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Linking Theory & Practice

# Sustainability principles: a review and directions

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**Abstract**

In 1987 the publication of *Our Common Future* by the United Nations' World Commission on Environment and Development proposed the concept of sustainable development as an ideal for the global economy and corporations. In seeking sustainable economic growth and sustainability at the enterprise level, a number of "sustainability principles" or codes of conduct emerged. A great deal of intellectual effort, managerial resources, and publicity are devoted to these principles. While these principles have created some dialogue, and helped to lead some organizations in the direction of sustainability, their practical effectiveness remains uncertain. This paper provides an overview of sustainability principles within the context of evolving literature on sustainable development. It describes their purpose and content, the rationale for their creation, and who adopts them. We explore what functions these principles serve, and how they can be made more useful and compelling for businesses, governments, non-profit organizations, investors, and concerned people in general.

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## Evolving concepts of sustainable development

Since the early 1970s, there have been concerns about the imbalance between evolving human needs and availability of natural resources to support them. Human population is growing and expected to grow until the middle of this century. This growth is accompanied by increasing consumption of natural resources and also an increase in the rate of consumption. It is also accompanied by environmental pollution and natural systems degradation (Brown, 2008). One of the earliest studies to document this concern was the 1972 Club of Rome study published as "Limits to Growth" by Donella Meadows, Dennis Meadows, Jørgen Randers, and William Behrens III (Meadows *et al.*, 1972). This study used simulation models of the interactions among world population, industrialization, pollution, food production, and resource depletion. It showed that under the assumptions of industrial development, there was a clear conflict between human demands and Earth's finite resources. It argued that unfettered growth was not feasible, and that we need to manage the quality and type of growth that the natural systems of the Earth can support (Ehrenfeld, 2008).

Some versions of this warning have been around for a long time. For example, even before this, Malthus, in *An Essay on the Principle*



of *Population* (1798), warned about the growth of population outpacing the planet's ability to support human needs. That warning was disregarded partly because of the simplistic probability assumptions underlying Malthus' mathematical forecasts. A bigger factor was the unprecedented growth of technology and industrialism, which fostered the hope that humans would be able to overcome any shortages in nature through the application of new technologies, despite Adams' *The Education of Henry Adams* (1918), which reflected a very popular fear of the effects of science and technology in the early 1900s. It was only after the social movements of the 1960s (environmental, consumer, women's rights movements to name a few) that serious technology critique emerged, pointing to technology as a double-edged sword. On the one hand technology offered the many goods and services that made life easy and interesting, and on the other technology accelerated destruction of natural environments at an unsustainable pace.

The 1960s and 1970s saw an increasing demand for environmental protection. Rachel Carson's book *Silent Spring* (serialized in *The New Yorker*, and on Book-of-the-Month Club, and NYT best-seller list) raised public concerns about pesticides, chemicals, and environmental pollution (Carson, 1962). It offered a critique of materialism, scientism, industrialism, and the technological control of nature. At the same time, the concerns about imbalance between human needs and Earth's natural systems became a global issue. The United Nations organized its first "environmental summit" in 1972 (Stockholm Summit). It acknowledged that human-environment interactions were indeed a global challenge. It suggested the Earthwatch Institute, founded a year earlier in Boston, MA to promote the action and understanding necessary to sustain the natural environment and to study and document the scale and rate of environmental degradation. And it proposed that government and international policymakers undertake widespread environmental management activities to support international assessment and management. The summit gave wide public recognition to the jeopardy and risks involved in not addressing this issue. This served as an impetus for enactment of national-level environmental regulations in the USA and the Western industrial countries (Warren, 2003). Prior to this era, Western industrial governments as a whole represented a minor and weak regulatory pressure on environmental transgressions.

The Environmental Protection Agency (EPA), which creates and enforces environmental laws at the national level, did not begin operations until the end of 1972. That same year also saw the Consumer Product Safety Commission created.

