the North and high quality growth in the South through implementation of global ecological management (McManus 1996, pp. 60-61).

In summary these different strands of sustainability are presented by McManus in a matrix format (see Table 3.2). This matrix helps to summarise the various elements of each strand. The main headings used to summarise each strand of sustainability provide insight into how widely this term can be interpreted. The categories consider who applies it, what it is a critique of and the main antagonists in the debate. Also considered is how the transition to sustainability will be made, the agents of change and what will be sustained. The matrix also addresses key concepts in the sustainability debate including limits to growth, the substitutability of human made capital for natural capital and the role of technology.

**Table 3.2 Matrix of Sustainability Model**

| Who | Dominant background (s) | Critique of (all are against permanent environmental damage) | Main antagonists | Mean of transition | Agent(s) of change | Vision | Sustainability of what/sustainability is for who? | Recognises Limits to growth | Substitut-ability of Human Made Capital for Natural Capital | Role of technology |
|---|---|---|---|---|---|---|---|---|---|---|
| Brundtland Commission | government bureaucrats economists | global neoliberalism (the new right) | Thatcher Reagan TNCS | Mixed economy with government intervention in the market. Growth to occur, but need to change the quality of growth so it can be sustainable. a green Keynesian approach to economics, participation, social justice and environment, that attempted to put nature into capital. a managerial approach. | Governents. international bodies | A 'green Keynesian' system with a strong pro- 'south' bias, emphasising 'development'. It attempted to reconcile 'north-south' inequalities by linking 'green' in the 'north' with high quality growth in the 'south' through a system of global ecological management. | Humans, both in 'northern' rich nations and in poorer 'southern' nations. | No, not in recommendations. | yes | Yes. need to reorient technology to meet development objectives and to also address environmental issues. |
| Free market environmentalists | economist business people | government intervention | government socialist | 'free market' (deregulated market) | entrepreneurs | Profit led economy with high growth rates. conservation of individual species by private protection under market conditions. population growth. | Economic growth. humans and valued individual species. | no | yes | Yes. high degree of faith in technological progress to overcome problems. profit motive to develop these technologies. |
| Green signallers | economists | Market imperfections | No clear 'enemy'. radical economists such as non-environmental business or Marxists. | Adjusted market – incremental rate of change. | governments followed by business people and consumers | Market working with a pigouvian taxes to reduce unnecessary energy and resource consumption and to penalize waste disposal that treats the earth like a sink. | Humans mainly, through the operations of a sustainable economic systems | no | yes | Yes. faith in technological progress. green signals to direct research and development of 'green technologies'. |

| Who | Dominant background (s) | Critique of (all are against permanent environmental damage) | Main antagonists | Mean of transition | Agent(s) of change | Vision | Sustainability of what/sustainability is for who? | Recognises Limits to growth | Substitut-ability of Human Made Capital for Natural Capital | Role of technology |
|---|---|---|---|---|---|---|---|---|---|---|
| Steady state | economists | growth | Transnational corporations (TNCS) global trade growth proponents free markets environmentalists | market, education, change of peoples values. communities. | government, international bodies, communities. | Less emphasis on quantity move on quality. Less trade, growth superseded by development, constant stocks of people and artefacts, i.e. limiting population growth. | A level of physical resource use. | yes | no | Use of 'green' and appropriate technology. |
| Small scale | bioregionalist anarchists | growth | government TNCS global trade | Communities. local economic development often non-market structures eg. lets, co-operatives | communities individuals | Smaller bioregional units with political autonomy. Communities with autonomy and self sufficiency. Less trade. | The earth, biosphere and all living systems. | yes | no | Use of appropriate technology with decentralized control structures. |
| Eco feminist | women | patriarchy | men male systems militarism | Reframing male-based discourses to emphasize the specific lived-experiences of women all over the world. Move from universal to the small/local scale, particularly the female body and the household, emphasizing the under-valued work of women in informal sectors of the current economies. | women | Revaluing of matriarchal practices and knowledge with a reduction of hierarchies and violence. Emphasis on nurturing and participation, within a non-male centred discourse. | The earth as mother and all living things connected with her. | yes | Question not framed in this discourse, but generally no. | Often seen as a male preserve, but increasing opportunities for women in some area. The male discourse around technology must be reframed. |

| Who | Dominant background (s) | Critique of (all are against permanent environmental damage) | Main antagonists | Mean of transition | Agent(s) of change | Vision | Sustainability of what/sustainability is for who? | Recognises Limits to growth | Substitut-ability of Human Made Capital for Natural Capital | Role of technology |
|---|---|---|---|---|---|---|---|---|---|---|
| Eco-marxist | Marxists | capitalism | tncs related capitalists structures | A big problem, approaches range from traditional revolution through to incrementalism. | Working class, increasingly 'coalitions' based on race, class gender, etc. | Societies where the market is not the allocator of resources and opportunities. High degree of redistribution, less hierarchy, less conspicuous consumption. | humans (especially the oppressed) and other species. | historically no, increasingly yes. | Historically yes, with emphasis on redistribution, but increasingly no. | In the past has often being associated with labour displacement and exploitation. increasing emphasis on 'green technology' and appropriate technology. |
| Mirror nature | biologists deep ecologists thermodynamic economists | human population, numbers and impacts | human beings | population control, or reduction | contraception in more extreme cases, war, starvation, disease, etc. | Little emphasis on economic and political structures. Vision – smaller society living with nature according to natural philosophies. most likely group to project dystopian visions. Based on humans' continual violation of physical laws. | plants, other species, including a limited number of humans. | yes | no | Seen as a problem because it has enabled humans to overcome natural constraints. |

| Who | Dominant background (s) | Critique of (all are against permanent environmental damage) | Main antagonists | Mean of transition | Agent(s) of change | Vision | Sustainability of what/sustainability is for who? | Recognises Limits to growth | Substitut-ability of Human Made Capital for Natural Capital | Role of technology |
|---|---|---|---|---|---|---|---|---|---|---|
| Constant natural capital stocks criterion | ecologists | growth consumerism | tncs growth advocates free trade advocates | Vague on this point. increased government involvement to capture efficiency gains, linked with non-consumerist personal values, appears to be the dominant response. | Vague governments and citizens with non-consumerist values | A system emphasizing dev. rather than growth, but one that changes to accommodate population change. It is redistributive in this generation, it emphasizes resource stocks rather than monetary measures, and says efficiency savings must be captured by governments., and preferably invested in essential natural capital. | The earth, biosphere and all living systems, although authors admit the emphasis is still on the pragmatic minimal requirements for human survival. | yes | no | Seen as a problem in its current economic context where even 'green technology' generates savings which stimulate additional growth. recognizes tech. can raise productivity, but emphasizes gains have to be used in a sustainable manner. |

Source: McManus 1996, pp. 60-61.

## 3.3 Consistencies and differences between the categorisation frameworks

Weak and strong sustainability, the four worldviews and the matrix view of sustainability offer a variety of theoretical approaches to the concept of sustainability. The strengths and weaknesses of these three frameworks will now be considered.

### 3.3.1 Weak vs strong sustainability

The weak versus strong sustainability framework categorises sustainability within two broad categories. This framework provides a simple solution to categorising the main understandings of sustainability. It provides an over-arching typology for categorising two key alternative positions within the debate. This typology allows the user of this approach to quickly place the understanding of sustainability into terms that are readily grasped – weak and strong, which are clearly differentiated by their key assumptions.

Weak and strong sustainability are differentiated by the assumption of substitutability. In weak sustainability the assumption of unlimited substitutability of the various forms of capital holds, therefore it is the value of the aggregate capital passed onto future generations that is important. Advocates see no reason to limit growth as it is believed that human capital and technological progress will overcome resource constrains. For strong sustainability it is the opposite; there is an assumption that the non-substitutability of total natural capital holds. Proceeding from this assumption, strong sustainability advocates seek limits to growth as they do not accept that current or future generations can be adequately compensated for the loss of natural capital by increased consumption. Nor do they accept that technology will overcome resource constraints.

The weak versus strong sustainability framework does not accurately present the diversity of approaches to sustainability, which is a weakness of the approach. Beckerman (cited in Sumner, 2004) argues that 'weak sustainability [takes] debates [about sustainability] not much further than the current model of economic welfare maximisation and that strong sustainability [is] morally unacceptable and totally impractical' (p. 119). Beckerman's views have instigated a number of debates over the merit of his claim. Although the weaknesses of weak sustainability have been largely accepted, no consensus has been obtained in terms of strong sustainability and what use

of current natural stock is morally acceptable (Sumner 2004, p. 119). Milne (1996, p. 150) further contributes by outlining examples of questions that require an answer: 'what should be included in the critical category? Who should decide such matters and how?'

Neumayer (2003, p. 40) adds that both weak and strong sustainability are explained only in economic terms and their methodologies sit within an economic discipline. He (1996) points out that 'this is a linear, narrow framework which fails to encompass the diversity of approaches to sustainability that do not fall within the ambit of environmental/ecological economics' (p. 56). McManus (1996, p. 56) concurs by arguing that neither of the competing views adequately capture the complexities of sustainable development.

The complexities of the sustainability debate suggest that it might be too simplistic to divide sustainability into two main categories of weak and strong, which are defined predominately in economic terms. Defining sustainability it economic terms limits representation of the full scope of possible understandings and does not provide a balanced representation of all the dimensions of sustainability. As discussed by McManus (1996), the sustainability debate incorporates other ideological approaches that are not defined in economic terms such as radical social theory. Radical understandings of sustainability are excluded from the weak and strong typology as radical theories sit outside narrowly defined economic ideologies. Yet these approaches better represent social and environmental sustainability and address issues such as the limits to growth, which are neglected by models defined in predominantly economic terms. Redefining the role of the economy including the repositioning of the environment and society offers a holistic approach to understanding sustainability missing from the weak – strong framework.

Moreover, the use of the terminology weak and strong depoliticises the various understandings of sustainability when, in fact, ideology reflected in the politics of the right and the left in world governments is represented in the weak and strong arguments. Weak sustainability could fairly be referred to as a neoliberal approach while strong sustainability sits at the left of the liberal approaches. As described by Neumayer (2003, p. 56), the analytic capacity of strong sustainability remains constrained by its privileging of

the economic dimension. In this sense, strong sustainability reflects the core assumptions of environmental/ecological economics. Environmental and ecological economics accept that governments should intervene to address market failure and in some qualified circumstances act to place limits on growth.

In summary, the weak versus strong sustainability framework provides a simple but clear representation of two out of three discourses present in the sustainability debate. The two discourses are readily differentiated by a clear set of assumptions based on the substitutability of the various forms of capital. The key limitation of this framework is that its dichotomous structure does not effectively represent the diversity of approaches that are present in the debate over sustainability.

### 3.3.2 Four environmental worldviews

Clapp and Dauvergne (2005) offer a four environmental worldviews typology that captures the main perspectives in the sustainability debate in a more comprehensive form than the weak and strong sustainability framework. It captures both conservative and radical understanding of the debate. In particular it addresses radical stances, for example, the arguments of the social greens and bioenvironmentalists. More conservative perspectives are reflected in discussions of market liberals and institutionalists.

However, while this approach brings greater diversity to the debate, there is no consistency between the organising categories. The framework captures aspects in relation to weakly defined ideological positions (market liberals and institutionalists), scientific understandings (bioenvironmentalists), and activism (social greens).

Unlike the approach offered by McManus (1996) and the weak versus strong framework, Clapp and Dauvergne's (2005) model does not outline explicitly the key assumptions that differentiate the approaches. Implicitly, however, the key attributes that are used to describe and differentiate the different environmental world views are consistent with those explicitly outlined by McManus (1996). It is worthy to note that even McManus (1996) does not explicitly outline all key attributes (see Section 3.3.3).

This model offers only limited capacity to unpack the meaning of sustainability and how it is measured. In part this is because the framework has a focus on the environmental dimension rather than offering holistic sustainability worldviews. This limits its capacity

to provide an organising framework for the key ideological stances in the debate over sustainability. The key limitation is that there is no consistency between the organising categories. The framework does not explicitly distinguish the key attributes that differentiate the four worldviews. It does attempt to represent a broader spectrum of interpretations of sustainability capturing both conservative and radical understanding of the debate albeit without a great deal of consistency.

### 3.3.3 A matrix of approaches to sustainability

McManus' (1996) framework offers an extensive list of numerous approaches to the sustainability debate. The categories are a mixture of the different theoretical frameworks, ideologies, and one approach developed by a specific organisation. The focus is more on individual variants derived from a main thought; for example, a free market environmentalist is considered to be influenced in the main by neo-liberalism.

McManus' approach illuminates the complexities and the varying understandings of sustainability and gives a wider appreciation of alternative views of the concept. The list of approaches described by McManus is extensive, captures the diversity of individual interpretations, and is a useful summary of the numerous opinions to be found in the sustainability debate that require consideration within the collection of approaches to sustainability examined in this thesis. McManus (1996) also clearly attempts to identify the attributes that characterise each of the approaches to the issue of sustainability. Attributes identified as key to differentiating the approaches include: limits to growth, substitutability of human made capital for natural capital and technology as a solution to environmental issues.

A weakness of the McManus approach is that there is no detailed reasoning offered, nor a defined and consistent process for the choice of the strands of sustainability incorporated within the typology. The limited information provided by McManus on how these strands were selected constrains the extent to which this framework can be drawn on and replicated. Moreover, similar approaches are not grouped together to provide a clearer representation of the main strands in the debate.

Another weakness, which might be attributed to the selection of key attributes to differentiate approaches to sustainability, is the lack of representation of the social dimensions of sustainability. Representation of an attribute aligned to the social system is

not specifically specified even though the social system is described in many of the incorporated approaches as vital to sustainability, and especially so to ensure equity and social justice to current and future generations.

### 3.3.4 In summary

A clear difference between the reviewed typological frameworks is the complexity of categorisation offered by each typology. The weak versus strong sustainability framework provides two different perspectives in the sustainability debate. The parameters used to categorise the approaches to sustainability in this model are not specifically aligned to an ideological view or paradigm. The framework does provide a useful guide to the key mainstream understandings of sustainability at the broadest level. Nevertheless both strong and weak sustainability seem premised on the core assumption of neoliberal ideology, which holds that the economy has primacy. This framework fails to capture the full spectrum of the meanings of sustainability with the more radical understandings noticeably absent.

The four viewpoints of Clapp & Dauvergne (2005) represents more consideration of complexity within the spectrum of approaches within the whole environmental debate. The description of the approaches attempts to more tightly define the parameters of environmentalism, which is a part of the sustainability debate, than does the weak versus strong framework. There is an emphasis on four main views. However, how approaches are categorised into each of the four main views is not explained coherently. The typology would be strengthened by a consistent approach to categorisation. The distinctions between the different categories as less clear than those offered by the weak versus strong framework and the McManus approach. Each of the latter approaches identify the key assumptions that are used to differentiate the approaches to sustainability encapsulated in their frameworks.

The McManus (1996) matrix does not group approaches with similar ideological underpinnings together. This matrix attempts to outline and lists the different political positions within each of the main ideological stances, key organisation interpretations, and key scientific interpretations. It developed a list of key attributes that explicitly differentiate the differences between these various interpretations of sustainability.

In summary, a review of sustainability typologies suggests that while each typology has merits, none seem to adequately capture the debate. The weak verses strong sustainability approach offers a guide to mainstream thinking on sustainability but offers only a dichotomy that fails to capture the diversity of the debate and remains bound to neoliberal assumptions about the primacy of the market. The environmental worldviews approach offers no consistency in the way its categories are defined. The matrix approach likewise offers little information on how its many categories of sustainability are differentiated and tends to under-represent the social dimension of sustainability. A framework is needed that can capture the diversity of the arguments over sustainability in a form that remains sufficiently clear to provide a straightforward categorisation framework to make sense of the debate.

The review of the three typologies suggests that an organising framework is required that adequately captures the nature of the debate on sustainability to enable an understanding of how the political ideology that underpins a monitoring system affects the way sustainability is measured.

## 3.4 A political economy typology to organise the ideological debates

In the discussion which follows, a typology is proposed that incorporates the lessons learnt from the reviewed typologies, to propose an organising framework with a focus on the political economy. A political economy typology drawn from the review of these frameworks is proposed as an organising principle for the analysis of the case studies to follow. The research seeks a clear framework that addresses the broad ideological debates consistently.

The reviewed typologies have incorporated a range of foci, including different theoretical frameworks, ideologies and varying sets of interpretations of sustainability. All typologies offered insight into the complexity of the sustainability debate. This new typology applies a consistent categorisation approach that addresses the political economy of the sustainability debate. The aim is to capture the core ideologies present in sustainability debate to enable an analysis of how these ideologies influence what sustainability monitoring systems measure. These ideologies equate to three main understandings

under which the various sustainability perspectives can be grouped: neoliberal, liberal and radical.

A political economy typology offers advantages because it can contribute to a more complete understanding of the concept of sustainability by the adoption of an analytical approach that is broader than an economic inquiry. A political economy approach emphasises that there are many ideologies in society, as well as ideological tensions, which influence how economic, social and environmental issues are addressed. Modern political economy challenges the mainstream wisdom of dominant neoclassical economics (Argyrous & Stilwell, 1996, p. xi). It is an approach that recognises that an appreciation of the complexities of various economic, social, environmental systems and political processes and their influence on the sustainability debate is essential. Without an appreciation of these complexities it is impossible to appreciate the various understandings in the way systems may interact and how the political process might influence which dimensions of sustainability are valued and how this might affect applied policy decisions. In this sense a political economy typology can capture the key ideological positions in the debate over sustainability.

Stilwell (2002, pp 6-7) outlines four different schools of economic thought that have relevance in the construction of modern political economy. These schools of thought are: classical political economy; Marxist economics; institutional economics; and Keynesian economic analysis. Caporaso and Levine (1992, p. vii) offer a similar categorisation. Their key categories are the: classical political economy; Marxist political economy; Neoclassical political economy; and Keynesian political economy. Likewise Broomhill (2007, p. 6) outlines three discernible 'schools' of thought and practice in his study of Corporate Social Responsibility. Broomhill's schools of thought are neoliberal; Neo-Keynesian; and radical political economy. Each of these typologies encompass a common theme between the mentioned key schools of thought: a conservative, right of centre school of thought, with a belief in and reliance on the free market (classical approach and neoliberal); a middle road, liberal approach advocating for a level of government intervention to address market failure (Keynesian and institutional economics) but without changes to social relations; and radical approaches (including Marxist) that argue for social transformation.

The political economy typology proposed for this research encapsulates the main world views present in the reviewed typological frameworks. It suggests that these categories might usefully be conceived of as three typologies of neoliberalism, liberalism, and radical social theory. These typologies are consistent with those suggested by political economists but offer a more generic, broad understanding. Neoliberalism represents the advocates of the free market. Liberalism encompasses a wider view than institutional economic or Keynesian, both of which are variants of liberalism. Radical social theory in the sustainability debate encapsulates not only Marxism but as well other radical approaches such as eco-feminism, and mirror nature. These ideologies are also are noted as consistently represented within two of the reviewed frameworks categorising the main schools of thought within the sustainability debate: four environmental world views and a matrix of approaches to sustainability.

The political economy typology therefore captures the range of positions in the debate ranging from a conservative through to a radical approach. In the neoliberal interpretation, economic concerns and a dominant role for the market are at the forefront. The liberal approaches at the centre of the spectrum are still embedded within neoclassical economics, but with a focus on addressing 'market failures' through varying levels of regulation. At the other end of the spectrum are more radical understandings of sustainability. Radical social theory advocates a significant transformation of the power structure to situate social relations in the context of the natural environment. Such theories include feminist, deep ecologies, and Marxist understandings of disempowerment and inequality.

Each ideological position incorporates specific variants of the broader positions, providing a more nuanced level of complexity. These variants enable a more detailed understanding of the diversity of interpretations of sustainability that sit beneath the main ideologies.

The variants of sustainability are extracted from the main ideologies outlined in McManus (1996) and the four worldviews framework. Only free market environmentalism represents neo-liberal attitudes. Interpretations represented by liberalism, however, include market interventionism, steady-state theory, smaller scale advocacy, and

institutionalism. Radical social theory encompasses the following interpretations: eco-feminism, eco-Marxism, mirror nature, the constant natural capital stocks criterion. While institutionalism is depicted as a main world view by Clapp and Dauvergne (2005), it is represented in this proposed framework by its specific emphasis on the role of institutions, and its association with the broader perspective of liberalism.

Through the review of these three frameworks a number of key attributes to distinguish and compare the various interpretations of sustainability have also being ascertained. These key attributes are: limits to growth; substitutability; technology as a solution and power relationships. Limits to growth, substitutability and technology as a solution to environmental concerns are all attributes that are dominant features in two reviewed frameworks – that of McManus (1996) and the weak verses strong sustainability framework. The identification of these attributes is important as it provides a mechanism to clearly differentiate between the main world views in the debate over sustainability.

The identification of power relationships is the key to distinguishing the different approaches to sustainability discussed by McManus (1996). While this feature of McManus's matrix framework is not explicitly identified in its key attributes, discussion of the descriptions of the approaches located in the matrix identified this attribute. Radical theories stress that power structures lead to inequality and threaten inter-generational equity, as well as social justice. The addition of this attribute to the list of key attributes by which to distinguish the different approaches to sustainability provides balance and representation for the social system.

The attitudes evident in the three frameworks already illustrate the spectrum of ideologies to be found in the notion of sustainability. Neoliberalism anchors one end and radical social theory holds down the opposite end. The belief in limits to growth and the substitutability of the various sorts of capital provides an indication of whether environmental resources are considered finite or not. The treatment of natural capital in the various frameworks suggests the importance of this form of capital in defining a sustainable society and the need for limitations on the use of natural resources. More radical thinkers believe that critical natural capital is important to achieving sustainability as it preserves the physical stock of this form of natural capital that is non-substitutable

and vital to life on earth. Neo-liberal and more centrist liberal thinkers generally support the idea of substitutability of capitals, as it is assumed that human capital and technological progress will overcome natural environmental limits.

The role of technology as a solution is perceived differently by different ideological perspectives on different levels, from fully acceptable, to only appropriate as green technology, to not at all. Neo-liberal and most liberal thinkers advocate technology as a solution to overcoming environmental limits. Some liberal scholars advocate that only green technology is an appropriate solution. But more radical thinkers see even green technology as a problem, as it is seen to further stimulate additional growth. Again an understanding of the role technology plays in a framework provides an indication of the types of solutions that are believed to create a sustainable society.

The importance placed on transforming power relationships provides an indication of the extent of structural change required in human relations with the natural environment. Some radical advocates believe environmental issues are driven by processes of inequality and domination. Unequal access to resources is equated with exposure to environmental harm. Restoration of autonomy at the level of the local community would empower those voices that have been marginalised. Radical thinkers believe a significant transformation is required in order to structure human relations with the natural environment. Neo-liberal and liberal thinkers believe that the market, or tweaking the current economic structures, will lead to the required structural changes that will ensure desirable social and environmental outcomes.

This typology categorises the main ideological perspectives on sustainability. The development of this typology provides a tool to be applied to the case studies of sustainability monitoring systems, which will be considered later in this thesis.

## 3.5 Positioning the research

A critique of the main ideological perspectives in the sustainability debate provides a justification for the position on sustainability taken by this research. The critique will be structured using a political economy typology for categorising the different understandings of sustainability presented in the first part of this chapter. The critique is structured under three key headings that represent the three main ideological perspectives addressed in this research, neoliberalism, liberalism and radical social

theory. Structuring the critique within this political economy typology will offer an analysis of the ideological processes evident in the sustainability debate. However, before beginning a critique of these three interpretations of sustainability, it is important to review the rise of the dominant interpretation of sustainability - sustainable development, positioned within neoliberal ideology.

### 3.5.1 The rise of sustainable development

It is generally acknowledged that human activity affects ecological systems. In the 1960s there were growing concerns about environmental degradation from rapid industrialisation during the post-World War II global economic boom in the developed world (Clapp & Dauvergne 2005, p. 49). In this period the debate was about environmental quality versus economic growth, which inferred a need to limit growth to preserve quality habitats for humans as well as other species. However, by the 1970s this debate had turned to the notion that growth could be achieved in an environmentally and socially benign way (Pearce & Warford 1993; Moffatt 1995; Dowie 1995; Esobar 1996). The essence of the debate was subsumed into the rise of the concept of sustainable development.

The concept of sustainable development was first widely disseminated in a 1987 United Nations-sponsored report entitled Our Common Future, also known as the *Brundtland Report*. The Brundtland definition remains the most commonly quoted definition of sustainable development, stating that it 'is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987, p. 43). While the *Brundtland Report* provides the most widely disseminated definition of sustainable development, it was not coined by the UN. The term sustainable development has its origins in the 1972 Stockholm Conference (Kates, Parris & Leiserowitz 2005, p. 10).

The concept of sustainability originated in the late 1960s within the context of debates about renewable resources, such as forests and fisheries. The concept was subsequently adopted as a broad slogan by the environmental movement (Lele cited in Lele 1991, p. 609). Environmentalists applied the term sustainability with reference to the belief that systems should be in equilibrium. It was argued that 'exponential growth was not sustainable, in the sense that it could not be continued forever because the planet was finite and there were limits to growth' (Beder 2004, p. 2). Lele (1991, p. 609) has argued

that sustainability means 'the existence of the ecological conditions necessary to support human life at a specified level of well-being through future generations'. However, sustainable development has been the focus of debate for nearly three decades and offers a different understanding of sustainability. The domination of sustainable development as a concept, in particular, through the *Brundtland Report*, has resulted in the marginalisation of radical discourses of sustainability that address difficult choices, for example, the choice of zero growth, or at least limits to growth (McManus 1996, p. 48).

The historical move to sustainable development as the favoured approach to dealing with environmental and ecological degradation caused by industrial growth is summarised by McManus (1996, p. 51). The 1960s and 1970s were periods of growing ecological awareness. There was a widening of the disparities and agendas between developed and developing nations. The immediate concerns for developing nations included poverty and hunger with less concern given to environmental issues related to industrialisation. Developed nations, on the other hand, had the social systems, the economies and the institutions in place to address issues arising from their economic and social success. It was a period when global neoliberalism began to dominate economic debates in many developed countries, including the United States and the United Kingdom under the governance of President Ronald Reagan and Prime Minister Margaret Thatcher. Neoliberalism and its rise in this period provided an ideological and economic context to the emergence of sustainable development.

Neoliberalism and its rise eventually provided the dominant political and economic influence on the sustainable development discourse (McManus 1996, p. 52). Where the initial debate had been framed in terms of environmental quality versus economic growth, and implied the need to limit growth in order to preserve quality habitats for humans, as well as other species, in the 1970s there was a dramatic turn toward the notion that growth could be achieved in an environmentally and social benign way (Pearce & Warford, 1993; Moffatt, 1995; Dowie 1995; Esobar 1996). Soon the essence of the original debate became subsumed into the rise of the concept of sustainable development. Traditional economic policies, the original aims of which were to raise real income, were extended to incorporate both growth and environmental outcomes (Pearce & Warford 1993, p. 7). The more radical discourses of sustainability were marginalised (Lele cited in Lele 1991, p. 609).

With the essence of the debate changed, environmental protection came to be seen as an idea that no longer equated to opposition to growth and development, but as a way of accommodating economic growth, business interests and the free market while caring for nature. Sustainable development is, in essence, a version of environmental protection that does not pose a threat to the current structures of modern industrial societies, including the loci of power and wealth (Beder 1996a, p. xii). McManus (1996, p. 51) suggests that sustainable development seduced policymakers because it offered continued economic growth in an environmental and socially benign way. Lele (1991, p. 612) suggests that this appealing way of thinking about sustainability seemed to have the ability to traverse intellectual and political boundaries. In fact, as Beder (1996a, p. 10) demonstrates much of the language and concepts surrounding sustainable development borrows heavily from economics. For example, the discourse refers to resources within the context of natural, human, and manufactured resources that contribute to the production of goods and services (Jackson & McIver 2004, p. 34).

Critics of sustainable development suggest that it is a mainstream neoliberal concept, underpinned by neoclassical economic theory. It has borrowed language from economics to forward a view that development must be sustained and that environmental protection is fine as long as it doesn't hinder economic growth. The move away from a paradigm of conflict, that is, a paradigm that asserted growth tended to come at the expense of environmental health, has allowed the term 'sustainable development' to become mainstream. This process has been aided by the comforting but deceptive picture it projects of human societies and economies proceeding sustainably without experiencing radical change.

In summary, the decades of the 1960s and 1970s witnessed a surge in the environmental movement as a result of the impact of capitalism on the environment and the implications for society. Environmental degradation was made very visible by the externalities of capitalism. However, late in this period a change became apparent in the direction of the debate. The debate turned from a paradigm of conflict where economic growth was positioned as in tension with environmental wellbeing to these elements being seen as complementary. This turn in the debate led to the widespread acceptance of the concept

of sustainable development. Factors that contributed to this change in the debate included the impossibility of persuading rich countries that they should not get richer through unrestrained growth or telling developing countries that they should not aspire to emulate the rich. Many were convinced that radical change was unnecessary by well financed think tanks that produced studies to refute the limits to growth argument. The failure of predicted disasters and the apparent continued abundance of natural resources robbed radical discussion of sustainability of a great deal of its momentum. The next section will explore the Brundtland report, widely acknowledged as incorporating the most common definition of sustainability.

### 3.5.2 Brundtland report

In 1987 WCED released the influential publication *Our Common Future*, commonly referred to as the *Brundtland Report*, after Gro Brundtland, its chairwomen and the former prime minister of Norway. This publication produced the first widely disseminated definition of sustainability and is the most commonly quoted definition of sustainable development.

The World Conservation Strategy, United Nations Environment Programme (UNEP) and other attempts to define sustainable development made little impact. It was not until WCED rejuvenated the concept that it received wider dissemination in the policy community (Beder 1996a, p. xiii). The initial discussions of the concept of sustainable development began at the United Nations Stockholm Conference on the Human Environment held in 1972, which led to the establishment of the UNEP (Kates et. al 2005, p. 10). The conference was the first time in history that environmental decision makers from different countries, at the highest level, came together to discuss the human environment and the environmental issues facing humankind (Tolba 1988, p. xi). Furthermore, the gathering was the first global UN conference on the environment (Clapp and Dauvergne 2005, p. 54).

WCED differentiated its articulation of sustainable development by offering a single fundamental objective: 'development that meets the needs of present without compromising the ability of future generations to meet their needs' (WCED 1987, p. 43). This fundamental objective of sustainable development has now become the most commonly quoted definition of the concept. From this fundamental objective an extensive

list of operational objectives was derived. The operational objectives include reviving growth, changing the quality of growth and meeting essential needs for jobs, good, energy, water and sanitation. Other objectives include ensuring a sustainable level of population, conserving and enhancing the resource base and merging environment and economics in decision making (WCED 1987, p. 49).

The Brundtland definition of sustainable development is vague and fails to define the needs or identify the mechanisms required to achieve an environmentally sustainable society (Norgaard; Redclift; Solow; cited in Castro 2004, p. 196). *The World Development Report 2003* also notes that the definition does not clarify the notion of needs or address the implications associated with any interpretation of needs. Moreover it asks

> …does the Brundtland definition imply that well-being (utility) should not fall below some minimum for any subsequent generation? Does it imply that each generation should enjoy a constant level of well-being? Alternatively, should well-being be nondeclining for each future generation?' (World Development Report 2003, p.14)

The WCED articulation of sustainable development placed considerably more emphasis on the economy, rather than the other dimensions of sustainable development. Ecological integrity or constraints, outside of their contribution as resources to the economic system, were no longer seen as a key objective of sustainable development. The Brundtland Report's fundamental objective is intergenerational equity, that is ensuring future generations can meet their wants and needs. The operational objectives however have a focus on economic needs such as jobs, growth and resources. This is reflective of economists' concerns with the environment, which are normally limited to ensuring that the stock of natural resources is in good health in order to sustain human wants or needs (James 1991, p. 2).

The *Brundtland Report* proposed a strategy designed to bridge the divide between the First and the Third Worlds and between the various ideologies present in the debate, which included neoliberalism and environmentalism. The report argued that economic growth and industrialisation need not be harmful to the environment. It pointed out that poverty harmed the environment as much as industrialisation in line with Third World sentiments. Limits to growth were not seen as necessary. The report has been described as a political and ideological document, designed to influence governments, industrialists and scientists. The document has specifically positioned its argument in the context of the global political economy (Clapp and Dauvergne 2005, p. 60). The report suggests that the

application of neoclassical economic theory is justified by the need to maintain and revitalise the world economy, in particular through the implementation of the following objectives and policy goals:

> … more rapid economic growth in both industrial and developing countries freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows, both concessional and commercial. (WCED 1987, p. 89)

For many of the developed countries involved in events that contributed to the rise of sustainable development, such as the Stockholm Conference, the *Brundtland Report*, and later the Earth Summit, the application of neoclassical economic theory to solve environmental and social issues would mean 'business as usual'. These economic policies have been actively applied in many of the countries participating in these international events. For example, the UK government responded to the *Brundtland Report* by stating that its economic policy already conforms to the arguments of sustainable development, thus there was no impetus for change (Jacobs 1991, p. 59). Moreover, scholars, such as Voisey et al. (1997, p. 27) suggest that reliance on the Brundtland definition results in a narrow vision with 'little recognition of the implications for wider society and individual behaviour and the radical agenda of equity, democracy, and empowerment'. This business as usual approach wrapped in noble words has stifled debate at a national level about the institutional barriers that might be impeding genuine sustainability (Voisey et al. 1997, p. 27). Voisey et al. (1997, p. 24) observes that the 'current response has produced little in the way of policy realignment and new administrative cultures'.

The Bruntland Report offered no solutions to address the underlying tensions between economic growth and sustainability. Clapp and Dauvergne (2005, p. 61) do note that the *Brundtland Report* challenged some neoliberal thinking, such as denial of the need for redistribution between the rich and poor. However, the dominance of the existing ideological agenda 'ensured that the global community focused on the fully acceptable compromise of sustainable development' (Bernstein cited in Clapp and Dauvergne 2005, p. 61).

The *Brundtland Report* does touch on the concept of limits. But the limits discussed in the document are quite different to those proposed by Meadows et al. (1972, p. 23). Meadows

et al. argued limits to economic growth were required because of the impact of growth on the environment. If the effects of growth were not addressed the result would be uncontrollable decline in both population and industrial capacity. The *Brundtland Report*, however, argued that limitations were confined to technology and the structure of social organisations (WCED 1987, p. 8). Greater technological advancement and better social organisation were considered to be all that was required to successfully generate further economic growth.

The *Brundtland Report* makes no suggestion that a level of critical natural capital should be established. In essence, the report has given the environment a passive role (Norton cited in Turner 1993, p. 4). Norton (cited in Turner 1993) states that the report 'does not impose any non-negotiable limits on sustainable use, independent of limitations on the abilities of humans to control it' (p. 4). This enables the notion that economic growth, societal well-being and environmental protection can be fully compatible. As there are no benchmarks or targets, the acceptable sustainable limits cannot be known.

In summary, the *Brundtland Report* gave enormous momentum to the global acceptance of the concept of sustainable development. It also embedded the neoliberal approach to solving environmental and social issues in the sustainability debate. Economic neoliberalism was already actively applied by most developed countries, which gladly accepted the notion that the solution to environmental and social issues was the tweaking of the market system. Nevertheless the business as usual approach has given the environment a passive role and this concern will be elaborated on during the course of this thesis.

The rise of the concept of sustainable development has occurred in a period when neoliberalism has become the dominant approach in social, economic and environmental thinking. While the Stockholm Conference provided the initial platform for sustainable development, the *Brundtland Report* created enormous momentum. As discussed in Chapter 1, there has been an explosion of initiatives, including initiatives to monitor sustainable development. The *Brundtland Report* embedded the neoliberal approach to addressing environmental degradation. However the dominance of the mainstream neoliberal approach in this debate has limited examination of the inherent contradictions

between economic growth and further capital accumulation. The pressure a regime of continual capital accumulation places on the environment and the social implications of this process have not been recognised in the debate over sustainability. The neoliberal understanding of sustainability proposes to reconcile these competing forces with limited adjustments to the current systems, which has been interpreted by the governments of many industrialised countries as giving the green light to 'business as usual'.

### 3.5.3 Neoliberal approaches

At the heart of neoliberal environmentalism is a belief in the free market. This approach positions the economy as the dominant dimension. In this approach natural capital can be substituted for human made capital, limits to growth are not recognised and technology is seen as a solution to environmental issues. Moreover, inter-generational equity is not recognised (McManus 1996, p. 58, 60-61; Peat 2003, p. 40; Kearins & Springett 2003, p. 190). This research challenges the validity of these assumptions.

The assumed substitutability of the various types of capital, and the belief that market-based economies will provide adequate protection for the environment and societal outcomes, have promoted the understanding that environmental protection and economic growth are compatible (Beder 2004, p.3). Given the complexities of the relationship between economic growth and environmental health, claims of such compatibility must be seriously questioned.

The relationship between growth and environmental wellbeing needs to be carefully analysed using a range of indicators to gauge the environmental consequences of economic growth. Research has in fact concluded that compatibility between these two objectives cannot be supported (Neumayer 2003, p. 83-84; Hatfield Dodds, Poldy, Foran & Dunlop 2004, p. 12). Moreover there is evidence to indicate environmental problems are worsening and that global society is presently on a non-sustainable course (Diamond 2005, p. 486). The evidence suggests that our current levels of material consumption are environmentally unsustainable. For everyone on the planet to consume as much as the average person in a developed country would require the resources found on four planets the size and constitution of Earth (Hamilton 2003, p. 174).

Neoliberal approaches also assume technological and scientific progress will solve environmental problems thus overcoming natural biophysical limits for economic and population growth. As these assumed solutions are projected to resolve environmental problems, there is accordingly no need for radical social and political change (Beder 2004, p. 3). The validity of these potential 'solutions' to environmental degradation is open to challenge.

Current technological solutions are not keeping pace with the growth of world economies. That is, consumption of greater volumes of natural resources and increasing amounts of waste are exponentially outgrowing substantial efficiency gains in the use of materials (Hamilton 2003, p. 176). The future brings with it an increasing level of uncertainty. Moreover it is questionable whether technology can provide the solutions it has in the past (Neumayer 2003, p. 13; Lovejoy 1996, p. 276). The last decade has brought an exponential rise in population, resource appropriation and environmental degradation unprecedented in history. The scale of these impacts, particularly the long term effects of anthropogenic climate change, may adversely affect the welfare of future generations. Technological know-how to reduce pollution and to protect the environment does not mean it will automatically be implemented by society. The implementation and use of technology must be considered in the context of changes to political views and social behaviour if it is to be applied effectively (Beder 1996b, p. 178).

