



***While the paths leading to environmental sustainability in each country or sector will differ, the goal remains constant [1]***

***Businesses are now seeing a return on investment from embedding sustainable practices into the procurement function, indicating an emerging trend in supply chain engagement and collaboration. More than 50% of large businesses and 25% of their suppliers have seen cost savings as a result of carbon management activities[2]***

## Introduction <sup>1</sup>

The information for environmental sustainability (ES) – its reporting, management and outcomes - is disparate and fraught with competing agendas and priorities. All that most Australian companies would be aware of is that they face the need to address environmental sustainability into the future and they may struggle with how that can be achieved most effectively.

This paper looks at the definitions issues surrounding environment and sustainability, gives a short history of the development of community awareness and looks at standards and accepted reporting methods currently in use locally and globally. Further papers look at the information for aspects of Australian environmental sustainability.

### Definitions

The language of environment and sustainability has many meanings according to the context in which it is used. "Environment", for example, has five separate meanings in the Macquarie dictionary; the Australian national source [3]. As defined by the Standards Association of Australia, *environment* is the "surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelations... (and that the surroundings in this context extend from within an organization to the global system)." [4]

The definitions of "sustainability" are similarly varied, but in this instance relate to the meaning "to keep up or keep going as an action or process". This context for sustainability was first mooted in the 1980's with a challenge and warning from the World Commission on Environment and Development; "...the future is conditional on decisive political action now to begin managing environmental resources to ensure both sustainable human progress and human survival...the time has come to take the decisions needed to secure the resources to sustain this and coming generations [5].

The WCED report found three broad concepts to sustainability: social, economic and environmental. Although there is some overlap between the three, it is on the environmental aspects that this paper will focus. A more recent article by Goodland suggested that, although the planet's nature is finite, for ES environmental sustainability to happen, "throughput growth has to be kept within carrying capacity or within the capacity of the environmental services of assimilation and regeneration" [1] More recently, sustainability has been defined for humans as "the potential for long-term maintenance of well being, which has environmental, economic,

---

<sup>1</sup> The ebb and flow of web information allows us to share and travel with it in a community-centered way. Feel free to agree or take issue with the contents of these papers. They are the Aptly "take" on information and thought developed over many years and rely heavily on work already done in the field and referenced throughout.

and social dimensions [6].”

### **A brief history of the information of current ES thought**

Throughout history those working the land have “husbanded” their environmental resources, but with the accelerated pace of production and economic growth after the Industrial revolution, humankind was able to use new processes and technologies to increase its global production.

In the Western developed world, the publication of Rachel Carson’s Silent Spring in 1962 [7], heralded the start of a movement towards environmentalism or a more substantial awareness of our often negative impact on the world’s ecology caused by the search to increase and enhance production. The book’s focus was primarily on the pollution caused by the chemical industry.

The book claimed that there were detrimental effects of pesticides on the environment and was instrumental in incubating a new awareness of the vulnerability of earth to human intervention. Carson drew links between some human interventions and disappearance of wilderness, the contamination of the food chain, cancer, genetic damage, the deaths of entire species.

The book’s legacy was to produce a far greater awareness of environmental issues and community interest into how people affect the environment. In questioning some of the tenets of modern current economy – continued growth and humanity’s control of the means of production – the book could be seen to have initiated the fringe or alternative nature of the environmental cause, and the marginalization of the environmental movement in society for the decades following its publication.

This fragmentation of concern and interests is relevant from an information perspective because it meant that, save for the regulated issues such as pollution - oil spills, for example – diverse scientific, social, political and religious groups worked to their own agendas and data. There was rarely a systematic mainstream acceptance of the priority need for a broader and long-term interest in the planet’s well-being. Systematic collection and monitoring of information was impeded by the differing motives, agendas and acceptance of stakeholder groups. This aspect of complexity and variety of opinion and knowledge continues today.

Although the concentration of public opinion was initially on local waste and emissions – pollution – concern gradually changed to a more global approach and from ecology to ecosphere. An early example of this was the publicity, initiating in the 1970s, of an increasing depletion of ozone levels in the stratosphere caused by the use of chlorofluorocarbons (CFCs) which were formerly used widely in industry as refrigerants, propellants, and cleaning solvents. This depletion meant that a “hole” developed in the protective ozone layer over the Antarctic. The first global agreement to restrict CFCs came with the signing of the Montreal Protocol in 1987 ultimately aiming to reduce them by half by the year 2000.

During this period, the information for environmental sustainability had been developed between scientists and those organizations who had a commitment to environmental issues. Society in general lacked the ability to incorporate the knowledge into political and group actions. A recent review of current and past linking by Cash and others [8], suggested that the efforts to mobilise science and technology for sustainability were more likely to be effective when the boundaries between knowledge and action were enhanced by the salience, legitimacy and credibility of the information that was produced. They cited the lessons learned in the health, defense and agriculture sectors as examples of the more effective boundary spanning

“to motivate and harness relevant R&D work in support of problem-solving and decisions making activities” p 8090.