The concept of "sustainable development" was proposed by the United Nations' World Commission on Environment and Development (WCED) in its landmark 1987 *Brundtland Report* (WCED, 1987) entitled *Our Common Future*. The report defined "sustainable development" as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It advocated a form of economic development that was mindful of the long-term health of humans and the planet. It cautioned against unconditional overuse of natural resources that could destroy the ability of natural systems to regenerate. The simplicity of the definition of sustainable development masked many complexities and conflicts inherent in implementing it.

The WCED Report unleashed a torrent of research in the agricultural and food sciences, the natural sciences, and in the social sciences. Agricultural sustainability discourse started to examine how to create world food systems that would meet the needs of growing populations. Natural scientists examined sustainability of Earth's ecosystems (water, mountains, deserts, forests, and flora/fauna) and global climate, and atmospheric systems. And social scientists explored sustainability from a variety of disciplinary perspectives including political, economic, social, and cultural (Lappe, 1971).

The biggest revelations came from the natural sciences documentation of the scale and scope of destruction of the natural environment caused by human activities. The depletion of the ozone layer in Earth's atmosphere caused by chlorofluorocarbons was widely documented by scientists. In 1989, this fact led to an international treaty – The Montreal Protocol – to ban these substances. Throughout the 1980s and 1990s, researchers documented climate changes being caused by greenhouse gases or accumulation of carbon in Earth's atmosphere. For example, the Intergovernmental Panel on Climate Change (IPCC, 2007), a scientific intergovernmental group tasked with evaluating the risk of climate change caused by human activity established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, periodically consolidates the scientific findings from UN

member nations to record climate change and its impacts. The UK Government commissioned Sir Nicholas Stern, a British economist and academic, and Chair of the Grantham Institute for Climate Change and the Environment at the London School of Economics, to review the economic impacts, the economics of stabilizing greenhouse gases that cause climate change and development consequences of climate change. The Stern Report (2006) concluded that the benefits of decisive early action on climate change considerably outweigh the costs. It proposed that 1–2% of global gross domestic product (GDP) *per annum* be invested to avoid the worst effects of climate change. Without this investment, the report suggested that we risk global GDP being lowered by up to 20% *each year*. Table 1 provides a list of major agreements on environment and development problems between 1968 and 2009. These agreements also spawned a number of principles that articulated desired changes on the part of governments, corporations, financial institutions, and individuals.

Throughout these developments it has been clear that corporations, as major engines of economic growth, have a significant impact on the natural environment. They are systems of production and consumption that can accelerate or slowdown human impacts on the natural environment. Corporations use natural resources as inputs, placing pressure on depletion and even extinction of some resources. Their production, operations or

throughput systems, convert raw materials into finished goods and services with varying degrees of material and energy efficiency. Their outputs, which are products, services, packaging or waste and emissions, have direct ecological impacts. Making these corporations sustainable is a major challenge facing the global economy (Shrivastava, 1995, 1996).

In this milieu, organizational management scholars have explored the role of business and corporations in contributing to global sustainability. The subject of sustainable management and enterprise has evolved over the past two decades. It includes research on corporate social responsibility, environmental management, corporate ethics, sustainable human resources (see Jackson and Seo, 2010, in this issue), stakeholder management, corporate governance, sustainable supply chains, socially responsible consumption, and sustainability strategies. The goal is to help companies in their efforts to reduce their eco-footprint, improve their social performance, and become sustainable enterprises (Sharma and Vrendenburg, 1998; Freeman *et al.*, 2000; Post *et al.*, 2002).