The ascendance of neoliberal economic ideology in the debate over sustainability has resulted in acceptance of sustainable development as a compromise position by national governments, international organisations and the corporate sector. Sustainable development as a normative concept now accommodates economic growth, business interests and the free market, and does not question the norms of modern society, including industrial progress, consumption or the belief in and pursuit of limitless economic growth. Hence the neoliberal version of sustainability monitoring does not pose a threat to the power structures of modern industrial societies.

Confining debate to a discussion of sustainable development has constrained discussion of the underlying tensions between economic growth, further capital accumulation and environmental pressure, and their relationship with social justice. Instead, technological

solutions are offered, even though many of these solutions appear to be without substance or impossible to implement. The concept of sustainable development has, in short, instilled the belief that everyone can be both rich and green.

### 3.5.4 Liberalism

Liberal approaches make an attempt to address issues arising from the purely market-based neoliberal approach. While the liberal environmental position is still underpinned by neoclassical economics, market failure is acknowledged to varying degrees, and therefore different interventions are sanctioned. Liberals recognise that some environmental problems require immediate attention, but the focus is on problem amelioration. Liberal thinkers closer to the neoliberal school advocate for reforms through managerial philosophies like eco-efficiency, voluntary corporate regulation, more technological cooperation and the application of market mechanisms such as green signallers. However, some liberals, like the institutionalists, are more likely to accept the reality of market imperfections and failures and the need for higher levels of government intervention at appropriate times. Some liberal approaches promisingly extend to recognition of limits to growth, such as steady-state approaches that accept the non-substitutability of the various types of capital. While these developments in liberal environmental philosophy are promising, and liberalism goes some way in addressing critics' concerns in respect to environmental and societal outcomes, limitations are still present (Rosewarne 2007, p. 187). This is because the mechanisms for articulating liberal-type interventions are drawn from neoclassical economic theory (Paton 2005, p. 363). A discussion of two variants of liberalism, institutionalist and ecological economics, will provide insight into how liberal approaches have been extended beyond neoliberalism, but also their limitations.

Ecological economics, also referred to as the steady-state approach, is underpinned by liberalism and displays some of the failings of the neoliberal approach but with some evident strengths as well. Some clear strengths of the approach include articulating the natural environment in a way which recognises its complexity and diversity, for example, by recognising limits to growth. Moreover ecological economists support the substitutability of natural capital with man made capital, and only support the use of green and appropriate technology (McManus 1996, p. 60-61). Ecological economists

advocate for social and political change as essential ingredients in economic transformation (Rosewarne 2007, p. 188).

Many of the weaknesses of ecological economics relate to its roots in neoclassical economic theory. In the ecological economics approach there is a focus on the limits of consumption, which is in conflict with the principle of a market based economic system and the individual's right to exercise freedom. The latter, when exercised in a free market economy, is meant to reward individual effort and innovation with material benefits. It has proved difficult for ecological economists to define the boundaries of economic freedom without compromising the principle that underpins it. This tension has compromised any notion that limits should be placed on consumption (Rosewarne 2007, p. 188).

More specific weaknesses relate to the way in which ecological economics regulates access to environmental resources. In practice, the methods for operationalising green economics management tend to incorporate many of the shortcomings of environmental economic theory. The nature of regulation of access presents fundamental issues for this approach. Regulation of access 'cannot avoid the necessity for establishing the relative importance of resources in order to determine which will be exploited and which preserved, and there is really only one unambiguous measure of value – and that's money, or price' (Rosewarne 2007, p. 187). If access to environmental resources is to be regulated, the mechanism for valuing them reinstates the market, which in turn reproduces many of the failings of environmental economics.

Ecological economics also has an economic policy focus and social and political transformations are positioned as 'idealist complements'. This focus marginalises other approaches that may have informed ecological economic thought, like communitarianism (Rosewarne 2007, p. 187). Indeed, inequitable power relations that arise from environmental problems are not adequately addressed. In contrast, radical approaches consider inequalities in respect to control of environmental resources and in relation to disparities within global ecology (Rosewarne 2007, p. 190).

Institutionalists advocate for a stronger role for international organisations, ethical and principled norms and regimes, and a greater national and local capacity. They believe an

approach that goes beyond markets is required. Such an approach would develop a role for institutional intervention to harness sustainable development (Clapp & Dauvergne 2005, p. 227). While, institutionalists value economic growth, and advocate for a role for technology, they incorporate some radical ideas. Insitutionalists support the precautionary principle and the need to rebuild social structures at the local level, which requires a coordinated global effort. Institutionalists believe that the precautionary principle should be applied if scientific uncertainty is present. This approach differs from the radical thinkers' preference for economic order at the community level, and the scepticism of some about international agreements. A main concern of the more radical thinkers is that the institutionalists do not adequately incorporate issues residing with those most affected by environmental change. Bioenvironmentalists believe that the authorities heading global regimes are too weak to ensure agreements can be effective (Clapp & Dauvergne 2005, p. 238-239).

**In summary,** the liberal approach to understanding sustainability goes some way to incorporating issues of social justice, the environment and the economy in a considered manner. Limits to growth, and the non-substitutability of capital are only incorporated into the liberal approaches that sit towards the more radical end of the spectrum. There are still many limitations associated with this approach. An underlying issue is that neoclassical economic theory underpins most of these approaches to sustainability. Thus the role and the dominance of the market is at the forefront and impinges on incorporating environmental and social justice into these approaches. Nevertheless within the spectrum of liberal approaches, both right wing (neoliberal) and more centrist (liberal) versions can be ascertained. Right wing, neoliberal approaches argue that there are no limits to growth, the substitutability of capitals hold and technology can address the risks to sustainability. More centrist liberal approaches which address some of the radical concerns of the left, recognise there might be limits to growth, capitals are non-substitutable and only green or appropriate technologies should be used to address the risks to sustainability.

### 3.5.5 Radical social theories of sustainability

Radical social theory while seemingly marginalised by the dominance of neoliberalism has nonetheless made considerable contributions to the sustainability debate. In the

radical analysis the dimensions of environment and social justice are equally important, in some cases dominant, to the economic dimension in addressing sustainability. Moreover, radical approaches are capable of identifying tensions between the dimensions of sustainability. For example, radical approaches address tensions between the economy and the environment, which enable an analysis of the interdependence of the dimensions on each other. Radical social theory also offers a critique of sustainability based on power relations that is absent from the neoliberal and liberal discourses. The latter tends to ignore power relations lest it draw attention to inherent contradictions. Radical social theorists argue that nothing less than a significant transformation of the power relations structuring human interactions with the natural environment is required to ensure the survival of our society and environment (Rosewarne 2007, p. 189). For example, radical social theorists argue that a cultural and political transformation is required in tandem with economic change to address environmental issues. Moreover, radical theorists argue that simply reforming the management and organisation of contemporary economies, as suggested by both neoliberal and liberal approaches will be neither adequate nor sufficient to achieve sustainability.

Consistent attributes that are present within the different radical theoretical variants are the recognition of limits to growth, non-substitutability of the different capitals, a recognition that finite or critical natural capital must be preserved and an argument that technology is not a solution to addressing the risks to sustainability. Radical approaches also give general consideration to power relationships. Radical social theory overall considers technology more as a problem than a solution to environmental issues. Eco-feminists, for example, see technology as a male preserve although opportunities are increasing for women to participate in this area and this discourse is changing. The mirror nature approach views technology as a problem as it has enabled humans to overcome natural constraints. Those who advocate for the maintenance of natural capital stock suspect that green technology could actually stimulate additional, unsustainable growth (McManus 1996, p. 60-61).

Some radical critiques have pointed to a relationship between justice and the environment, an idea that has come to include concepts of social justice, which 'have

integrally linked to more critical consideration of intergenerational, international and interspecies dimensions of justice' (Low & Gleeson cited in Rosewarne 2007, p. 191). Radical social theories such as feminism and Marxism have sought to incorporate an appreciation of ecology in their respective theoretical frameworks. Radical ecology theory, or deep ecology theory has also advanced the debate on sustainability in a similar manner to the feminist and Marxist approaches. Radical ecologists incorporate, however, human survival within the environmental context. Specific interpretations include mirror nature and bio-environmentalism. Their focus is on reducing the environmental impact, particularly through addressing population growth. However, even within the context of the issue of population growth these approaches are notable for their lack of attention to social constructions and power relations (McManus 1996, p. 65). Social justice, human rights and equity are not always well considered. For example, the right of a women to have more than one child tends to conflict with a radical ecology that stresses the necessity of population restraint.

Radical critiques emphasise the importance of revitalising civil society and strengthening the community. An important part of the revitalisation of communities, which radical critics sees as vital for sustainability, is cultural and political transformation (Rosewarne 2007, p. 190). Ecofeminists advocate for the abolishment of patriarchal relations to reinstate the intimate subjective connections between people and the natural world (Rosewarne 2007, p. 189; Merchant 1983, p. xix). Deep ecologists who advocate for approaches like mirror nature believe that the ecological crisis is linked to a cultural crisis that will be resolved when humans become conscious of their interconnectedness with others and with nature (Rosewarne 2007, p. 190; Merchant 1992, p. 1).

Eco-Marxists believe that an ecological crisis will lead to a social upheaval and be a catalyst for socio-economic change (Rosewarne 2007, p. 192). Marxist authors such as James O'Connor and Enrique Leff have described the environmental movements as the product of non-internalised externalities. Firms externalise social and environmental costs to society, behaviour which can sometimes give rise to new social movements (Martinez-Alier 1995, p. 88; Peet & Watts 1996, p. 9).

The capacity of market based solutions to address the expanse of environmental degradation is questioned by this research because such approaches involve minimal restructuring of the capitalist system (Liodakis 2001, p. 121-122). A particular concern is that the minimalist approach neoliberalism offers in terms of restructuring property relations, rearranging competitive conditions, and rationalising capitalist accumulation might happen without affecting the impact of capitalist rationality and private property on nature. Priority areas for consideration are not only judicial forms of property rights or the monetary valuation of nature but also the affect of the structure of capital on nature. If this is not addressed, then the inherent contradiction between future expansions of capital and environmental wellbeing must manifest itself. Capital accumulation requires resources. Therefore, natural resources must either be used or destroyed. It is 'impossible to ensure the sustainability of capitalism and, within its limits, an essential reconciliation of people with nature' (Liodakis 2001, p. 121-22). It is noted that 'there is a deeper tension between prescriptions for ecological modernisation and the expansionary dynamic of the capitalist system which is profoundly anti-ecological' (Stilwell 2000, p. 277).

The radical critique of the various liberal and neoliberal stances must advance further to offer insight into the social forces that can 'progress the resolution of the contemporary economies' impact on the natural environment. Rosewarne (2007, p. 197) suggests that this requires a more critical engagement with environmental movements. He calls for a reinvigoration of the radical project to provide new reference points for environmental struggles, and for the political force of environmentalism more generally. This will in turn contribute to the development of more sustainable modes of organising socio-economic systems (Rosewarne 2007, p. 198). Vlachou's (2004, p. 928) claims are similar to those made by Rosewarne (2007). He claims that eco-Marxist literature 'is undertheorized in the realm of environmental economics'. He argues that there is a lack of comprehensive accounts of the shaping of environmental policies and adjustments. If such analyses were pursued, it would enable a better understanding of the processes required to bring environmental policies and change into being.

In summary, environmental Marxism and other radical social theory illuminate the contradiction between capitalism and the environment, and have advanced the relationship between social justice and the environment. Environmental Marxism, for

example, provides a valuable tool for understanding capital both in terms of the society-nature relation, as well as rapid environmental degradation in the context of capitalism. Discussion of these approaches has been marginalised in the debate over sustainability by the domination of the neoliberal variant of the liberal discourse. The mainstream neoliberal and liberal approaches have been widely applied in public policy, unlike radical left approaches to monitoring sustainability.

### 3.5.6 Summary of the arguments

Neoliberalism and liberalism offer ideas that only partially advance the concept of sustainability to ensure current and future survival of our society, economy and environment. In contrast, radical social theory considers the contradiction between capitalism and the environment and addresses the relationship between social justice and ecology. The underlying tension between capitalism and the environment requires extensive consideration within this debate, as historically the impact from economic growth has had catastrophic impacts on the environment and caused massive social upheavals.

Significant transformation of the power relations structuring human interactions with the natural environment is required to ensure the survival of our society and environment. A cultural and political transformation coordinated with economic change is required to address environmental issues. Market based responses involve only minor restructuring of the capitalist system, which is arguably at the root of current problems arising from the depletion of natural resources and the interruption of the Earth's ecological balance. The neoliberal and liberal approaches cannot offer a satisfactory long term outlook. They do little to preserve the environment, ensure social justice or consider the inter-relationships between the economy, society and the environment. A market based response to sustainability does not ensure a critical level of natural capital, nor encourage less consumption or address distributional concerns. In contrast, radical social theories address the aspects of the debate that are critical to the advancement of sustainability as understood in this study.

The focus of this study of sustainability monitoring is on understanding the interdependence of the environment, the economy and social well-being on each other in terms of power relations. That is, it consciously adopts this position, which is informed by

radical social theory, as critical to the advancement of measuring sustainability. Radical approaches are considered important as they place a greater emphasis on the environment and social justice, rather than the economy as the dominant sphere. The environment is centrally positioned since without the ecosystem as the basic life support for humanity there can be no society and no economy.

This point of view understands sustainability to encompass the following attributes, which are consistent with radical approaches to sustainability:

- Critical natural capital is required to support the Earth's ecological systems. Therefore support is given to the assumption of non-substitutable capital. Critical natural capital is held to be important to achieving sustainability as it preserves a physical stock that is non-substitutable and vital to life on earth.
- To achieve sustainability it is desirable to create a new paradigm that recognises the limits to growth, population pressures and excessive consumption levels, and the need to achieve a higher level of social and economic redistribution and equity.
- Economic growth leads to more consumption of natural resources and impacts on the overall environment resulting in increased stress on the earth's limited resources. Thus, limits to growth are critical to efforts to sustain natural resources and preserve Earth's ecology.
- Population growth is a key source of pressure on the earth's limits because in the current neo-liberal economic order consumption levels are encouraged to continually rise in relation to population growth.
- A higher level of redistribution is required to address inequality and domination and thus relieve significant pressures on ecological systems in developing countries and parts of the first world.

Achieving these objectives requires reformation of social structures and how they interact with the economy, society and the environment. Alternative social structures have been suggested, such as the establishment of scaled down societies living with nature and in accordance with natural philosophies. These alternative social structures require further investigation, which is beyond the scope of this study.

Results of the study give weight to the argument that the mainstream neoliberal and liberal approach with its emphasis on continual economic growth has significant deficits

that undermine sustainability. These deficits include the impact of ever greater growth driven by capital accumulation on the environment which will accelerate as the value of aggregate capital is passed onto future generations. This process is held to have a depleting effect on the critical natural capital required for sustainability. The assumption that the market based system will provide adequate protection for the environment and societal outcomes when there are few historical examples to suggest this will be so is also of critical concern, as is the fact that liberal approaches do not extend their analysis of sustainability far enough to provide adequate consideration and solutions for achievement of environmental and social sustainability.

A fully comprehensive definition of sustainability requires a balanced understanding of the relationship between the economy, environment and society. The environment and society should not be seen as a subset of the economy. It should be recognised instead that the economy and society sit in relation to the environment. This approach would acknowledge that ecology is the life support of the earth.

## 3.6 Conclusion

The range of approaches evident in the sustainability debate suggests the complexity of the issues encompassed within the rubric of sustainability. An understanding of the theories and ideologies that inform approaches to sustainability provides an insight into how its measurement is operationalised. For example, if a mainstream neoliberal approach is applied to the measurement of sustainability, it would be unrealistic to expect this process to incorporate indicators that might address the concerns of radical approaches to sustainability monitoring. As discussed, the dominance of the neoliberal discourse of sustainability has tended to privilege the economy over the environment and the social dimensions with implications for what is measured. This argument will be further explored in later chapters with reference to case studies. Knowledge of the various approaches to sustainability is critical to understanding what these frameworks might accomplish. The application of the political economy typology will be important to understanding the ideological influences in the reviewed case studies.

Given the critical nature of the debate over sustainability to the future of the planet it is imperative that the theoretical paradigms deployed give an adequate understanding of

the meaning of sustainability. The developed political economy typology that categorises the approaches to sustainability illustrates main ideologies in the debate, which vary between the neoliberal approach and a more radical perspective. The neoliberal approach asserts a dominate role for the economy. The more radical approaches also appreciate the importance of economic sustainability but also address ecological and social sustainability. This research has identified the radical approach as the most useful to progress sustainability by developing measures addressed to ensuring the current and future survival of all species.

This chapter has addressed the literature on theoretical interpretations of sustainability and associated reporting systems using a political economy typology as a framework for analysis. The analysis has suggested that questions must be asked about the validity of sustainability monitoring systems influenced by the neoliberal discourse as meaningful measures of sustainability. This argument will be addressed empirically in later chapters through case studies of reporting systems. In the following chapter the methodology for the empirical component of the research will be addressed.

# Chapter 4 Methodology

## 4.1 Introduction

As argued in earlier chapters with reference to a political economy typology, the dominance of the neoliberal discourse in the debate over sustainability has tended to privilege the economy over the environment and the social dimensions with implications for what is measured by sustainability monitoring systems. Moreover systems to measure sustainability, and in particular those influenced by the neoliberal discourse, tend to lack robust definitions of sustainability and fail to address the interrelationship between the social, economic and environmental contexts. If the purpose of sustainability indicators is to help understand the interrelated forces driving social, economic and environmental change, and to actually provide indications of sustainability, then the indicators themselves should be derived from an epistemologically consistent conceptual framework which seeks to encapsulate clearly defined phenomena. The literature discussed in earlier chapters has thus raised certain questions about the validity of current sustainability monitoring systems, which this research will unpack further using a case study methodology. The research questions raised by the literature review are stated below and will be followed by a discussion of the research methodology.

## 4.2 Research questions

The research questions will be applied to the case studies. To re-iterate the research questions are:

1. What do these sustainability reporting systems attempt to measure?
    a. How do they conceptualise sustainability?
    b. What phenomenon are they seeking to measure?
2. How do organisations measure sustainability?
3. Do these frameworks have any validity as genuine measures of sustainability?

The research questions were derived through a review of the literature (chapters 1 to 3). In chapter 2 it was argued that a clear theoretical consensus on the concept of sustainability was lacking in the debate over sustainability, which has implications for the clarity and coherence of what is measured by systems that seek to address this concept. Incoherent

measurements in turn suggest a lack of direction in terms of what these different measurement approaches seek to accomplish. In Chapter 3 it was outlined that sustainability can be interpreted within numerous theoretical frameworks. Therefore since monitoring systems might be situated within various theoretical frameworks, it is important to understand which position is applied to a given system. This is because different understandings of sustainability and the assumptions that underpin them have implications for which indicators are included in monitoring systems. It is thus necessary to unpack the underlying assumptions that guide the selection of indicators to assess the value of current and emerging sustainability monitoring systems and their contribution to the measurement of sustainability.

This research began to address these issues by answering the research question; What do these sustainability reporting systems attempt to measure? and the two sub-questions; How do they conceptualise sustainability? and What phenomenon are they seeking to measure?

Addressing how sustainability is conceptualised enabled an understanding of how sustainability is defined in given monitoring systems through an analysis of case studies of organisational reports derived from sustainability monitoring systems. Addressing the second sub-question enabled an analysis of indicators within case study monitoring systems, which provided an understanding of the phenomenon being measured.

As discussed in Chapters 1 and 2 the methods employed by monitoring systems to measure and report on sustainability varies from suites of indicators to narrative approaches and combinations of both formats. With no commonly agreed format for measuring sustainability it is necessary to understand how differing measuring systems collect and report on data if their capacity to measure sustainability is to be assessed. Addressing the second research question: How do organisations measure sustainability? enabled this research to analyse the tools by which monitoring systems measure and report on sustainability.

Answering the third research question on whether these frameworks have any validity as genuine measures of sustainability enabled an assessment of whether monitoring systems framed by the dominant discourse have a real ability to assess economic, environmental

and social sustainability. The literature reviewed earlier suggests that liberalism and its further to the right variant, neoliberalism are the dominant discourses in the sustainability debate and have strongly influenced the current mainstream monitoring systems, while marginalising more radical approaches. Both liberalism and its variant, neoliberalism tend to privilege the economic dimension over environmental and social considerations. Privileging one dimension over others might discourage serious analysis of the interdependence of the dimensions on each other. It is thus questionable whether monitoring systems framed by the dominant discourse have a real ability to assess economic, environmental and social sustainability.

## 4.3 Methodology for the research – case study approach

### 4.3.1 Point of comparison and approach of comparing case studies

Addressing these research questions in relation to the case studies enabled an investigation of how the reporting organisations conceptualise sustainability, which in turn frames the phenomena they are attempting to measure. Answering these questions has brought into focus the validity of existing practices to measure sustainability. An assessment was made of the capacity of these Australian reporting frameworks to acknowledge comprehensively the threats to economic, social and environmental sustainability. In addressing the research questions, due consideration was given to alternative approaches to the dominant paradigm.

The international benchmarks will be discussed as a point of comparison for the Australian case studies. With no commonly agreed format for a reporting framework evident in the literature it is important to consider the similarities and differences of the Australian case studies against international benchmarks. Similarly the selection of Australian case studies incorporating two corporation and two government reporting frameworks provides an opportunity to compare similar sector systems. This will help to illuminate patterns of repetition in a number of cases.

### 4.3.2 Comparative case study

A comparative case study approach was used for the research in order to address the research questions and achieve the study's aims and objectives. The comparative case study approach is an empirical inquiry that investigates a contemporary phenomenon

within its real life context (Yin 1984, p. 23). Punch (2005, p. 144) outlines a similar understanding of case studies, with it's aim 'to understand the case in depth, and in its natural setting, recognising its complexity and its context'. This approach involves examining a selected number of cases to investigate the research question (Punch 2005, p. 146). A comparative case study approach illustrates a problem in reference to a number of successive instances, or patterns of repetition in a number of cases (Zartman 2005, p. 7). This is the approach that was best suited to the study reported here. A single case approach would require unpacking one case in depth to uncover rich data. However the architects of sustainability reporting systems, generally governments and corporations, typically provide only limited background information about how their monitoring systems are constructed and their indicators selected, consequently making the collection of rich data from a single case unattainable. A comparative case study approach has proved effective for this research as background information is sparse but there are a number of recurring instances or patterns within the one phenomenon.

In this sense the comparative case study approach 'lie(s) at the crossroads of reality and theory; they present their evidence through the eyes of a knowledgeable specialist and they test it against the hypothetical constructs of a creative conceptualist' (Zartman 2005, p. 4). This approach was used in this research to consider the connection between ideology and the measurement of sustainability. That is, empirical data was collected through the case study analysis and investigated against theories and concepts (Zartman 2005, p. 3). Identifying patterns evident in each case provided an indication of how sustainability is conceptualised, what monitoring systems are measuring and suggested whether these systems provide valid assessments of sustainability.

The research questions for this study were addressed by comparing a selection of corporate and government sustainability reports (cases) to identify common reporting patterns, and discussed in relation to the literature on sustainability measurement and the salient issues. Four Australian examples were identified. The Australian cases were compared against the international measures, the Global Reporting Initiative (GRI) and the United Kingdom Government sustainability monitoring system titled *Securing the Future*. Zartman (2005, p. 12) suggests that a comparative analysis need not involve an

extensive number of cases. An extensive number of cases deviates from the reality of the topic due to methodological issues of coding and/or aggregating numerous data sets within the same format. Moreover, cases should be selected on the basis of saliency (Zartman 2005, p. 8). Following Zartman (2005), case studies were selected on the basis of relevance to the research, and which illustrate current Australian and international sustainability reporting practices. Each case has been addressed in relation to the research questions and the critical literature in this field.

The case studies have been identified throughout the thesis as examples of corporate and government reporting. The case studies were then interrogated in relation to the research questions and the critical literature.

### 4.3.3 International benchmarks

With no agreed international reporting formats this research will identify international benchmarks. International benchmarks are identified and chosen for the point of comparison against the Australian case studies. Two benchmarks are identified, government and corporation. The process of identifying the international benchmarks is as follows:

**Corporation:** The literature on corporate sustainability reporting was comprehensively reviewed to assess which measuring frameworks were considered to be international best practice. The selection of the corporate benchmarks discussed in this research was based on the general consensus of experts in the field as discussed in the literature in this area.

**Government:** The literature does not provide a consensus on a benchmark for government reporting. Therefore criteria were developed to select government best practice sustainability reporting systems. The criteria were developed from findings in key earlier chapters. An articulate and theoretically grounded definition is discussed in Chapter 2 as an important requirement to operationalise sustainability. Secondly, in Chapter 2 certain attributes are identified that signal a conceptual shift in the understanding of the requirements to produce a sustainability report. Attributes chosen as key criteria include: a movement away from the conventional indicator typology and the inclusion of new indicators that have been developed for the purpose of measuring sustainability. Inclusion of these criteria demonstrate reporting systems that are starting

to implement the conceptual shift that it is argued are the key to meaningful sustainability reporting. That is, a shift towards reporting on the interrelationships between the dimensions of sustainability and the development of new indicators to undertake this task. A reliance on previous practices does not demonstrate the required conceptual shift. The inclusion of new indicators suggests that the architects of systems that take this approach understand that conventional indicators are not appropriate for the measurement of sustainability and a new approach to indicator selection is required.

### 4.3.4 Significance of the case studies

While Australia has made significant advances in monitoring sustainability in recent years the state of reporting in this country remains behind international developments. This research offers a comparison of Australian sustainability reporting against international benchmarks in this field at both the national government and corporation level. It offers a critique of both the Australian and international sustainability monitoring systems, which suggest each has significant limitations that require addressing. A research agenda is outlined in the conclusion to address the identified limitations in the current models for measuring sustainability.

In comparison to the United Kingdom, a national government that has been at the forefront of action on this issue, the Australian government has been relatively slow to respond to the push for sustainability reporting. Since its inception in 1999 the UK government sustainability monitoring system has been revisited to incorporate new insights and research (2005) and has annual updates of headline indicator data. Since the release of the Australian government sustainability reporting system in 2002. it has not been revisited nor updated with new data. At a corporate level, Australia lags behind the international average for economically advanced countries in the number of released sustainability reports. Only 23 percent of Australian companies produce sustainability reports, in comparison to 41 percent for economically advanced countries (Commonwealth government of Australian 2005, p. 4). Comparison against the international benchmark has identified areas of particular research focus for Australia.

While scholars have raised concerns about the conceptual limitations of current sustainability reporting systems, little critical analysis has been undertaken of specific

monitoring systems. This thesis presents case studies of how governments and corporations conceive of, and report on, sustainability. This research has sought to discover how they conceptualise sustainability, and in turn what phenomena they are attempting to measure. Moreover, the current study investigated whether sustainability indicators are derived from an epistemologically coherent and analytically strong framework in order to provide an assessment of the validity of current monitoring systems to report on sustainability. This assessment also considered the capacity of current reporting frameworks to adequately identify threats to economic, social and environmental sustainability.

To address its objectives a selection of sustainability monitoring systems (the case studies) developed within Australia was critiqued. To date, the most comprehensive review of sustainability reporting has been undertaken by the Australian Collaboration[10], a peak non-government organisation. In 2006 the Australian Collaboration released a report titled, *Which direction? A review of monitoring and reporting in Australia*. This report is an examination of social, environmental and economic reporting practices in Australia. It discusses optimal arrangements for reporting, problems that require attention and the types of reporting required for different situations. The report concludes with a set of recommendations covering national and regional reporting, public reporting, corporate reporting and not-for-profit reporting.

While the *Which direction?* report provides a comprehensive summary of the current state of reporting on various parameters in Australia and broadly suggests some impediments that these reporting systems face, like many other reports in this field it does not attempt

[10] The Australian Collaboration is a collaboration of peak national community organisations representing social, cultural and environmental constituencies and interests. The peak national community organisations includes: Australian Council of Social Service; Australian Conservation Foundation; Australian Consumers Association; Australian Council for International Development; Federation of Ethnic Communities' Councils of Australia; National Council of Churches in Australia; and Trust for Young Australians. The overall aim of the Australian Collaboration is to contribute to an integrated and sustainable ecological, social, cultural and economic environment in and outside Australia. The main activities of the Collaboration are to act as a forum for the exchange of ideas and information between its member bodies and to undertake research projects and publish books and reports on key issues (Australian Collaboration, n.d., online, p. 1).

to critically interrogate emerging monitoring systems in terms of how they report on sustainability. A critical interrogation of these monitoring systems would develop an understanding of how, and if, the systems have a conceptual foundation. This type of analysis would significantly enrich the understanding of the development of these systems, and indicate how effective present mechanisms are to drive policy development in sustainability. This thesis will address this gap in the research.

### 4.3.5 Selecting the case studies

Two Australian corporation and two national government sustainability monitoring systems will be reviewed in relation to two international monitoring systems. The review of the monitoring systems is structured by reference to the research questions and provides an indication of the conceptual development of these monitoring systems.

The choice of case studies is justified in relation to the research methodology. Following Zartman (2005), Punch (2005), and Yin's (1984) discussion of a comparative approach, the case studies were selected on the basis of saliency (Zartman 2005, p. 8). This research does not claim that the four chosen case studies are necessarily representative of the Australian sustainability monitoring systems in general but that they are illustrative of current reporting practices and indicative of a pattern of reporting that is influenced by certain ideological perspectives.

**National government agencies.** The first national government sustainability monitoring system selected for review by this research was Environment Australia's *Are We Sustaining Australia?* Report Against Headline Sustainability Indicators. This monitoring system is the headline sustainability indicators program for Australia. Therefore its inclusion for review in this research seems appropriate as an indication of how an Australian government agency conceives of and reports on sustainability. The aim of this monitoring system is to evaluate the nation's performance in relation to the objectives of the National Strategy for Ecologically Sustainable Development.

The Australian Bureau of Statistics (ABS) *Measuring Australia's Progress* (MAP) has also been chosen for inclusion in the review of Australian attempts to monitor sustainability to provide a comparator with the Environment Australia *Are We Sustaining Australia?* report against headline sustainability indicators. A comparison allowed the identification of

patterns of reporting indicative of inherent ideological concepts. This comparison is important, as sustainability is not only a contested concept but also a conceptually confused concept (Neumayer cited in Sumner 2004, p. 118; Savitz & Weber 2006, p. xi). The inclusion of this monitoring system of progress allowed a comparison between the reporting on concepts of progress and sustainability. As will be discussed in the relevant chapters, there are strong similarities between what is measured within these frameworks. This is perhaps unsurprising since these monitoring systems are drawing on the same data sets to report on related concepts. This case study particularly adds to the assessment of the last research question: Do these frameworks have any validity as measures of sustainability?

Furthermore, Macintosh & Wilkinson (2006, p. 32) suggest that MAP is considered a landmark contribution to national government monitoring systems as it provides information across the three pillars of sustainability and therefore provides a significant contribution to the advancement of sustainability reporting in the Australian context. As Macintosh & Wilkinson (2006) note:

> Not only do MAP reports provide information across the three pillars of sustainability, the indicators that have been selected are relatively comprehensive, the system is sensitive to change and, possibly most importantly, it is now regular and timely...the MAP reports are an important achievement. (p. 32)

*Are We Sustaining Australia?* and MAP are arguably the most comprehensive attempts at the national government level in Australia to address the measurement of economic, social and environmental factors in reporting systems. As discussed in Chapter 1, state and local government attempts in Australia to measure sustainability have been ad-hoc, with varying depths of analysis and focus. Moreover, no state government is yet to release a monitoring system with a specific focus on reporting on sustainability. MAP was selected for review on this basis.

Both *Are We Sustaining Australia?* and *Measuring Australia's Progress* apply a suites of indicators reporting format although they also include narrative assessment. Their inclusion offers examples of the main reporting formats for sustainability developed by government in Australia.

**Corporations.** Two corporate attempts to monitor sustainability have also been reviewed. These are the monitoring systems of 1) Origin Energy and 2) The Australian Gas Light Company (AGL). The reports were selected as being indicative of a style of corporate reporting common in Australia. They were also selected as Australian based companies that have produced two or more sustainability reports to allow the research to ascertain change over a short period of time (corporations generally annually update these reports). Moreover these reports draw on the GRI guidelines (the leading international benchmark for corporate sustainability reporting, as discussed in Chapter 5) and, as is detailed below, the corporations that produced the reports are recognised as leading participants in initiatives to address sustainability.

In addition, both AGL and Origin Energy apply a combination of the narrative assessment reporting format and crude suites of indicators approach. In this sense they are examples of the most commonly applied sustainability monitoring formats, with the emphasis in this case on narrative assessment.

AGL and Origin Energy are also significant corporate players in the energy industry in Australia. The actions of this industry are significant for environmental sustainability and the energy industry is a key economic and social industry in Australia. Electricity is considered an essential service for the maintenance of social, physical and economic well-being in the 21st century in Australia. Today many of the technologies used in the everyday life of communities and businesses are powered by electricity (Davidson 2005, p. 442). Coal is also Australia's number one commodity export and is still the main fuel used to produce energy and electricity in much of the world (Australian Coal Association, n.d., p. 1). Origin Energy is also a leader in the production of solar panels, the large scale application of which can reduce greenhouse gas emissions (Origin Energy, n.d., p. 4). Energy is a key industry in the debate over sustainability and climate change and one which requires radical change if it is to address pollution and greenhouse gas emissions, which contribute to global warming.

**Origin Energy's** monitoring system was chosen for review as it is an Australian-based company that has already released six sustainability reports. This company also claims to be a leader in environmental change and a leader in providing green power (power

generated from renewable or less greenhouse gas intense polluters such as natural gas) sources. In 2003 and 2006 Origin Energy was voted number one best green power product by Green Electricity Watch (an independent ranking of GreenPower electricity products offered by Australian electricity retailers). It participates in the Dow Jones Sustainability Index and has been recognised as one of the leading companies in sustainable change in Australia (Patrick 2007, p. 23). Origin Energy also states that it draws upon the GRI guidelines to guide the development of its report (Origin Energy 2005b, p. 4).

**AGL** is an Australian based and owned company that has also been chosen for review as it sits within the same industry sector as Origin Energy and therefore provides a close point for comparison. AGL participates in the following initiatives that have arisen in response to sustainability: the ASX Corporate Governance Council Best Practice Recommendations; the Dow Jones Sustainability Index and Corporate Reputation Index surveys. The company also complies with the Energy Supply Association of Australia's Code of Sustainability Practice (AGL 2005, p. 3). AGL applies the GRI guidelines, like Origin Energy. A review of the two corporations' application of the GRI guidelines will provide an assessment of how their monitoring systems address sustainability reporting and identify common issues and themes in corporate reporting.

The selected case studies all incorporate combinations of the two main reporting formats for sustainability, suites of indicators and narrative assessment. Incorporating case studies with the main reporting formats for sustainability also provides scope to consider the strengths and limitations of these approaches.

# Section 3: Current sustainability monitoring systems

Section Three examines a selection of current sustainability monitoring systems. It uses a case study analysis to illustrate the issues this research is investigating and as a canvass to address the arguments that have been forwarded. The case studies include a discussion of international benchmark monitoring systems and two Australian government and two corporate attempts to measure sustainability. The corporate attempts are monitoring systems developed by Origin Energy and AGL, which are recognised as corporate leaders in sustainability reporting in Australia. The government attempts include *Are we sustaining Australia*, developed by Environment Australia, and *Measures of Australia's Progress*, developed by the Australian Bureau of Statistics. The case studies are examined to ascertain how the underlying meaning attributed to sustainability influences what these monitoring systems measure. The research also offers a comparison of the Australian sustainability reporting against the international benchmarks in this field at both national government and corporate levels.

The initial focus of the research discussed in earlier chapters was on the emergence of sustainability monitoring systems, critical analyses of their development and on the ways in which sustainability has been conceptualised. The accelerated interest in monitoring systems over the last decade and the way they have been developed by international organisations, governments, corporations, business organisations, non-government organisations, and professional societies was also considered.

A review of the literature on sustainability indicators identified many problems associated with current practices. Along with other concerns, it was argued that definitions of sustainability are not well articulated and are difficult to operationalise. This has led to theoretical and conceptual confusion in relation to how sustainability can be measured. Moreover, the nature of sustainability itself is contested in the literature. This also presents problems in terms of measurement. Mainstream sustainability reporting lacks an epistemologically consistent process for the selection of indicators and measurement systems (Lele 1991; Sumner 2004; Pinter et al. 2005; Luckman 2006; Bossel 1999). Moreover, the dominance of neoliberalism and liberalism in this debate has mitigated against the adoption of integrated sustainability indicators that can address the complex risks to sustainability. The emphasis placed on economic growth that is evident in the categorisation of indicators in neoliberal monitoring systems segments the dimensions of sustainability, deprivileging the environmental system, which supports life

on earth and underplays social concerns (Clapp and Dauvergne 2005, p. 178; Norman & MacDonald 2004, p. 6; SDC 2004; Voisey et al. 1997; McGregor 2003b).

I ask whether neoliberal and liberal beliefs have the capacity to adequately address the issues surrounding sustainability. It will be argued with reference to the case studies that the dominance of the neo-liberal and liberal discourses in marginalising alternative radical approaches to measuring sustainability has limited the capacity of current reporting systems to provide assessments of the threats to economic, social and environmental sustainability. It will be argued that the current and future survival of our society and environment requires a radical rethinking of the way sustainability is measured.

# Chapter 5 Setting international benchmarks for sustainability reporting systems

## 5.1 Introduction

The previous chapters have documented the evolution of the sustainability debate, the ideological permutations within the debate and the development of monitoring systems to measure sustainability. This chapter and Chapters 6 and 7 will address current sustainability monitoring systems. The aim of this chapter is to identify international benchmarks for sustainability monitoring that are used by national governments and corporations. These benchmarks will be considered in relation to the four sustainability monitoring systems developed in Australia that are offered as case studies to illustrate the arguments developed by this thesis. These international benchmarks will offer a point of comparison for the Australian case studies at both the national government and corporate levels. This chapter will also apply the theoretical framework developed by this research. The political economy typology developed in Chapter 3 will be applied to categorise data to illustrate the underlying ideology that has influenced the development of the monitoring system. This categorisation process will inform the analysis of how the organisation conceptualises sustainability, and in turn implications for its measurement. The resulting key findings will inform an assessment of the attributes which makes this framework successful and as well illuminate its limitations.

## 5.2 International benchmarks for corporation sustainability reporting

Chapter 1 identified numerous guidelines developed by professional and business organisations, both at country level, as well as peak industry association level. Notable amongst these is the Global Reporting Initiative (GRI). The World Business Council for Sustainable Development is another example. Its report *Striking the Balance* acknowledges the work being undertaken by the GRI in the development of its own guidelines. At a country level numerous other initiatives have evolved, Australia being no exception. Some examples include:

- The Australian Minerals Industry Framework for sustainable development *Enduring Value*. This report suggests that members either self-select from the GRI or self-develop (Mineral Council of Australia 2005, p. 6).