In recent decades, the [United Nations Framework Convention on Climate Change](#) (UNFCCC) has asked countries to sign and then to agree to assigning mandatory emission limitations for the reduction of their greenhouse gas emissions. The most recent of these was in Cancun, Mexico in December 2010. Scientific data for this development was substantiated by global groups such as The Intergovernmental Panel on Climate Change (IPCC) which had been formed in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess scientific, technical and socio- economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. The Panel is currently finalizing its Fourth Assessment Report "[Climate Change 2007](#)", including content about : 1) the physical science basis, 2) impacts, adaptation and vulnerability and 3) mitigation of climate change.

In recent years, popular opinion has become more concerned and vocal. The release in 2006 of a film entitled *An Inconvenient Truth* which featured Al Gore, former US vice-president further raised the environmental profile [9]. It was a general release film about the change in the Earth's climate in response to the effect of carbon-dioxide emissions from human activities. It illustrated the theme with photographs of receding ice fields and glaciers — consequences of climate change that have already taken place — and speculative maps of submerged coastlines. In stressing the need for countries to reduce carbon-dioxide, the film served to garner a more co-ordinated and mainstream community approach to the issues surrounding ES.

On a political level, HM Treasury in the United Kingdom commissioned in 2006 a major review of the economics of climate change, authored by Sir Nicholas Stern [10]. The review assessed a wide range of evidence on the impacts of climate change and on the economic costs, and used a number of different techniques to assess costs and risks. It concluded that the benefits of strong and early action far outweighed the economic costs of not acting. It highlighted four key elements of future international frameworks: 1) emissions trading, 2) technology cooperation, 3) action to reduce deforestation and 4) adaptation.

Only at this period did reporting on “climate change” seem to become more mainstream.

### **The Australian context**

The Australian community's interest in environmental sustainability/climate change has mirrored the behaviors of the global developed community; there were, and still are, varying entrenched and strongly held opinions in the general community, scientific and political arenas. Nonetheless, the discussion and regulatory activities have increased in the past decade.

The Australian Greens, for example, is a confederation of eight state and territory parties which grew out of Australian environment movements in the 1970s and 1980s. The campaign to save Lake Pedder (Tas) led to the formation of the United Tasmania Group in 1972. This was the first 'green party' in the world. By the end of 1992, both the Australian Greens and a Victorian Greens party were established [11]. In Federal elections, Greens Parties have moved from sharing 1.74 % of the vote in 1996, 7.79% in 2007 to 11.76% in the recent 2010 federal elections [12].

The speed of change in federal politics was shown within the context of the two major parties (Liberal/National and Labor) also. A review of the major political parties preparing for the November 2007 election by the Australian Conservation Foundation, rated the policies of the

Last updated: February 8, 2011

Coalition, Labor, the Greens, the Democrats and Family First on climate change, water and other environmental issues against ACF's national agenda for a sustainable Australia. The scorecard showed the major parties - Liberal and Labor - with a score below 50 per cent. The Foundation concluded that "There is clearly a long way to go if the major parties are serious about tackling impending environmental crises like climate change and permanent severe water shortages." [13]. Green issues were a factor in the change of government in the 2007 Federal election, as it was thought that the previous government's controversial stance on issues like the signing of the Kyoto Agreement was not in line with societal sentiment. Within three years, the 2010 Federal election saw the Federal balance of power to be held by Greens and independent members most of whom had strong environmental platforms.

The Bureau of Meteorology's attempts to understand weather patterns have become more inclusive with publication of [Indigenous weather knowledge](#) for some Australian regions which differ according to location.

## References

1. Goodland, R., *The concept of environmental sustainability*. Annual Review of Ecology and Systematics, 1995. **Vol. 26**: : p. 1-24
2. Investors Group on Climate Change (2011) *Greening the supply chain: businesses unlock hidden value*. MEDIA RELEASE.
3. *The Macquarie dictionary*. 2nd ed. 1981, Sydney: The Macquarie University.
4. Standards Australia, *Environmental management - vocabulary. AS ISO 14050—1999*, in *Australian standard*. 1999.
5. World Commission on Environment and Development, *Our Common Future: Report of the World Commission on Environment and Development*, G.H. Brundtland, Editor. 1987.
6. Wikipedia (2010) *Sustainability*. <http://en.wikipedia.org/wiki/Sustainability>.
7. Carson, R., *Silent Spring* 1962, New York: Houghton Mifflin Company.
8. Cash, D.W., *Knowledge systems for sustainable development*. Proceedings of the National Academy of Sciences, 2003. **100**(14): p. 8086 - 8091.
9. *An inconvenient truth*, F.A. Gore, Editor. 2006, Paramount Classics and Participant Productions.
10. HM Treasury, *STERN REVIEW: The Economics of Climate Change*. 2006, The author: London.
11. Australian Greens. *History*. <http://greens.org.au/history>. 2010.
12. Australian Electoral Commission. *Federal Elections* [http://www.aec.gov.au/Elections/federal\\_elections/](http://www.aec.gov.au/Elections/federal_elections/). 2010.
13. Henry, D. *Major parties' environmental scores woeful*. 2007 18th October, 2007]; Available from: <http://www.abc.net.au/news/stories/2007/10/18/2062549.htm>.