In practically moving companies toward sustainability, a number of “Principles” have been proposed by various industry associations and national and international bodies. These are sets of values, standards, guidelines or rules of behavior that describe the responsibilities of or proper practices for organizations. Sustainability principles deal

**Table 1** Major international agreements on environment and development

1968	<i>Biosphere</i> , International Conference for Rational Use and Conservation of the Biosphere by UNESCO
1972	<i>Conference on Human Environment</i> , the historical Conference on Human Environment held in Stockholm in June 1972
1975	<i>CITES</i> , the convention on international trade in endangered species of flora and fauna was signed on 3 March 1973 in Washington
1976	<i>Habitat</i> , the first global meeting to link human settlement and the environment was held to highlight the problems being faced due to an increase in the population
1981	<i>World Health Assembly</i> adopts a global strategy for health for all by the year 2000
1984	<i>The International Conference on Environment and Economics</i> (OECD)
1987	<i>Montreal Protocol on Substances that Deplete the Ozone Layer</i>
1988	<i>The Intergovernmental Panel on Climate Change (IPCC)</i> was set up to assess the technical issues in climate change
1992	<i>Earth Summit the United Nations Conference on Environment and Development (UNCED)</i> was held in Rio de Janeiro in Brazil
1995	<i>The First Conference of the Parties (COP-1) to the FCCC, the UN Framework Convention on Climate Change</i> took place in Berlin
1997	<i>Kyoto Protocol</i> , 159 nations attending the Third Conference of Parties (COP-3) to the UNFCCC in Kyoto, Japan) agreed to reduce worldwide emissions of greenhouse gases
2009	<i>Copenhagen Summit</i>



with moving organizations toward sustainability by changing their vision/mission, their use of natural and human resources, their production and energy practices, and their products and waste management.

Since 1990, several dozen sets of principles have been proposed and adopted by organizations. A Google search for “sustainability principles” listed most of the principles discussed in this paper, and a few were found by following links and other references. For each set, the main principles, their origin or provenance, the date of their publication or inception, and their context have been identified. Those speaking directly to public policy have been labeled “political.” Those favoring industry and commerce have been labeled “economic.” Those with a strong focus on an impartial or third-party claim have been labeled “scientific.”

In the next two sections, we review these principles, their goals, and their content. We have divided our discussion into two broad groups – general principles and industry-specific principles.

### **General sustainability principles – purpose, content, rationale**

Principles are a popular way of expressing commitment to certain ideals. They offer a starting point for both individuals and organizations of all kinds for addressing sustainability. Sustainability principles seem to have emerged from a socio-historical context of environmental abuses and public anxiety over the proliferation of nuclear weapons beginning in the 1960s, juxtaposed with a general social awakening to the issues surrounding our relationship with the planet.

The 1960s were characterized by heightened attention to environmental abuses and public anxiety such as the effects of pesticides, smog, birth defects, air and water pollution (including oil spills), nuclear power plant incidents and nuclear weapons testing. At the same time, there were many positive things happening in terms of a general social awakening to the issues surrounding our relationship with the planet: the first Clean Water Act was passed in the US Congress; the World Wildlife Federation was founded; the US Congress created the National Wilderness Preservation System; the United Nations Biosphere Conference took place (leading to the famous Stockholm conference on the environment held in 1972), the UNESCO conference “Man and his Environment: A View Towards Survival” in San Francisco was held, and *Friends of the Earth* was founded. For additional

examples, see historical events lists compiled by the Environmental Institute of Houston and the Environmental History Timeline. Sustainability principles in general are high-level ideas. They occupy a high moral ground and are stated with a high level of abstraction. They are designed to apply broadly to many different organizational situations. Some organizations take this a step further and offer specific tools for measuring performance, and others include tools to assist with implementing ways to change organizations or to communicate results. Most, however, remain at the high intellectual level of values. And those with measurement tools and implementation methods sell their tools and methods as part of consulting services or certifications. As a result, there are many more certification bodies than there are principles. This paper focuses on the principles that underlie these certification practices, and the organizations that have developed the principles.