- Energy Supply Association of Australia's (ESAA) has developed a *Code of Sustainability Practice* (AGL 2005, p. 3). However, this guideline is only available to its members.

Again the GRI is the key point of reference for the industry guidelines for developing sustainability monitoring systems.

American (US) business associations have also developed corporate guidelines for monitoring sustainability:

- The American Institute of Chemical Engineers Centre for Waste Reduction Technology has developed sustainability metrics with an emphasis on eco-efficiency for companies.
- The US National Academy of Engineering has also developed Environmental Performance Metrics, which contain eco-efficiency metrics (Veleva and Ellenbecker 2000, p. 107).

The American systems have a focus on the environment rather than addressing all dimensions of sustainability.

Veleva and Ellenbecker (2000, p. 107) have reported on what they regard as the top four corporate sustainability monitoring systems or reporting guidelines. From their perspective, the Global Reporting Initiative is the only monitoring system to meet the criterion that a reporting system address all three dimensions of sustainability: environmental, social and economic. They note that a set of indicators rather than a single indicator is applied; indicators are supported by clear guidelines; the project is published, readily available, well known and has the potential to become widely used by companies (Veleva and Ellenbecker 2000, p. 108).

The Global Reporting Initiative, as was noted in Chapter 1, is considered by scholars as the pre-eminent project to promote consistent reporting regimes amongst corporations (Macintosh & Wilkinson 2006, p. 9; Luckman 2006, p. 261; KPMG 2005, p. 7). Moreover, it is also cited as the future of corporate reporting (Grafe-Buckens & Jankowska 2001 and Crawford 2005 cited in Luckman 2006, p. 261; Macintosh & Wilkinson 2006, p. 9).

Overall, it is evident in the literature that the Global Reporting Initiative is the leading corporate framework for monitoring sustainability. It is also the first comprehensive corporation guideline to report on sustainability (WBCSD/Accountability 2004, p. 20).

Other guidelines for corporate sustainability reporting either draw upon the GRI or have more of an environmental focus. A brief outline of the Global Reporting Initiative is provided below, followed by an assessment of the guidelines with reference to strengths of why it is considered successful. The limitations of GRI are also noted this section.

To identify international benchmarks, a criteria is developed to facilitate selection of the monitoring system. The international benchmark monitoring systems will be reviewed to illuminate the attributes of a successful monitoring system. Limitations of the monitoring systems will also be identified. While it is noted that both the government and corporate international benchmark monitoring systems make a significant contribution to sustainability reporting, the development of these new systems is historical limited, and underpinned by dominant mainstream discourses of sustainability, therefore challenges will be present.

### 5.2.1 Overview of the GRI guidelines

The Global Reporting Initiative (GRI) has been the principal attempt to develop a consistent format that can be applied by enterprises to their reporting regimes. It's mission is to develop and disseminate globally applicable sustainability reporting guidelines. It was developed in response to the need for a consistent, rigorous, comparable, and credible sustainable reporting framework similar to the expectations for financial reporting. The GRI was launched in 1997 as a joint initiative of the US non-governmental organisation Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environment Programme. The GRI sees itself as an international leader in the development of sustainability indicators. To date more than 1000 organisations, have declared their voluntary adoption of the GRI's *Sustainability Reporting Guidelines* worldwide (GRI, n.d., online, p. 3).

These guidelines are an option, not a requirement, for organisational monitoring. The guidelines are flexible enough to allow companies to draw upon specific aspects of the framework. However, if organisations wish to identify their report as having been prepared in accordance with the 2006 *GRI Guidelines*, they must meet specific conditions and report on all indicators.

**Principles.** The principles that underpin the reporting framework are viewed by the GRI as an integral part of the monitoring process. Principles are considered an important reference point to help users interpret and assess their enterprise's decisions with regard to the content of their respective reports (GRI 2006, p. 1). The GRI provides an explanation for each principle (Exhibit 5.1).

**Exhibit 5.1 GRI Principles**

NOTE:
This exhibit is included on page 132 of the print copy of the thesis held in the University of Adelaide Library.

Source: GRI 2006, pp. 7-19.

These principles are grouped into two categories: those that define report content; and those that define report quality. The principles to define report content are: materiality; stakeholder inclusiveness; sustainability context; and completeness. The GRI states that in applying these principles to determining the content of a report will ensure a balanced and reasonable presentation of the organisation's performance. Using the guidelines helps ensure that the content of the report reflects the organisation's purpose and experience and its stakeholders' expectations and interests (GRI 2006, p. 7).

The inclusion of stakeholders' expectations and interest as part of the reporting principles demonstrates a point of departure from conventional financial reporting, for which the principal audience is investors. In sustainability reporting, the information is of interest to the broader community who are affected by the corporation's activities regardless of whether they have invested in the corporation or not. The principles defining the quality

of the report and its presentation include balance, clarity, accuracy and timeliness. Comparability and reliability are also defining principles of the report. The principles ensure effective transparency, which in turn allows stakeholders to undertake sound and reasonable assessment of the corporation's performance (GRI 2006, p. 13).

The principle for sustainability context provides an important insight into the GRI's understanding of sustainability (GRI 2006). That is, the focus is on:

> how an organisation contributes, or aims to contribute in the future, to the improvement or deterioration of economic, environmental, and social conditions, developments, and trends at the local, regional, or global level. Reporting only on trends in individual performance (or efficiency of the organisation) will fail to respond to this underlying question. Reports should therefore seek to present performance in relation to broader concepts of sustainability. This will involve discussing the performance in relation to broader concepts of sustainability. This will involve discussing the performance of the organisation in the context of the limits and demands placed on environmental or social resources at the sectoral, local, regional, or global level. For example, this could mean that in addition to reporting on trends in eco-efficiency, an organisation might also present its absolute pollution loading in relation to the capacity of the regional ecosystem to absorb the pollutant. (p. 11)

The GRI provides examples of how to situate a report within the context of global sustainability. It suggests environmental aspects should be reported within terms of global limits on resource use and pollution levels. International and national socio-economic goals also require consideration, for example, reporting on 'employee wages and social benefit levels in relation to nation-wide minimum and median income levels and the capacity of social safety nets to absorb those in poverty or those living close to the poverty line' (GRI 2006, p. 11). Global impacts require consideration of factors such as climate change, and those factors that also have more regional and local effects, such as community development (GRI 2006, p. 11).

A number of key points emerge from the report, which clarify how the measurement of sustainability can be operationalised. As already noted, sustainability reporting requires the consideration of three conditions: economic, social and environmental. It requires the progression from reporting on individual performance measures to broader attributes of sustainability. Sustainability performance should be discussed in the context of the ability of the system to absorb or respond to the impact, limits and demands placed on

environmental or social resources. It should also be discussed in relation to the scale of impact, whether at the sectoral, local, regional, or global level. The inclusion of these multi-level attributes enables better insight overall into the state of existing conditions. It also suggests where there have been improvements or deterioration in economic, environmental, and social conditions. Furthermore it offers indications of how the organisation might contribute to future improvement.

It is argued that sustainability reporting requires individual performance measures to be linked to their flow-on impacts (both positively and negatively) in contrast to reporting on seemingly random improvements across a limited operational spectrum. The GRI guidelines are now reviewed in more detail to develop an understanding of how these processes are operationalised at the performance indicator level.

**Suite-of-indicators.** The GRI applies the suites of indicators reporting format. The suite-of-indicators is segmented into the three key categories in a principled sustainability context – economic, social and environmental. Indicators are then categorized into two types, core indicators and additional indicators. Core indicators are relevant to most reporting organisations and of interest to most stakeholders. Additional indicators reflect a more detailed level of reporting. They might, for instance represent a leading practice in economic, environmental or social measurement or provide information of interest to stakeholders who are particularly important to the reporting entity. Additional indicators can also be used on a trial basis for possible consideration as a future core indicators (GRI 2006, p. 24).

**Economic performance indicators.** The normal company approach to reporting is primarily about addressing financial indicators. These indicators generally focus on the profitability of an organisation for the purpose of informing management and shareholders. Such indicators are included in the GRI guidelines but the guidelines extend the understanding of the conventional economic system to consider the manner in which an organisation affects those stakeholders who directly or indirectly have some form of economic interaction with the organisation. Consideration is also afforded to an organisation's contribution to the sustainability of a larger economic system, rather than just the organisation itself (GRI 2006, p. 25). This second attribute of economic indicators

is aligned with the 'principled sustainability context' in terms of promoting an understanding of an impact and its scale.

Economic indicators consider two main areas of business performance (GRI 2006, p. 25): flow of capital amongst different stakeholders; and main economic impacts of the company throughout society.

These two areas are considered important as financial performance is viewed as fundamental to understanding an organisation and its sustainability. The flow of capital would normally be reported within the organisation's financial accounts. In contrast, the organisation's contribution to the sustainability of a larger economic system is reported on less often, but is frequently desired by users of sustainability reports (GRI 2006, p. 25). Therefore this second point of emphasis makes a critical contribution to the reporting of economic sustainability in terms of new data collection.

The GRI groups the economic performance indicators into three categories: economic performance, market presence, and indirect economic impacts. The range of indicators is illustrated in Exhibit 5.2. Indicators are differentiated between core and additional. However not all categories incorporate both types of indicators. Indicators also incorporate both qualitative and quantitative measures.

As noted, economic performance indicators are usually already reported upon within financial statements, and are seen as important as they establish the financial sustainability of the organisation. Elements of market presence and indirect economic impacts are aspects which differentiate indicators of economic sustainability. Reporting in the past has focused on either financial, social or environmental reporting. Therefore, reporting on the entity's economic impact, particularly indirect flows, is relatively underdeveloped. As a consequence the GRI appears to be one of the first sustainability reporting frameworks to incorporate a thorough review of the entity's impact on the whole economic system.

**Exhibit 5.2 Economic categories GRI**

NOTE:
This exhibit is included on page 136 of the print copy of the thesis held in the University of Adelaide Library.

Source: GRI 2006, p. 26.

The 'market presence' category relates to the reporting entity's local socio-economic impact with a focus on income equity and work practices. The indicators track the demands placed on the local social resources and the resulting impact, in this case on the local labour force.

Lastly, the inclusion of reporting on 'indirect economic impacts' provides a more complete insight into the sustainability of the larger economic system because it captures the 'externalities' created by the reporting entity that might affect communities. Examples here might be contribution to public benefit because of investment in infrastructure and services; or equally, the negative impact of a company's change of location or production focus. In a principled approach to sustainability reporting an understanding of indirect economic impacts are key to understanding the organisation's overall contribution (both positive and negative) to the sustainability of the larger economic system within which it operates.

**Environmental performance indicators**. Environmental performance indicators focus on the organisation's impact on living and non-living natural systems, including the land, water and air. The GRI requests that organisations provide both absolute figures and normalised measures. Absolute figures enable a picture of the scale or magnitude of the use or impact; normalised figures provide a sense of the organisation's efficiency and enable comparison between organisations of different sizes (GRI 2002, p. 48).

The GRI encourages organisations to relate their individual performance to the broader ecological systems that they operate within (GRI 2002, p. 49). Alignment with these performance indicators is designed to measure the organisation's impact upon the broader ecological systems that they operate within.

Environmental indicators cover input (material, energy, water) and output (emission, effluents, waste) of the production process. Reporting on other areas of biodiversity, environmental compliance, environmental expenditure, and the impacts of products and services is also encouraged (GRI 2006, p. 27). Exhibit 5.3 outlines the indicators within the environmental category.

**Exhibit 5.3 Environmental aspects GRI**

NOTE:
This exhibit is included on page 138 of the print copy of the thesis held in the University of Adelaide Library.

Source: GRI 2006, p. 26.

The 'overall' category aggregates the range of factors to provide an indication of the organisation's impact on the environment, including ecosystems, land, water and air. Secondly, specific aspects of the production process's effect upon the natural system are assessed. As indicated, inputs include material, energy and water; outputs include emissions, effluents, and waste. The GRI states there is general consensus for indicators that represent environmental sustainability (GRI 2002. p. 52). This is reflected by impact categories that compare with those proposed by the UN in their *Indicators for Sustainability* monitoring system (UN Commission of Sustainable Development 2001, p. 14).

The inputs and outputs of the production process are also referred to as the 'operating ecology' (Tarna 1999, p. 57). Again there is general consensus on the main material and energy flows caused directly by corporations' operations, with similar key flows described by both the GRI and in the concept of operating ecology.

Most of the suggested indicators provide only a measurement of the extent to which an entity's activities impact on the environment. This is consistent with current organisational environmental reporting practices (Macintosh & Wilkinson 2006, p. 16). The GRI does however attempt to place these impacts in context within the total environmental system. It does this by the identification of relevant international benchmarks or protocols reflecting the ability of the system to absorb or respond to limits and demands placed on environmental resources. These range from IUCN Red List, Helsinki, Sofia, and Geneva Protocols to the Convention on Long-Range Trans-boundary Air Pollution. However, as international benchmarks and standards are not available for all factors listed, national lists are also utilised. The GRI also encourages the use of normalised data where possible, for example, the organisation's greenhouse gas emissions against sector emissions.

**Social performance indicators**. Social performance indicators focus on the organisation's impact on the social system within which it operates. These indicators do not have the consensus that environmental performance measures enjoy. In this category, the GRI focuses on labour practices, human rights, and broader issues affecting consumers, the community, and other stakeholders in society. These key aspects were decided on the basis of a consultative process conducted by the GRI. Many of the social performance indicators are not easily quantifiable, therefore a number of these measures are qualitative measures. Acknowledging that not all social impacts are captured by this framework, the GRI encourages organisations to conduct consultative processes of their own. Areas

identified for possible inclusion are employee remuneration, working time, and broadening the coverage of the entity's impact on the community (GRI 2002, p. 52). Ethical labour practices, decent work and human rights are recognised in international standards enshrined in the Conventions of the International Labour Organisation and the United Nations Universal Declaration of Human Rights and its Protocols (GRI 2006, p. 30-32). Exhibits 5.4 to 5.7 outline indicators selected to represent the aspects of labour practices and decent work, human rights, society and product responsibility.

**Exhibit 5.4 Labour practices and decent work GRI**



Source: GRI 2006, pp. 30-31.

**Exhibit 5.5 Human rights GRI**

NOTE:
This exhibit is included on page 142 of the print copy of the thesis held in the University of Adelaide Library.

Source: GRI 2006, p. 32.

**Exhibit 5.6 Society performance GRI**

NOTE:
This exhibit is included on page 143 of the print copy of the thesis held in the University of Adelaide Library.

Source: GRI 2006, p. 34.

**Exhibit 5.7 Product responsibility GRI**



Source: GRI 2006, p. 36

As the GRI notes, social performance measures are more contentious than environmental performance measures and therefore not all may agree that the chosen list of elements represents social sustainability.

For corporate reporting the GRI has been one of the few attempts to include social sustainability indicators within corporate sustainability reporting guidelines, if not the only one. Prior to the GRI a range of declarations, guidelines and standards monitored various social issues, but no comprehensive suite of social sustainability indicators had been developed covering a selection of key issues. Examples of the various declarations,

guidelines and standards include: the United Nations Universal Declaration of Human Rights and Global Compact, the Organisation for Economic Cooperation and Development's Guidelines for Multinational Enterprises and Principles of Corporate Governance and the International Labour Organisation's (ILO) Core Labour Standards. As mentioned, some of these standards are incorporated within the GRI social sustainability indicators, for example the United Nations Universal Declaration of Human Rights and its Protocols.

In summary, the GRI reporting framework makes a positive contribution to sustainability monitoring in terms of its principled approach to sustainability and its attempts to broaden the focus of environmental, social, and economic reporting. It also makes a contribution in its promotion of comparable data sources and in its acknowledgement of international benchmarks such as international human rights instruments.

### 5.2.2 Assessment of the GRI?

The strengths and limitations of the GRI will now be discussed to identify the attributes that differentiate this monitoring system from others.

**What attributes make this monitoring system successful?** The key attributes of this monitoring system that have led to its adoption as an international benchmark include its status as the first comprehensive set of corporation guidelines for reporting on sustainability and its vision to enable entities to report on their contribution to the sustainability of overall systems. It promotes reporting on the broader concepts encompassed within sustainability rather than individual performance measures. This system also includes a reference to stakeholder engagement in the development of a sustainability report and in indicator development.

*First comprehensive corporation guidelines to report on sustainability.* As has been established, this is the first comprehensive attempt to develop guidelines that incorporate the three pillars of sustainability at the corporate level. Other guidelines that have been developed have referred back to the GRI as the point of reference rather than proposing a new reporting system. For example, the guidelines offered by the World Business Council for Sustainable Development in *Striking the Balance* and the Australian Minerals Industry framework for sustainable development *Enduring Value* are examples of where GRI guidelines have been incorporated into business sustainability reporting.

*Entities report on their contribution to the sustainability of the overall systems.* The GRI guidelines require that the reporting entity reports on its contribution to the sustainability of a larger economic, environmental and social system. This is explicitly outlined within the guideline principle, 'sustainability context'. This attribute requires the reporting entity to report on internal impacts but also any external flow on impacts to the environment, society and economy. Reporting on external impacts incorporates a more holistic approach to the understanding of sustainability, and requires corporations in many cases to collect new data. This focus of reporting on the whole system is a new contribution to corporate sustainability reporting. As discussed in Chapter 2, holistic approaches are generally under developed in sustainability monitoring systems (Bossel 1999, p. 8).

*Report on the broader concepts encompassed within sustainability*. The reporting system has developed a structure where indicators are segmented into key aspects of sustainability. By segmenting indicators in this way indicator results are not considered in isolation but rather as a set of performance measures. For example, performance measures are offered for human rights, biodiversity, and indirect economic impacts.

This change of the approach to reporting is significant as the focus is on a set of indicators rather than individual ones. Grouping like indicators signals interrelationships to other indicators. This is a positive step for the development of reporting systems, which might be extended to communicate linkages to indicators outside of it's defined category (Macintosh & Wilkinson 2006, p. 3; Gibson 2005, p. 94; Luckman 2006, p. 261; Spangenberg, Pfahl, & Dellar 2002, p. 66; Bossel 1999, p. 13; Farrell & Hart 1998, p. 2; Maclaren cited in Hoernig & Seasons 2004, p. 87).

*Inclusion of stakeholder engagement in the development of the report.* The GRI guidelines place high value on stakeholder engagement and the importance of stakeholder inclusiveness. The inclusion of this principle is important as it provides an avenue for stakeholders to be engaged and consulted within the development of these sustainability reports. It also signals, in comparison to financial reporting, where investors are the main interest group, a more diverse understanding of what a stakeholder is. The types of stakeholders interested in sustainability reporting include environmental non-government organisations, human rights and welfare non-government organisations and government; communities in which the entity operates.

*Indicator development.* For corporation reporting the GRI guidelines appear to be one of the first attempts to group social, economic and environmental indicators into the one set of guidelines. In addition, each set of indicators – economic, social and environmental – have been extended from conventional reporting practices in some manner.

The GRI defines the aim of economic indicators as the monitoring of the entity's impact on the whole economic system. This includes reporting on indirect economic impacts. This is an area in which corporations have not collected data, and therefore involves the collection of new data.

For environmental indicators, the GRI guidelines place emphasis on situating the reporting entity's impacts on the environment within the context of the overall environmental system. The guidelines do this by encouraging the inclusion of normalised data and the use of international and national benchmarks and standards. For example, the IUCN Red List species and the national government conservation list species are included as environmental benchmarks. Another inclusion is the use of qualitative indicators, which attempt to provide the reader with more descriptive information rather than just figures. Examples of qualitative indicators are *initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation* (GRI 2006, p. 29).

For social indicators, the GRI guidelines represent the most comprehensive list of indicators covering a selection of key social issues. Indicators are provided for labour practices and decent work, human rights, product responsibility and similar matters.

### 5.2.3 Limitations of the GRI guidelines

While the GRI guidelines move corporation reporting from a single system focus (eg a report on financial status or a report on its impact on the environment), to a broad sustainability reporting paradigm there are still significant limitations to these guidelines. Of most concern is the fact that they do not encompass a strong definition of sustainability. This has significant repercussions for the measurement of sustainability. As a result no clear conceptual underpinning is provided, and this leads to a lack of clearly defined processes for indicator selection. Moreover, linkages among the various indicators

do not illuminate the essential relationships of sustainability. The indicators are not positioned to represent the viability and sustainability of these systems.

The guidelines have adopted the conventional typology (economic, environmental and social) for categorising indicators (GRI 2006, p. 2; GRI 2006, p. 25; GRI 2006, p. 28; GRI 2006, p. 29), which in turn leads to limitations in considering the interrelations between aspects and dimensions of sustainability. The GRI could also play a greater role in developing methodologies for the collection of various sets of new data such as an entity's external and internal impacts on communities.

*Theoretical clarity of the definition of sustainability.* The GRI guidelines state that sustainability reporting aims to 'describe reporting on economic, environmental, and social impacts' (GRI 2006, p. 3). This definition represents a neutral position on sustainability. No insight is provided into how the dimensions of sustainability might interrelate.

The guidelines do incorporate a principle 'sustainability context' which was earlier described as including an accurate representation of the condition of the economy, society and environment, which links the flow on impacts that affect systems and their key elements. Inclusion of this principle is a positive development as it contributes to what has been identified in this research as a critical area of concern for the advancement of sustainability reporting. That is, the development of a model that offers an understanding the interdependence and relationships between the dimensions of sustainability. Nevertheless, while the positioning of reports based on the sustainability context principle is described, no theoretical insight is offered into how the systems might interrelate.

The GRI offers a process of reporting on the whole system and links the flow on impacts that affect systems with their key elements. But while the principles of the reporting system move towards a holistic reporting system, key areas remain underdeveloped in the GRI guidelines. These key areas are as follows, and will be explained in detail in this section.

The environmental dimension of sustainability is not positioned as central to survival on earth. The GRI guidelines does make an attempt to ensure some context to sustainability

is included at the indicator level. The GRI suggests that performance of the indicator needs to consider and represent the limits and demands placed on environmental or social resources (GRI 2006, p. 11). However, this approach is limited as indicators sit within their specific system (i.e. economic, social or environmental) and no connection is made between related indicators across the systems. For example, there is no discussion in the GRI of the relationship between the environmental dimension indicator *Material used by weight or volume*(GRI 2006, p. 26) and the economic dimension indicator *direct economic value generated and distributed* (GRI 2006, p. 26). A change in the latter indicator would cause flow on effects to the former indicator. Economic growth does require resources, and an increase in economic value in many cases involves the use of more resources both environmental and human.

The representation of the dimensions of sustainability for categorising indicators is in a silo format and represents conventional reporting practices, as suggested by Gibson (2005, p. 94) and Spangenberg et al. (2002, p. 66). This representation deprivileges the environmental dimension at a cost to the validity of the reporting framework. This is because the environment can not be considered in isolation as it represents the life support system of the earth. Hence all systems must connect with this dimension of sustainability (McGregor 2003b, p. 30; Stilwell 2002, p. 15).

No new benchmarks are developed to measure what is to be sustained and by how much. Current international benchmarks are drawn upon, for example one of the few recognised benchmarks incorporated into the suite-of-indicators is *Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk*. But the development of new benchmarks to address threats to sustainability where no such standard exists is not discussed. Most noticeable is that there is no discussion of a benchmark indicator to address the limits to economic growth due to environmental degradation. For example benchmarks or targets are not provided for indicators such as total water withdrawal by source and total weight of waste by type and disposal. The omission of alternative benchmarks such as this suggests that this monitoring system fails to adequately acknowledge significant threats to sustainability.

Contentious issues in the sustainability debate are not well represented, particularly consideration of external social and economic impacts is underdeveloped. Examples of some contentious issues that are not included are the ratio of wages to profits, executive salary to salary ratio and tax to earnings ratio. It therefore does not attempt to consider whether there has been a fair distribution of resources and opportunities between current generations and also for future generations. Labuschagne et al. (2003: 379) has identified other examples of external social impacts that are not considered in the GRI guidelines. External impacts might include equity, community benefit/employment, community cohesion, stakeholder participation and capacity development. Moreover, the key indicator to monitor the indirect economic impact is general. The indicator is: *Understanding and describing significant indirect economic impacts, including the extent of impacts* (GRI 2006, p. 26). The reporting organisation is left to therefore identify which external impacts warrant reporting on.

Conspicuously absent is a mechanism to address the underlying tension between economic growth and the environment. For each dimension of sustainability, indicators are categorised together but interrelated indicators across the dimensions are not connected, which limits cross-dimensional reporting. Therefore the structure of the guidelines avoid consideration of limits that might be required to be placed on economic growth to sustain the environment for current and future generations.

In a political economy typology the GRI closely aligns with the liberal discourse. That the GRI actually argues for corporations to produce sustainability reports is an indication that it framers understand that sustainability requires innovation (at least in the modest sense of a sustainability report) to address market failure. Nevertheless sustainability is addressed through conventional reporting practices. That is, by indicators segmented within economic, social and environmental spheres. This approach significantly limits the value of the GRI guidelines. While lip service is paid to the importance of understanding the organisation's performance in the wider context of sustainability, very limited insight is provided into how practically this might be achieved (GRI 2006, p. 11). The GRI guidelines fail to address contentious issues in the debate over sustainability, which suggests the framers have taken a relatively mainstream stance.

*Typology for categorising indicators.* The GRI guidelines apply a typology that categorises broad concepts of sustainability into economic, social and environmental impacts. This typology is consistent with the GRI definition of sustainability reporting. Nevertheless, the GRI itself recognises that this model may oversimplify complex relationships between the economy, society and the environment but believes that this categorisation is a starting point that is comprehensible to many and is seen as a reasonable entry point into a complex issue (GRI 2002, p. 9).

The GRI guidelines note the shortcoming of this typology for the categorisation of indicators (GRI 2002, p. 44):

- Changes in one aspect of economic, environmental, or social performance often result in changes to other aspects of sustainability.
- Sustainability strategies often use one area of sustainability as a reference point when defining goals for another area.
- Advancing sustainable development requires coordinated movement across a set of performance measurements, rather than random improvement within a full range of measurements.

This applied typology restricts the ability of the reporting entity to situate its report within the context of sustainability. It restricts the ability to link aspects of economic, social and environmental performance, which in turn limits the ability to report on the interrelationships between the economy, society and environment to develop a better understanding of the overall health of combined systems. As discussed, this approach privileges the economic system, marginalising the environmental system that provides the life support to earth and does likewise to the social system (McGregor 2003b, p. 30; Stilwell 2002, p. 15).

*Selecting indicators.* The guidelines present the indicators in list format, suites of indicators, where the only link is back to a common aspect being reported (GRI 2006, p. 26, 28, 31). Linkages between the individual indicators or other elements of the indicators are not provided. By not illuminating the links between indicators the ability to understand progression or deterioration of sustainability is restricted. An understanding of the entity's' impact requires reporting on movement across a set of performance

measures rather than focusing on individual performance of indicators. This holistic approach is important because changes in performance of an indicator often result in changes to other aspects of sustainability (GRI 2002, p. 44). This level of understanding is required to report on the health of the systems. A systems based approach is therefore not used by the GRI as the reporting model does not illuminate the essential relationships of sustainability. Moreover indicators are not positioned to represent the viability and sustainability of these systems (Bossel 1999, p. 8). As demonstrated by the GRI, the application of the suites of indicators reporting format lacks the capacity to address linkages between indicators. As a consequence it is difficult to make an assessment of the progression or deterioration of sustainability. It is clear that the suites of indicators format requires modification of its simplistic form to enable it to report on complex issues like sustainability.

The GRI also provides little guidance to the user on how to select the most appropriate indicators, or what mix of indicators is required to be able to accurately report on sustainability. The GRI process does differentiate indicators between core and additional. Nevertheless, it provides no guidance as to the effects of a core indicator going unreported, and one is left to wonder if the omission will affect the overall accuracy of the measurement of sustainability. This lack of guidance is compounded as no conceptual underpinning is outlined within a definition of sustainability to provide greater clarity.

*Indicator development*. Moreover, the GRI appears to give little guidance on how to develop methodologies to collect data for new indicators. For example it provides no guidance on how to collect data for the aspect indirect economic impacts. This is of particular concern as many aspects of economic and social sustainability are also difficult to measure. For example, little research has been undertaken on how to monitor company-community partnerships, investment in local community, job creation or quality of life. These are all examples of corporate impacts on communities, which are difficult to measure and evaluate (Veleva & Ellenbecker 2001, p. 104). Many of these items may not be quantifiable and may have an element of subjectivity (Veleva & Ellenbecker 2001, p. 106). Further research is required into how to develop methods to collect and report this data on these issues.

*Stakeholder engagement*. Concern has been raised that stakeholder engagement, while new to sustainability reporting, is not 'about trading off the vested interests of different stakeholders, but balancing them and simultaneously achieving them all' (Milne, Tregidga & Walton 2008, p. 19). These scholars explain that 'this is now not only good for the business but also good for stakeholders and the environment, and in the process constitutes sustainable development' (p. 19). This argument has close similarities to the arguably flawed 'we can have it all' thesis that holds that economic growth and achieving good environmental and social outcomes are mutually compatible as discussed in the *Brundtland Report* (WCED 1987, p. 49).

In summary, the GRI is a useful contribution to the sustainability debate as it pushes the boundaries of previous corporate reporting practices. It has provided guidance to corporations on how to report against social, economic and environmental factors. It encourages a reporting philosophy to report on their contribution to sustainability from the perspective of the overall system. This in turn requires corporations to report on attributes for which data has been collected in the past. It considers the inclusion of stakeholder perspectives, which have been neglected in earlier financial reporting models.

While the GRI has advanced the development of sustainability monitoring systems, it still remains underdeveloped. The underdeveloped nature of sustainability reporting is to some extent to be expected, as it is historically limited, and general operationalised within the liberal discourse. In this sense, as a set of guidelines underpinned by liberal values, this system has limited capacity to provide assessments of threats to economic, social and environmental sustainability as understood by more radical thinkers. Indicators are categorized within a conventional silo approach, which restricts an understanding of interdimensional sustainability considerations. Indicators are presented in list format consistent with the suites of indicators approach, which is methodologically limited in terms of its capacity to communicate linkages between individual indicators. Little attempt has been made to define sustainability and more controversial questions are left unanswered. Contentious issues are generally not reported against. At what level attributes are required to be sustained is left unanswered. Despite these limitation the GRI is still considered the corporation benchmark for sustainability reporting.

## 5.3 International benchmarks for government sustainability reporting

In Chapter 1 it was noted that many governments have developed sustainability monitoring systems. Unlike corporate reporting there is no consensus on benchmark guidelines for government monitoring systems. While international guidelines for national government reporting have been released by the United Nations, many leading government monitoring systems have not applied the UN guidelines. For example, the United Kingdom, Australia, Ireland and Austria have not taken this approach. Reasons have not given by these governments for why alternative monitoring systems have been adopted. The GRI also indicates that they are currently trying to develop a set of national annexes to tailor their guidelines better to different regions and countries. This development is still in its early stage and no such guidelines are currently available (GRI, n.d., online, p. 3).

Due to the lack of consensus of a benchmark government monitoring system a selection of government monitoring systems were reviewed for the purposes of this study, as well as the UN attempt at developing a common framework for national government reporting. The governments of Ireland, the Czech Republic, and Austria were identified within an OECD report titled *Good Practices in the National Sustainable Development Strategies of OECD Countries* as three good practice examples. The UK government sustainability monitoring systems was also reviewed as it was the first mover in developing a national government sustainability monitoring system.

A criterion was established to inform the selection of the most advanced sustainability monitoring systems for national governments. The reviewed national government monitoring systems all lacked an operational definition of sustainability to inform its measurement. Therefore selection criteria were developed based on key attributes that signalled a conceptual shift in the understanding of the requirements to produce a sustainability report.

Two criteria provided the main focus of the review. These were a movement away from the conventional indicator typology and the inclusion of new indicators that have been developed for the purpose of measuring sustainability. Inclusion of these criteria

demonstrate reporting systems that are starting to implement the conceptual shift that it has been argued earlier sustainability reporting requires. That is, a shift towards reporting on the interrelationships between the dimensions of sustainability and the development of new indicators to undertake this task. A reliance on previous practices does not demonstrate the required conceptual shift. The inclusion of new indicators suggests that the architects of systems that take this approach understand that conventional indicators are not appropriate for the measurement of sustainability and a new approach to indicator selection is required.

The UK government *Securing the Future* monitoring system is positioned as offering the benchmark for national governments who wish to develop measures of sustainability. It is significant that *Securing the Future* system includes a typology to categorise indicators within what are perceived by the UK government to be the key issues in the sustainability debate. This reporting system does not apply the conventional typology. Indicators are not constrained to addressing a single issue in the debate and can represent a number of issues if appropriate. *Securing the Future* monitoring system includes new innovative indicators that have been developed for the purpose of measuring sustainability, which include the concept of environmental equality. Other attributes include the incorporation of a consultative approach allowing the community to voice their opinions on sustainability issues. Moreover this is an evolving framework that is regularly updated and sits within a wider strategy for sustainability.

In comparison with the UK approach the UN 2001 monitoring system is relatively weak. The latter has a conventional typology to categorise indicators and relies on well developed indicators the primary purpose of which is not to measure sustainability. The revised version of the original UN system does show promise, however, by incorporating aspects of the UK and components of the GRI monitoring systems. The new revised version was released in 2007. This monitoring system reveals a movement away from the conventional over-arching typology that was incorporated within its 2001 framework. The thematic framework is retained. However, the overarching typology layer is removed, unlike the UK approach. The framework now categorising its indicators under 14 main themes, including poverty, natural hazards, consumption and production patterns. This correlation between the UK and UN approach is potentially a result of the UK

government participating as one of the main developed countries on the UN revised guidelines working group. The UK *Securing the Future* framework still differentiates from the UN reporting guidelines by applying its key aims of sustainability to the monitoring framework. This is an attempt to better link indicators to its conception of sustainability.

The **Irish** monitoring system is still under development, and its emphasis is on a green national accounts[11] and satellite accounting approaches[12] to supplement the current economic accounts (OECD 2006b, p. 28). Due to its underdeveloped status it is difficult to comment upon. Early indications are that there is an emphasis on the environmental dimension rather than all of the dimensions of sustainability.

**Austria** applies the pressure-state-response model[13] as part of its monitoring system, which has been criticized for its limited application within a sustainability context. This model was also applied in the very early stages of the development of the UN indicators for sustainability program but quickly abandoned because it was unsuitable to monitor sustainability. This is because this model was developed for the purpose of monitoring of environmental effects of human activity and lacked the capacity to incorporate social and economic sustainability (UN Commission on Sustainable Development 2001, p. 13).

The government of the **Czech Republic** monitoring system for sustainability applies the conventional model for categorizing indicators (a typology of economic, environmental and social). This was the original typology proposed by the UN in its 2001 framework. As noted, the UK and UN are attempting to move beyond the conventional typology to category headings that better capture the interrelationship between the economy, environment and society.

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[11] Green National Accounts incorporates important environmental considerations (Ireland Government 1997, p. 180).

[12] Satellite accounts incorporates 'data on the physical flow of natural resources and physical flow of wastes and emissions are provided for each production and final demand sector (Mirovitskaya & Ascher 2001, p. 164).

[13] Pressure-state-response model illustrates needs of man/society are initially listed i.e. nutrition, which leads to the activity agriculture that leads to ***pressures*** of emissions which affects the ***state*** of the environment such as climate and air and results with the impact of climate change, which in turn leads to various public policy ***responses (***OECD 2003, p. 21).

## 5.4 UK government reporting system for sustainability: *Securing the Future*

### 5.4.1 Overview of the UK government *Securing the Future* reporting system for sustainability

In 1999 the UK government included in its sustainable development strategy a monitoring system titled *Quality of Life Counts* (1999), which was updated in 2005 and renamed *Securing the Future.* This monitoring system tracks developments in key priority areas of the government's sustainable development strategy. The development of the strategy was in response to a commitment agreed upon at the Earth Summit in 1992, through Agenda 21, which had recommended that all countries produce a national sustainable development strategy (UK government, 1999a, p. 2-1). In 1994 the UK government responded to the commitment entered into at the Earth Summit and became one of the first countries to produce a sustainable development strategy, leading to the creation of the monitoring system.

The literature does not provide any explanation of why the UK was the first country to produce a sustainable development strategy; but the 1994 strategy notes that it was one of the first countries to industralise, and had experienced for some time the impact of economic development on the environment. It states that the reason for including indicators in the strategy was to monitor and report on progress towards sustainable development (UK government 1999a, p. 1-10).

*Securing the Future* is based on a thematic typology categorising indicators in a way that matches them to the four government aims for sustainable development. The themes are (UK government 2005, p. 15):

- sustainable consumption and production
- climate change and energy
- protecting our natural resources and enhancing the environment
- creating sustainable communities and a fairer world.

The government noted that there is no international consensus on one particular model of sustainability monitoring, although there has been a trend to categorise within the three traditional dimensions of sustainability – economic, environmental and social. It was felt by the UK government, however, that using key themes would allow economic, social and

environmental issues to be more effectively linked (UK government 1999b, p. 15). Moreover, indicators do not have to be attached to a single key aim, but can sit underneath two key aims if appropriate (UK government 2006, p. 9).

*Securing the Future* applies the suites of indicators reporting format. It consists of 20 headline indicators and another 48 indicators. The headline indicators are also encompassed within the key areas aims of sustainability but are seen as significant to cover key impacts and outcomes that reflect the priority areas shared across the UK. The UK headline indicators therefore represent an overarching set of indicators for the whole of the UK. Exhibits 5.8 to 5.11 outline each key theme and its indicators. Headline indicators are indicated by an asterisk.

Indicators sited within this theme attempt to cover the main impacts and pressure on the environment resulting from consumption and production. Indicators report key impacts and pressures including emissions, resource use and waste. Other aspects covered, while less dominant, include: economic growth and productivity; investment; demography; and households and dwellings.

By categorising indicators under key objectives of sustainability, the indicators are immediately removed from the conventional segmentation within traditional systems (economic, social or environmental) typical of many other indicator reporting systems. Many of the conventional indicators are present but not grouped together, and can appear numerous times under a number of key objectives of sustainability. For example, indicators reporting on the pollution issue of climate change are present within the objective of sustainable production and consumption but also in climate change and energy. The indicators focus on carbon dioxide intensities, which correlates with the OECD key environmental indicators recommendation (OECD 2003, p. 24).

Many incorporated indicators are applied to report on aspects of emission output, resource use and waste output using conventional practices. However, there are exceptions. One indicator of particular interest is *domestic material consumption and gross domestic product*. This indicator monitors the relationship between these two elements of sustainability. It reports on changes in economic growth and the flow on effect to material consumption. Indicators such as this report on how a change in one factor flows into a change in another.