Many of the organizations created their principles in response to an offensive environmental disaster. For example, the Deep Ecology principles were influenced by the popular US grassroots political environmentalism that had emerged in the 1960s with the publication of Rachel Carson’s book *Silent Spring*. The Deep Ecology platform was a response to the detrimental environmental effects of modern industrial technology that had been accumulating. For example, between 1962 and 1972, 750 people died in London as a result of the smog (The Met Office, Government of the UK), the thalidomide birth defects disaster in Europe made global headlines, a weather inversion in New York City created a 4-day air pollution incident in which 80 people died (Environmental Institute of Houston), the Torrey Canyon oil tanker crashed off the coast of England resulting in a spill of over 29 million gallons of oil (devastating the coastlines of England and France) (International Maritime Organization), the Cuyahoga River (located in Northeast Ohio and connected to Lake Erie) burst into flames from oil and chemical pollution (EPA), and an oil well blew out off the Santa Barbara coast of California spilling 235,000 gallons of oil, covering 30 miles of beach with tar for 9 days (National Oceanic and Atmospheric Administration). The effect of this in the space of a single decade highlighted the extent of industrial pollution and man-made disasters.

The CERES Principles were a response to chemical accidents and toxic dumping, including the death of Karen Silkwood, an American labor union

activist and chemical technician at the Kerr-McGee plant, Oklahoma, whose job was making plutonium pellets for nuclear reactor fuel rods, and who died under mysterious circumstances after investigating claims of irregularities and wrongdoing at the plant. Additional stimulants included the infamous Love Canal event, Cancer Alley, and the Three Mile Island nuclear explosion. Other principles resulted from studies or documents related to conferences or scientific reports. The Biomimicry Principles, for example, emerged from the publication of a book titled *Biomimicry: Innovation Inspired by Nature*, (Benyus, 1997). Others created them as a means to influence business models (such as the *Principles of Natural Capitalism*) or government policy (the *Wingspread Principles*).

These principles see sustainability as a journey, not a destination. They point directions and act as guideposts on that journey. The guidance comes in the form of frameworks for decision making, and, in some cases, as mechanisms for converting ideas into action. The adopters of the principles become members of a community with common goals. The community serves as a vehicle for sharing ideas and best practices, enabling elaboration and implementation of the principles.

Sustainability principles have regard for both local and global consequences, and for short- and long-term impacts. They attempt to address the interconnectedness and interdependence of systems. General principles are often cast in the form of broad assessments of progress toward sustainable development. They take a holistic perspective on this task, with a balanced focus on the well-being of social, ecological, and economic sub-systems, and the interaction among these parts. They adopt time horizons long enough to capture both human and ecosystem time scales, thereby responding to current needs as well as those of future generations.

Some sets of principles are vague and small in number, such as the Natural Capital Principles and the Natural Step. Each of these has only four statements. Others, such as the Earth Charter Principles, with its 16 statements, take a more targeted approach with attention to explicit sets of categories with indicators and assessment criteria. The principles are broad enough to be useful to community groups, non-government organizations, corporations, national governments, and international institutions.

Table 2 lists basic characteristics of several general principles. The most common number of principles

is 10, with a maximum of 27. None are older than the early 1960s, and new ones have appeared almost every year since the late 1980s. A quick review of the principles suggests a wide array of sustainability topics is covered by the general principles. These include,

- Biodiversity
- Overpopulation
- Regulatory frameworks: Policies/laws/regulations (government/business)
- Conservation (environment)
- Restoration (environment)
- Safety (human)
- Human rights/Quality of life
- Need to integrate three pillars (economic, financial, social)
- Economic equality/poverty eradication (justice; human rights)
- Information/communication/community relations
- Awareness/Education/training
- Collaboration/partnership
- Democratic processes/role of youth, women and marginalized populations
- Waste/toxins (environment)
- Responsibility (corporate; individual; government)
- Self-evaluation/evaluation/certification
- Contingency planning/risk management/precautionary principle
- Long-term vision/multigenerational thinking
- Global perspective
- Local perspective

The topical coverage is broad, but the level of integration among topics both within a given set of principles, and across them, seems weak. They often read as a listing of concerns without any clear theoretical or practical rationale for why specific concerns are included and others are excluded. The principles address concerns of multiple stakeholders without valorizing any single group. They resist taking sides or overly privileging any particular value or group. While this sense of balance and proportion is important for the credibility and success of principles, it leads to high-level philosophical statements that are difficult to act upon.