## Sustainable consumption and production indicators

**Exhibit 5.8 Indicators in the sustainable consumption and production theme**

| |
|---|
| – Carbon dioxide emissions by end user: $CO_2$ emissions from industry, domestic, transport sectors (excluding international aviation and shipping) |
| – Aviation and shipping emissions: Greenhouse gases from UK-based international aviation and shipping fuel bunkers |
| – Household energy use: Domestic $CO_2$ emissions, domestic energy consumption and household spending |
| – Road transport: $CO_2$, $NO_x$, $PM_{10}$ emissions and Gross Domestic Product |
| – Private car $CO_2$ emissions, car-kilometres and household spending |
| – Heavy goods vehicle (HGV) $CO_2$ emissions, kilometres, tonnes and gross domestic product |
| – Manufacturing sector $CO_2$, $NO_x$, $SO_2$, $PM_{10}$ emissions and output |
| – Service sector $CO_2$, $NO_x$ emissions and output |
| – Public sector $CO_2$, $NO_x$ emissions and output |
| – Stone, sand, and gravel extraction: construction output and extraction of construction materials |
| – Water resource use: Total abstractions from non-tidal surface and ground water, leakage losses and Gross Domestic Product |
| – Domestic water consumption: Litres per person per day |
| – Household waste per person (a) Arisings (b) recycled or composted |
| – Waste: (a) arising by sector (b) arising by disposal* |
| – Land recycling: (a) New dwellings built on previously developed land or through conversions (b) all new development on previously developed land |
| – Resource use: Domestic material consumption and Gross Domestic Product * |
| – Greenhouse gas emissions: Kyoto target and carbon dioxide emissions* |
| – Fish stocks: Sustainable fish stocks* |
| – Emission of air pollutions: $NH_3$, $NO_x$, $PM_{10}$ and $SO_2$ emissions and GDP |
| – River quality: Rivers of good biological and chemical quality* |
| – Economic growth: GDP* |
| – Productivity: UK output per worker |
| – Investment: (a) Total investment (b) Social investment relative to GDP |
| – Demography: Population and population of working age (contextual indicator) |
| – Households and Dwellings: Households, single person households and dwelling stock (contextual indicator) |

Note: Headline indicators are indicated by an asterisk
Source: United Kingdom government 2005.

## Climate change and energy indicators

**Exhibit 5.9 Indicators in the climate change and energy theme**

| |
|---|
| – Greenhouse gas emissions: Kyoto target and carbon dioxide* |
| – Carbon dioxide emissions by end user: CO2 emissions from industry, domestic, transport sectors (excluding international aviation and shipping) |
| – Greenhouse gases from UK-based international aviation and shipping fuel bunkers |
| – Renewable energy: Renewable electricity generated as a percentage of total electricity |
| – Electricity generated, CO2, NOx and SO2 emissions by electricity generators and GDP |
| – Household energy use: Domestic CO2 emissions, domestic energy consumption and household spending |
| – Road transport: CO2, NOx, PM10 emissions and Gross Domestic Product |
| – Private car CO2 emissions, car-kilometres and household spending |
| – Heavy Goods Vehicle (HGV) CO2 emissions, kilometres, tonnes and Gross Domestic Product |
| – Manufacturing sector CO2, NOx, SO2, PM10 emissions and output |
| – Service sector CO2, NOx emissions and output |
| – Public sector CO2, NOx emissions and output |
| – UK indigenous energy production and gross inland energy consumption |
| – Economic growth: GDP* |

Note: Headline indicators are indicated by an asterisk
Source: United Kingdom government 2005.

Climate change is a significant risk to the sustainability of society as we know it today. Future changes in land use, demographics and economic development are likely to have greater indirect impacts on regional ecosystems and on socio-economics than the direct impacts of climate change (Commonwealth of Australia 2004, p. 68). Monitoring greenhouse gases is therefore a significant priority for governments, as reflected through the international agreement the Kyoto Protocol.

In terms of greenhouse gasses, *Securing the Future* primarily monitors emissions that contribute to climate change. In this, the framework is little different from other indicators which cover greenhouse gas emissions, electricity generation and energy supply. In the future, this reporting theme could be broadened to include some of the socio-economic and environmental implications of climate change, such as reduced farm productivity due to increased flooding.

**Exhibit 5.10 Indicators in the NR protection and environmental enhancement theme**

| |
|---|
| – Bird population indices* |
| – Biodiversity conservation: a) Priority species status (b) priority habitat status |
| – Agriculture sector: Fertiliser input, farmland bird population, ammonia and methane emissions and output |
| – Farming and environmental stewardship: Land covered by environmental schemes |
| – Land use: area covered by agriculture, woodland, water or river, urban, 2004* |
| – Fish stocks: sustainable fish stocks* |
| – Emission of air pollutions: NH3, NOx, PM10 and SO2 emissions and GDP |
| – Water stress: assessment of water availability |
| – Land recycling: (a) New dwellings built on previously developed land or through conversions (b) all new development on previously developed land |
| – Dwelling density: Average density of new housing |
| – River quality: rivers of good biological and chemical quality* |
| – Flooding: no of properties in areas at risk of flooding |
| – Economic growth: GDP* |
| – Households and dwellings: Households, single person households and dwelling stock (contextual indicator) |
| – Social justice |
| – Environmental equality |
| – Ecological impacts of air pollution: Area of sensitive UK habitats exceeding critical loads for acidification and eutrophication* |

Note: Headline indicators are indicated by an asterisk
Source: United Kingdom government 2005.

Indicators within the theme of natural resource and enhancement cover issues including wildlife and biodiversity, farming, land use, fish stocks, air pollution and rivers. This theme encompasses two main areas. Firstly, it reports on the state of the environment in relation to matters such as biodiversity, fish stocks and rivers. Secondly, it monitors pressures on the environment, including agriculture, air pollution, housing and fishing. None of these key indicators is readily differentiated from themes proposed within the UN reporting system (2007).

As discussed earlier, an attribute that differentiates *Securing the Future* from other government monitoring systems is the inclusion of new indicators that address the

sustainability debate in relation to social justice and environmental equality. These indicators are more commonly represented in radical approaches to sustainability.

## Sustainable communities indicators

**Exhibit 5.11 Indicators in the sustainable communities theme**

| |
|---|
| – Land recycling: (a) New dwellings built on previously developed land or through conversions (b) all new development on previously developed land |
| – Dwelling density: Average density of new housing |
| – Economic growth: GDP* |
| – Productivity: UK output per worker |
| – Households and dwellings: Households, single person households and dwelling stock (contextual indicator) |
| – Active community participation: Informal and formal volunteering* |
| – Fear of crime: (a) car theft (b) burglary (c) physical attack |
| – Workless households: Population living in workless households, children and working age* |
| – Economically inactive: Percentage of people of working age who are economically inactive * |
| – Childhood poverty: children in relative low-income households* |
| – Young adults: 16-19 year-olds not in employment, education or training |
| – Pensioner poverty* |
| – Pension provisions: Proportion of working age people contributing to a non-state pension in at least three years out of the last four |
| – Education: 19 year-olds with level 2 qualifications and above* |
| – Sustainable development education: (to be developed to monitor the impact of formal learning on knowledge and awareness of sustainable development) |
| – Health inequality: infant mortality and life expectancy* |
| – Healthy life expectancy (a) men and (b) women |
| – Mortality rates: Death rates from (a) circulatory disease and (b) cancer, below 75 years and for areas with the worst health and deprivation indicators, and (c) suicides |
| – Smoking: Prevalence of smoking (a) all adults (b) 'routine and manual' socio-economic groups |
| – Childhood obesity: Prevalence of obesity in 2-10 year-olds |
| – Diet: Proportion of people consuming (a) five or more portions of fruit and vegetables per day and (b) in low income households |
| – How children get to school |
| – Access to key services |
| – Number of people and children killed or seriously injured |
| – Mobility: no. of trips and distance travelled per person* |

| |
|---|
| – Social justice* |
| – Environmental equality* |
| – Air quality and health: a) Annual levels of particles and ozone (b) days when air pollution is moderate or higher |
| – Housing conditions: (a) Social sector homes (b) vulnerable households in the private sector in homes below the decent homes standard |
| – Households living in fuel poverty containing (a) pensioners (b) children (c) disabled/long-term sick |
| – Homelessness: a) Number of rough sleepers (b) number of households in temporary accommodation (i) total (ii) households with children |
| – Local environmental quality: Assessment of local environmental quality |
| – Satisfaction in local areas: Percentage of households satisfied with the quality of the places in which they live (a) overall (b) in deprived areas |
| – UK international assistance: Net Official Development Assistance (a) per cent of Gross National Income (b) per capita |
| – Well-being* |

Note: Headline indicators are indicated by an asterisk
Source: United Kingdom government 2005.

The issues covered within the theme of sustainable communities are extensive. The indicators encompassed by this theme mainly cover issues of poverty, health, crime, access, mobility, and local and domestic environments. These key indicators are not dissimilar to points incorporated in the UN indicators for sustainable development monitoring system (2007). An addition to the UK *Securing the Future* are the indicators of mobility and local and domestic environments.

**In summary**, the UK government monitors four key themes of sustainability: sustainable consumption and production, climate change and energy, protecting our natural resources and enhancing the environment, and creating sustainable communities and a fairer world. The monitoring system is different from other sustainability reporting systems in three significant ways. It has a method of categorising indicators thematically, includes indicators that capture aspects of sustainability that have not been reported on in the past and some indicators can appear in more than one area in the monitoring system.

The UK strategy moves indicators from their conventional policy and research mandates. This approach encourages integrated thinking as the conventional boundaries are removed, which allows policy makers and researchers to consider how indicators of one dimension interact with others. Moreover, indicators are not restricted to reporting on one

issue. The inclusion of new key indicators within this monitoring system is an important step differentiating the type of data reported from the conventional to an expansive approach.

### 5.4.2 Assessment of the framework

In the assessment of the attributes that make *Securing the Future* successful, the strengths of this framework are discussed, which in turn are the attributes that differentiate this monitoring system from others. The current limitations of *Securing the Future* monitoring system will also be noted.

**What attributes make this monitoring system successful?** Considering sustainability reporting has only being practised for a short period, as a single organisation the UK government has produced some promising developments, two of which are particularly noteworthy. Firstly, the deviation from the conventional typology for indicator categorisation is promising due to the fact that the development of key themes to describe sustainability opens opportunities to better report on interrelationships between economic, social and environmental aspects. Secondly, innovative indicators are present in this monitoring system that deviate from the more conventional indicators to incorporate new elements of the sustainability debate. These include those linking social justice to environmental well-being. Such attributes result in better reports on the interrelationships between the dimensions of sustainability.

*Typology to categorise indicators.* As has been previously discussed, the UK government has put forward an alternative categorisation process for sustainability indicators. This is a clear strength of this framework. The typology for categorising the indicators reflects the government's key aims of sustainability. The key aims are to achieve sustainable consumption and production, address climate change and energy sustainability and protect our natural resources, as well as enhancing the environment and creating sustainable communities (UK government 2005, p. 15). As discussed, this departure from the conventional typology allows indicators to be categorised outside the conventional dimensions of sustainability. This arrangement allows the development of linkages between indicators, which have traditionally been categorised in different

spheres. For example, the theme of sustainable consumption and production incorporates indicators that have applicability across different systems (UK government 2006, p. 9).

*Innovative indicators***.** Many of the indicators encompassed in this and other sustainability reporting systems are drawn from data collected for other purposes. For example, indicators such as economic growth measured by GDP, economically inactive measured by *Percentage of people of working age who are economically inactive* (UK government 2006, p. 62), and fear of crime measured by *car theft (b) burglary (c) physical attack* (UK government 2006, p. 68). However this reporting system has incorporated a selection of new indicators that are not part of other reporting systems. That is, these indicators have been developed specifically to report on sustainability. Examples include indicators that plot *domestic material consumption (DMC) against gross domestic product* and indicators of *well being* (UK government 2006, p. 37), *environmental equality* (UK government 2006, p. 93) and *social justice* (UK government 2006, p. 93).These indicators address more than one key theme. For example, the indicator of *domestic material consumption* has salience to themes of consumption and production patterns and the correlating impact on the environment. Likewise the indicator of *environmental equality* has salience to both the theme of poverty and of health effects.

Some of these indicators provide an insight into a contribution or effect on a system. For example, *domestic material consumption (DMC) against gross domestic product* monitors the total mass of materials directly consumed by the economy against GDP (UK government 2006, p. 37) and area of sensitive UK habitats exceeding critical loads for acidification and eutrophication monitors the capacity of the ecosystem to absorb the pollutant (UK government 2006, p. 57). These types of indicators report on how a single alteration in an economic, social or environmental element causes change to other elements of sustainability.

Other new indicators included within the *Securing the Future* monitoring system report on attributes that have not been reported on in the past, such as well being, environmental equality and social justice. In reference to the typology developed in Chapter 3, some of these indicators are considered to encompass radical attributes of the sustainability debate. The indicator environmental equality is a case in point. The indicator of

environmental equality reports on the relationship between public spaces and air quality in the built environment in deprived areas across the country (UK government 2005, p. 174). Environmental equality is an idea found within social greens thinking. Social greens argue that environmental issues stem from inequality and domination (Clapp and Dauvergne 2005, p. 11).

**Limitations of this monitoring system.** While the UK government *Securing the Future* monitoring system has offered significant innovations in sustainability reporting it still has limitations. Many of the identified limitations in the *Securing the Future* framework correlate with concerns in regard to the GRI guidelines. Of most concern is the omission of a definition of sustainability to provide the required conceptual launchpad for its measurement. Furthermore, even considering the strengths of the *Securing the Future* contribution to sustainability reporting overall, it is difficult to obtain an insight into the relationships between the indicators, particularly potential conflicts and tensions.

*Theoretical clarity of the definition of sustainability.* The UK government in their *Quality of Life Counts* report define sustainable development as 'a simple idea of ensuring a better quality of life for everyone, now and for generations to come' (UK government 1999b, p. 8). The central premise is that there will be a better quality of life for current and future generations. This definition appears to be closely aligned with the Brundtland definition of 'development that meets the needs of present without compromising the ability of future generations to meet their needs' (WCED 1987, p. 43). As has been noted (see Chapter 3), this definition has been criticised for being vague. It fails to define the needs, the quality and the mechanisms required to achieve an environmentally sustainable society (Norgaard; Redclift; Solow; cited in Castro 2004, p. 196). This definition lacks the operational capacity to address contentious aspects of sustainability. It inadequately addresses social concerns and fails to offer an indication of a standard level at which the environment should be conserved. It suggests a 'business as usual' approach reflective of the neoliberal discourse discussed in Chapter 3. This definition also fails to acknowledge the threats to sustainability that a radical approach would address.

Key aims (referred to in the strategy as priority areas) are offered. Much of the content incorporated around these key aims is descriptive information on the topic and is not

provided in the detail required to operationalise the measurement of sustainability, as illustrated in Exhibit 5.12.

**Exhibit 5.12 Sustainable communities indicators**

> **Climate change and energy**. The effects of a changing climate can already be seen. Temperatures and sea levels are rising, ice and snow cover are declining, and the consequences could be catastrophic for the natural world and society. Scientific evidence points to the release of greenhouse gases, such as carbon dioxide and methane, into the atmosphere by human activity as the primary cause of climatic change. We will seek to secure a profound change in the way we generate and use energy, and in other activities that release these gases. At the same time we must set a good example and will encourage others to follow it.

Source: United Kingdom government 2005, p. 17.

More precise detail on what and how much is to be sustained is required from the UK system to operationalise these aims. Without this detail it is uncertain what the reporting entity's theoretical understanding of the concept is and what it hopes to achieve from measuring it. Critically, the UK government does not offer a robust definition of sustainability.

This lack of a robust definition of sustainability is reflected through the monitoring system by its inability, or unwillingness to critically report on sustainability. The nations economic health is still reported by applying conventional practices; contentious issues surrounding the sustainability debate are not reported against and inadequate targets and benchmarks are offered. This limits the capacity of the monitoring system to capture the complexities of the sustainability debate. This marginalisation of more alternative approaches suggests an aligned to a liberal theoretical approach. These aspects to concluded this theoretical position are further discussed.

This reporting system remains overall a conventional reporting regime even though it has incorporated some promising indicator developments such as the incorporation of measures of social well-being and environmental equity. Of most concern is that the nation's economic health is measured using conventional reporting practices (UK government 2006, p. 62). The measurement of GDP, as has been noted earlier, is an inadequate indicator of social and environmental objectives in the long term and is not a good measure of individual and community well-being (Voisey et al. 1997, p. 43; McGregor 2003b, p. 33). The inclusion of GDP is emblematic of an emphasis on economic growth. This is also evident in the monitoring system's fourth objective of sustainable development,

which is given as the 'maintenance of high and stable levels of economic growth and employment' (UK government 1999b, p. 8). In the context of the arguments put earlier in this thesis, employment should be linked to social progress and well-being, not growth. Moreover, economic growth that supports social progress, high employment levels, protection of the environment and prudent use of natural resources should be encouraged (SDC 2004, p. 17).

Contentious issues surrounding sustainability are not addressed in the reporting system. The Rio Earth Summit identified a number of contentious issues in the sustainability debate including the need for population control, reducing resource consumption in the wealthier countries and the need for legally binding targets on emissions (Beder 1996a: xxiii). The absence of a discussion of these issues suggests a pattern of avoidance in dealing with some of the more challenging issues.

Another contentious theme, the placing of limits or constraints on the exploitation of the environment, again only has a minor role in this monitoring system. In one indicator the amount of pollutants is reported against the capacity of the ecosystem to absorb the pollutant. This indicator relates to an area of sensitive UK habitats which have been shown to exceed critical loads for acidification and eutrophication (UK government 2006, p. 57). No other limits or constraints are offered in relation to the ecosystem. Overall there is no discussion as to whether a certain level or pattern of activity is sustainable or not. Moreover the demands placed on the environment and society by economic growth are generally not discussed in any meaningful detail. Without such information it is difficult to develop from this monitoring system an understanding of the overall improvement or deterioration of the economic, environmental and social conditions.

The conventional nature of this sustainability monitoring system is also reflected in inadequate target setting. Targets are not discussed as part of the annual update of indicators. In any case, targets and benchmarks are at best an inadequate approach to measuring sustainability because they tend not to address medium and long term requirements for sustainability (SDC 2004, p. 12).

The UK government commitment to sustainability tends to be patchy and uncertain. The Sustainable Development Commission investigation suggests that the UK government

does not appear to adjust policies if headline indicators are moving in the wrong direction. This indicates that the sustainable development strategy and its indicator reporting system has limited leverage in driving change (SDC 2004, pp. 6-7).

In a political economy typology the UK government *Securing the Future* monitoring system should be considered to be based on liberal values. The UK government has developed a strategy that incorporates tools to monitor and address sustainability. Green taxes were an example outlined in this strategy to advance a sustainable agenda (UK government 2005, p. 3). *Securing the Future* shows glimpses of addressing a more robust commitment to sustainability through the development of new, innovative indicators and a typology that moves away from conventional practices to some extent. However, many of these aspects are over-ridden by the dominance of the conventional reporting practices and indicate an underlying commitment to a 'business as usual' approach to addressing sustainability. The system relies on conventional measures of economic growth, avoids addressing contentious issues and sets inadequate targets and benchmarks. The monitoring system framers seem to support the concept of sustainable development and indeed celebrate the achievement of high levels of economic growth.

*The format of the indicators.* The architects of the UK *Securing the Future* monitoring system rejected aggregating data into the one single index to provide a composite assessment because it was argued that it was not practical to incorporate all of the 127 disparate indicator measures into one single index for a variety of reasons (UK government 2006, p. 9). These reasons include technical difficulties and the problem that some indicator measures are more important or complex than others and their key messages would be lost in the aggregation process (Macintosh and Wilkinson 2006, p. 5; ABS 2004, p. 7). An overall picture of progress of sustainability was developed by providing a 'traffic lights' approach. This involves quantifying the number of traffic lights that are green (representing progress), amber (representing little or no change) or red (representing regression) across all the indicator measures (UK government 2006, p. 9). While this traffic light system represents change in a particular indicator, it does not communicate the level of progress or regression, or the flow on change to another indicator. In this approach the interrelations between the indicators are not communicated sufficiently, particularly the flow on effects on other aspects of sustainability arising from

changing indicator performance. As demonstrated in the earlier discussion of the GRI, the suite-of-indicators reporting format (with supporting narrative assessment) it has adopted remains simplistic and requires methodological advancement if is to be applied to complex issues like sustainability (GRI 2002, p. 44, Macintosh & Wilkinson 2006, p. 5; ABS 2004, p. 7; Dalal-Clayton & Sadler 2004, p. 24).

*The selection of indicators.* It is not made explicit the reasons for selecting indicators to report on sustainability. The selection of indicators is linked to the purpose and priorities evident in the UK strategic framework on sustainability (UK government 2005, p. 12). It is therefore important that the 'purpose and priority' is clearly articulated in the strategy in order to facilitate the selection of indicators. As discussed, the strategy does not incorporate a comprehensive definition of sustainability nor are the key aims explored in a manner that enables the purpose and priority of indicators to be readily apparent. The aims of sustainability are not communicated to a level that could be operationalised for measurement. Hence the reader is left with little insight into the conceptual fit between the selected indicators and the UK government's understanding of sustainability.

In summary, the UK government has made a significant contribution to sustainability reporting. It is a useful contribution as it has pushed the boundaries of national government sustainability reporting practices. It has provided an indicator typology that has moved away from conventional reporting practices and has proposed new indicators to measure sustainability. These developments are positive but the model has limitations. This monitoring system still lacks theoretical clarity about what is being monitored. Nor does it provide indicators that address many contentious issues in the sustainability debate and work remains to be done on the development of indicators to communicate linkages between the dimensions of sustainability. Again like the GRI guidelines, the underdeveloped nature of this monitoring system is to some extent to be expected, as it is historically limited, and general operationalised within the liberal discourse. Theoretically underpinned by liberal values, consequently this system has limited capacity to provide assessments of threats to economic, social and environmental sustainability as understood by more radical thinkers. Nevertheless its innovations in the field of monitoring systems, however limited, have caused the UK government *Securing the Future* monitoring system

to be considered the benchmark in the context of the current state of national government sustainability reporting.

## 5.5 Conclusion

Overall, this chapter has identified two monitoring systems for sustainability that represent benchmark examples from government and corporate reporting. As leading benchmark examples these two entities are acknowledged for their contribution to the development of sustainability monitoring systems. It seems timely to re-iterate the stated need for the development of sustainability reporting and how these benchmark examples address this need. It was argued earlier that there was a need for sustainability reporting by international organizations, governments and corporations to better report on the interrelationships between economic, environmental and social systems.

For corporations current sustainability reporting represents a significant shift from conventional practices. The GRI has played a substantial role in facilitating this change. Three key aspects of its guidelines are noteworthy as a contribution to sustainability reporting:

1 The GRI offers a comprehensive list of social, economic, and environmental indicators to monitor sustainability for application within corporations.

2 The GRI represent movement away from individual performance measurements to reporting on broader concepts encompassed within sustainability

3 Reporting also provides a focus on the entity's contribution to the sustainability of a larger economic, social and environmental system. This has placed an emphasis on internal organisational impacts and also its wider external impacts on society and its environment. Reporting on a wider external impact provides a more holistic approach to reporting. A combination of these attributes within the reporting process leads to a reporting system that is better able to communicate the sustainability of the whole system, and might increase knowledge on how these systems interrelate and impact positively and negatively on each other.

The UK government has also made a contribution to developing reporting frameworks that are better situated to report on the interrelationships between the different dimensions of sustainability. Their contribution has been twofold: the development of a new typology to categorise indicators and the development of new indicators to contribute to measuring sustainability. A new typology and the development of new

indicators moves sustainability reporting away from conventional monitoring practice. It also attempts to address issues that cross the dimensions of sustainability and report on key attributes important to the sustainability debate. However, reporting on these aspects remains limited.

Even with these significant advances, limitations are present. Neither of the frameworks discussed above has developed an adequate monitoring system to report and communicate the interrelationships between the various spheres. That is, the monitoring systems above are still limited in their capacity to report on how one aspect of economic, environmental, or social performance might cause changes to other aspects of sustainability. Moreover these monitoring systems still fail to communicate coordinated movement across a set of performance measurements. Instead they report random improvement within a range of measurements.

To adequately communicate such a performance, a conceptual launchpad is required. It has been observed that an evident theoretical underpinning is not present in their stated definitions of sustainability. Without conceptual direction it is difficult to ascertain how and why indicators have been chosen, which leaves unanswered questions on how the indicators inform and where are they sited within the wider context of sustainability. It is also difficult to identify the key issues reported on if it is not clear what the reporting organisation is attempting to measure. The monitoring systems discussed above are situated firmly in the liberal discourse. Concepts associated with radical approaches have been underdiscussed or marginalised.

Despite the shortcomings of both the GRI and the UK government *Securing the Future* system, given the current state of sustainability monitoring, these two systems can be considered examples of advanced sustainability reporting. In Chapter 6 and 7, these international benchmark sustainability monitoring systems will be applied to case studies to enable a comparison of the performance of the Australian monitoring systems against the international benchmarks both at a government and corporate level.

# Chapter 6: Corporate reporting in Australia – 2 case studies

As outlined in the introduction the research design employs a comparative cases study approach. The identified Australian cases studies will be reviewed over the next two chapters. This chapter reviews a selection of corporation attempts to monitor sustainability in Australia. These are the monitoring systems of 1) Origin Energy and 2) AGL. Chapter 7 reviews two Australian national government sustainability monitoring systems, *Are we Sustaining Australia*, developed by Environment Australia and *Measuring Australia's Progress* (MAP) developed by the ABS.

## ORIGIN ENERGY

### 6.1 History of the Origin Energy report

Origin Energy is one of Australia's largest energy companies, generating $909 million for its stakeholders in the financial year of 2004/05 (Origin Energy 2005, p. 38) and employing 3400 employees in Australia, New Zealand and the Pacific (Origin Energy, n.d., online, p. 3 ). It has operations in Australia, New Zealand and the Pacific and has a client base of more than two million customers. Origin Energy participates in most aspects of the energy supply chain, including gas and oil exploration, production, power generation, energy retailing, utility network ownership and management (Origin Energy 2005b, p. 1).

Origin Energy has released five sustainability reports, the first in 2002. This thesis will consider reports from 2002 up to and inclusive of 2005. In 2006 only a summary report was released due to an internal review of the company's sustainability aspirations and targets. Since completion of the thesis a 2007 report was released in April 2008 (Origin Energy, n.d., online, p. 3) and is hence beyond the scope of this study.

In the 2002 Origin Energy report, the company outlined reasons for developing a sustainability report. This enterprise sees that to improve the sustainability of its activities it must identify, implement and measure the key outcomes that are the most important drivers of sustainable performance. It holds that it must set objectives for those outcomes which are most able to be influenced significantly by its activities. The purpose of the 2002 report was to identify and begin reporting on these objectives under the categories of environmental, social and economic performance (Origin Energy 2002, p. 2).

## 6.2 Outline of the sustainability report

The 2005 report consists of three main components: background on the reporting company, a performance summary including indication of objectives achieved and a report on the sustainability objectives. Items included in the background section include statements of commitment, the company's values and principles and an outline of the company.

The internal operations of the company are summarised in the background section in considerable detail. The section outlines the organisation's structure and operations and the nature of the markets within which it operates. Insight into the major products and/or services offered is provided, along with a map of Australia and New Zealand stating where these services are located. In addition, the volume of product produced is provided as is the number of customers served by the company. Throughout this report information is supplied which contributes to an understanding of the company's structure and operations. This information includes the scale of the organisation, the number of employees, total revenue, gross value added and net debt to capitalisation ratio.

The background section also summarises the company's sustainability achievements over the past year. However, the report neglects to mention company objectives that were not achieved. The achievements include four environmental, four social and one economic achievement. Claims are forwarded that the company has responded to climate change, equal opportunity in the workplace for women and workplace safety. Furthermore the company is assisting customers in hardship and has an employee volunteer program. However, actions in regard to climate change and assisting customers in hardship are responses to issues external to the company's core operations. Origin Energy itself comments that these achievements, while sound, 'were easy gains when compared to the challenges ahead of us' (Origin Energy 2005, p. 3).

The section of the report on the key components of sustainability is initially introduced with a summary table of the individual strategies, actions and their performance. Performance with regard to each strategy is provided on a simple, four point scale that records an action as either achieved, in progress, not achieved or verified. However, it is unclear from the contents of the report how it was determined if the strategy had

achieved its required performance or not. Actions for each of the strategies are provided but it is not apparent how these actions correlate with achieving performance. The strategy – action reports represent a set of implicit performance indicators.

A section on the structure of the key components of sustainability is divided up into three main foci: economic, social and environmental. The components are then segmented into a hierarchical structure, and the objectives are defined, followed by strategies. These strategies incorporate actions undertaken and, on rare occasions, benchmarks or targets. Indicators have not been developed that sit underneath these strategies, i.e. no suite-of-indicators to articulate how each strategy will be reported against is offered. A narrative assessment is provided as the reporting format to evaluate each objective. The approach taken is essentially to provide sets of crude indicators on a four point scale followed by strategic statements which are evaluated by narrative assessment.

Reference to company data occasionally occurs during the discussion of a strategy. For example, data is supplied for reports on annual greenhouse gas impact from operators, equity interest and energy supply. However this data is not a focus of the discussion in the narrative text. The social component consists of three key themes, each with its own objectives. These key themes then incorporate appropriate objectives and strategies for achieving those objectives. For the economic and environmental component no key themes are defined and objectives with their appropriate strategies are only outlined. The objectives and strategies are illustrated in Exhibit 6.1 to 6.3.

These strategies will be described, and the GRI will be drawn on to provide a point of comparison. Providing a point of comparison enables a more complete picture of what is and is not reported upon. In Chapter 5 the GRI guidelines were identified as the international benchmark for corporate reporting.

**Exhibit 6.1 2005 Origin Energy sustainability reporting framework – the economic component**

NOTE:
This exhibit is included on page 176 of the print copy of the thesis held in the University of Adelaide Library.

Source: Origin Energy Sustainability Report 2005, pp 8-13.

The Origin Energy report considers three key economic strategies. The first strategy considers the monetary flows between the organisation and its key stakeholders. This strategy encompasses a benchmark, *shareholder returns are required to be in the top third of comparable companies*, which enables an understanding of where the company is placed relevant to other organisations. The next strategy considers appropriate rewarding and remuneration to deliver the required business objectives, *ensure the reward and remuneration levels for employees required for the business to meet its objectives*. The other two strategies that sit under the economic dimension consider community investment. These strategies are included to ensure that the contribution the company makes to the community through payment obligations to government are identified and reported on, and provide an indication of appropriate levels of investment in community activities.

The GRI 2006 guidelines state that the role of the economic indicators should be to illustrate flows of capital among different stakeholders and to give an indication of the main economic impacts of the organisation on society (GRI 2006, p. 25). The economic strategies offered in the Origin Energy report have a focus on the internal operations of the company. The strategies refer to shareholder returns, remuneration to employees and community giving. Community giving does not necessarily have a relationship to economic impacts. In reference to the GRI guidelines, Origin Energy is limited in its reporting of the main economic impacts of the organisation's activities particularly as reporting on external economic impacts is not given equivalent emphasis as reporting on the internal economics of the operation. An understanding of the wider community issues

that result from the company's operations and the services it offers would strengthen this report's ability to monitor sustainability, as the GRI guidelines suggest.

As identified, the report's economic indicators focus on internal reporting and do not include adequate information on external economic impacts. For example it does not consider economic externalities created by the reporting entity that might affect communities such as the positive or negative economic impacts of the company's operations in the community. However, a discussion of community investment is offered. While this investment in the community is positive, it cannot necessarily be seen as an action to address social sustainability. It is important to differentiate between community investment and the monitoring of the enterprise's economic impact on society. Community investment is a social initiative. However social sustainability is affected by the external economic impact of corporate operations, such as land use, product pricing etc. and environmental externalities such as pollution (Labuschagne et al. 2003, p. 377). Simply offering community investment does not necessarily contribute to social sustainability. When compared with the GRI recommendations, the report fails to address the external economic impact of the operations of Origin Energy on communities.

**Exhibit 6.2 2005 Origin Energy sustainability reporting framework – the environmental component**

NOTE:
This exhibit is included on page 178 of the print copy of the thesis held in the University of Adelaide Library.

Source: Origin Energy Sustainability Report 2005, pp 8-13.

The emphasis of Origin Energy's environmental strategies is on greenhouse gas emissions. The organisation sees this issue as one of its major challenges and its efforts to minimise environmental impact on the local environment is well reported (Origin Energy 2005, p. 3). Three out of the four environmental objectives have their focus on greenhouse gas emissions. The fourth objective has a focus on eliminating and/or minimising any adverse impact on the local environment. In this respect there is a focus on legislative responsibilities, such as considering obligations under environmental laws, regulations or licences.

The GRI states that environmental indicators should enable consideration of the impact of an organisation on the environment (GRI 2006, p. 27). The GRI suggests that

environmental indicators incorporate three key areas: environmental inputs (e.g. materials, energy and water); output into the environment (e.g. emissions, effluents, waste); and other miscellaneous aspects (e.g. biodiversity, environmental compliance, impacts of products and services, environmental expenditure and investment). Origin Energy reports on all of these areas except environmental expenditure and investment. The company does not always apply the reporting foci suggested by the GRI.

The GRI framework also suggests that organisations should provide both absolute and normalised environmental measures (e.g. resources per output). These measures should be provided to enable an understanding of the magnitude of the use or impact and to provide a sense of the organisation's efficiency. Measures such as these also allow comparisons to be made between the environmental impact of organisations of different sizes (GRI 2002, p. 48). Origin Energy's strategies generally only report in absolute figures. Comparison to benchmarks outside the organisation is limited, with the percentage of the total of Australia's stationary energy emission being one of the few examples. Hence, the environmental strategies do not provide an overall indication of the organisation's total impact on the environment.

**Exhibit 6.3 2005 Origin Energy sustainability reporting framework – the social component**



Source: Origin Energy Sustainability Report 2005, pp 8-13.

The key themes within the Origin Energy's social strategies are to provide a satisfying and rewarding work place, a safe workplace and maintaining community support and goodwill. These themes focus on internal social concerns, primarily in regard to employees and developing a relationship with the community to ensure a licence to operate. The impact on the community from Origin Energy's operations and the services they offer is not directly monitored.

As identified, community support and goodwill is a key theme but this does not consider the social sustainability of the enterprise within its community it operates within and indirectly other communities that it operations impact. An exception is the strategic consideration given by the report to the issue of customers experiencing hardship. The actual strategy is *Facilitate improved access to services and support the disadvantaged in our community so they can also enjoy the comforts of energy use*. Interestingly this strategy is located within the objective of *To maintain community support and goodwill for the company's activities*. The real objective seems to be economic in terms of maintaining a licence to operate rather than consideration of the wider social impacts of company operations. A stronger indication of how company operations affect the community would strengthen the indicator framework.

The GRI states that social performance indicators should focus on the organisation's impact on the social system in which it operates (GRI 2006, p. 29). The GRI acknowledges that not all social impacts are captured by their framework, and their measures do not enjoy the consensus of its environmental indicators (GRI 2002, p. 51). The GRI's key social themes concern labour practices, human rights and the broader issues affecting consumers, community and other stakeholders in society. The social performance focus in the GRI guidelines varies markedly from how this is addressed in the Origin Energy report. Origin Energy concentrates on internal labour practices and much less so on the broader issues affecting the consumer, the community and other stakeholders. The actual impact on the community from Origin Energy's operation and the service they offer is not directly monitored.

**In summary**, comparison with the GRI guidelines indicate that the environmental component of the Origin Energy report is the most similar to the reporting systems recommended by GRI. Origin Energy reported on all of the environmental areas recommended by the GRI except one. The section reporting on economic areas did conform to some extent to GRI guidelines but the monitoring of external economic impacts caused by organisational activities was quite limited. When compared with the GRI recommendations for corporate sustainability reporting the social component of the Origin Energy report was the least developed. The provision of a stronger understanding

of how Origin Energy's operations affect the community would significantly strengthen this framework.

## 6.3 Review of the reporting system in context of addressing the research questions

As discussed, the review of Origin Energy's reporting system for sustainability will consider these research questions for this study. The questions are How is sustainability conceptualised and what phenomenon are they seeking to measure, How does the organisation measure sustainability? Do the frameworks have any validity as genuine measures of sustainability?

### 6.3.1 How is sustainability conceptualised and what phenomenon are they seeking to measure?

No explicit definition of sustainability is included in the Origin Energy report, although a statement at the beginning of the report provides limited insight into the corporation's interpretation of sustainability. The corporation report suggests this can be understood as 'Ensuring the long-term sustainability of our business by balancing environment, social and economic impacts in a transparent way' (Origin Energy 2005, p. 1). The statement places an emphasis on sustaining the business and provides no specific focus on improving societal or environmental conditions which may be affected by the company's activities. The report provides no insight into how the systems interact in terms of critical relationships. The reader is left uncertain about what is to be sustained and by how much.

Origin Energy's vague statement of commitment to sustainability makes it unclear what it is hoped will be achieved by its reporting on sustainability. Its failure to provide a clear operational definition of sustainability means that there is no conceptual launchpad for the measurement of sustainability, as discussed by Sumner (2004, p. 117). The company's statement on sustainability tends to privileges economic sustainability or at least does not countenance a discussion of the external economic impact of company operations. There is only a vague commitment to environmental sustainability and social sustainability is under reported, which allows for 'business as usual' to proceed. Origin Energy's approach is an example of what Norman & MacDonald (2004, p. 6) suggest is to provide a definition of sustainability that when presented sounds plausible on the surface but remains vague and therefore non-committal when unpacked.

Without a conceptual launchpad no insight is provided into why the strategies were selected or why the strategies discussed should be considered as accurate reports on sustainability. This is consistent with the GRI guidelines. The GRI framework itself lists over 100 indicators. No form of guidance is given on how to select the most appropriate indicators, or what mix of indicators is required to be able to accurately report on sustainability. This raises doubts about an indicator selection process that seems everywhere to be ad hoc. Origin Energy's strategies, therefore, lack context and rationale. This argument is consistent with that of Pinter et al. (2005, p. 16) and Luckman (2006, p. 261) who suggest that if conceptual uncertainty is present it leads to confusion and a lack of consensus on the specific elements of sustainability to be reported on and an inability to recognise links among goals, strategies, indicators and outcomes.

An analysis of the report was undertaken to suggest the ideological position of Origin Energy's monitoring system given that the definition of sustainability provided by the corporation was vague and unclear. Four main goals were claimed by the company. These goals were to manage risk, value employees and customers, minimise impact on the environment and sustain economic growth.

Managing the various risks that may affect the company's business performance is a key goal of the monitoring system. The key risk mitigation strategies are occupational health and safety, and environmental management. The main strategy that addresses commitment to risk mitigation systems is: *continuously improve the health, safety and environmental management system* (Origin Energy 2005, p. 31). Community relationships are also important to ensure a license to operate in that community. The following strategies address this risk factor: *maintain an open and constructive approach to gaining access to land and resources* and *maximise value of company sponsorship to recipients by focusing on activities that most leverage Origin Energy's skills and resources* (Origin Energy 2005, pp. 8-13). The risk strategies are focused on those which could lead to enhancing economic return through improved community relations thus ensuring a licence to operate, and reducing visible impact that might harm the company's reputation such as injuries at the workplace. Community sponsorship is determined on maximising greater return for Origin Energy

rather than incorporating a more holistic decision making process that includes social and environmental factors.

Employee and customer relations are viewed as important by the company to ensure the success of the business. The Managing Director's statement, under the heading of social (sustainability), says (Origin Energy 2005, p. 4):

> Our employees are a critical stakeholder group as our success relies on attracting and retaining the best people for the needs of our business.

Foremost, Origin Energy's sustainability report suggests that employees are seen as important to business survival, rather than being part of a workplace that is fulfilling and allows a contribution to society. However, strategies are included that go some way to incorporating features that contribute to a more fulfilling workplace including: *provide employment conditions consistent with community expectations*; and *provide access to the necessary job training and assist employees obtaining additional skills to develop their careers* (Origin Energy 2005, p. 8-13). Only general indications are offered as to how this strategy has been achieved so it is difficult to ascertain the conditions that are seen to be consistent with community expectations for the former strategy. The narrative text discusses culture and leadership programs and work-life balance initiatives in general terms.

Managing the environment is couched in the terms of minimise, decrease, manage environmental impact, and improving environmental management practices. Statements that address the company's position include: 'decrease the greenhouse gas intensity of the energy available for consumption', 'to assist our customers manage the environmental impact of their energy use', and 'focused on improving our environmental management practices and performance' (Origin Energy 2005, p. 3). These statements avoid a commitment to reduction of the impact. Use of language which suggests a higher level of commitment such as constraints, eliminate, or limits on its use of environmental resources do not feature in the report.

The report does however make a strong statement in reference to emitting greenhouse gases and the implications for doing so. The report states (Origin Energy 2005, p. 14):

> Origin Energy believes energy producers and consumers must acknowledge that we are now operating in an environment increasingly constrained in its ability to absorb greenhouse gases without unacceptable environmental impacts.

However, the report stops short of stating what is an unacceptable environmental impact, and outlines unless an economic consequence of polluting is established through a regulatory framework, it will not change current practices. In Origin Energy's words it states (Origin Energy 2005, p. 14):

> However, while investors are anticipating a carbon constrained future, there is little appetite to invest without a suitable regulatory framework.

This statement re-enforces the dominance of the economic imperative within environmental decision making.

Prioritising the health of the company's economic system over environmental and social concerns is reflected within key objective and strategies of the report. The objective *to provide sustainable returns to Origin Energy's key economic stakeholders* and the strategies that sit underneath this objective emphasise economic sustainability, rather than a holistic approach (Origin Energy 2005, p. 38-39). The objectives concentrate on financial returns to stakeholders rather than ensuring economic growth is in areas that will lead to a more sustainable future, such as investment in solar or wind power. Where investment in renewables such as solar energy or wind power is referred to this is qualified by the words *economically viable* (Origin Energy 2005, p. 17). Strategies are included that position economic outcomes above what is achieved for the environment or social gain, as in *seek economic avenues for reducing greenhouse gas emissions in our energy production activities and identify and invest in renewable energy technologies that are economically viable* (Origin Energy 2005, p. 17).

The report contains no discussion of the tensions between the economic, social and environmental dimensions of the company's operations. Instead Origin Energy suggests 'we can have it all' as evidenced by the following strategies and aims, which are reported without any sense of irony that one might affect the other: the economic strategy *Provide shareholder returns in the top third of comparable companies* (Origin Energy 2005, p. 39) and the following two strategies *Facilitate improved access to services and support the disadvantaged in our community so they can also enjoy the comforts of energy use* (Origin Energy 2005, p. 36) and *On completion of use, ensure land is managed and/or rehabilitated to appropriate environmental standards* . (Origin Energy 2005, p. 24) Restoring land quality and supporting

the disadvantaged in the community to maintain access to supply of electricity might cost more than many businesses would consider acceptable if they were looking for financial growth and sustained cash flows.

Targets are included in the report but are mostly only incorporated for less contentious issues. For example:

- Greenhouse gases from the environmental refrigerants' portfolio (Origin Energy 2005, p. 8)
- Employee lost-time and moderate medical treatment injuries (Origin Energy 2005, p. 10)
- Green electricity customer base (Origin Energy 2005, p. 18)
- Installation target for connected solar systems (Origin Energy 2005, p. 18)

Overall targets are infrequent and ad hoc. There inconsistency raises concern for their adequacy in addressing medium and long term requirements of sustainability.

Solutions offered in the report for the achievement societal and environmental outcomes include good management practices, the use of technology, and supports the application of market based incentives. The role of technology is advocated to help to reduce greenhouse gas emissions. The report states (Origin Energy 2005, p. 14):

> Origin Energy supports policies that advocate early action and complement longer term efforts to develop and deploy breakthrough technologies. We also support the use of market based instruments to create the incentives for private investment in lower greenhouse intensive technologies.

This statement is supported by a strategy that encourages investment in technology that reduces greenhouse gas emissions. This strategy is *identify and invest in renewable energy technologies that are economically viable.* It is offered as a solution to reduce risks to climate change by investing in a sustainable energy supply (Origin Energy 2005, pp. 8-13).

Good management practices are emphasised in a strategies such as:

- *to continuously improve the health, safety and environmental management system* (Origin Energy 2005, p. 31) emphasising the importance of management systems to help deliver social sustainability.

- *maintain an open and constructive approach to gaining access to land and resources* (Origin Energy 2005, p. 10) emphasising the importance of consulting with the community to help ensure social sustainability.
- *improve the company's greenhouse gas measurement methodology, audit and report regularly* (Origin Energy 2005, p. 17) to contribute to good data management to inform management practices.

These strategies represent emphasis on management practices such as improving systems, consultation practices, and data management.

Improved data reporting on the company's relationship to the environment and community, such as the opportunity cost to the community and to the environment of developing tracts of bushland are not included in its latest report. Origin Energy does discuss improving reporting on greenhouse gas emissions. This is the only significant indication that data systems are being improved in response to reporting on sustainability. This observation concurs with Norman and MacDonald's (2004, p. 5) observation that what is referred to as sustainability reporting is not about contributing new data. Therefore it is uncertain whether these monitoring systems can be developed, or there is willingness to develop these reporting systems adequately to address the risks to sustainability. Indeed many of the strategies included in the report are not good examples of the parameters of sustainability discussed in the GRI guidelines. For example, the reports do not monitor the whole economic system, as it suggested by the GRI (GRI 2006, p. 25), as they only provide limited disclosure of social and economic impacts on the communities they operate in.

Moreover, it is unclear whether the development of a sustainability report is the motivator for the policy initiatives outlined in these reports. Many of the initiatives discussed in this report could happen in the organisation without any reference to sustainability. Green office programs, employee giving programs and women in the workplace initiative, are all examples of initiatives discussed in the narrative to address assessment of achievement of the strategy. The green office program is discussed in the report and states (Origin Energy 2005, p. 24):

> In its fourth year, our Green Office Program operates across nine sites. Over time we have resulted in reduced office waste and promotion of recycling.

However, while the launch of this initiative coincides with the release of its first sustainability report, this and other initiatives discussed in the report can be conducted without reference to sustainability. The lack of a conceptual launch pad in Origin Energy's report makes it unclear how what is described as a sustainability report differentiates itself from either an environmental, economic or social report.

Like the GRI guidelines, the typology applied to categorise strategies is the conventional model discussing sustainability in compartmentalised silos of the social, economic and environmental. This framework does not situate itself well to consider the complex relationships embedded in sustainability or represent a holistic monitoring system. The structure of the report leaves little scope for considering either complementary or conflicting strategies. The interrelationships between the strategies are not discussed within the report. As well conflicts between the various strategies, particularly that sit within different systems are not identified or discussed. These issues in Origin Energy's reporting system are similar to those suggested by Macintosh & Wilkinson (2006, p. 14) as symptomatic of liberal sustainability monitoring.

The literature in this area suggests that corporations in general have not recognised the paradigm shift required for this type of reporting, which requires numerous conceptual shifts including the consideration of the external impacts of the enterprise on the social system (Murray et al. 2006, p. 6; Labuschagne et al. 2003, p. 379). The review of this report tends to confirm such studies. Origin Energy's sustainability report continues the conventional neoliberal and liberal practice of priveliging the economic dimension of sustainability over social and environmental considerations. In this sense Jones et al. (2005, p. 19) suggests that corporations are either reluctant or do not have the skills or knowledge to develop the required models and tools to report on external impacts on the social system.

While radical ideas are not included in the strategies, Origin Energy does go some way to incorporating aspects of social and environmental sustainability that have not been considered in the past. Strategies, for example, that can be seen as socially progressive in Origin Energy's report include *provide employment conditions consistent with community expectations* (Origin Energy 2005, p. 10) and *facilitate improved access to services and support*

*the disadvantaged in our community so they can also enjoy the comforts of energy use* (Origin Energy 2005, p. 36).

The first strategy addresses matters such as work-life balance, equal opportunity, and removing cultural barriers. The second strategy acknowledges community concerns of access to essential services, of which electricity is one. Environmental strategies also worthy of mention include the reduction of greenhouse gas emissions and responding to the fact that these contribute to climate change. While many of the strategies place emphasis on responding to economic concerns as the prime motivator for change in reducing greenhouse gas emissions, a strategy is outlined that requires the improvement of the company's greenhouse gas measurement methodology, audit and reporting regime. To date the company is not required by legislation to report on greenhouse gas emissions.

Through the lenses of the political economy typology it would appear from analysis of Origin Energy's report that a liberal approach to sustainability has been applied. It is not a pure neoliberal approach as the production of a sustainability report to implement strategies that address the issue of sustainability implies that there is a role for corporations outside of the market to implement change. Initiatives that are included under the banner of social and environmental sustainability also suggest that the company believes that it has a role in implementing sustainability. Assisting customers in hardship to access electricity and reducing greenhouse gas emissions are both responses to concerns about social and environmental sustainability.

The approach to implement sustainability offered by Origin Energy does not stray far from the norm and therefore situates itself within the sustainable development model. It does not touch on the concerns of any radical social theory such as preserving finite environmental resources and contributing to social and political transformation (although a commitment to the latter might be expected to be excluded by a private corporation with responsibilities to wealthy shareholders). As well it does not consider the underlying tensions between the dimensions of sustainability. Origin Energy's report recommends solutions to reduce threats to sustainability, which include good management practices such as risk management, employee relations, and environmental management through eco-efficiency. The report's goals seem likely to be drawn from normal company reporting on employee relations, customer commitments, and environmental guidelines rather than

addressing a specific commitment to sustainability. The company also offers a commitment to the implementation of new technology.

Origin Energy advocates for solutions that are aligned to the sustainable development model, as discussed in Chapter 3.5.1. This model rejects the limits to growth thesis and proceeds from a position that environmental problems can be solved through legislation, science and technology, and good management practices (WCED 1987). As suggested by Gray and Milne (2002, p. 2) the argument often presented by corporations like Origin Energy for sustainable development is no more than an extension of standard business practices. It is clear that the current structures and operations of the corporation will not be seriously questioned in this reporting system. The economic growth of the corporation is still positioned as a prerequisite for sustainability. This finding is congruent with arguments forwarded by Clapp and Dauvergne (2005, p. 178) that liberal approaches to sustainability reporting support the continuation of the accumulation of capital through unrestricted growth as corporations have managed to define sustainability in a way that fits their existing practices.

### 6.3.2 How does the organisation measure sustainability?

It was noted in Chapter 1 that sustainability reports have evolved in three main formats. This report combines narrative assessment with crude suites of indicators.

The Origin Energy sustainability report outlines objectives and applicable strategies then each strategy is reported against. The assessment process is in narrative format in the body of the report and indicates whether each strategy has been achieved or not. This assessment process is supported by a crude, suites of indicators evaluation process in the form of different coloured dots (achieved, in progress and not achieved, and verified) on whether this strategy has been achieved or not. Strategies are reported against in relation to indicators although this is not always made explicit in the narrative. Where statistical data is offered it is generally applied to support the opinions expressed in the report.

The strength of this approach is the report is flexible. It is a yearly report but does not have to report against the same suite-of-indicators each time it is produced. The report is also in an accessible format. It is written in non-technical language that is accessible to most groups in the community. Origin Energy stakeholders are likely to come from

backgrounds varying from wealthy shareholders, the communities Origin Energy serves and small retailer customers that purchase its electricity and gas.

However the flexibility of the report might also be a deficit. The report lacks suites of indicators that are linked to a clear definition of sustainability. This makes it difficult to verify its strategic claims to have made progress on sustainability.

Origin Energy's approach is an example of what Gray and Bebbington (2005, p. 1) argue is symptomatic of neoliberal and liberal sustainability reporting. That is, neoliberal and liberal monitoring systems claim to measure sustainability but there is reluctance to produce convincing evidence to support these claims (Gray and Bebbington 2005, p. 1). For example, Origin Energy's report simply indicates that strategies are either achieved or not in relation to sets of coloured dots but it does not show why this is so.

A lack of epistemological coherence and analytical robustness in Origin Energy's report disguises the right of centre liberal discourse underpinning the key themes within the reporting system. This monitoring system also discourages serious analysis of the interdependence of the dimensions of sustainability on each other, de-privileges the environmental system on which the economy and society relies and under-reports social impacts. The categorisation of strategies within the conventional typology of economic, social, and environmental aspects entrenches structures that de-privilege the environmental system. This system should not be considered in isolation as it is the heart of survival on earth. Origin Energy's approach to categorisation of indicators is widely used as McGregor (2003b, p.30) notes in reference to the *Are We Sustaining Australia?* sustainability monitoring system developed by Environment Australia.

In summary, the capacity of the report to address the sustainability achievements or otherwise of the company is limited. While it reports on actions implemented under each strategy it does not identify robust indicators for each strategy that can be monitored over a period of time. As discussed in Chapter 2 the development of robust indicators to monitor sustainability is critical to the assessment of progress against goals and objectives (IPCC 2001, p. 635; Bossel 1999, p. xi). Indicators also have many other roles, such as establishing benchmarks and identifying trend (Macintosh and Wilkinson 2006, p. 11; UN

Commission of Sustainable Development 2001, p. 9). Origin Energy's indicators are not capable of performing these roles in a meaningful sense.

Origin Energy's attempt to report on sustainability falls short of the international corporation reporting benchmark, the GRI guidelines. The GRI guidelines offer indicators that can be reported against and monitored over a period of time. The Origin Energy evaluation framework is not as robust as the GRI. Although a crude set of indicators are offered these are not sufficient to report meaningfully on the key issues. No more than vague objectives and strategies for sustainability are offered in this report.

### 6.3.3 Validity of the reporting system as a genuine measure of sustainability

Origin Energy's sustainability report demonstrates that this organisation has responded to the evolution of sustainability reporting by releasing narrative assessment reports that are combined with basic suites of indicators. It continues to release annual reports which have focused conventionally on financial reporting. Its sustainability reports do have a broader focus incorporating economic, social and environmental elements. The investment in time and resources to produce such reports signals a commitment to sustainability, as understood by this corporation. The percentage of Australian companies that produce such a report falls below the international benchmark (Commonwealth of Australia 2005, p. 4). In this sense Origin Energy's practice of producing annually updated reports is a positive development and places Origin Energys as a leader in the field in Australia.

Stakeholder consultation also features in the development of this report. The inclusion of a consultation process provides an avenue for stakeholders to express their opinions about areas of interest. The annual reports provide a mechanism that allows the community to monitor these corporations on social, economic and environmental performance to some extent. The literature in this field identifies this process as a key point of differentiation between conventional financial reporting and sustainability reporting (GRI 2006, p. 7).

Origin Energy's reports do go some way to incorporating aspects of social and environmental sustainability. Key themes reported upon include access to service for customers in financial hardship, providing employment conditions consistent with community expectations and a focus on quantifying and understanding the organisation's impact on the environment and reducing greenhouse gas emissions.

This sustainability report address the GRI guidelines to some extent. The closest alignment was reporting on the environmental dimension of sustainability, where all environmental areas were considered except one. The GRI is established as the international benchmark for corporation reporting, which suggests these reports are drawing on what is considered to be international best practice in the current debate.

Nevertheless, Origin Energy's current sustainability reporting practices is flawed on a number of accounts. Many of the limitations identified in this review correlate to the issues identified in literature discussed in earlier chapters. The key limitations discussed so far are:

- Robust and operational definitions of sustainability are not provided in the report.
- The structure of the report does not allow for considering complex relationships that are characteristic of even the simplest definitions of sustainability, such as that supplied by the *Brundtland Report*.
- No insight is provided into why the strategies were selected.
- There is no discussion of whether the mix of indicators is adequate to report on sustainability, however it has been defined.
- Consideration and inclusion of the external social and economic impacts of the company's activities are limited.

As discussed in Chapter 3, the liberal political and ideological position on reporting prioritises economic growth. Limits to growth is an example of both a vital and radical notion that tends to be ignored by companies such as Origin Energy.

Nevertheless corporations are investing in the publication of these reports and must see some need to respond to the debate about sustainability. Their motives might be linked to the desire for good public relations and the economic benefit derived rather than reasons of genuine corporate interest in social and environmental welfare, or ethical considerations. If correct these motives would correlate to key motivators for corporations to invest in sustainability reporting identified in studies in this area (see WBCSD 2002, pp. 10-12; WBCSD 2005, p. 9; Group 100 2003, p. 6; Allen Consulting Group 2002, p. xi).

If the motivations for producing 'sustainability' reports such as those reviewed are a manifestation of doing what's best for business and a public relations exercise then

sustainability that limits growth and conserves natural resources, biodiversity and clean air and water will continue to be relegated to the margins of the sustainability debate. This is of concern at a time when climate change, recession and related social issues suggest a need for a radical rethinking of the debate over sustainability.

# AUSTRALIAN GAS LIGHT

## 6.4 History of the AGL report

The Australian Gas Light Company, commonly referred to as AGL, has been a participant in the Australian energy industry since 1837. This company began in New South Wales as a privately-owned gas utility. The company today is a major gas and electricity supplier across Australia. In 2004/05 the company had a net profit of $365.8 million (AGL, n.d., a, online, p. 3).

AGL is a relative newcomer to sustainability reporting, developing its first report only in 2004. This report was titled *Staying Power*. It was developed in response to a commitment to report to stakeholders on progress in becoming part of a sustainable society. This commitment was made at the 2003 Annual General Meeting. As a response to this commitment the report states that it endeavours to:

> take(s) the reader on a journey through what is important to us beyond our financial performance. It represents the beginning of an ongoing reporting program by the Company to a wider stakeholder audience. (AGL 2004, p. 4)

AGL has released four sustainability reports, 2004 to 2007. The focus of this research is on the 2005 report. This provides consistency with the reviewed Origin Energy 2005 report. Like the Origin Energy 2007 report, the AGL 2007 report was released after the completion of the thesis (AGL, n.d., online, p. 3) and is hence beyond the scope of this study.

## 6.5 Outline of the sustainability report

The AGL 2005 report consists of two main sections. These are a section on the background of the company and the report on sustainability itself.

The AGL report begins by providing a detailed summary of the company's internal operations. The overview of the company's internal operations includes its structure and

operations, the nature of the markets it operates in, employment, financial information and its values. This overview provides an insight into the operational structure of the organisation and business locations, including descriptions of major divisions, operating companies, subsidiaries, and joint ventures, the nature of their ownership, and the major products and services the company offers. An outline of the organisation's governance and management systems is also provided.

The report offers a very brief insight into the company's values, which are described in overall terms as being about using energy to help people get on with their lives. The company claims that it values achievement, credibility and teamwork. Commitment to stakeholders is discussed as is a commitment to 'better understand their needs and interests and improve our performance accordingly' (AGL 2005, p. 1). Discussion about the commitment to stakeholders also includes a description of the stakeholder consultation process for the development of the sustainability report.

The 2005 report mentions the internal reporting focus as a limitation in the 2004 report. In the 2004 report AGL had stated that it decided to focus on its internal business framework. It offered to support at a later date a deeper program of stakeholder engagement that would produce a monitoring system that addresses externalities. The 2004 report stated that it hoped to develop more robust performance measures in its next report (AGL 2004, p. 4). Changes between the 2005 and 2004 reports are, however, limited and mainly semantic.

Each year the AGL report has a special feature that focuses on a particular issue. In both 2004 and 2005 the focus of the issue was external. The 2004 report concentrated on monitoring the environmental impact of the business, while the 2005 report paid greater attention to the relationship of the company with AGL's customers, including those suffering from long-term and temporary hardship (AGL 2005, p. 1). The story of the firm's experiences over the year, however, remains the main focus of the report. Nevertheless the consideration of customers who are in hardship is positive as it considers the wider implications of the service that the company provides, namely the affordability of a service which in today's society is considered as essential to life (Davidson 2005, p. 442).

At the beginning of the report, a summary of both the company's achievements and disappointments, as well as how it will address these disappointments, is presented. The summary of achievements in the 2005 report includes:

- improvement to the program for customers in hardship
- energy efficient programs for low income households
- electronic incident and injury reporting systems
- the development of greenhouse gas policy
- an emphasis on expansion of low emissions gas-fired power generation
- and a broadened health focus from being injury free to personal well-being.

A summary of disappointments includes the observation that important initiatives related to environmental activities were slower and more difficult to finalise, that the company had not set as many targets as was intended and that there had been an increase in lost time injury frequency rate. The company also reported disappointment over a lower than expected level of employee engagement within the company.

The AGL report lists the company's memberships in industry and business organisations and notes the application of various initiatives. It participates in or adheres to the Dow Jones Sustainability Index, the Corporate Reputation Index surveys, the GRI and the Energy Supply Association of Australia's Code of Sustainability Practices. Memberships and participation of these associations and/or initiatives is stated to provide consistency in terms of this enterprise's approach to sustainability, particularly against international and best practice standards (AGL 2005, p. 3). It is worth noting that all of these initiatives are voluntary. As mentioned previously, there are no regulatory requirements for sustainability reporting in Australia. The report states that the GRI has informed the development of their work on sustainability but it does not state how.

The structure of the main body of the report is divided up into the three common components of current sustainability reporting: economic, social and environmental. The framework varies slightly in the process for reporting on the three. The social component consists of three key themes, each with its own goal. These key themes are used to categorise appropriate goals and then strategies. For the economic and environmental

components no key themes are defined, and goals with their appropriate strategies are only outlined. Benchmarks or targets are not outlined. The reports, goals and chosen strategies are given in Exhibit 6.4 to 6.6.

This report, like that of Origin Energy, does not incorporate an explicit suite-of-indicators, but reports through a number of individual strategies that contribute to wider economic, social and environmental goals. These strategies are followed by an indication of its performance. Indicators are provided as a crude assessment of the achievement or failure of each strategy by either a tick or a cross. No measurement targets are identified. However, reporting on the strategies involves the incorporation of a variety of data, which could be related to a more explicit indicator and measurement target but is not. For example, data such as 'amount of land disturbed for oil and gas exploration' could be compared to 'amount of land rehabilitated'. By this process the ecological footprint of the organisation could be monitored over a period of time and benchmarks established. However, these data are not the focus of the narrative text within the report, which deals with a discussion of actions implemented for each strategy. Attached to the back of the main report is an indicator table that outlines progress against commitments.

The strategies for each objective are outlined in Exhibits 6.4 to 6.6. These strategies will be described, and the GRI will be drawn on to provide a point of comparison. Providing a point of comparison enables a more complete picture of what is and is not reported upon. In Chapter 5 the GRI guidelines were indentified as the international benchmark for corporate reporting.

**Exhibit 6.4 2005 AGL Sustainability reporting framework – the economic component**

NOTE:
This exhibit is included on page 198 of the print copy of the thesis held in the University of Adelaide Library.

Source: adapted from AGL 2005.

Differing from the GRI suggestion, AGL has not placed much emphasis on reporting the main economic impacts of the organisation on society, but it has considered economic strategies that illustrate the monetary flows between the organisation and its key stakeholders (GRI 2006, p. 25). The three strategies that fall into this category are

1. Expand the integrated energy business model.
2. Refocus internal supply change management processes.
3. Ensure that growth strategies focus on sustainable cash flows.

Other economic strategies discussed in the AGL report include issues about employee relations, including employee training and remuneration. These strategies address issues that affect the productivity of the organization. Furthermore, these strategies address internal issues of employee satisfaction to be gained through employee training and remuneration.

The final strategies included in this suite relate to the financial contribution made to the community, which could also be seen as an indirect economic impact indicator. This is because this investment in the community is seen as a positive externality by the reporting entity. But as previously discussed, community investment is a societal initiative differing from social sustainability which requires a corporation to acknowledge the social impact of the enterprise on communities.

**Exhibit 6.5 2005 AGL Sustainability reporting framework – the environmental component**

NOTE:
This exhibit is included on page 199 of the print copy of the thesis held in the University of Adelaide Library.

Source: adapted from AGL 2005.

The emphasis of AGL's environmental strategies is on greenhouse gas emissions and minimising environmental impact in the areas of resource use, waste disposal, land quality and rehabilitation. Legislative compliance provides the parameter in which environmental impacts are considered. The impact of products and services and their contribution to greenhouse gas emissions are considered. A discussion of an environmental footprint is also included. This discussion is limited, however, as it only considers total greenhouse gas emissions. Since there is no comparison to a benchmark or to the footprint of another similar corporation, there is little indication of the significance of the total footprint.

The key themes of the AGL report are similar to those of the GRI. However, consideration of environmental expenditure and investment is omitted and limited consideration is given to the impact of materials. In this sense the environmental footprint discussion only considers absolute greenhouse gas emissions and not the overall impact of total material use by AGL. The GRI guidelines suggest that organisations should provide both absolute

and normalised measures (e.g. resources per output) to enable an understanding to be developed of the scale or magnitude of the use or impact of material resources being consumed by the business. The guidelines also suggest that a company should provide a sense of the organisation's efficiency and a comparison between organisations of different sizes. The AGL strategies generally only report in absolute figures. Intensity of emissions are measured against a state average but this appears to be one of the few indicators that provides such a comparison.

Reporting predominately in absolute figures makes it difficult to understand the scale or magnitude of the effects, negative or otherwise, of the enterprise on the environment. This difficulty is compounded by the lack of inclusion of targets or industry benchmarks. As discussed the literature, it was identified the lack of industry benchmarks was an overall weakness of corporate reporting in general (Allens Consulting 2002, p. 101).

**Exhibit 6.6 2005 AGL Sustainability reporting framework – The social component**

NOTE:
This exhibit is included on page 201 of the print copy of the thesis held in the University of Adelaide Library.

Source: adapted from AGL 2005.

The key themes of the AGL's social strategies are based around their customers, people and community. AGL's foci under these themes are:

- customer service
- safety of the work place
- development of its employees
- recognising employee contribution
- contributing to the community.

AGL generally focuses on internal issues, rather than the indirect flow on effects of their activities on the community. The impact on the community from AGL's operation and the services offered is not directly monitored. In contrast to the GRI, the AGL framework does not place emphasis on the broader issues affecting consumers, the community and its

stakeholders or human rights. However, while the GRI outlines the importance of these issues, it is also limited in considering the organisational impacts on the social system it operates in (Labuschagne et al. 2003, p. 379).

**In summary**, compared to the GRI guidelines the environmental component of the AGL report provides a closer resemblance to the GRI than does the Origin Energy report. AGL reports upon most of the aspects recommended by the GRI. Like Origin Energy, reporting on economic aspects of the business included elements from the GRI guidelines but monitoring of the external economic impacts of organization activities was limited. Also similar to Origin Energy, the social component of the report was less developed than the GRI guidelines recommend. A better understanding of impact of corporate actions that affect the community would significantly strengthen this framework.

## 6.6 Review of the reporting system in context of addressing the research questions

As outlined earlier, the review of the reporting system for sustainability will consider the research questions: How is sustainability conceptualised within the current monitoring systems, and what phenomenon are they attempting to measure? How does the organisation measure sustainability? Do the frameworks have any validity as genuine measures of sustainability?

### 6.6.1 How is sustainability conceptualised and what phenomenon are they seeking to measure?

A definition of sustainability is offered on AGL's corporate website. However, this definition is not incorporated within the company's annual sustainability reports. AGL's website states (AGL, n.d., b, online, p. 3):

> Our definition of sustainability: a sustainable business is one that adds measurable value by its financial success and its positive contribution to society as a good corporate citizen.

This definition emphasises financial success and the company's contribution as a good corporate citizen. The environment is not specifically mentioned. The objective of financial success is clear and there is an emphasis on economic sustainability. But the second objective *a positive contribution to society as a good corporate citizen* is less clear and could be interpreted in any number of ways.

In the corporate social responsibility literature three main ways to be a good corporate citizen are discussed. These ways are being strategic, ethical and moral (Lantos 2002, p. 206). It is not clear which, if any of these, has been selected as the focus for this report. The approach to corporate social responsibility is driven by different motives. The neoliberal approach to being a good corporate citizen is a strategy that requires economic benefits to be derived from business activities. At the other end of the ideological spectrum are ethical and moral drivers, which are motivated by social concerns rather than derived from an economic benefit. However, the concept of corporate social responsibility differs in some ways from sustainability. The inclusion of the term 'good corporate citizen' represents a distraction from the measurement of sustainability. Moreover, the terms reporting sustainability and social responsibility are used interchangeably in this report, whereas the two terms do have some conceptual differences (Savitz & Weber 2006, p. xi).

Like Origin Energy's definition of sustainability, AGL's is vague and non-committal. As discussed by Sumner (2004, p. 117) this approach fails to provide a clear conceptual launchpad for the measurement of sustainability. Moreover, AGL's definition has an emphasis on financial sustainability and exhibits a lack of commitment to social and environmental sustainability. The primary focus is on financial success, which is about maximising profits to shareholders. This provides the familiar reason for operating in terms of 'business as usual'. Again as Norman & MacDonald (2004, p. 6) argue, it is a definition of sustainability that when presented sounds plausible on the surface, but remains vague and non-committal when unpacked. This again allows business to proceed as normal.

Again like Origin Energy and the GRI, no insight is provided in why the strategies were selected and represent an accurate report on sustainability raising a concern over epistemological consistency with the phenomenon being measured (Lele 1991; Sumner 2004; Pinter et al. 2005; Luckman 2006; Bossel 1999)

To gain a better insight into the applied assumptions that underpin the AGL report, an analysis of key goals evident in the strategies was undertaken. The political economy typology was applied as the organising principle for the analysis of the case studies data.

AGL's goals are not dissimilar to those of Origin Energy. However, slight variations in the key themes that inform these goals were identified.

The goals consist of managing risk, valuing employees and customers, minimising environmental impact and achieving sustainable economic growth. The goal 'managing risk' appears in the same key themes as in Origin Energy's report. The second goal of valuing people and customers is reflected in the following key themes, which also appear in a similar context in Origin Energy's report but with a slight variation. These themes are *best possible service to customers* (AGL 2005, p. 7) and *employees' contribution to the organisation* (AGL 2005, p. 14).

The third goal of minimising environmental impact is reflected in the key themes of reducing greenhouse gas intensity across the supply chain and minimising environmental impact in the areas of resource use, waste disposal, land quality and rehabilitation. These goals are similar to those of Origin Energy. However, AGL has a broader aim of reducing greenhouse gases across the whole of the supply chain and also specifies areas of particular focus. Finally, the last goal is sustaining economic growth, again a goal AGL shares with Origin Energy (Origin Energy 2005, p. 38).

A review of the goals reveals that the economic sustainability of the enterprise seems to be at the forefront of concerns. That is, the goal of *sustaining economic growth* appears to dominate the discussion and extends across all themes, which exhibit a bias towards an economic emphasis with few exceptions. Examples within the economic sustainability of the report proceed, but this dominant presence will be again highlighted within the discussion of examples within the other goals. The report states '… AGL's key focus will be on maximizing sustainable cash flows to shareholders' (AGL 2005, p. 40). It is clear from this statement and the preceding analysis of this report that the key focus of AGL is the maximization of economic returns to shareholders.

Reducing business risk is seen as a requirement to improve sustainability. The report states: 'A more integrated energy business model will improve sustainability by reducing business risk' (AGL 2005, p. 39). Risk management has a focus on elevating business risks. In this sense, social and environmental risk are to be managed if there is likely to be an economic impact.

Again, the report places emphasis on maximizing shareholders returns: 'Highly engaged people are key to AGL providing the highest level of service for our customers and maximizing performance for shareholders' (AGL 2005, p. 39). Effective employees are seen to deliver outcomes of high customer service and shareholder returns. This point is raised within the context of economic sustainability however no relationship is drawn between effective employees and working within fulfilled workplaces. These factors are discussed in social sustainability aspect of the report. This lack of connection between issues reported against clearly is a shortfalling of segmenting strategies within one system i.e. in this case either economic or social sustainability. The report omits to mention that delivering all aspects of a fulfilled workplace sometimes requires a trade off between economic and social sustainability, which inturn may impact on achieving maximum economic performance for the shareholder.

AGL states that risk management is central to its sustainability program. The company defines the various risks to which it is exposed. These risks include sustainability, financial performance and operational and compliance issues (AGL 2005, p. 3). Sustainable risk is defined by AGL (2005) as including 'governance and leadership processes, reputation risks and major events that impact on economic viability' (AGL 2005, p. 3). The sustainability report contains strategies which address these risk factors. Examples of these strategies include:

- *pursue zero injuries and incidents; ensure the safe* (AGL 2005, p. 12)
- *ensure safe, reliable and efficient operation of infrastructure* (AGL 2005, p. 17)
- *improve our impact in the area of resource use, waste disposal and land quality and rehabilitation* (AGL 2005, p. 23).

Managing these potential risks are about ensuring financial security of the company is protected, safe work practices and environmental remediation are practiced. Reducing risk that may affect the environment and society do not feature in this monitoring system if the likelyhood is there will be no impact on economic viability, for example if sits outside of reputation risks and mitigating against major environmental or social events that impact on economic viability.

The environment component within the sustainability report is positioned within the overarching statement which introduces this section as (AGL 2005, p. 21):

> AGL's focus on sustainable environmental performance is simply good business sense. It delivers shareholder value by earning and keeping the confidence of our customers, our people and the community over time.

Environmental sustainability is seen to deliver good business outcomes of shareholder value, market confidence and public relation. This statement re-enforces environmental risks are only acted upon if likely to impact on economic viability. This overarching statement does not consider preserving a critical natural capital, or even at least acknowledging the important of the environment within this context to the sustainability of this corporation.

Incorporated environmental principle and strategies contain terminology like 'improve', 'minimise, and understand impact on the environment'. In its environmental principle the report states 'AGL will reduce risk and minimise our environmental impact, by integrating considerations of environmental sustainability into all activity' (AGL 2005, p. 22). Examples of strategies that apply this terminology include:

- *quantify and understand our impact on the environment* (AGL 2005, p. 23)
- *improve our impact in the area of resource use, waste disposal and land quality and rehabilitation* (AGL 2005, p. 23).

The use of language such as reduce risk, minimize, and improve indicates a commitment to reducing impact on the environment but it is not clear what this entails. Moreover, in the narrative text to report against the strategy *quantify and understand our impact on the environment* the analysis is brief and lacks depth in understanding of the issue. For example, the only quantification of impact is the environmental footprint (AGL 2005, p. 23). However, this footprint only considers greenhouse gas emissions, there are numerous other impacts that arise from the company's operations. Many other impacts are incorporated throughout the report, such as sulfur dioxide emissions, under ground water extractions, contaminated land and biodiversity and land issues (AGL 2005, p. 24-26), but are not listed as well in this section. An analysis to further understand these impacts would demonstrate a higher level of understanding of the issue. For example,

correlating the impact on the environment from further economic growth is not considered.

Targets are only incorporated for non-contentious and less significant environmental and social issues despite AGL being a major producer and supplier of energy. Examples of these targets include:

- employee volunteering days (AGL 2005, p. 16)
- green office targets in paper reduction, energy offsets, vehicle offsets and recycling) AGL 2005, p. 27)
- green electricity customers (AGL 2005, p. 31)

Moreover, the report indicates that AGL has an important role to contribute to overall emission reduction, 'to reduce the greenhouse gas intensity of energy across the supply chain'. The report further states (AGL 2005, p. 21):

> It is clear that significant reductions are required: Australia's Chief Scientist has called for Australia to achieve a 50 percent emissions reduction by 2050. The energy sector, including AGL, has an important part to play in meeting this goal.

Despite the recognition of the important of emission reduction, moreover the report states that a reduction of greenhouse gas intensity will occur, no targets are set to report against this rate of reduction.

Overall targets presented in the AGL report are sparse and ad hoc. Targets are not included for significant impacts, and only less significant impact of office operations have targets being developed. Considering the impact on environmental resources, emissions, and wastes that result from such a business operation these targets are therefore inadequate to address the medium and long term requirements of sustainability.

The theme environmental management and performance, which would apparently have an environmental focus, is actually intertwined with an efficiency component. An example of this phenomenon within the report is the environmental goal excellence in environmental management and performance (AGL 2005, p. 23), which establishes environmental targets to improve the efficiency of its office operations. While environmental management is a wider issue than eco-efficiency, the latter is a strong component of the theme. Eco-efficiency integrates environmental concerns into business

practices, where both economic and environmental benefits are expected results. Efficiency and environmental protection are seen to be synergistically beneficial. It is thought that eco-efficiency helps corporations to gain a competitive advantage in the market place as environmental stewardship is viewed as good business sense (Clapp & Dauvergne 2005, p. 177).

Impacts on the environment are reported against, but data is reported in absolute figures, and only comparison against previous years figures are reported. For example a greenhouse footprint is incorporated within the report. But this footprint is reported within the context of only total emissions from three components of the business: operations; equity; and energy supply (AGL 2005, p. 33). This data gives no indication of the resulting impact on the environment resulting from emissions produced. A footprint normally reports land required to support human activities (Higgins 2001, p. 54). This footprint developed by AGL does not do this.