It is hard to assess whether some principles are better than others both in content and in implementation mechanics. Little data are published on the numbers of organizations that have adopted them, or the depth of implementation. Nor is the

Table 2 Overview: general sustainability principles

<i>Principle</i>	<i>Date</i>	<i>Origin</i>	<i>Purpose</i>	<i># of principles</i>	<i>Measurement/ implementation guidance</i>	<i>Who uses them?</i>	<i>Scientific/ economic/ political</i>
Deep ecology foundation principles	1972	Norway	Support education and advocacy on behalf of wild nature	8	Philosophical	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Scientific
Declaration of the United Nations Conference on the Human Environment, Stockholm	1972	United Nations	Establishing a new and equitable global partnership through the creation of new levels of cooperation among states, key sectors of societies, and people	27	Philosophical	States and governments	Political
CERES Principles for socially and environmentally responsible investing	1989	USA	Integrating sustainability into capital markets for the health of the planet and its people	10	GRI has multiple levels of auditing items	Companies	Economic
The Natural Step Principles	1989	Sweden	To become a sustainable society	4	Vision only, but offers consulting services to measure and implement	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Scientific
Keidanren Global Environment Charter	1991	Japan	Guidelines for building new systems to realize an environmental conservation society, where the continuous progress of industry is possible	10	Guidelines are semi-structured	Companies	Economic
Business Principles for a Sustainable and Competitive Future	1992	Canada	To encourage enterprises to strive for competitive and sustainable future	8	Philosophical	Companies	Economic
International Chamber of Commerce (ICC) Business Charter	1992	?	That the widest range of enterprises commit themselves to improving their environmental performance in accordance with the principles, to having in place management practices to effect such improvement, to measuring their progress, and to report this progress	16	Philosophical	Companies	Economic
Charter of Rights and Responsibilities for the Environment	1994	Canada	To take into account the real costs of production and consumption; inspired by deep ecology movement	13	Philosophical	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Political
The Bellagio Principles	1997	Canada	Serve as guidelines for the whole of the assessment process including the choice and design of indicators, their interpretation and communication of the result	10	Has case studies to follow for each principle as a practical guide	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Scientific

Table 2 Continued

Principle	Date	Origin	Purpose	# of principles	Measurement/implementation guidance	Who uses them?	Scientific/economic/political
The Four Principles of Natural Capitalism	1999	USA	To improving profits, competitiveness, and the environment	4	Philosophical	Companies	Scientific
The Global Sullivan Principles of Social Responsibility	1999	USA	To enhance human rights, social justice, protection of the environment and economic opportunity for all workers, in all industries, in all nations	8	Philosophical	Companies	Political
Earth Charter Principles	2000	Costa Rica	To promote the transition to sustainable ways of living and a global society founded on a shared ethical framework that includes respect and care for the community of life, ecological integrity, universal human rights, respect for diversity, economic justice, democracy, and a culture of peace	16	Philosophical	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Political
UN Global Compact	2000	United Nations	To align business operations and strategies with 10 universally accepted principles in the areas of human rights, labor, environment and anti-corruption	10	Philosophical	Companies	Political
Biomimicry Principles	2002	USA	Actually design and build things that are biomimetic	12	Philosophical	Architects, builders	Scientific
Wingspread Principles	2006	USA	The United States must take immediate, comprehensive action against global warming	12	Philosophical	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Political
The Equator Principles	2006		Intended to serve as a common baseline and framework for the implementation by each EPFI of its own internal social and environmental policies, procedures and standards related to its project financing activities	10	Specific guidelines	Companies	Economic
Addis Ababa Principles FOR THE SUSTAINABLE USE OF BIODIVERSITY	2004	United Nations	To assist governments, resource managers, indigenous and local communities, the private sector and other stakeholders on how to ensure that their use of the components of biodiversity will not lead to the long-term decline of biological diversity	14	Philosophical	Governments, resource managers, indigenous and local communities, the private sector and other stakeholders	Political
Malawi Principles for the Ecosystem Approach	1998	United Nations	Ecosystem approach to biodiversity management	12	General principles	Community groups, non-governmental organizations, corporations, national governments, and international institutions	Scientific