The social sustainability is couched in terms of consultation with communities and financial investments within them. The overarching objective for social sustainability, our people is (AGL 2005, p. 16):

> AGL contributes to the community in a variety of ways – from the way we operate in the community through to our community investment program, *Energy for Life.*

This understanding of social sustainability is limited. It has a focus on 'contributions', but not all social contributions, or would be better described as consequences of doing business are positive, as applied by this statement. The report therefore is limited in considering the social impact of the enterprise, that is understanding and taking responsibility for the social consequences (both positive and negative) of doing business in the community. The report could at least incorporate issues like economic welfare (induced business opportunities).

Internal issues are the key focus: safe work place; employee skill development; rewarding employee contribution. There is an attempt to understand external social issues through with the incorporation of a strategy, *consult with the community about existing and proposed infrastructure (*AGL 2005, p. 23), but the focus is on consultation rather than mitigating or eliminating negative social impacts on the community, or enhancing positive social

benefits to the community from the company's operation. AGL has not taken the next step, to acknowledge there impacts on the community. The literature does state that most corporations have not yet made the paradigm shift of businesses taking responsibility for their social impacts upon external communities has not yet taken place (Labuschagne et al. 2003, p. 379). This finding is observed within this corporation's sustainability report.

Overall AGL makes no distinction between reporting on sustainability and everyday economic, social and environmental reporting. Again like Origin Energy many of the initiatives discussed in this report could happen in the organisation without any reference to sustainability. Green office programs (AGL 2005, p. 30), employee giving programs (AGL 2005, p. 16)and winter warmth program (helping those retail customers in economic hardship) (AGL 2005, p. 1) can all be conducted without reference to sustainability. Data is also likely to be routinely collected by the company on matters such as employee practices (i.e. injuries and incidents, workforce status), customer commitments (i.e. customer service calls answered within 30 seconds) environmental guidelines (i.e. emissions; effluent; water use; use of office paper), and financial commitments (i.e. funding for community programs, earning and profit, and tax paid). Much of this data in many instances would be gathered by standard departments within any large organization for measuring productivity performance. Again this accords with Norman and MacDonald's (2004, p.5) observation that corporatation reports tend not to incorporate new data collected to measure sustainability but rely on data collected for other purposes.

Moreover, there is no suggestion of any potential conflicts between the individual strategies, yet strategies such as the following are potentially diametrically opposed in their aims: *ensure that growth strategies focus on sustainable cash flows* (AGL 2005, p. 40); and *improve our impact in the area of resource use, waste disposal and land quality and rehabilitation* (AGL 2005, p. 23). Reducing the impact of resource use, controlling the disposal of waste and restoring land quality might cost more than many businesses would consider acceptable if they were looking for financial growth and sustained cash flows.

While radical concepts are not included in its strategies, AGL does go some way to incorporate aspects of social and environmental sustainability that have not been reported

on in the past. It has for example a social goal of valuing employees and customers. The overarching objective for social sustainability, our people, it states (AGL 2005):

> Helping people to get on with their lives holds as true for our employees as it does for customers and other stakeholders. We strive to create a workplace where all our people can realise their potential, make a genuine contribution and where a fulfilling working life can support their wider personal commitments and aspirations. (p. 12)

The overarching objective refers to the respect and development of people and valuing employee contributions. It also offers a concern with respecting the rights and diversity of individuals, physical fitness, encouragement and recognition of outstanding contributions and leadership. The report outlines programs provided to employees to promote leadership and fitness (AGL 2005, p. 13). As well it describes a survey conducted by the company to report on its employees' emotional commitment to the organisation, how they work and how likely they are to stay with the company (AGL 2005, p. 14). This survey will provide an indication of employee's emotional commitment to the company.

An exception to the focus on economic impact is an undertaking to reduce greenhouse gases, which has environmental and community salience. The theme of *valuing customers and the employees* incorporates elements that consider the well-being of these individuals. The focus on 'positive contribution to society as a good corporate citizen' (AGL, n.d., b, online, p. 3) in AGL's definition of sustainability is however unclear. The themes could be considered to be evidence of a genuine concern for the environment and the community. By implementing them, AGL might also be seeking to ensure it has a licence to continue operations. The latter is clearly about ensuring the economic viability of the company.

AGL also places an emphasis on valuing its customers. Strategies that reflect this include, firstly, a more conventional aim of *deliver a continuous service improvement program for its customers*; secondly, *provide tailored options for our customers who are in need of specialist services and support* (customers in financial hardship); and *create opportunities for customers and consumer advocates to provide input into AGL's operations, particularly in relation to sustainability issues* (AGL 2005, pp. 7-8). The first strategy acknowledges community concerns of access to essential services, of which electricity is one. The latter strategy incorporates an ongoing avenue of stakeholder engagement beyond the development of the company's sustainability report.

From an environmental perspective, a strategy is included on *quantifying and understanding the organisation's environmental impact* (AGL 2005, p. 23) and *reduce the greenhouse gas intensity of energy across the supply chain (*AGL 2005, p. 28). This is not yet a legislative requirement in Australia and represents a voluntary reporting initiative. But again, this would appear one of the only commitments to collect new data to measure sustainability. As well as already noted, while this data is collected, no targets have being set for emission reduction.

Like Origin Energy's sustainability report, AGL clearly takes a liberal approach to the implementation of sustainability. Economic benefit is prioritised over other dimensions of sustainability. Good management and business practices are seen to deliver adequate sustainability outcomes. For example, the implementation of occupational, health and safety, and environmental management systems are offered as examples of socially sustainable outcomes but are essentially about good business practice. This practice accords with the tenets of sustainable development as an extension of normal business practice as discussed by Gray & Milne (2002, p. 2), (Murray et al. 2006, p. 6) and Labuschagne et al. (2003, p. 379). The current state of AGL's reporting suggests no paradigm shift that would enable this corporation to acknowledge the full extent of its impacts on the environment and society. Again key findings from this review support Jones et al. (2005, p. 19) contention that corporations are reluctant to report on factors outside of the business as usual paradigm.

AGL's report positions technology as playing a key a role in reducing greenhouse gas emissions. Examples of technological solutions include the implementation of energy efficiency and investment in renewable and low-emission power generation. Technology is advocated as a solution to issues of sustainability by both neoliberal and liberal thinkers (McManus 1996, p. 60; Clapp & Dauvergne 2005, pp. 4-7).

A robust commitment to sustainability is not suggested by this report. Like Origin Energy, while liberal in its approach AGL's report suggests that it is closer to the right neoliberal side of the ideological spectrum than to the left radical approach. While the very action of producing a sustainability report and undertaking initiatives that sit outside of a market approach suggest that AGL believes there is a role for themselves in the implementation of social and environmental outcomes for society, traditional

solutions like tweaking management practices and new technology are strongly emphasised. Environmental impact is generally considered within a legislative requirement framework and little insight is gained into the overall impact of the organisation on the environment. Managing risk to ensure no short or long term economic implications is also seen as important. In this sense valuing employees and customers to ensure they stay loyal is essentially an economic consideration. Social sustainability is positioned as important for business success. Engaging and consulting with the community is seen as important to succeed in business. As with Origin Energy, issues such as preserving finite environmental resources and social transformation are not considered by AGL's report. These solutions only require the tweaking of current practices and do not address social or political transformation.

As discussed earlier, this is not a surprising finding for a corporation with responsibilities to shareholders and one which draws on guidelines framed in a period when the liberal discourse dominates the debate over sustainability. As suggested by the literature, it is difficult to contemplate achievement of social and environmental sustainability while corporations operate within the current paradigm (Gray & Bebbington 2005, p. 2). AGL's report like that of Origin Energy, illustrates the absence of any of the concerns raised by radical approaches to addressing sustainability, which have been marginalised in the current debate by the dominant neoliberal and liberal discourses.

### 6.6.2 How does the organisation measure sustainability?

AGL applies the same reporting format as Origin Energy and the organisation's report exhibits the same deficits. These deficits correlate to concerns raised in studies by Dalal-Clayton & Sadler (2004, p. 26) and Macintosh & Wilkinson( 2006, p. 14). AGLs reporting system is limited in its capacity to evaluate sustainability. It does report on whether defined actions for each strategy have been achieved (indication is given by either a cross or tick). However, no discussion is provided on the decision making process of how it is decided if a strategy has been achieved or not. The report does not take the crucial step of identifying well defined indicators for each strategy that can be reported against and monitored over a period of time. Such indicators are important for sustainability reporting as they enable an assessment of progress against goals and objectives to determine if an organisation is achieving its stated aims (IPCC 2001, p. 635; Bossel 1999, p.

xi). They also assist with the development of new benchmarks and identify trends (Macintosh and Wilkinson 2006, p. 11; UN Commission 2001, p. 9).

AGL has fallen well short of the international corporate benchmark provided by the GRI guidelines. The GRI guidelines incorporate indicators which can be reported against and monitored over a period of time. As noted with Origin Energy, narrative assessment, or in this case a combination of narrative assessment and a crude suite of indictors, is not a very effective reporting system, particularly given the complexity of the sustainability debate. This approach offers only a muddled understanding of sustainability. AGL and Origin Energy's reports lack both epistemological coherence and analytical robustness.

## 6.7 Validity of the reporting system as a genuine measure of sustainability

The review of the AGL sustainability report has revealed similar trends in terms of their strength and limitations as in the Origin Energy report. Moreover, there are correlating patterns with the international benchmark, the GRI.

Clearly the release of sustainability reports by corporations like AGL and Origin Energy indicate a willingness to extend their conventional reporting practices to incorporate economic, social and environmental elements. Again with the percentage of Australian companies that produce such a report falling below the international benchmark, the continuing release of this report is significant. Aspects of the GRI are incorporated to some extent and this is positive as the report incorporates what is considered to be international best practice in the current debate.

Again the limitations of the AGL report reveal an emerging pattern of concerns that have similarities to those identified in the Origin Energy sustainability report. No clear and operational definition of sustainability to provide a conceptual launchpad for the measurement of sustainability is offered in the AGL report. No conceptual insight is provided for the choice of strategies. A crude indicator system is only evident which limits sophistication within the monitoring system and offers only limited insight into the sustainability of the organisation. The conventional typology to categorise indicators disguises the nature of both complementary and conflicting strategies. Many of the initiatives discussed in this report could happen in the organisation without any reference to sustainability. More alternative attributes of sustainability are not reported against or discussed within the report. Moreover, the report is underpinned by a liberal position on

the threats to sustainability. This research has questioned the capacity of monitoring systems derived from this position to provide an accurate assessment of social, environmental, and economic aspects, and their inter-relationships, given that liberalism privileges the economy over the environment and the social system.

# Chapter 7 Government reporting systems in Australia – Two case studies

## Introduction

As stated earlier the two national government reporting systems that have been selected for this case study are 1) the Environment Australia Are We Sustaining Australia? Report Against Headline Sustainability Indicators, and 2) the Australian Bureau of Statistics Measuring Australia's Progress. To reiterate these national government attempts were chosen as they are the most comprehensive attempts at the government level in Australia to report on the interrelationships between the economic, social and environmental dimensions of sustainability. Environment Australia is the headline sustainability indicators program for Australia and its aim is to evaluate the nation's performance in relation to the objectives of the National Strategy for Ecologically Sustainable Development. Measuring Australia's Progress (MAP) is considered a landmark contribution to national government systems as it provides information across the three pillars of sustainability (Macintosh & Wilkinson 2006, p. 32).

# ARE WE SUSTAINING AUSTRALIA? ENVIRONMENT AUSTRALIA

## 7.1 The nature of the reporting system

The first national government framework to be reviewed is the monitoring system developed by Environment Australia, *Are We Sustaining Australia?* This reporting system is incorporated into the Australian Government's National Strategy for Ecologically Sustainable Development (NSESD), which was endorsed in 1992.

The Australian government defines Ecologically Sustainable Development (ESD) as follows: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'. The strategy provides an interpretation of the definition which is 'ESD is development which aims to meet the needs of Australians today, while conserving our ecosystems for the benefit of future generations' (Commonwealth of Australia 1992, p. 2). The NSESD has three core objectives:

1 to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations

2 to provide for equity within and between generations

3 to protect biological diversity and maintain essential ecological processes and life-support systems.

The guiding principles of the strategy are:

- Decision making processes should effectively integrate both long and short term economic, environmental, social and equity considerations.
- Where there are threats of serious or irreversible environmental change, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The global dimension of environmental impacts of actions and policies should be recognised and considered.
- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.
- The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.
- Decisions and actions should provide for broad community involvement on issues which affect them.

Both the objectives and guiding principles will be reviewed within the section that considers how Environment Australia conceptualises sustainability (see Section 7.4.1).

The NSESD also incorporates 75 other objectives, one of which is to develop appropriate performance measures to provide an indication of overall progress towards ESD. However, it was not until 2002 that Environment Australia published a report that proposed a set of National Headline Sustainability Indicators (NHSI).

The aim of the monitoring systems is to enable the nation's performance to be monitored in relation to the objectives of the National Strategy for Ecologically Sustainable Development. This monitoring system is also stated to have the broader role of raising awareness in the

Australian community of sustainability issues. Environment Australia sees that the system will assist:

> the Australian community to think in an integrative, multi-dimensional way about the full range of activities in which human society is engaged and how they interact – in other words to think in terms of Ecologically Sustainable Development. (Commonwealth of Australia 2002, p. 4)

## 7.2 Outline of the sustainability reporting system

In the report indicators have been chosen and categorised in relation to the three core objectives of the report and for each of these objectives a set of values has been identified to represent a key element of the objective. The first objective is divided into two parts: direct aspects of individual and community well-being (including aspects of environmental well-being) and elements of economic development (including aspects of natural resource management). The values identified for each of the objectives are outlined in Exhibit 7.1.

**Exhibit 7.1 Objectives and values of the Australian Government ESD Strategy**

NOTE:
This exhibit is included on page 218 of the print copy of the thesis held in the University of Adelaide Library.

Source: Commonwealth of Australia 2002.

A rationale for each value is provided. For example, value 7, economic security, *Economic security is the capacity of the economy to remain strong over time*. This rationale provides no link to the definition of sustainability or scope for its measurement. Nor does it address why economic security is important within the context of sustainability. Rationales for some of the values do specify a link to objectives, for example, value 20, freshwater health:

> The condition of river systems represents an integration of land use activities, and a major input to the estuarine and marine environments. Safeguarding freshwater systems is therefore essential to protecting a range of ecological processes (Core objective 3) and economic prosperity which, in turn, are essential to the welfare and well-being of future generations (Core Objective 1), as well as providing for inter-generational equity (Core Objective 2). (Commonwealth of Australia 1992, p. 3)

This rationale does link to the key objectives of sustainability but no scope or detail required for its measurement is provided.

For each value, one or more indicators has been identified to report against. Three contextual indicators relating to population issues are offered and twenty four headline indicators are included in the framework. Supplementary indicators have been provided to present a more complete picture where necessary. However, data for these indicators are yet to be collected and many indicators are still underdeveloped (Appendix 3 incorporates a full list of supplementary indicators). The headline indicators for each objective are outlined in Exhibits 7.2 to 7.4.

At the headline indicator level, individual and community well-being is reported on in terms of life expectancy, obtainment of secondary qualifications, air pollution above national standards and gross income.

At the headline indicator level reports are provided on economic development that safeguards the welfare of future generations. Indications of the management of environmental resources and an economic system that encompasses the required security capacity and performance are provided (Exhibit 7.2).

**Exhibit 7.2 Headline indicators for objective *To enhance individual and community well-being***

NOTE:
This exhibit is included on page 220 of the print copy of the thesis held in the University of Adelaide Library.

Source: Commonwealth of Australia 2002.

At the headline indicator level equity within and between generations is addressed in terms of gender income earning equity, year 12 completion rate between the extreme socio-economic deciles and location and difference between life years lost due to disability and mortality between the differing socio-economic quintile (Exhibit 7.3).

**Exhibit 7.3 Headline indicators for objective *To provide equity within and between generations***

NOTE:
This exhibit is included on page 221 of the print copy of the thesis held in the University of Adelaide Library.

Source: Commonwealth of Australia 2002.

At the headline indicator protecting biological diversity and maintaining essential ecological processes and life support are addressed in terms of reporting on extinction, endangered and vulnerable species, extent and condition of native vegetation, and the condition of freshwater, coastal, estuarine and marine habitats. Reporting on the state of biological diversity and essential life support suggests whether future natural capital is at risk (Exhibit 7.4).

Overall the intent of the indicator monitoring system is to monitor whether current needs are being met without sacrificing future capital. The latter is understood to include the ecosystem. The monitoring system then scopes the areas of significance as defined by the three key objectives and each applicable value set. Indicators are derived for each value. Each objective, its values and indicators are considered as a unit and the interrelationships between the objectives are not reported upon. The approach is instead to monitor individual key themes at the indicator level, which include:

- life expectancy
- obtainment of secondary education qualifications
- air pollution above national standards
- gross income
- management of environmental resources

- an economic system that encompasses the required security
- economic capacity and industry performance
- gender income earning equity
- comparison of year 12 completion between socio-economic deciles and location
- difference between life years lost due to disability and mortality between the differing socio-economic quintile
- extinction, endangered and vulnerable species
- extent and condition of native vegetation, freshwater habitats, coastal habitats, estuarine habitats and marine habitats; river condition; estuarine condition; and catchment condition.

**Exhibit 7.4 Headline indicators for objective *To protect biological diversity and maintain essential ecological processes and life support***



Source: Commonwealth of Australia 2002, p. 1.

Similar headline indicators key themes between the Environment Australia and the UK government *Securing the Future* monitoring systems are national income, employment,

economic hardship, health, the air and atmosphere, freshwater health and the natural landscape. The following key themes are not included in the Environment Australia monitoring system but feature in the UK government framework: waste, crime, volunteering, and the more innovative key themes of consumption, wellbeing and environmental quality. Also, interestingly, Environment Australia puts a greater emphasis on economic indicators than the UK government framework. National wealth and productivity do not feature as headline themes in the UK government framework. In addition, Environment Australia emphasises indicators that report economic equity with an emphasis on gender, education and location. Both reporting systems report on economic and health equity.

Conceptual differences between the Environment Australia monitoring system and the UK government framework are Environment Australia's emphasis on equity issues and economic performance. More innovative key themes like consumption, wellbeing, social justice and environmental quality are better represented in the UK government framework than in the Environment Australia framework. These differences will be explored below in relation to the research questions for this study.

## 7.3 Review of the reporting system in context of addressing the research questions

Environment Australia's sustainability reporting system will be reviewed in relation to the research questions: How is sustainability conceptualised within the current monitoring systems, and what phenomena are they seeking to measure? How does the organisation measure sustainability? Do the frameworks have any validity as genuine measures of sustainability?

### 7.3.1 How is sustainability conceptualised and what phenomenon are they seeking to measure?

Environment Australia draws on the Australian government's definition of sustainability: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased' (Commonwealth of Australia 1992, p. 2). The key focus of this understanding of sustainability is meeting the present generation's needs, while acknowledging the importance of preserving the ecosystem for future generations. The

definition does not articulate what is needed, nor to what extent should needs be satisfied, or how to resolve conflicting needs, for example, between the environment and the economy. This lack of clarity makes it difficult to determine the monitoring system's theoretical perspective or ideological position. Again the definition of sustainability is not concise enough to provide a conceptual launch pad, which raises the issue of the epistemological relationship to the phenomenon being measured, as addressed by Sumner (2004, p. 117).

Given the lack of a clear definition, an assessment of the strategy's objectives and guiding principles helped to provide insight into the orientation of this document (Commonwealth of Australia 2002, p. 1). The political economy typology was applied to this case study to categorise the theoretical perspective of the framers of the Environment Australia report. Key attributes that differentiate the ideological positions were reviewed to ascertain which was the most influential on the report by Environment Australia. How the report addressed issues such as limits to growth; substitutability of the various forms of capital; technology as a solution and power relationships were considered.

To gain a better insight into the ideological assumptions that underpin this report, an analysis of key themes revealed in the principles on which the monitoring system is based and the indicators incorporated in the system was also undertaken. This process enabled the political economy typology to be applied to categorise the report's ideological position. The themes embedded in the reporting framework are:

- Economic development enhances individual and community well-being and welfare.
- No limits or constraints are required on the use of the environment.
- Implementation of neoclassical economic market mechanisms is approved.
- Economic growth and environmental protection are seen as compatible.

The theme of 'economic development enhances individual and community well-being and welfare' is initially outlined in the strategy's objective: *To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations* (Commonwealth of Australia 2002, p. 1). The emphasis on economic development indicates that the strategy has failed to examine the critical role of economic growth within the context of ESD. As noted in Chapter 2, McGregor (2003b, p.

31) makes the point that many of the economic indicators rely on the conventional measurement of GDP. Three out of the five economic indicators relate to measures of GDP-based growth.

The use of GDP as an indicator shifts focus away from individual and community well-being to economic well-being. Economic well-being does not distinguish between sustainable and un-sustainable practices. Moreover, economic growth does not necessarily provide a critical measure of individual and community well-being. It is in this context that McGregor argues that sustainability reporting should be drawn against alternative measures like Genuine Progress Index (GPI) (McGregor 2003b, p. 33).

Furthermore, Environment Australia's focus on GDP suggests that this strategy has an emphasis on economic precautionary principles. That is, it suggests that no policies should be implemented that might adversely impact on the economy. In this sense, the Australian Government's National Strategy for Ecologically Sustainable Development (NSESD) (1992) suggests that no greenhouse gas policy will be implemented that adversely impacts on the economy. However it is recognised that some principles might have to be applied as constraints. For example, conservation of biodiversity and precautionary principles might constrain the types of development that are permitted or encouraged. In respect to the reporting system no direction is provided to conflicting aims between indicators, and how to resolve these tensions to inform the reporting system goal of whether we are sustaining Australia or not? For example the proceeding two values conflict: industry performance measured by real GDP per capita and climate change measured by total net greenhouse gas emissions (Commonwealth of Australia 2002, p. 1). Increased economic growth in general results with greater impact on environmental resource and increased emissions and waste. Technological solutions that provide efficiency gains are unable to keep pace with growth of world economies (Hamilton 2003, p. 174).

The second theme 'no limits or constraints are required on the use of the environment' indicates, however, that conditions in the environment would be allowed to pose no limits to growth, and no restrictions to economic growth are recommended. In fact economic development is considered to enhance the capacity for environmental

protection. This belief is reflected in a guiding principle: *the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognized* (Commonwealth of Australia 1992, p. 2). This guiding principle conflicts with another principle which suggests the implementation of the precautionary principle when the threat of serious or irreversible damage is predicted but this is later contradicted with a principle stating that there is a need to develop a strong, diversified and growing economy (Commonwealth of Australia 1992, p. 2). The statement discussed in the first theme 'no objective or principles should predominate over the others' only adds to confusion as it is unclear whether a precautionary principle is able to curtail economic growth to reduce an environmental threat.

Overall, the typology used to categorise the indicators in the report tends to privilege economic growth over the environment and other dimensions of sustainability. Although the system is structured on the three core objectives of the ESD strategy that considers specific elements in the system, how these elements are inter-related is not considered. For example consider the previously discussed tensions between the values of industry performance and climate change. Tensions and complementary values outside of their systems are not connected. Hence this representation does not provide a true picture of the whole system. It should be considered that 'without the planet's basic life support there can be no society and no economy, so the social system therefore is contained within the ecological system' (McGregor 2003b, p. 30). To view each objective and its values separately is to ignore the fact that the environment is central to life itself, as Stilwell (2002, p. 15) indicates.

The third theme involves the inclusion of both long and short term timeframes which encapsulate intergenerational equity. While the strategy emphasises this theme in their opening guiding principle (Commonwealth of Australia 1992, p. 2), this aim is not always included in the indicators. Again, McGregor (2003b, p. 31) makes the point that indicator targets are not sufficient to measure sustainability. He explains that for some indicators desirable trends have happened but notes that the trend may not be fast enough to avoid significant environmental problems. Air quality, for example, shows an improving trend in this report although this improvement may not be sufficient to avoid significant health

problems if it is not happening quickly enough. The focus on total energy use is also problematic as an increase in this variable could be large enough to offset any improvements in an increase in total renewable energy. While targets are important in ensuring progress occurs at a fast enough rate, this suggests that appropriate targets and their interrelationships are not well considered in this monitoring system. This issue of inadequate targets was also raised in relation to the UK government sustainability reporting system. Targets need to address the medium and long term requirements of sustainability (SDC 2004, p. 12).

Lack of benchmarks and targets hinders an assessment of progress against the medium and long term requirements of sustainability. No new targets or benchmarks have been developed for this monitoring system. Already developed targets or standards from other government frameworks are incorporated, such as the government's renewable energy target legislated by the *Renewable Energy (Electricity) Act* 2000. As well the reporting system includes the following standard that was originally developed for the Water Resources Assessment 2000 (ABS 2006, p. 99):

> proportion of bio-geographic sub-regions with greater than 30 per cent of original vegetative cover (as a percentage of 354 sub regions) at 2000; and proportion of surface water management areas with diversions within 70 percent of sustainable yield at 2000.

These targets and benchmarks were developed for other purposes, and their ability to monitor the performance of the organisation in the context of sustainability, ensuring current and future species does require questioning.

The fourth theme suggests the implementation of economic mechanisms to solve environmental problems. This understanding is evident in the following guiding principle of the strategy: *cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms* (Commonwealth of Australia 1992, p. 2). Market-based instruments such as these seem to draw on liberal frameworks associated with green signallers. It was noted in Chapter 3 that while green signallers (variant of a liberal approach) are popular with believers in the primacy of the free market, the market does not always send appropriate signals from a sustainability perspective. In response to this problem, market mechanisms like incentives continue to be applied to correct inappropriate market signals and are seen to solve the environmental issue. However, as

outlined in Chapter 3, more radical thinkers are sceptical about the ability of market-based solutions to solve environmental problems because such solutions involve little restructuring of the global free market system (Liodakis 2001, p. 121-122). The latter is a key force generating the pressures that affect sustainability of any description, economic, social or environmental.

Economic growth and environmental protection are seen as fully compatible in the Environment Australia report. This understanding is evident in the guiding principle: *The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised* (Commonwealth of Australia 1992, p. 2). The key theme is that economic growth complements environmental protection by providing the wealth required to protect ecosystems. This principle is inherently contradictory since the generation of wealth has already been shown to damage the environment in myriad gross and subtle ways. Nor does this theme question wealth distribution issues or the impact of the affluent lifestyles of the western countries. It does not consider any need to pose limits to consumption to ameliorate impacts on the environment.

These themes reveal a strong element of liberal thinking. Liberal thinkers more closely aligned to the right (i.e. closer to the neoliberal perspective) see no reason for limits to be placed on growth, as noted by Clapp & Dauvergne (2005, pp. 4-7). They argue that market mechanisms will rectify any environmental concerns. Economic growth is seen to be compatible and required to enhance the possibility of environmental protection. Economic development is also seen to complement and enhance individual and community well-being and welfare (Clapp & Dauvergne 2005, pp. 4-7). No need is therefore perceived for social transformation and only minimal changes are required to achieve sustainability.

The Environment Australia monitoring system considers well-known indicators already included in other monitoring systems. In its criteria to select indicators it specifies that the monitoring system must be reliant on data which is already available in other context (Commonwealth of Australia 2002, p. 1). As a result data is drawn upon for example, reporting frameworks developed by Commonwealth government research centers and agencies including the National Land and Water Resources Audit, Cooperative Research Centers and the Australian Greenhouse Office (Commonwealth of Australia 2002, p. 2).

The indicators and their data sets do not have the monitoring of sustainability as their primary purpose. Nor were they developed to monitor future capital. The nature of the data that is used to compile indicators raises concerns about epistemological link between indicators and the concepts being measured. A study by Spangenberg and Bonniot (cited in Spangenberg et al. 2002, p. 84) suggests that reliance on data collected for other purposes limits the capacity of monitoring systems to react proactively to potential future threats to sustainability.

Given that the data collected for this monitoring system was actually collected for purposes other than the measurement of sustainability it is worth considering how adequate they are to measure sustainability. A selection of indicators from this monitoring system will be discussed to illustrate this process.

- *Percentage of people aged 25-64 who have attained upper secondary and/or attained post secondary qualifications including vocational training.* This indicator provides an insight into the education and skill level for the country. However, from a sustainability perspective this indicator does not report against whether education is in the fields which will meet future requirements and whether education attainment will limit impact on the environment.
- *Air quality*. The indicator for air quality reports on total emissions and the number of times emissions exceed the national health standard. It does not report on the wider implications of this air pollution, for example, health and biodiversity effects.
- N*ational net worth.* This indicator is applied to monitor economic security but placed in a sustainability context. It must be asked how does the data from this indicator link to environmental and social security?
- *Management of environmental resources*. Various indicators are applied to monitor the management of key inputs from the environment into the production process. These inputs include water, fish, energy, and forests. The focus of these indicators is on the environment as a resource rather than on its intrinsic value or its place at the centre of life on the planet. In essence the economy is again privileged over the environment.
- *Management of key sectors*. McGregor (2003b, p. 30) raises that the management of agriculture is an indicator theme that is monitored by considering the net value of rural land. However, the economic value of rural land does not provide an indication of improvement in ecologically sustainable management of agriculture in Australia.

As outlined, the intent of this monitoring system is to report on whether current needs are satisfied, but without affecting the ecosystem in a manner which will prevent future generations from meeting their needs. This is a general understanding of sustainability, typical of the Brundtland definition and does not outline what is to be sustained and to what level. It appears that the selection of indicators limits the capacity of this monitoring system to consider sustainability, particularly in terms of whether future needs will be satisfied. This is because the indicators included in the framework have been developed for other purposes and lack the rigour to provide insight into whether the needs of future generations, or even those of the present generations will be met without adversely affecting the ecosystem.

In summary, this monitoring system does not include a robust definition to measure sustainability against. There is a particular lack of clarity in the epistemological link between indicators and the phenomenon being measured. The typology to categorise the indicators does not represent a true picture of the whole system and marginalises the role of the environment. No new data has been collected to measure sustainability for this reporting system. There is a reliance on data already collected for other purposes and other reporting requirements. No new targets or benchmarks have been developed for this report. Targets developed for other purposes are unable to address the medium and long term requirements of sustainability. Consequently issues associated with more alternative understandings of sustainability are not considered. For example, contentious issues such as the environmental and social impact of increasing population are not monitored and there is only limited reporting on the impact of economic growth on the environment. The liberal ideology evident in this report seems to limit its capacity to meaningfully report on the risks to sustainability.

### 7.3.2 How does the organisation measure sustainability?

Chapter 1 described how sustainability reports have evolved into three main formats. Suite-of-indicators assessment is the most applicable interpretation of the format used in this report although there is some narrative assessment. The suite-of–indicators approach involves the presentation of a collection of data on various aspects of sustainability (Macintosh & Wilkinson 2006, p. 5). The monitoring system does incorporate narrative text, explanatory and elaborative information on the indicator data but this does not

extend to an assessment of the data and its implications for sustainability. In general the narrative text outlines applicable definitions and explains the data.

This reporting system does encompass a suite-of–indicators that it believes is best fit to monitor the nation's performance in relation to the objectives of the National Strategy for Ecological Sustainable Development. The reporting system encompasses 24 headline indicators and a supplementary indicator. The suites of indicators approach provides a relatively effective way to communicate the key issues of sustainability. The use of indicators also provides a straight forward format to compare change over a period of time. This approach however has its limitations. The suites of indicators reporting format does not communicate the linkages and tensions between the indicators. The application of this reporting format has resulted in a list of indicators that are disconnected from a holistic concept of sustainability. This finding concurs with Holden's (2001, p. 24) observation that mainstream sustainability monitoring approaches tend to contain long lists of indicators where no attempt is made to identify linkages between them.

This monitoring system again lacks epistemological coherence and analytical robustness, which tends to disguise the influence of the neoliberal and milder liberal discourses on this system. The way the lists of indicators are presented also discourages serious analysis of the interdependence of the dimensions on each other and further marginalises consideration of the role of the environmental system on which life depends. As discussed in earlier chapters, governments appear reluctant to report on the tensions between the dimensions of sustainability as it may draw attention to the need for radical behaviour change from corporations, governments and citizens.

## 7.4 Validity of the reporting system as a genuine measure of sustainability

It is encouraging that the Australian government has invested to some extent in the development of a monitoring system for sustainability. However, this investment has not been to the extent of the international government benchmark represented by the UK government sustainability monitoring systems. It is disappointing that since its inception the Australian government reporting system has not been revised or even been populated with updated data. It is clear that ongoing investment by the Australian government in this area is limited. The Environment Australia typology is conventional and limited rather than comprehensive and innovative. It does not incorporate any new indicator developments better suited to sustainability reporting for business and government.

The main limitations of the Australian indicator monitoring system include the fact that it

- does not incorporate a comprehensive theoretical definition of sustainability to underpin the monitoring system
- relies on data collected for purposes other than the monitoring of sustainability. The reporting system is limited by its inability to situate the collected data in a sustainability context.
- establishes a monitoring framework that does not situate itself within the larger context of sustainability
- does not provide a robust commitment to sustainability. Its commitment to sustainability is closely aligned to a liberal theoretical discourse.
- uses a framework and data that has not been updated since its inception in 2002. With a lapse of six years, data included in this reporting system is now obsolete.

The ambiguity of the concept of sustainability in the literature and among policy makers generally means that monitoring systems such as NSESD begin from an inherently unstable base. It is imperative, therefore, that a clear indication of the chosen theoretical perspective is provided in any description of a monitoring system. This type of definition would clarify how sustainability is understood and in turn what is to be sustained and to what level.

This monitoring system does identify a set of values, which contributes to making the focus of the system clearer. However, it is not clear how the values are understood by Environment Australia or what parameters determine the level of sustainability sought. There remains uncertainty about the linkages between the values, although the linkages are

vital to understanding the viability of the total system since a change in performance of one value can affect other values.

Indicators included in Australian monitoring system are drawn from other reporting systems and there is little new about them. Other than incorporating these indicators within the one monitoring system and categorising them under similar key themes, there is no other advance made to reporting on the interrelationships between the systems, which might indicate the viability of the overall system. The simplistic nature of the typology use to categorise indicators also limits understanding of the interrelated forces driving social, economic and environmental change.

The monitoring system appears to have strong links to a liberal theoretical understanding of sustainability, which in turn influences what is measured. Attributes that are considered radical are not monitored, such as the impact of growing populations and increased consumption on present resources and future generations. The conservative targets addressed in the monitoring system raise concerns about the ability of our nation to maintain future capital. Furthermore, indicators lack the rigour to monitor issues of concern addressed by radical understandings of sustainability. Contentious issues are not monitored and reporting on the tension between furthering economic growth and environmental degradation is underdeveloped.

In short, the NSESD promotes little change to current practices and procedures at a time when there is a need to question all aspects of the nation's interaction with the environment and attitudes towards society and the economy. That contentious but important issues have been ignored suggests that this monitoring system has little to contribute to addressing sustainability.

# MEASURING AUSTRALIA'S PROGRESS

## 7.5 History of the report

The second national government framework reviewed was the Australian Bureau of Statistics (ABS) *Measures of Australia's Progress* (MAP). The Australian Bureau of Statistics (ABS) released the first issue of *Measures of Australia's Progress* (MAP) in 2002. The publication was updated in 2004 and 2006. In the 2005 publication only the headline indicators were updated. MAP is a facts-based publication that includes indicators that

are seen to encompass key aspects of Australia's economic, social and environmental progress. MAP is considered a landmark contribution to national government monitoring systems as it provides information across the three pillars of sustainability Macintosh & Wilkinson (2006, p. 32). The indicators are a selection of statistical facts that allow Australians to make their own assessment of whether life is Australia is getting better.

As can being seen from the title of this initiative it is about measuring progress, not sustainability. However, in Chapter 1 of the current study, it was noted that even with the conceptual difference in terminology, in the absence of a more comprehensive government monitoring system, any system considering the three pillars of sustainability is worth investigating to ascertain whether trends are developing or attitudes changing.

MAP was initiated to address increasing public interest in, and the ABS's desire to increase the understanding of, the interrelationships between the economic, social and environmental aspects of life (Trewin & Hall 2004, p. 2). The ABS notes that it has for some years been reporting on each of these key aspects, but the focus had been on each dimension of sustainability in isolation (ABS 2004, p. v). Development was also influenced by calls from Civil Society Organisations (CSO)[14] for new and better measures of progress to supplement the Gross Domestic Product (GDP). They felt that the GDP did not provide the necessary level of understanding of the interrelationships between the economy, society and environment.

The ABS also states that they had an interest in developing a broader set of economic statistics that could provide information about aspects of life outside of the traditional economic system (ABS 2001, p. 1). As early as the mid 1990s the ABS had started discussions with academics, scientists and policy makers on ways to measure progress. In 1997 the ABS co-sponsored a conference on Measuring National Progress: Is Life in Australia Getting Better or Worse? The final outcome was the MAP publications (Hall et al. 2004, p. 4).

## 7.6 Outline of the reporting system

This review will analyse the MAP 2006 monitoring system.

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[14] CSO refers to collective action around shared interests, purposes and values through organisations such as registered charities, non-governmental organisations, professional associations, trades unions, business associations, coalitions and advocacy groups (Hall, Yencken, Carswell & Jones 2004, p. 2).

The ABS typology for categorising indicators is based on conventional economic, social and environmental structures. This standard trilogy of reporting themes provides the over-arching framework in which to categorise indicators. Systems are referred to as domains. These domains are further categorised into other domains: individuals, the economy and economic resources, the environment, and living together. Fourteen headline dimensions are then categorised under these four domains. Indicators are incorporated into the monitoring system under these dimensions.

Indicators are differentiated between headline, supplementary and 'other'. The monitoring system also includes a supplementary dimension and its indicators. The ABS saw it as important to distinguish the headline indicators as they are seen to encapsulate the major features of change in Australian life (ABS 2006, p. 11). Moreover, the supplementary dimensions and indicators contribute to the relevance of the progress story (ABS 2006, p. 10). Supplementary indicators also provide more information about the dimensions that extend beyond the headline indicators (ABS 2006, p. 11).

In the overall framework over 100 indicators are present. The full list of indicators can be found in Appendix 4. The review of the MAP framework concentrated on describing and analysing the headline dimensions and headline indicators. This focus was chosen since, with so many indicators in the framework, not all could be fully considered. The headline indicators, due to their nature, provide a good indication of the ABS's understanding of key themes of change within Australian life.

The headline indicators are discussed in this thesis in the context of the specified domains and dimensions proposed by the ABS. The focus is on the conditions and aspects of people's lives, the society we live in, and the state of the environment that surrounds us. The headline indicators are outlined in Exhibit 7.5.

**Exhibit 7.5 Headline indicators for MAP 2006**

| Headline dimensions | Headline indicators |
|---|---|
| Health | Life expectancy at birth |
| Education and training | People aged 25-64 years with a vocational or higher education qualification |
| Work | Unemployment rate |
| National income | Real net national disposal income per capita |
| Economic hardship | Average real equivalised weekly disposable income of households in the second and third deciles of the income distribution |
| National wealth | Real national net worth per capita |
| Productivity | Multifactor productivity |
| The natural landscape | Threatened birds and mammals; annual area of land cleared; salinity, assets at risk in areas affected, or with a high potential to develop, salinity; water management areas, proportion where use exceeded 70 percent of sustainable yield |
| The air and atmosphere | Fine particle concentrations, days health standards exceeded, selected capital cities; net greenhouse gas emissions |
| Crime | Victims of personal and household crimes |

Source: ABS 2006, p. 24.

In the report, environmental progress is described as the 'reduction of threats to the environment and improvements in the health of our ecosystems' (ABS 2004, p. 16). The key dimensions to measure environmental progress include the natural landscape, the air and atmosphere, and oceans and estuaries. Oceans and estuaries are not reported on at the headline indicator level. The dimension of air and atmosphere reports on whether air pollution exceeds health standards, and net greenhouse gas emissions. The dimension of natural landscape reports on threats to birds and mammals, assets at risk from salinity, and water usage above a sustainable yield. It is assumed that threats to the environment can be monitored to provide an indication of the health of the environment.

Economic progress is interpreted as 'enhancing the nation's income, (broadly Australia's' real per capita levels of consumption) while at least maintaining (or possibly enhancing) the national wealth that will support future consumption' (ABS 2004, p. 16). The key dimensions to measure economic progress include national income, economic hardship, national wealth, housing and productivity. Housing is not reported on at the headline indicator level. Instead the emphasis is on real net national disposable income and wealth per capita. Productivity, and the average real equivalised weekly disposable income of households in the second and third deciles of the income distribution are offered as an indication of economic hardship. The dimensions are centred on the nation's income, with

particular interest in reporting on those Australians in economic hardship, along with the nation's ability to make wealth and be productive.

Social progress is interpreted as an 'increases in the wellbeing of the population; a reduction of threats to, and increases in social cohesion; and protection and enhancement of democratic rights' (ABS 2004, p. 16). The key dimensions for social progress are divided into two categories, individuals and living together. The category of individuals incorporates health, education and training, and work. Living together includes family, community and social cohesion, crime and democracy, governance and citizenship. Family, community and social cohesion and governance, democracy and citizenship are not reported upon at the headline indicator level. Individual social progress is reported against individuals' life expectancy at birth, higher or vocational educational attainment and the unemployment rate. Living together is reported against victims of personal and household crimes. At the headline indicator level the well-being of the population is measured through life expectancy and reduction of threat to social cohesion through monitoring the level of crime and unemployment. Social cohesion is also measured in relation to education attainments. Overall the focus of the ABS monitoring of progress at the headline indicator level is on:

- the health of the environment and its main threats
- the nation's income
- those suffering economic hardship
- the nation's ability to generate wealth
- the well-being of the population measured through life expectancy
- the threat to social cohesion monitored through levels of crime and the unemployment rate
- social cohesion monitored through education levels.

The ABS describes its selection of indicators as an attempt to attain objective measurements from measures of items such as life expectancy and educational qualifications. It states that it has avoided indicators that are intrinsically subjective, preferring instead more objective, generally agreed measures (ABS 2006, p. 7).

## 7.7 Review of the reporting system in context of addressing the research questions

As outlined earlier, while this monitoring system focuses on progress, the same research questions that were applied to the review of the reporting system for sustainability in Australia were also considered for the ABS system. It was necessary to determine whether sustainability and progress were understood differently by the writers of the reports and if they were, how the differences in conceptualisation affected the measurement of sustainability.

### 7.7.1 How is progress conceptualised and how then do they seek to measure it?

The ABS states that it's definition of progress 'tries to take a comprehensive view of progress, embracing the social, economic and environmental aspects of Australian life' (ABS 2004, p. 4; ABS 2006, p. 6). While the ABS MAP 2004 and 2006 reports describe the importance of a theoretical perspective in informing the conceptual framework, they also point out that national statistical agencies are usually uncomfortable making statements involving value judgments (ABS 2004, p. 15; ABS 2006, p. 17). The ABS states that it deliberately avoids a tight definition of progress because it does not see its role to define a specifying a desired state (ABS 2004, p. 4; ABS 2006, p. 6). As a result progress is loosely defined and no explicit tendency towards one perspective is specified.

While the ABS has stated that it does not wish to align itself with a theoretical perspective, inevitably the choice of indicators requires some form of value judgment. As has been demonstrated in Chapter 3 sustainability is open to many different interpretations, and there is no agreement on what constitutes sustainability. This is also the case with the concept of progress. This is because it depends on your understanding of what attributes are considered important to sustaining society. For example, there is debate over the question of whether preserving critical natural capital is more important than ensuring that economic capacity continues to grow (Meadows et al. 1972, p. 23; Norton cited in Turner 1993, p. 4). Fundamental questions such as this present difficulties when a nation is deciding what aspects of its life need to be incorporated in a system to monitor what cannot even be consensually defined. A lack of definitional clarity in the ABS monitoring

system causes confusion in the choice of indicators, and in turn how they represent progress. Examples of this confusion follow.

The number of indicators that represent a particular dimension could be seen to communicate the weighting of the importance of a dimension. For example, six of the 15 indicators within MAP are environmental indicators. This could be interpreted, particularly by those more closely aligned to neoliberal thinking, as placing specific emphasis on the environment to the detriment of the economy. For example, The Centre of Independent Studies, a neoliberal research organisation, argues that Australians do not care enough about the environment to warrant this emphasis (Saunders 2002, p. 2). However, Hamilton, a liberal thinker with radical leanings feels there is growing concern within the Australian community over the state of the environment. Hamilton also argues that protecting the natural environment is crucial to the sustainability of economic growth (Hamilton 2002, p. 6).

Those holding differing ideological positions consider different elements worthy of inclusion in a monitoring system. The inclusion of an indicator measuring income inequality is a good example. The CIS believes that there is no consensus that equality is generally a good outcome for society. The inclusion of income equality is also seen by the CIS to reflect commitment by the ABS to the egalitarian politics of the left (Saunders 2002, p. 1). Hamilton responds by stating that there is 'plenty of evidence that the majority of Australians believe that the distribution of income is too unequal and would prefer greater equality' (Hamilton 2002, p. 6).

These critiques of the headline indicators reveal a clash of life philosophies, world views and attitudes reflective of different interest groups in Australian society. Such tensions make the task of the ABS, a national statistics agency difficult.

The MAP report does not incorporate a discussion of the key goals that underpin the reporting system. This is because of MAP's relatively unique place of development. It was developed by a national statistical agency rather than a government department with a specific policy mandate. The ABS is a national statistical service and its purpose is not policy development but is to collect and provide data and information to support policy making decisions. In this sense the role of the ABS is not to define progress, set

benchmarks or develop policy. Therefore the ABS has sought to keep the MAP report ideologically neutral. Unfortunately the absence of a theoretical position in MAP seems to have contributed to a lack of epistemological coherence. This report does not measure a theoretically defined concept and hence is an example of a list of disconnected and relatively meaningless indicators.

There is a clear argument for the ABS to incorporate a concise definition of progress in the monitoring system to provide it with a conceptual launchpad. This argument is reflected within the literature (Lele 1991; Sumner 2004; Pinter et al. 2005; Luckman 2006; Bossel 1999). Regardless of whether critics agree with the definition and the direction of the ABS, they would be aware of its position, and could pose counter arguments based on a clear understanding of what the ABS intended to monitor and how. The definition would guide the choice of indicators to ensure they are epistemologically consistent with the term's definition.

The ABS provides an extensive discussion of what indicators it would ideally have liked to have included in the reporting system (ABS 2006, p. 20-22). The main reasons for its inability to include all of its 'ideal indicators,' was that there was no available data, and methodologies to collect the required data were not yet developed. This is of concern as a key point of difference between the two types of indicators is that 'ideal' indicators generally attempt to report on the state of the key theme under consideration. In general this requires a composite indicator to report on the overall state of the key theme. When ideal indicators are not availability, a proxy indicator is resorted to. The shortcoming of proxy indicators is that they do not report on the overall state of key themes, but focus on aspects of the key theme, which are taken to be representative of the whole.

The ABS describes an ideal indicator for the natural landscape as an indicator that encompasses all the varying aspects of biodiversity (ABS 2006, p. 20). But the ABS also thought that such a comprehensive measure would be difficult, if not impossible, to develop (ABS 2006, p. 20). Therefore individual indicators were decided upon to discuss progress for three of the key components of the landscape. These three components being biodiversity, land and water. Two headline indicators represent biodiversity. These are represented by the change in the conservation status of one small component of faunal

biodiversity, mammals and birds, and the clearance of native vegetation (ABS 2006, pp 20-22).

The indicator *threatened birds and mammals* is illustrative of the point of concern (ABS 2006, p. 20). An increase in the number of species listed as threatened may be the result of a number of factors, such as new knowledge or a successful environmental campaign that leads to an increase in numbers of protected threatened species. On this basis, particularly the later example, the increase of species listed could be seen as a positive rather than a negative for biodiversity. Overall, this indicator is seen to lack rigour and objectivity as it ignores the vast majority of biological diversity (Marohasy 2003, p. 10).

The state of biodiversity is a more complicated issue than represented by these two indicators. The two headline indicators for biodiversity only provide an indication of a small proportion of the overall heath of biodiversity.

This lack of data impedes the quality of information that can be provided through the monitoring system. This then limits the monitoring system's capacity to report on progress. If well-known indicators are continuously resorted because of either methodological or data constraints than reporting systems will not actually be reporting any thing new. As discussed, the practice of incorporating well-recognised indicators within sustainability monitoring systems results in a focus on historical experiences. The practice tends to be backward looking and limits the inclusion of new issues. Moreover it restricts the type of knowledge available to inform current and future decisions.

As discussed by Neumayer (cited in Sumner 2004, p. 118) the concept of sustainability is frequently discussed in the literature as interchangeable with the concept of progress although these terms might have conceptual differences (Neumayer cited in Sumner 2004, p. 118). Moreover, while a measure of progress MAP is recognized as addressing the three pillars of sustainability. It is worthy to compare the MAP headline indicators with the UK government *Securing the Future* 2005 headline indicators and with those of the Environment Australia sustainability monitoring system.

A comparison with the government *Securing the Future* monitoring system suggests close similarities between two reporting system. Similar key themes appear in both monitoring systems on national income, employment, economic hardship, education and training, health, crime, the air and atmosphere, and the natural landscape. Key themes not

included in the ABS framework but appearing in the *Securing the Future* framework are waste, fish stocks, and the more innovative key themes of consumption, well-being and environmental quality. The ABS places greater emphasis on economic indicators than the *Securing the Future* framework. For example, indicators of national wealth and productivity do not feature as headline key indicators in *Securing the Future*.

As noted, the ABS monitoring system does not include two key themes that are present in the UK *Securing the Future* framework, waste and fish stocks (United Kingdom government 2005). There is an argument for these key themes to be included. Waste is of significances because Australia is the second highest waste generator among the OECD countries. It has a per capita disposal rate for domestic waste at 620 kg/year (Commonwealth of Australia 2001, p. 1). In terms of fish stocks, Australia is surrounded by the sea, access to fish stocks is readily achieved and harvesting and consumption is high. The rate of increase of overfished species has resulted in exponential growth in the last decade, species monitored that were classified as overfished or subject to overfishing increase from 3 to 17 from a total of 74 (MAP 2006, p. 141).

Innovative key themes like consumption, well-being and environmental quality are also missing from the ABS framework. The inclusion of these themes would demonstrate a more radical indicator development process that considers the interrelations between the dimensions, as is the case in the UK *Securing the Future* monitoring system. For example, consumption in the UK government system considers both domestic material consumption and gross domestic product in the one indicator (United Kingdom government 2005).

Nevertheless there are strong similarities between the key themes of the ABS MAP reporting system and the UK government *Securing the Future* monitoring system. A comparison was also made against the Environment Australia sustainability indicator framework to determine if similar reporting patterns were present.

Similarities between the headline indicator key themes in the ABS MAP and those in the Environment Australia report lie in the areas of: national wealth; work; national income; productivity; economic hardship; education and training; health; the air and atmosphere; and the natural landscape. Key differences between these two monitoring systems are the

inclusion of reporting themes in the Environment Australia framework with a focus on economic equity and particularly inter-generational equity and the sustainable management of key natural resources such as water, energy, agriculture and fisheries (Commonwealth of Australia 2002, p. 1). Example of the indicators that sit underneath these themes include: the value economic and gender equity and its indicator is *Adult female full time average weekly earnings as a proportion of adult male full time average weekly earnings*; and sustainability of fish and its indicator *Percentage of major Commonwealth harvested wild fish species classified as fully or under fished* (Commonwealth of Australia 2002, p. 1).

But while some of the key themes seem to differ in each monitoring system closer examination suggests that they do not. For example, both the Environment Australia monitoring system theme 'management of natural resources – water', and the ABS MAP theme, 'the natural landscape' incorporate the same indicator of *water management areas, proportion where use exceeded 70 percent of sustainable yield (*ABS 2006, p. 25; Commonwealth of Australia 2002, p. 1). A contributing factor to the use of similar or the same indicators in the two monitoring systems is the reliance on already available data sets.

This analysis has revealed close similarities between key themes and headline indicators from reporting frameworks of both progress and sustainability. This raises significant issues over how sustainability and progress are understood, and suggests that the terms are understood to mean much the same thing by the framers of these monitoring systems. This being the case it places into question the epistemological link between the concept being measured and its indicators. Are the Environmental Australia monitoring system and ABS reporting system MAP measuring sustainability or progress? Since these monitoring systems seem to use the same indicators to measure different (although related) concepts it raises the question of just what are the designers of these two monitoring system are measuring? Is it sustainability or progress, or both?

**In summary**, the ABS MAP indicators present a selection of disconnected indicators that do not lead to any significant insight into progress of the nation or of sustainability. The indicators report on diverse issues but reporting on the interrelationships between these issues is not undertaken. This monitoring system provides an example of a set of

indicators drawn from data that were collected for other purposes. The data sets are already available and therefore seen to provide the 'best fit' proxy solution. Moreover, the decision of the ABS not to provide a discussion of its ideological reasoning in the design of its monitoring system combined with a vague definition of progress and sustainability contributes to disconnection between the indicators and limits the capacity of this monitoring system to measure either progress or sustainability. A comprehensive definition of the underlying principle driving the reporting system would provide the epistemological link between the concept and the overall selection of indicators. A clear theoretical underpinning to the monitoring system would tighten the debate regarding what indicators should be incorporated in the system, while allowing a debate based on a concise understanding of the ABS's position.

Moreover, a strong definitional statement would differentiate between concepts prone to being confounded, such as progress and sustainability. The development of innovative indicators that reflect the realities of 21st century economic, social and environmental challenges requires further research, particularly in terms of methodological and technical issues. This research is necessary to ensure that development of the monitoring system advances and remains a relevant and informative part of the decision making process.

### 7.7.2 How does this organisation measure progress?

Chapter 1 discussed how sustainability reports have evolved within three main formats with the suites of indicators approach being the most commonly applied format. While the ABS report is not technically a sustainability report (although it reports on sustainability in terms of progress), the suite-of–indicators approach has been used in its development.

The reports also include a narrative discussion for each indicator. Topics covered include: the relationship of the 'indicator' to progress, a discussion of the headline indicator and its limitations; some differences present within the Australian context and links to other dimensions. This narrative addition to the report is descriptive, rather than evaluative.

This monitoring system has limited capacity to report on the interrelationships between society, the environment and the economy. Reporting on the interrelationships across systems (economy, the environment, and society) is important to make an accurate

evaluation of whether progress has improved overall or deteriorated. Changes in the performance of one indicator affect others. Therefore advancing measurement of the interrelationships between the pillars of sustainability requires the capacity to address a coordinated movement across a set of performance measures. A reporting system requires the capacity to communicate these linkages to effectively measure progress. Again, the monitoring system reviewed here contains a list of disconnected indicators that discourages serious analysis of the interdependence of the dimensions on each other and marginalises the environmental system on which society and the economy depend.

## 7.8 Validity of the reporting system as a genuine measure of sustainability

The amount of statistics available through the ABS is vast, and it generally catalogues data on issues (for example, health, education and income) separately. A publication like MAP that identifies relevant statistics and puts them together makes a broad spectrum of ABS data accessible to a wide audience. MAP utilises and presents these statistics in a user friendly format. It is probably the most complete and up to date set of indicators available on economic, social and environment aspects of life in Australia. The MAP publication has played an important role in influencing public debate on the pillars of sustainability.

Environment Australia has also developed a sustainability monitoring system but, as discussed, it is yet to be revisited since its launch in 2002. In contrast MAP has been updated twice since its release. Other countries are developing national systems to monitor sustainability and there is a persuasive argument for Australia to contribute to these developments. Regardless of the words used to describe what the report measures (progress), the statistics offer readers an opportunity to investigate the state of the nation in a variety of areas central to the key dimensions of sustainability.

The ABS also believes that MAP has also played a role in influencing public debate in raising awareness of the interrelationships between the economy, environment and social systems. The ABS comments that interest in a publication like MAP is strong because it provides 'a well thought through, holistic and fact based presentation of progress' (Trewin et al. 2004, p. 15). With GDP progressively being abandoned as the major indicator of

growth, it appears that a publication like the MAP can provide a more meaningful selection of data relating to what it means across a range of sectors for a country to be 'growing' (Trewin et al. 2004, p. 14).

The main limitations of the ABS monitoring system include a lack of a clear and operational definition of progress to provide clarity to its measurement. As is the case with other monitoring systems reviewed for this study the epistemological link between chosen indicators and the concept is unclear. The ideal indicators the ABS wishes to use are not available as the data to populate these indicators is often incomplete or not available. Moreover the typology to categorise indicators is based on a conventional policy and research structure which limits its capacity to demonstrate the interrelations between the economic, social and environmental dimensions of sustainability.

The ABS has chosen to report on the progress of four areas which it sees as similar, while omitting sustainability, well-being and quality of life. Sustainability was not included because it was felt that it would be difficult to make a judgment of whether a pattern was sustainable or not (Trewin et al. 2004, p. 6). This argument seems to overlook the fact that 'progress' actually has similar limitations, as progress requires specifying a desired state of being with which existing states of being can be compared and judged. The ABS does not specify a desired state, because it does not see that it is its role to do so. Thus, while considerable effort has gone into developing the domains of progress and its dimensions, conceptually linking these to a wider understanding of progress is not possible.

Unavoidably when monitoring concepts like sustainability, progress or quality of life, some form of judgment is inescapable due to the very nature of these terms. Because of this reality, it is essential that a clear and operational definition of a concept like progress or sustainability be stated if an organisation is to provide information related to it. Only then will the term have the conceptual launchpad that allows for meaningful measurement.

# Chapter 8 Summary of argument: the research objectives and questions

Chapter 8 summarises the argument that has been developed by this research by addressing the research objectives. As discussed in the Introduction, the objectives of this research were:

1 to review and critically analyse the literature on sustainability indicators

2 to map out the various ideologies present within the sustainability debate and analyse existing typologies that seek to organise these political positions

3 to identify and critique the assumptions and theories of sustainability that underpin mainstream sustainability monitoring systems

4 to identify the international benchmarks in sustainability reporting systems

5 to undertake a critical interrogation of a selection of Australian reporting systems using the theoretical insights provided by this study and using the international benchmarks for comparison

In reviewing the research and the findings as presented in this thesis, it is timely that these five objectives be reconsidered in the light of the evidence presented.

## Achieving the research objectives

### 1) To review and critically analyse the literature on sustainability indicators

The research began with a review of the literature on the evolution of sustainability monitoring and reporting systems. In considering the literature in the field it became clear that sustainability monitoring has evolved to a point where most reporting systems now attempt to some degree to report on the interrelationships between economic, social and environmental factors, or at least refer to the concept of 'sustainability', however obliquely. There appears to exist, however, no broadly agreed understanding of the concept of sustainability. Much reporting is not epistemologically coherent and is often analytically meaningless, as evidenced by lists of disconnected indicators (Holden 2001, p. 24; Bossel 1999, p. 13), reliance on indicators developed for other reporting purposes (Spangenberg and Bonniot cited in Spangenberg et al. 2002, p. 64) and in many cases indicators categorised within silos that restrict thinking in a more holistic manner (Gibson 2005, p. 94). There are significant variations in the quality of the approaches that have

been applied to sustainability reporting as well as a lack of uniformity between the approaches. Such variations make both comparisons and/or linkages between reporting systems difficult to operationalise (Pinter et al. 2005, p. 16).

Much of the ineffective and confused reporting can be related to the influence of the neoliberal discourse of sustainability (Clapp and Dauvergne 2005, p. 178; Norman & MacDonald 2004, p. 6; SDC 2004, p. 25; Voisey et al. 1997, p. 43; McGregor 2003b, p. 33). This discourse tends to equate the word 'sustainable' with the word 'growth'. It is a discourse in sustainability measurement that privileges the economy over social and environmental concerns and discourages serious analysis of the interdependence of the dimensions on each other. Moreover it marginalises the environmental system on which life depends. The blending of sustainability with economic growth to arrive at the term 'sustainable development', (Jacobs 1991, p. 59; Voisey et al. 1997, p. 27; Clapp and Dauvergne 2005, p. 61) raises the question of whether current mainstream indicator systems can possibly offer valid measures of progress toward a genuinely sustainable society and environment. The concept of economic growth is inherently unsustainable given that Earth's resources, on which growth depends, are finite and cannot be sustained at their current rate of use (Hamilton 2003, p. 174; Diamond 2005, p. 486).

As discussed in Section 3. 5 both neoliberal and liberal interpretations of sustainability are limited in their capacity to monitor sustainability as both of these approaches draw on the assumptions of neoclassical economic theory (Paton 2005, p. 363). For these approaches the role and the dominance of the market is at the forefront and environmental and social justice considerations are of secondary concern. Moreover, a critique of sustainability based on power relations is absent from the neoliberal discourse. Some variants of liberal sustainability discourse attempt to consider power relations but continue to privilege the economy at the expense of the other dimensions of sustainability thus limiting the capacity of these models to seriously consider the impact of power differentials on social, economic and environmental sustainability (Rosewarne 2007, p. 190). Radical social theorists alternatively argue the dimensions of environment and social justice are equally important, in some cases dominant, to the economic dimension in addressing sustainability. This is because radical approaches do not assert that the economy is the dominate dimension of sustainability nor should the economy be privileged over social

and environmental considerations. For example, there is recognition in radical approaches that finite or critical natural capital requires preservation. It logically follows from this understanding that constraints will most likely need to be placed on the economy in some form if sustainability is to be achieved. Such an understanding shows an evident appreciation of the tensions between the dimensions of sustainability and the need to address them. This appreciation is not present in the neoliberal discourse as it is assumed that economic growth can compliment outcomes of social and environmental wellbeing. That is, neoliberal discourse suggests that 'we can have it all' and hence there is no need to constrain natural capital depletion. Radical approaches also enable a discussion of the cultural and political transformations that might be required in tandem with economic change to address environmental issues (Rosewarne 2007, p. 189). As discussed in the case study, a commitment to cultural and political transformation was identified as lacking in the UK Government *Securing the Future* monitoring system by the Sustainable Development Commission. The Commission's report suggested that a significant societal and political transformation is required to adequately progress sustainability, but there is no evident willingness to forward such a transformation in the UK because the discourse on sustainability remains dominated by neoliberalism.

Hence radical social theory allows consideration of contentious risks to sustainability to a greater extent than centrist liberal models and right of centre, neoliberal approaches. Most mainstream sustainability monitoring systems rely on neoliberal or liberal assumptions about the role of the economy in relation to environmental and social concerns, and fail to address the risks that radical approaches to monitoring sustainability are capable of identifying. Such risks are likely to be under reported by mainstream sustainability monitoring systems. A rethink might be required into how we measure sustainability.

### 2) To map out the various ideologies present within the sustainability debate and analyse existing typologies that seek to organise these political positions

Due to the complexity of different theoretical perspectives in the sustainability debate this research drew upon typologies that categorised the various definitions offered in the existing literature. The typologies captured the range of positions within the debate, moving from a conservative through to a radical approach to the concept of sustainability

and its reporting. The purpose of the review was to propose a political economy framework or typology to make sense of the case study data that was reviewed in later chapters. The research proposed a clear framework that addressed the broad ideological debates to identify theoretical underpinning in monitoring systems for sustainability. The typology captures the three key political economy views: neoliberal; liberal; and radical social theory.

As discussed in the review of the literature, neoliberalism and liberalism are the dominant discourses in the sustainability debate. Chapter 3 also addressed how and why this has come about. This understanding is important to provide insight into how such approaches to society, the environment and the economy have acquired dominance in mainstream discourse and skewed mainstream interpretations and policy responses to sustainability. The Brundtland report discussed in earlier chapters provided an example of the dominance of the mainstream neoliberal discourse in the debate over sustainability. The significance of this report continues to skew policy responses to sustainability, as is evident for example in the UK application of the Bruntland definition within its *Securing the Future* policy on sustainability. Neoliberalism and liberalism are not, however, the only ideological positions in the debate on sustainability (McManus 1996, pp. 60-61).

Within the neoliberal interpretation of sustainability, economic concerns and a dominant role for the market are at the forefront (McManus 1996, p. 60). The market is seen as capable of delivering economic growth and social and environmental solutions. The liberal approaches at the centre of the spectrum are still embedded within neoclassical economics, but with a focus on addressing 'market failures' through varying levels of regulation. Liberal approaches incorporate a diversity of variants influenced by the extent of belief in the market and, in turn, the level of government intervention required to deliver the desired solution. The variants vary in focus ranging from a more neoliberal perspective on the right to radical approaches on the left. Liberal thinkers closer to the neoliberal end of the spectrum advocate for reforms through managerial philosophies like eco-efficiency, voluntary corporate regulation, more technological cooperation and the application of market mechanisms such as green signallers. Some liberal thinkers but with more left leanings even extend to recognition of limits to growth, such as steady-state

approaches that accept the non-substitutability of the various types of capital (McManus 1996, p. 59).

At the other end of the spectrum are more radical understandings of sustainability. Radical social theory, for example, advocates a significant transformation of the power structure to situate social relations in the context of the natural environment. The more radical approaches place considerably more importance on ecological and social sustainability with the environment positioned as central to ensure life on earth. Radical social theorists also argue that a cultural and political transformation is required in addition to economic change to address environmental issues.

The analysis advanced in this thesis suggests that the both the liberal and therefore the neoliberal discourse (as it underpins the liberal discourse) in the sustainability debate need to be displaced by alternative discourses that involve less emphasis on 'growth' and more emphasis on society and the environment. It is acknowledged that liberal approaches to understanding sustainability go some way to incorporating issues of social justice, the environment and the economy in a more balanced and considered manner than do the approaches of neoliberals. However, an underlying issue is that neoclassical economic theory underpins most of these approaches to sustainability (Paton 2005, p. 363). The role and the dominance of the market is at the forefront, therefore, and impinges on incorporating environmental and social justice.

The literature reviewed by this research suggests that the dominance of neoliberal and liberal discourse will not, in fact, reduce the threats to sustainability to the extent required to ensure survival of all species on earth. It has been argued that neoliberal and liberal market-based responses involve only minor restructuring of the capital system to address the tension between economic growth, and environmental impact. The dominance of the neoliberal assumptions that are present in the liberal discourse result with, if present, marginalisation of power relationships, for example ecological economics (see Section 3.5.2). A market-based response to sustainability does not ensure a critical level of natural capital, nor does it encourage less consumption or address distributional concerns. Lack of attention to power relationships results in tinkering of cultural and political structures, and no debate of transformation of structures required to implement economic change to

address social and environmental issues. This response does not extend to addressing key threats to survival, much less sustainability, for example, depletion of natural resources and the interruption of the Earth's ecological balance (Liodakis 2001, pp. 121-122; Stilwell 2000, p. 277).

To summarise the radical approach offers advantages over neoliberal and liberal sustainability monitoring systems. This is because radical social theory considers the contradictions between an economic system based on continual growth and the environment and addresses the relationship between social justice and ecology. This is an important advantage because historically the impact from economic growth has had catastrophic impacts on the environment and caused massive social upheavals (Diamond 2005, p. 486). Market based responses favoured by the liberal and neo-liberal discourses involve allowing only minor restructuring of the capitalist system, which is arguably at the root of current problems arising from the depletion of natural resources and the interruption of the Earth's ecological balance (Liodakis 2001, pp. 121-122). A market based response to sustainability does not ensure a critical level of natural capital, nor encourage less consumption, or address distributional concerns. In contrast, radical social theories do address the aspects of the debate that are critical to the advancement of sustainability.

A radical perspective understands sustainability to encompass the following beliefs and attributes. Critical natural capital is held to be important to achieving sustainability as it preserves a physical stock that is non-substitutable and vital to life on earth. To fulfil this requirement requires a recognition of the limits to growth, population pressures and excessive consumption levels, particularly in the developed world. Economic growth leads to more consumption of natural resources and impacts on the overall environment resulting in increased stress on the earth's limited resources. Thus, limits to growth are critical to efforts to sustain natural resources and preserve Earth's ecology. Population growth is a key source of pressure on the earth's resources because in the current neoliberal economic order high consumption levels are encouraged, along with population growth to provide more consumers. A higher level of redistribution of wealth is required to address inequality and the domination of poverty, and thus relieve

significant pressure on ecological systems in developing countries and parts of the first world where most population growth is occurring.

### 3) To identify and critique the assumptions and theories of sustainability that underpin mainstream sustainability reporting systems.

Case studies offered of international and Australian monitoring systems (which although heavily influenced by the neoliberal discourse align to a liberal ideology), is that monitoring 'sustainable growth' leaves society, the economy and the environment open to threats to genuine sustainability. Liberal sustainability theory proceeds from the assumption that the market-based system will provide adequate protection for the environment and will produce good social outcomes when there are few historical examples to suggest this will be so (Diamond 2005, p. 486). The underlying assumptions of both the neoliberal and liberal discourses on sustainability remove consideration of the inherent tensions between the three major dimensions of sustainability and deprivilege the concerns of radical approaches pertaining to limits to growth, and substitutability of all forms of capital. Radical approaches are concerned with limiting growth and an inherent tension between an economy based on capital accumulation and continual growth, and place considerable importance on environmental and social sustainability. Radical social theories address the aspects of the debate that are critical to the advancement of sustainability as it has been understood in this research.

In the reviewed case studies no robust and operational definition of sustainability was provided to underpin the reporting systems. An analysis of mainstream sustainability monitoring systems revealed all were influenced by the liberal discourse on sustainability, which retains the core assumptions of neoliberalism. Such an approach means that no limits or constraints are required on the use of the environment. In fact economic development is considered to enhance the capacity for environmental protection. This principle is inherently contradictory since the generation of wealth has already been shown to damage the environment in myriad gross and subtle ways. Nor does this theme question wealth distribution issues or the impact of the affluent lifestyles of the western countries on the environment. It does not consider any need to pose limits to consumption to ameliorate impacts on the environment. Consequently critical issues are not considered. For example, contentious issues such as the environmental and social impact

of an increasing population are not monitored and there is only limited reporting on the impact of economic growth on the environment. The liberal ideology evident in the case study reporting systems seem to limit their capacity to meaningfully report on the risks to sustainability.

Moreover indicator targets are not by themselves sufficient to measure sustainability and can become quickly dated. For example, no new targets or benchmarks have been developed for the Environment Australia report since its inception. Targets developed for other purposes appear in the report but they are unable to address the medium and long term requirements of sustainability. Moreover, no new data has been collected to measure sustainability for this reporting system. Data collected might be out of date and in turn reflect aspects seen as important within the mainstream neoliberal discourse at the time of inception. Such reporting systems tend to be static rather than dynamic and inadequate to respond to a rapidly changing global economic, social and environmental environment.

### 4) To identify the international benchmark in sustainability reporting systems

This research offered case studies of international benchmarks to illustrate the current position of sustainability monitoring. The UK government monitoring system for sustainability *Securing the Future* and the GRI have been identified as international benchmarks for the current state of mainstream sustainability monitoring. While these case studies are considered benchmarks within current practices, nevertheless they retain many limitations due to their alignment with liberal ideology. Nevertheless, the GRI and *Securing the Future* are attempts to move the debate from the right to a more centrally positioned understanding of sustainability within liberal theory. Both of these monitoring systems are attempts to move the sustainability debate towards a greater consideration of the interrelations between the dimensions. However, as has been discussed, approaches based on neoliberalism or its milder liberal variant are limited in their capacity to consider the more contentious risks to sustainability by their assumption of the primacy of the economy in addressing sustainability. This assumptive limitation is present in mainstream reporting systems. Sustainability indicators in these systems cannot be considered in relation to each other because to do so might challenge core ideological

assumptions. Hence theses systems cannot report on key risks associated with the impact of one or more dimensions of sustainability on the others.

The UK government *Securing the Future* monitoring system offers some interesting developments in sustainability reporting and indicators. The *Securing the Future* system categorises its indicators in what it identifies as the key issues in the sustainability debate. It includes indicators of sustainable consumption and production, natural resource protection, environmental enhancement and sustainable communities. This approach encourages critical, integrated thinking about the key issues of sustainability. It encourages the development of a process that offers a better understanding of the interrelationships between the elements of sustainability. This development is important because progressing sustainability requires understanding flow on effects and/or coordinated movements across numerous aspects, not ad hoc results on numerous indicators.

The reporting format consists essentially of a suite-of-indicators approach with some narrative assessment. It is still limited in the communication of the relationships between the indicators, and has only limited capacity to address tensions between the dimensions of sustainability. Characteristically many of the indicators in the framework were not developed primarily for the measurement of sustainability. As a result data is more applicable to be useful within frameworks underpinned within liberal underpinnings. Nevertheless the revised 2005 framework includes new indicators that appear to better consider the relationships between the dimensions of sustainability and report on issues that are more radical than countenanced by most monitoring systems. However, many of these new indicators are unpopulated as methods for capturing the data have yet to be developed. Indicator targets remain insufficient to address the long term requirements of a sustainable society, economy and environment.

Despite some promise the UK government sustainability monitoring systems appears to have also provided limited triggers for policy change. While there are aspects of the system that indicate a willingness to contemplate less mainstream interpretations of sustainability, the failure to populate more alternative parts of the framework continue to limit its effectiveness. Moreover the lack of any policy movement in response to what has

been reported by the monitoring system serve to emphasise the dominance of the neoliberal and liberal discourses. This discourse continues to position economic growth and market forces as the keys to health, wealth and happiness. This places economic growth as a key objective of sustainability, hindering or compromising any attempt to imbue the concept with a more radical interpretation.

Like the UK government *Securing the Future* monitoring system, the GRI offers a comprehensive list of social, economic, and environmental indicators to monitor sustainability for application within corporations. Its provides a movement away from individual performance measures to reporting on broader concepts encompassed within sustainability. As such it provides an analysis of the entity's contribution to its own sustainability and that of a larger economic, social and environmental system. The GRI addresses internal organisational impacts and also wider external effects on society, the economy and the environment. Reporting on a wider external impact in relation to social, economic and environmental concerns offers a holistic approach to reporting. The GRI has advanced corporation sustainability reporting but the case studies of the Origin Energy and AGL monitoring systems (which have drawn on the GRI for inspiration) suggest that corporations tend to adapt GRI guidelines to suit their needs. GRI guidelines were adapted by AGL and Origin Energy so as to report mainly positive stories and to minimise the impact of negative reporting. Corporations of course have responsibilities to diverse groups including their shareholders, which might suggest why this approach was taken by AGL and Origin Energy. Moreover, the GRI itself might be strengthened by moving from reliance on conventional reporting practices. The guidelines would be strengthened by the development of typologies of indicators and methodologies to address the collection of data for some of the new areas it suggests should be reported on.

Limitations are indeed present in both the UK government *Securing the Future* system and the GRI. Overall neither of the international benchmark monitoring systems has adequately developed a system to report and communicate the interrelationships between the dimensions of sustainability. Nevertheless, changes in one area of economic, environmental, or social performance might result in changes to other areas of sustainability. To address this process a mode of communicating the coordinated

movement across a set of performance measurements is required rather than a reliance on random improvement within a range of measurements. Unfortunately such a process is not incorporated into these monitoring systems. Moreover, to adequately communicate the overall health or deterioration of the systems requires a strong and robust definition of sustainability to provide the conceptual launchpad for a coherent set of indicators. It is the contention of this thesis that definitional clarity is still lacking in the international benchmark monitoring systems with implications for how sustainability is measured and what is measured.

**5) To undertake a critical interrogation of a selection of Australian reporting systems using the theoretical insights provided by this study and using the international benchmarks for comparison.**

The literature was reviewed to establish international benchmark monitoring systems to provide points of comparison for a case study of sustainability monitoring in Australia. The Australian case studies offered were two corporate sustainability reports (Origin Energy and AGL) and two Australian government sustainability studies (*Are we sustaining Australia*? developed by Environment Australia and *Measuring Australia's Progress* developed by the ABS).

Within these case studies, the following research questions were investigated:

1) What do sustainability reporting systems attempt to measure?
    a) How do they conceptualise sustainability?
    b) What phenomenon are they attempting to measure?
2) How do organisations measure sustainability?
3) Do these frameworks have any validity as genuine measures of sustainability?

Addressing these research questions brought into focus the validity of existing practices to measure sustainability. Epistemological incoherence and a lack of analytically sound practices led to questioning the validity of existing monitoring systems. Mainstream sustainability monitoring systems conform to the assumptions of the dominant neoliberal and liberal discourses and seem incapable of measuring complex risks to sustainability. In addressing the research questions due consideration was given to alternative approaches to the dominant discourses.

## 1 What do sustainability reporting systems attempt to measure? How do they conceptualise sustainability? What phenomenon are they seeking to measure?

The case study analyses revealed a consistent pattern in the way sustainability was measured and reported. None of the four Australian monitoring systems reviewed in this thesis provide a concise definition of sustainability. It is difficult to measure something that isn't defined. The absence of a clear conceptual definition has implications for the selection of the phenomena that are being measured. Omission of this theoretical definition brings into question the overall epistemological coherence and analytical robustness of the framework. In turn this makes it impossible to develop a holistic understanding of the health of the social, economic and environmental systems that are being monitored.

It was also clear from an analysis of the key themes present in the case study reports that in each case there is a strong alignment to the liberal discourse of sustainability reporting. The inclusion of indicators that might address issues of concern to radical social theory does occur but are limited. However, as these indicators are essentially disconnected from each other any possibility of developing a more comprehensive and sophisticated analysis is marginalised. Ideas such as critical natural capital, whether an activity is able to be sustained, what to do if it is not and the desirability of equity and social justice are all contested issues requiring debate. However they tend to be silenced by the noise of the dominant discourses in the case study monitoring systems. Questions must also be posed as to whether the targets for indicator performance in these monitoring systems have been adequate to ensure that the needs of future generations are met. In accordance with the neoliberal and liberal discourses on sustainability the case study monitoring systems prioritise the economy, hence targets are likely to be set at a level that does not unduly affect economic growth.