success of implementation monitored or reported over time to capture emergent issues. Consequently, many of the sets of principles have had no obvious updating or editing since creation. Despite the sense that these principles are meant to be living documents, it is not clear where or when the reciprocal and dynamic nature of this type of document lies. Moreover, nothing is said of the difficulties in adhering to such principles – no words of caution or identified areas prone to failure.

### Industry-specific principles

Industry-specific principles are frameworks for making smarter decisions about growth management and responsibilities within specific industry sectors. They are premised on the idea that each industry has operational practices, resource consumption, waste management, safety technologies, and environmental impact patterns that are common across firms in the industry. These principles attempt to integrate technological, financial, environmental, and community elements in the context of industry realities. Some of the industries that have been developing sustainability principles include government, architecture and construction, mining, fishing, tourism, education, green spaces and recreation, energy, agriculture, forestry, viticulture, transportation and packaging, as illustrated in Table 3.

They provide institutional guidance, capacity for data collection, maintenance, and documentation. They promote development of collective cross-industry learning and feedback to decision making. Their development entails engagement of industry stakeholders such as key grassroots environmental and social groups, professional and technical groups, youth, women, and indigenous people to ensure recognition of diverse and changing values. Topics covered by the specific principles address the interdependence of the natural environment and industry commerce. They acknowledge how nature serves as an underlying structure and poses limitations for industry practices and the built environment. They adapt existing frameworks such as the Natural Step and United Nations Environmental Programs to articulate acceptable governance practices that address industry-related issues. Some use market-based incentives to encourage sustainable management practices that reach regions where regulation is lacking, and to exceed government standards in more regulated countries.

A good example of an industry-specific set of principles is offered by the Ski Area Industry. As

Table 3 suggests, there are many industry-specific principles; however, the National Ski Area Association stands out in its clarity, its broad vision, in its organizational alignment from the simplest of operations to the most complex and in its collaborative structure. The charter developed by the National Ski Areas Association in 2000 (revised in 2005), called *Sustainable Slopes*, shows how an industry can incept a set of environmental and social principles that are integrated with economic needs. The charter's vision statement makes this integration clear: "To be leaders among outdoor recreation providers by managing our businesses in a way that demonstrates our commitment to environmental protection and stewardship while meeting public expectations" (National Ski Areas Association, p. 2). And the commitment to long-term sustainability is made manifest in the mission statement: "We are committed to improving environmental performance in all aspects of our operations and managing our areas to allow for their continued enjoyment by future generations" (National Ski Areas Association, p. 2). The rationale is clearly presented by outlining the values behind the principles, and the principles themselves are elaborated with specific actionable items that are also measurable. Moreover, the document is treated as a collaborative living entity: "This revision ensures that our Principles are current and reflect the latest technology and best management practices to foster continuing improvement in environmental performance. It also acknowledges and incorporates emerging resources available from our Partnering Organizations as well as specific new 'options for getting there' from endorsing resorts" (National Ski Areas Association, p. 2).

General areas covered by the principles are illustrated in Table 4, along with the total number of main principles related to each area, as well as the total number of suggested action items.