All of the reviewed sustainability reports contained only limited new data, and in some cases no new data. For example the Environment Australia framework incorporated an indicator selection requirement that data must be drawn from already collected sets. In cases where a narrative reporting model with combined with basic suites of indicators was used it was unclear whether data incorporated in these reports had already been collected for other purposes. A weakness of the combined narrative/basic suites of

indicators approach is that it allows the monitoring entity to mask the quality of the data that it is reporting.

In each case indicators were categorised within conventional structures in accordance with conventional neoliberal and liberal monitoring practices. The Australian monitoring systems did not attempt to incorporate indicator typologies such as those present in the UK government example. All reports lacked a concise definition of sustainability. In each case the epistemological link to indicator selection was unclear.

Australian attempts at sustainability monitoring continue to be less developed than international benchmark monitoring, which exhibit failings of their own. The international benchmark reporting systems offer limited promise of moving from conventional liberal reporting practices. However, much work is still required to move the debate to a sophisticated and meaningful level, which involves incorporating radical social theory. It is argued here that this move must be implemented if real risks to a sustainable society, economy and environment are to be identified and acted on.

Sustainability was conceived of in loose terms in each case and there was little evidence of any attempt to monitor sustainability in terms of cross-dimensional relationships with the exception of the UK *Securing the Future* system. The latter system seemed to include some measures that might enable consideration of issues of concern to a radical sustainability discourse. However while the UK government *Securing the Future* monitoring system has incorporated a few radical attributes in its measurement of sustainability, its system remains embedded within liberalism ideology.

The threats to sustainability addressed by radical approaches remain inadequately reported on in the UK *Securing the Future* monitoring system and even less so in the Australian monitoring systems that were the subjects of the case studies. The case study monitoring systems seem to continue to give the green light to a 'business as usual' approach. Unless this light is changed to red it is the contention of this thesis that the development of sustainability monitoring systems capable of considering radical cross-dimensional risks to sustainability will continue to be constrained.

## 2 How do organisations measure sustainability?

It has been identified that the most common mode of measuring sustainability is a combination of a suite-of-indicators approach and narrative assessment. This approach was particularly evident in the AGL and Origin Energy case study sustainability reports. The national government reporting systems applied a suite-of-indicators approach with narrative description included. Both reporting formats as applied to the case study monitoring systems have only a limited capacity to report on sustainability because analytical sophistication is restricted by a lack of definitional clarity. As the case studies illustrated the suites of indicators did not progress past disconnected lists of indicators presented in suites. The narrative assessments also lack a defined conceptual framework to report progress against.

The case studies of international and Australian monitoring systems are arguably typical of mainstream sustainability monitoring. Their incapacity to report on cross-dimensional risks to sustainability and how change in one set of indicators might affect another is of concern. A model appears yet to be developed that has the capacity to communicate coordinated movement across a set of performance measurements. A suite-of-indicators/narrative assessment approach to measuring sustainability seems to allow its architects to report on a liberal version of sustainability that avoids addressing the hard questions. While this might be attractive to a national statistics bureau like the ABS to avoid allegations of ideological bias, it is the contention of this thesis that a clear definition of sustainability would remove ambiguity from the debate and allow the advancement of alternative approaches to measuring sustainability.

The case study monitoring systems typically included data which had been collected by diverse agencies, for different purposes, using different methodologies. The original purpose of these indicators was not the measurement of sustainability. These monitoring systems are, therefore, ill-suited to measuring sustainability unless the context which the data they are using is understood. This context is rarely made clear in the case study reports. This robs the indicators of any sense of universal meaning or linkage with one another. Tied as they are to the context for which they were originally developed, they are epistemologically incoherent in relation to the concept of sustainability. As discussed the concept of sustainability is itself poorly defined in the case study monitoring systems.

Measurements of sustainability require indicators that can illustrate the interrelationship of the environment to the economy and to society. They must also take into account the implications of an imbalance in these relationships for all species' current and future survival on earth.

## 3 Do these frameworks have any validity as genuine measures of sustainability?

The validity of the sustainability monitoring systems reviewed in this research must be considered questionable. The case study sustainability monitoring systems each incorporate a poorly articulated definition of the phenomenon being measured with implications for how sustainability is measured and what is measured. Indicators in the suites are not connected by a clear epistemological link. Hence they cannot be considered in relation to each other in a meaningful sense and the reader is left to consider sets of disconnected measurements. Disconnected indicators are unable to communicate coordinated movement across a set of performance measurements, which is required to develop a holistic understanding of sustainability.

Various indicators are applied in the case study monitoring systems to monitor the management of key inputs from the environment in the production process, including water, fish, energy, agriculture and forests. The focus of these indicators is on the environment as a resource rather than on its intrinsic value, or its place at the centre of all life on the planet. More appropriate indicators would consider the relationships of the economy, society and the environment to one another and view them as part of an integrated system. Nevertheless, this relationship can only be unpacked if monitoring systems define the concept they wish to measure and ensure that indicator selection can be conceptually linked and placed in the context of a phenomenon being measured.

A recurring theme in the case studies is the evident influence of the liberal discourse in the framing of these monitoring systems. While the case study monitoring systems accord with a liberal discourse they remain aligned to the right of the ideological spectrum and influenced by neoliberalism. It has been argued that the dominance of the neoliberal and liberal discourses in sustainability measurement works against the development of monitoring systems that have the capacity to identify risks sustainability to the extent

required to ensure survival of all species on earth. There are few historical examples to suggest that a market based system will provide adequate protection for the environment and positive societal outcomes. Yet the underlying assumptions of the mainstream neoliberal approach to sustainability removes consideration of the inherent tensions between the three major dimensions of sustainability. In the process it de-privileges the concerns raised by radical scholars over the limits to growth, and substitutability of different forms of capital. It is argued that a radical rethink of how we understand and measure sustainability is required. In the conclusion chapter the limitations of the current paradigm for monitoring sustainability will be summarised and an agenda for a radical approach to monitoring sustainability proposed.

# Conclusion

At first glance the concept of sustainability appears to have much merit as an idea useful in raising the importance of environmental well-being and social justice for current and future generations. It is a term that has quickly become widely applied within many sectors of the community, particularly government and corporations; and it is frequently used now in policy development. Reports are being produced by organisations that actively make claims of their commitment to a more sustainable society. The positive feelings inspired by the word and its frequent use and application in policy tend to make readers or listeners confident that action by leaders in the community is underway to implement the required changes for sustainability.

The case studies discussed in this research have demonstrated that this is unfortunately not the reality. The commitment to a more sustainable society derives little from current sustainability reporting practices, which, it could be argued, are a reflection of current attitudes toward sustainability, its meaning and efforts to pursue sustainable practices. The case study reports are prepared in accordance with the current conventional policy mandate, which makes it difficult to address the inter-relationship between the spheres reported on, and are underpinned by a clear economic imperative.

Sustainable development arose in a period when the debate over sustainability was dominated by neoliberal ideology. While the debate has moved to a more centrist, liberal position, mainstream monitoring systems retain the core assumptions of neoliberalism. As a result, the mainstream values that underpin sustainability address this theoretical agenda. Sustainable development as currently practised and reported, therefore, falls considerably short of the understanding of sustainability argued for by this study, which draws on radical social theory. This thesis contends that achieving a sustainable economy, society or environment requires a greater transformation of beliefs and behaviours, values and practices than has yet been envisaged, much less reported. It is only by bringing a radical approach to the sustainability paradigm that the current and future survival of all species on earth will be secured.

## Limitations of the current paradigm

Sustainable development is the dominant interpretation of sustainability, evolving through the mainstream discourse of neoliberalism in the late 1970-1980s. The dominance of this discourse has marginalised more radical interpretations of sustainability, such as eco-feminism, eco-marxism and mirror nature. The key positions taken by more radical thinkers include limits to growth, the non-substitutability of the various forms of capital, and a concern with finite or critical natural capital required to be preserved for a sustainable future. Radical thinkers also argue that technology is not the sole solution to the crisis of sustainability. Social and political transformation are required to deliver the necessary changes for a sustainable society. The mainstream neoliberal understanding of sustainability proposes to reconcile these competing forces with limited adjustments to current systems. The 'limited adjustment', 'business as usual' understanding continues to dominate the sustainability debate, which limits understanding of the tensions between the dimensions of sustainability.

The current paradigm by which corporations and governments, even the most environmentally and socially friendly ones, operate significantly limits achieving social and environmental sustainability, in the sense that less conventional thinkers interpret the meaning of the term. Corporations worldwide are perpetually encouraged to increase growth and to increase their profitability. However, only in the most unlikely circumstances can such growth be sustainable within a real world of finite resources, labour and capital. A paradigm of continually improving growth and profits cannot help but impact on ecological and societal systems in ways that are not captured within the categories or data sets of the dominant reporting models, which tend to focus on economic growth as the touchstone from which all goodness in a society, the environment or a nation's economy derives.

With the adoption of this neoliberal interpretation of sustainability and aspects of the liberal form of sustainability dominating sustainability discourse, questions arise as to whether society can possibly appreciate the need to shift to a stronger version of sustainability that moves away from growth at all costs. Research has certainly indicated that corporations either do not recognise the need to or are unwilling to take

responsibility for the impact of their aggressive pursuit of growth upon external communities and the environment (Labuschagne et al. 2003, p. 379).

As discussed previously the Sustainable Development Commission (SDC) offers a similar observation the arguments put here in regard to the UK government *Securing the Future* sustainability monitoring system. The SDC believes that neither the government nor the UK population as a whole have appreciated the commitment required to create a fully sustainable society that does not end up consuming itself out of existence. The only commitment is generalised and patchy in its delivery of the required changes, and it appears that government, business and society in general believe that a more sustainable approach can be cloaked in the banner of continued adherence to an old-fashioned growth imperative (SDC 2004, p. 26).

Given the current approach to sustainability, it is to be wondered what it means to be a sustainable corporation or society; and what sustainability reports actually report. Gray & Milne, as outlined in Chapter 2, begin by proposing that a sustainable corporation is 'one that leaves the natural environment and social justice no worse off at the end of the accounting period than it was at the beginning of that period' (2002, p. 6). Similarly, sustainable government should be a good steward of its geographic jurisdiction, and ensure that the natural environment and the individuals falling within the government's ambit are not worse off at the end of its period of control than they were at the beginning. Achieving these ends and a successful economic result in both instances might mean a change of attitude toward society, the environment and economics; and certainly means the relationships between the three must be considered more realistically.

Outcomes of current reporting practices seem to report on the dimensions of sustainability as sets of disconnected indicators. The purpose of such reporting practices is quite unclear other than a vague commitment to the measurement of whatever is defined as sustainability. Key findings indicate this could be due to three factors. First, a typological structure to capture the interrelationships and conflicts between the indicators is yet to evolve. Second, the development of these typologies to capture relationships requires a theoretical framework to inform how systems connect. To date reporting systems lack a sound theoretical framework founded on a clear definition and fail to coherently categorise their indicators. Third, for governments and corporations it is easier to manage the policy outcomes if the inherent tensions in the relationship between social,

economic and environmental sustainability are not addressed. This allows governments and corporations to avoid the hard decisions that must be made once the inherent tensions between the spheres of sustainability have been acknowledged. Acknowledgment of these tensions, their impact and a stronger commitment to a sustainable society is required.

Ideas considered more radical have received little attention, albeit government reporting systems have incorporated some aspects of the more challenging agendas. However, when more radical themes have been incorporated they have often also included a contradictory conservative principle. The Environment Australia framework is an example of this process. It suggests application of the precautionary principle that no reported item should interfere with strong and diverse economic growth; and no dimension of sustainability should be able to dominate another. Governments are signalling confused messages that suggest they wish to incorporate some radical themes into sustainability monitoring but without abandoning the core assumptions of neoliberalism.

## A radical agenda for reporting sustainability

To report on sustainability underpinned by radical social theory requires the incorporation of themes not conventionally reported on. It involves questioning the real validity of current measures of sustainability. To achieve sustainability based on a radical conceptualisation requires a reinterpretation of social, environmental and economic goals, and particularly of how the reporting system should communicate the inter-relationships between systems. This will require a revolutionary change to agenda setting. Incremental changes, as advocated within liberal and neoliberal approaches, appear unable to deliver the cultural and political transformations required to adequately progress social, economic and environmental sustainability. A radical transformation is required if multiple and interrelated challenges to sustainability are to be addressed. Examples of radical interpretations of reporting include reporting on:

- intergenerational welfare that requires communication of whether an activity can be sustained or not
- new ways of measuring economic success, rather than relying solely on growth

- the deterioration of renewable resources and, where appropriate, the upper limit of harvest and maximum sustainable yield
- environmental capacity to absorb pollution and natural absorptive capacity
- equity and distribution
- the state of critical natural capital
- consumption rates and relating them to overall impact on the environment
- targets that report on the medium and long term i.e. greenhouse gas reduction targets through the use of the Kyoto benchmarks
- the economy in ways that do not privilege it over social and environmental considerations.

Some of the above themes are currently reported on. For example natural environmental absorptive capacity is reported as air pollution and the deterioration of renewable resources, such as fish stocks are reported on in the case studies addressed by this study. However, these themes are only reported on through disconnected indicators. A holistic approach is needed. From the perspective of my thesis, which incorporates a radical conception of sustainability, it is encouraging that these glimpses of radical theory are emerging. It is unfortunate that in many cases radical perspectives conflict with approaches more in accord with the dominant ideology in these monitoring systems and therefore do not receive the same attention. My argument is that radical needs to become the new conventional in sustainability monitoring if we are to measure the risks to sustainability and address them.

**In summary,** this research has demonstrated that current monitoring systems are problematic because of a lack of operational definitions of sustainability and epistemologically inconsistent approaches to measurement. Moreover, the construction of typologies and indicator development is historically limited. Many methodological and technical issues are yet to be resolved. These issues arise from the conventional thinking which considers the economic, social and environmental aspects in isolation rather than adopting an integrated approach. Ideological rigidity and methodological issues are inhibiting the application of new indicators that are better able to represent the issues of sustainability. There is an evident need to incorporate cross-dimensional measures and

considerations of how the critical elements of sustainability will be maintained in the future.

The evident lack of clarity in the definition of sustainability in reporting systems leaves open the question of what is being reported. In the mix of conceptual confusion characterised by unclear definitions of sustainability, methodological and technical constraints and the reporting entities' unwillingness to make a strong commitment to sustainability of any definition, it is hardly surprising that reporting on sustainability is lacking direction and outcomes are confused.

## Research agenda

To develop reporting systems for sustainability underpinned by more radical, or, in fact, simply more realistic and far-sighted concepts of sustainability, the following research agenda is proposed. Key recommendations for potential changes to the current reporting requirements have been made based on the research and case study findings.

### Robust and operational definition of sustainability

Clarifying the theoretical ambiguity surrounding the concept of sustainability requires defining what sustainability is, and explaining why and how indicators of sustainability should be measured. Reporting systems should be clear about what they are trying to achieve and what can hoped to be achieved from a sustainable system.

Operational principles might include:

- Measurement that addresses the larger context of sustainability as it relates to ecological, social, economic or other limits or constraints. This requires communication of whether a certain level or pattern of activity is sustainable or not. Limits and demands placed on the environment or society from economic growth require incorporation into reports through the use of appropriate indicators.
- Articulation of the interrelationships between the systems. This includes indicating how change in performance of one indicator flows into the performance of others. Conflicts and tensions between indicators should be recognised.
- Targets should be provided to ensure the short, medium, and long term progress of sustainability can be accurately measured against a benchmark.

### Typology to categorise indicators

Typologies to categorise indicators that better consider the complexities of sustainability should be developed. The continuing adoption of a simplistic approach to the categorisation of indicators is not a long term option.

Typologies that are better able to recognise and reflect the relationship between social, economic and environmental systems need to be developed. Such typologies should be structured in a manner that can develop an understanding of the overall contribution of human activity to the improvement or deterioration of economic, environmental and social conditions.

### Indicator development

Indicator development is required. Current reporting systems have included monitoring features based on historical experience rather than elements important to sustainability. The ABS MAP publication has clearly identified the need for further indicator development. None of its ideal indicators are currently available due to methodological and technical constraints. In the case for corporation reporting, indicators require identification.

To summarise, the three key recommendations for further research are:

- Use a more radical or holistic definition of sustainability.
  A robust definition will help to provide clarity to the varying notions of sustainability evident in current reporting systems and in turn aid the power of its measurement
- Develop a typology to categorise indicators that is able to represent such complex systems.
- Develop indicators that consider issues relevant to the monitoring of the spheres of sustainability and the issues of concern for the future.

The sticking point will be our interpretation of sustainability, of course. As long as it is bound up with the neoliberal concept of sustainable development, that is, keep on expending the Earth's resources and degrading our environment, but in a sustainable way (an inherently contradictory proposition), sustainability reports will continue to provide an unrealistic picture of social, environmental and economic reality. While humans are consuming resources equivalent to more than one planet, sustainability, even in the

context of the *Brundtland Report* is impossible. Genuine dialogue needs to be entered into and more meaningful reporting might be a good place to begin the conversation.

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# Appendix 1: Peer-reviewed papers drawn from this research

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Davidson, K. (2005). Is electricity affordable in South Australia?, *Australian Journal of Social Issues*, 40 (3), 441-455.

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Davidson, K., & Wilson, L. (2006). *Measuring social, economic and environmental sustainability at the enterprise level: a case study of an Australian Utility Corporation's Sustainability Report*. Social Change in 21st Century, Queensland University of Technology, October 2006.

Davidson, K., & Wilson, L. (2008). A model to identify the risks to sustainable urban development. *The International Journal of Interdisciplinary Social Sciences*, 3 (1), 161-167.

Ness, D., Kellett, J., Wilson, L. Pullen, S., Karuppannan, S., Sivam, A., Tisato, P. and Davidson, K. (2008). *Integrated sustainability assessment of urban development and infrastructure: complementaries and contradictions*. World Sustainable Building Conference (SB08), Melbourne, September 2008.

# Appendix 2: Overview of the literature on sustainability reporting systems

## 2.1 Academic literature

An emerging academic sustainability reporting literature is developing. Within the literature there appear to be two main groups, one located in business, management and accounting journals, and the other a more critical literature. The business, management and accounting journals also refer to sustainability reporting through the concept of triple bottom line. Examples of journals in which this literature is located include:

*Australian Journal of Management*

*Charter*

*Australian CPA*

*CMA Management*

*The CPA Journal*

*Journal of Accounting and Public Policy*

*Journal of Business Ethics*

The second category of literature encompasses a broad range of journals with varying foci i.e. the environment, social, planning and statistics. Example of journals in which this literature is located includes:

*Environment*

*Development*

*Social Indicators research*

*International Journal of Sustainable Development*

*International Journal of Environment and Sustainable Development*

*Ecological Economics*

*Journal of the Royal Statistical Society*

*Journal of Environmental Management*

*Journal of Environmental Planning and Management*

*Planning, Practice & Research*

*Journal of Cleaner Production*

*Review*
*Environmental Management*
*Environmental Health*
*National Civic Review*
*Integrated Assessment Journal: Bridging Science and Policy*
*Ecological Indicators*
*Environmental Politics*
*International Journal of Social Economics*
*International Journal of Environment, Workplace and Employment*
*Science, Technology and Human Values*
*Journal of Rural Studies*
*Journal of American Planning Association*
*Population and Environment*
*Trans IChemE (Institution of Chemical Engineers)*

No university think tanks with the sole purpose of investigating the measurement of sustainability appear to have arisen. However, various academics situated within university think tanks have contributed to the literature on reporting on sustainability. Examples include: Clive Hamilton from the *Australia Institute* located at the Australian National University; Wayne Norman and Chris MacDonald from the *Centre for Social Innovation* at the Graduate School of Business, Stanford University; Rob Gray and Jan Bebbington from the *Centre for Social and Environmental Accounting Research*, at the University of St Andrews; and Heather Voisey and Tim O'Riordan from the *Centre for Social and Economic Research on the Global Environment*, based at the University of East Anglia.

## 2.2 Business literature

**Corporate reports**. Many corporations now report on sustainability through a published report generally located on their website. One of the first corporate sustainability reports was published in 1997 by Interface (Interface, n.d., online, p. 3), and since then this type of reporting has grown. The uptake rate varies between countries. In 2005 Japan and the UK were the leaders, with the proportion of enterprises within the top 100 publicly listed companies developing these reports, at 80 and 71 percent respectively. This rate is not common, however. In Australia, only 23 percent of companies produce these reports and

the international average is 41 percent for economically advanced countries (Commonwealth of Australia 2005, p. 4). There is however considerable diversity in the scope and form among the companies preparing these reports (Jones et al. 2005, pp. 6-12; Macintosh & Wilkinson 2006, p. 44).

**Business peak organisations.** The peak business organisation for sustainable development is the World Business Council for Sustainable Development established in 1992. In 2002 the Council released *Sustainable Development Reporting: Striking the Balance Guidelines*. The Council undertook this project to provide companies with guidance on why, how and what to report based on their members' experiences and practices. In 2005 it released *Beyond Reporting: Creating business value and accountability.* This report 'explored how leading companies are beginning to translate accountabilities between the seemingly alien worlds of sustainability and business value' (WBCSD 2005, p. 2).

The International Aluminium Institute's *Aluminium for Future Generations Sustainable Development Program* in 2006 released a report titled *Aluminium for Future Generations: Sustainability Update 2005*. This report reports on the thirteen voluntary objectives of this program that relate to key phases of the aluminium's life cycle. (IMA, n.d., online, p. 2). In 2005 the Minerals Council of Australia released a report titled *Enduring Value.* This report encompasses guidelines for sustainable development that require a commitment to public sustainability reporting from its members on an annual basis (Minerals Council of Australia, n.d., online, p.2).

**Business consultancies.** Business consultancies have contributed to the available literature on sustainability and triple bottom line reporting. Numerous reports have been written by various business consultancies. In 2004 the Sustainable Development Commission in the United Kingdom, for example, released a report titled *Assessment of Progress Against the Headline Indicators* undertaken by Levett-Therivel Sustainability Consultants. This report is an independent analysis of the UK's progress against the fifteen 'headline' indicators of sustainable development adopted in 1999.

KPMG in conjunction with the University of Amsterdam in 2005 released the *International Survey of Corporate Responsibility Reporting 2005.* Corporate Social Responsibility is defined to broadly include sustainability, triple bottom line or corporate social responsibility

reporting. This is a triennial survey, which began in 1993 to analyse trends in CR reporting in the largest corporations (KPMG 2005, p. 4).

The Allen Consulting Group (2002), based in Melbourne, Australia, released a report titled *Triple Bottom Line Measurement and Reporting in Australia* in 2002. This purpose of this report 'was to explore current strands of thought and action in Australian companies about the triple bottom line measurement and reporting, and to document existing practices' (p. iii). The report was funded by a range of public-sector departments and private sector organisations.

The CPA Australia commissioned a report titled *Sustainability Reporting: Practices, Performance and Potential* (2005) which was undertaken by the University of Sydney, School of Business, Faculty of Economics. This report also investigates current sustainability/triple bottom line (TBL) reporting practices in Australia (Jones et al. 2005, p. 1). The Commonwealth Government of Australia has commissioned three annual reports on *The State of Sustainability Reporting in Australia* (2003-2005). The 2005 report was undertaken by KPMG, Deni Greene Consulting Services and the Centre for Australian Ethical Research. The focus of this report was on sustainability reporting by Australia's largest companies. Types of issues investigated: benefits and impediments to producing such reports; identification of key audiences; and use of the Global Reporting Initiative (GRI) guidelines.

## 2.3 Government reports

Governments have being active in producing monitoring systems for sustainability. The scope and quality of these monitoring systems vary. Many reports have been released that outline the indicators encompassed by these monitoring systems. In 2005 the European Union released a report titled *Measuring Progress Towards a More Sustainable Europe: Sustainable Development Indicators for the European Union*. This report developed a set of indicators to monitor progress towards a European Union strategy. In 2003 the government of Finland released a report titled *Evaluation of Sustainable Development in Finland*. The report evaluates problems and progress under eleven key themes. In 2003 the Canadian government released a report titled *Environmental and Sustainability Indicators*. This initiative developed a small suite of national-level indicators that considered assets

necessary to sustain a healthy economy, society and environment in Canada. In 1999 the government of the United Kingdom released a report titled *A Better Quality of Life: A Strategy for Sustainable Development for the United Kingdom*. This strategy identified a core set of about 150 indicators that were seen as central to the monitoring and reporting on the progress of sustainable development. In 2004 this strategy and its indicator framework were revised through the release of a report titled *Securing the Future: Delivering UK Sustainable Development Strategy*.

## 2.4 Non-government organisations

The Institute for Sustainable Development has released numerous publications on the topic of measuring sustainable development. It is a Canadian-based not-for-profit organisation, established in 1990. In 1997 it released *Assessing Sustainable Development: Principles in Practice.* The aim of this report was to assess emerging sustainability monitoring systems against the Bellagio Principles (a list of desirable attributes for sustainability monitoring) (Hardi & Zdan 1997, p. 1). In 1999 the Institute released the *Indicators for Sustainable Development: Theory, Method, Applications* which discusses the development and application of a systems theoretical framework for defining indicators sets for sustainable development (Bossel 1999, p. xi).

The Sustainability Institute, founded in 1996 with the aim of applying systems thinking and organisational learning to economic, environmental and social challenges, released in 1998 the *Indicators and Information Systems for Sustainable Development*. The aim of this report is to provide a framework for developing indicators of sustainable development, and it outlines why indicators are important and how to select them (Meodows 1998, p. i).

The Institute of Social and Ethical Accountability, commonly referred to as AccountAbility, which has been discussed, released the AA 1000 Assurance Standard for assurance on sustainability reports. This is an international not–for-profit-organisation. Reports released by this organisation include: *Critical Friends*: *The Materiality Report* and *The Assurance Briefing and What Assures* (Accountability, n.d., online, p. 3).

The Australian Collaboration, as has also been discussed, is a collaboration of peak non-government organisations in Australia. In 2006 it released *Which Direction? A Review of Monitoring and Reporting in Australia*. This report is an examination of social,

environmental and economic reporting practices in Australia. It discusses optimal arrangements for reporting, problems that require attention and the different types of reporting required for different purposes. The report concludes with a set of recommendations covering national and regional reporting, public sector reporting, corporate reporting and not-for-profit reporting.

The Coalition for Environmentally Responsible Economies (US non-governmental organisation) and the UN jointly launched the Global Reporting Initiative (GRI) previously mentioned. The GRI has released numerous publications, but notable in 2002 it released it first edition of *Sustainability Reporting Guidelines*. This publication has subsequently been updated (2006) with the *G3 Guidelines* (GRI 2002; GRI 2006).

Another publication also previously mentioned is *Redefining Progress*; and Earth Day Network released *A Community Indicator Guide* in 2002. This guide suggests a process that a community can use to identify key concerns and gather data to enhance the community's ecological and social well-being (Redefining Progress and Earth Day Network 2002, p. 1).

## 2.5 Global political institutions

**United Nations Commission on Sustainable Development.** The United Nations Commission on Sustainable Development has played a significant role in the development of sustainability indicators. It has produced numerous reports that provide guidance to the development of indicator frameworks, particularly at the government level. One of the most predominate in regards to sustainability indicators is the 1996 *Indicators of Sustainable Development: Framework and Methodologies.* This publication contains the methodology sheets for 134 indicators of sustainable development proposed by United Nations lead agencies and others as the preliminary working list for testing at the national level. In 2001 the proposed national government framework was released in the publication *Indicators of Sustainable Development: Guidelines and Methodologies.* This report details the proposed framework and its core set of fifty-eight indicators and their methodologies. Then in 2004 the United Nations released a report titled *Progress in Implementing the Decisions of the Commission on Sustainable Development Related to Improvements in National Reporting and Further Work on Indicators of Sustainable Development*.

Among other foci, the report provides an overview of national efforts at developing and implementing indicators of sustainable development.

**World Bank.** The World Bank released two notable publications, in 1997 as previously mentioned, *Expanding the Measure of Wealth: Indicators of Environmentally Sustainable Development*. In 2004, it released a report titled *World Bank: Focus on Sustainability 2004*. This report is the first that reviews the World Bank's commitment to sustainable development. The report dedicates a chapter to managing and monitoring. The chapter describes how the World Bank monitors its activities and how it is working within its own organisation and its partners to achieve evaluation standards.

**OECD.** The OECD has released numerous publications that have encompassed the topic of monitoring sustainability. In 2000 it released *Towards Sustainable Development: Indicators to Measure Progress,* which are proceedings from a conference in 2000. In 2001 it released *OECD Environmental Indicators: Towards Sustainable Development*. Also in 2001 the OECD through the publication *Sustainable Development: Critical Issues* proposed a limited set of sustainable development indicators. The purpose of these indicators was to capture key trends and draw attention to selected issues. In 2002 the OECD published *Overview of Sustainable Development Indicators* used by national and international agencies. This report provided a general overview of recent work on sustainable development indicators in OECD countries.

In 2006 *Good Practices in the National Sustainable Development Strategies of OECD Countries* was published. A section of this report was dedicated to indicators and targets. It was suggested that 'strategies should be based on structured indicator systems (enumerated in national plans and reports) to assist in 'monitoring progress and to serve as quantitative targets' (OECD 2006b, p. 8).

Also in 2006 the OECD released the 2005 *Annual Report on Sustainable Development Work in the OECD*. In this annual report a chapter was again devoted to the measurement of sustainable development. The chapter reviewed work undertaken by the OECD on indicators of sustainable development.

# Appendix 3: *Are We Sustaining Australia?* Supplementary indicators 2002

**Value 1: Living Standards and Economic Well-being**

- average income (Survey of Income and Housing Costs)
- average weekly earnings of full-time adult employees (Employee, Earnings and Hours Australia Cat. no.6306.0)
- average hours worked and earnings per hours worked (Survey of Earnings and Hours)
- average hours of leisure (Time Use Survey – not regular – six year intervals at best)
- unemployment rate (Labour Force: Australia Cat. No. 6302.)
- long-term unemployment rate (Labour Force survey)
- extent of under-employment measured by the proportion of people who are working part time and would like to work more hours (Labour Force survey)
- number of discouraged workers measured by the proportion of people who are no longer in the work force but who would like to work if jobs were available (Labour Force survey)
- household final consumption per head of mean population (National Accounts)

**Value 2: Education and Skills**

- year 12 retention rates
- adult literacy rates
- attainment for various age groups eg 25-34 years
- value of human capital

**Value 3: Healthy Living**

- life expectancy

**Value 4: Air Quality**

- status of the atmospheric resource as measured at Cape Grim

**Value 5: Economic Capacity**

- labour supply
- labour productivity
- capital stocks

**Value 6: Industry performance**

- national expenditure on research, development and innovation.

**Value 7: Economic Security**

- historical volatility of national output
- industrial balance or over-concentration
- national savings/investment imbalance
- strategic reliance on foreign supplies

- exposure to foreign debt

**Value 8: Management of Natural Resources: Water**

- water use per total value of sectors that are strongly water based
- there may also be scope to develop a water efficiency indicator along the lines of the ABS gross product by sector per megalitre of water used and average water consumption per household.

**Value 9: Management of Natural Resources: Forests**

- area of forest cover as a proportion of pre-European forest cover (if and where data available)

**Value 10: Management of Natural Resources: Fish**

- proportion of catch that comes from fisheries that have met nationally agreed requirements for ESD. The Standing Committee on Fisheries and Aquaculture is currently embarked on a process to develop such requirements.

**Value 11: Management of Natural Resources: Energy**

- years of fossil fuel remaining globally (note, this will increase as new sources are discovered and as technologies and conservation measures increase the efficient utilisation of non-renewable fuels, as well as decreasing with use of the reserves)

**Value 12: Management of Natural Resources: Agriculture**

- an indicator which measures the viability/vitality of rural communities would be useful. Healthy communities are integral to achieving sustainable natural resource management
- a range of supplementary indicators have been developed by State/Territory agencies covering the production/economic, social and environmental aspects of agriculture

**Value 13: Gender and Economic Equity**

- women's workforce participation rates.

**Value 14: Educational and Economic Equity**

No supplementary indicators

**Value 15: Health and socio-economic equity**

No supplementary indicators

**Value 16: Locational equity**

No supplementary indicators

**Value 17: Biodiversity and ecological integrity**

- population trends for selected/key species

- number of endangered and vulnerable species where population number have declined/increased since last Report, if available)
- rate of clearing of native vegetation in hectares per annum

**Value 18: Climate change**

- satellite/land & sea temperature change (global). (Note the AGO advises that the usefulness and practicability of this supplementary indicator at this time is questionable)
- Australian GHG emissions as a proportion of global GHG emissions

**Value 19: Coastal and marine health**

- an interim indicator could be extent of marine disturbance. A number of human activities disturb marine habitats with potentially damaging effects on benthic ecosystems. An estimate of the extent of marine disturbance should be available in the course of SoE reporting, but may not be repeatable
- changes in coastal use (length and area of coast used for structures associated with activity) total seafood catch (This indicator provides a gross measure of pressure on the marine ecosystem.

However, it is neither an indicator of the state of the species that are harvested nor an indicator of the pressure on any of those species)

**Value 20: Freshwater health**

- Catchment condition index (indicator 24)
- Nutrient flux (N/P sediment)/nutrient loads (Being developed by NLWRA)

Freshwater bodies with significant concentrations of:

- heavy metals
- pesticides
- microbiological organisms
- turbidity
- dissolved oxygen
- phosphorous
- nitrogen
- salinity

**Value 21: Land health**

- hectares lost to secondary salinity

Source: Commonwealth of Australia 2002, p. 3

# Appendix 4: MAP headline and supplementary indicators 2006

| Headline dimensions | Headline indicators | Supplementary indicators | Other indicators |
|---|---|---|---|
| Health | Life expectancy at birth | Proportions of people surviving to ages 50 and 75; Infant mortality rate; Avoidable death; Incidence of all cancer; Incidence of heart attacks; Burden of disease | International life expectancy at birth; Living with disability; Causes of death |
| Education and training | People aged 25-64 years with a vocational or higher education qualification | Education participation rate for those aged 15-19; Year 7/8 to Year 12 apparent retention rate; Education participation rates and attainment levels for those aged 15-64; Human capital stock; OECD literacy rates, science, reading and mathematics; Indigenous to non-indigenous education participation and attainment ratios; Female students as a proportion of students | International level of higher education; Education participation for those aged 15-64; Level of highest non-school qualification for those aged 25-64 |
| Work | Unemployment rate | Labour force underutilization rate; Proportion of people working; Long term unemployment rate; Retrenchment rate; Unemployment to population rates | Casual employees; People working part-time or longer hours (50 hours a week or more); Average hours per week, full-time workers. |
| National income | Real net national disposal income per capita | Real Gross Domestic Product per capita; Real final consumption expenditure per capita; Real household consumption expenditure per capita; Net national saving as a proportion of GDP; Real industry gross value added; Real Gross state income per capita; Population in work; Terms of trade; | Selected measures of equivalised household disposable income; International comparisons of national income: Gross National income; International comparisons of national income: average annual GDP growth |
| Economic hardship | Average real equivalised average weekly disposable income of households in the second and third deciles of the income distribution | Indicators of economic situation by household composition | |

| Headline dimensions | Headline indicators | Supplementary indicators | Other indicators |
|---|---|---|---|
| National wealth | Real national net worth per capita | Real national assets and liabilities per capita; Real net capita stock per capita; Economically demonstrated resources (minerals and energy) per capita; Real net foreign debt; Real gross fixed capital formation per capita; Mean household net worth; Mean value of selected household assets and liabilities | |
| Housing | No headline indicator | None | Households in dwellings requiring an additional bedroom |
| Productivity | Multifactor productivity | Labour productivity; Research and development expenditure as a proportion of GDP; Managers and professionals, as a proportion of total employment; Investment in software, as a proportion of GDP; Proportion of businesses with web site or home page; Hours worked and quality adjusted hours worked; Proportion of businesses innovating | |
| The natural landscape | Threatened birds and mammals; Annual area of land cleared; Salinity, assets at risk in areas affected, or with a high potential to develop, salinity; Water management areas, proportion where use exceeded 70 percent of sustainable yield | Trends in Threatened species; Mammalian extinctions; Species-threatening invasive animals; Proportion of ecosystems: area protected; Weeds of national significant, distribution; Native forest area; Net water use; Total water storage capacity of large dams; Water diversions; Murray-Darling Basin; River condition (biota) index; | Cattle and sheep numbers; Natural and actual flows in the Murray River; International comparison: Threatened bird species; International comparison: Water abstraction per capita |
| The air and atmosphere | Fine particle concentrations, days health standards exceeded, selected capital cities; Net greenhouse gas emissions | Days when ozone concentrates exceeded guidelines, selected capital cities; Highest one hour averages of SO2, selected regional centers; CO2-e emissions, net, per capita and per $ GDP; Australia's greenhouse gas emissions for selected sectors; Carbon dioxide concentrations; Consumption of ozone depleting substances. | International comparison' net greenhouse gas emissions per capita |

| Headline dimensions | Headline indicators | Supplementary indicators | Other indicators |
|---|---|---|---|
| Oceans and estuaries | None | Estuarine condition index; Number of reported oil spills. | Fisheries production, value and employment |
| Family, community and social cohesion | No headline indicator | Proportion of children in lone mother families; Children without an employed parent; Primary carers of elderly and disabled; No participation in selected activities; Voluntary work; Suicide and drug-induced death rates; (indicators in the Work dimension are also relevant) | Family type; Participation in religious activities; Racism. |
| Crime | Victims of personal and household crimes | Homicide rate | Imprisonment rates |
| Democracy, governance, and citizenship | No headline indicator | Proportion of eligible overseas-born residents who are citizens; Voter turnout and informal votes cast; Federal parliament election candidates; Volunteering rates for management, committee and coordination work; Proportion of Federal parliamentarians who are women; Proportion of executive managers and board members of ASX200 companies who are women. | Indigenous members of Federal parliaments and State and Territory legislative assembies |

| Supplementary dimensions | Supplementary indicators |
|---|---|
| Culture and leisure | Attendance at cultural venues and events; Attendance at sports events |
| Inflation | Consumer price index; Domestic final demand price index; Total final consumption expenditure; Total gross fixed capital formation |
| Competitiveness and openness | Trade weighted exchange rate; Real unit labour costs; Foreign ownership of Australian enterprise; Australian trade openness |
| Communication | Computer ownership and internet access, households. |
| Transport | Passenger vehicles per 1,000 people; Road fatalities |

Source: ABS 2006, pp. 24-25.