This charter represents much that this paper suggests a good set of principles should include:

- It is clear and specific and uses plain language.
- It consults with the broadest possible group of stakeholders in its design: over 50 organizations were consulted in the development of the charter (see pp. 3 and 4 of the charter for a list).
- It makes explicit all judgments, assumptions, and uncertainties.
- It is consistent.
- It includes practical applications. For example, in the category of waste management there are four

Table 3 Overview: industry-specific sustainability principles

Principle	Date	Origin	Purpose	# of principles	Measurement/implementation guidance	Scientific/economic/political
<i>Federal, State, Provincial, and Municipal</i> Manitoba Principles and Guidelines of Sustainable Development	1998	Canada	To create a framework through which sustainable development is implemented in the provincial public sector and promoted in private industry and society generally	7	Six semi-structured guidelines plus SUSTAINABLE DEVELOPMENT CODE OF PRACTICE & Sustainable Development Procurement Guidelines & Sustainability Guidelines for Local Governments, School Divisions, Universities, Colleges, and Regional Health Authorities Regulation	Scientific
Melbourne Principles For Sustainable Cities	2002	United Nations	Improving the sustainability of cities will not only benefit their inhabitants, but also significantly contribute to improving the well-being of people around the world	10	Philosophical	Scientific
Principles of Sustainable Development for Minnesota	1999	USA	If Minnesota's prosperity is to be sustained over time, what is good for business, the environment, and communities must eventually become one and the same	5	Philosophical principles with tools and techniques for local planning document	Political
Netherlands National Environmental Policy Plan (NEPP)	1989	Netherlands	To achieve a sustainable, high-quality environment within 25 years, one generation	3	Philosophical	Scientific
Ontario Round Table on Environment and Economy (ORTEE)	1989	Canada	To provide a framework for local communities to use in designing sustainable development goals	6	Philosophical	Scientific
National Round Tables on the Environment and Economy in Canada	1993	Canada	To guide and implement sustainable development. It outlines directions for change, offers examples of what individuals and organizations are already doing, and suggested milestones or targets to evaluate future progress	6	Semi-structured principles with suggested directions and milestones	Economic
City of Kingston, Ontario	2008	Canada	To make Kingston Canada's most sustainable city	10	Philosophical principles with semi-structured strategies on moving forward	Political
<i>Education</i> PRME Principles of Responsible Management Education	2007	United Nations	To inspire and champion responsible management education, research and thought leadership globally	6	Fairly specific	Scientific
<i>Green spaces and recreation</i> Environmental Charter (National Ski Areas Association)	2005	USA	To raise the collective environmental performance of the ski industry	36	Very specific for each principle	Scientific



<i>Architecture and building</i>									
LEED – US Green Building Council Principles for Leadership in Energy and Environmental Design	1993	USA	To promote buildings that are environmentally responsible, profitable, and healthy places to live and work	9	Semi-structured principles with specific certification criteria	Scientific			
Sanborn principles for building design and construction	1994	USA	To provide a comprehensive approach to ecological design that considers building structure, its impact on environment and social, economic, and aesthetic implications	7	Philosophical with semi-structured suggestions for action	Scientific			
The Hannover Principles	1992	USA	To encourage the design professions to take sustainability into consideration	9	Philosophical	Scientific			
The Todds' Principles of Ecological Design	1994	USA	To provide a logical framework that places nature at the center of the design process	9	Philosophical	Scientific			
Van der Ryn & Cowan 5 Principles of Sustainable Design	1995	USA	Integrating design with nature to regenerate rather than deplete ecosystems; to articulate the interdependence of design, function, and nature	5	Philosophical	Scientific			
<i>Energy</i>									
Guiding Principles for Biodiesel Sustainability	2008	USA	To ensure that the future will encourage new research and innovation; incorporate sound science and knowledge based on credible, transparent data; create mechanisms for continual assessment and improvement; and provide the opportunity for this fuel to realize its full potential as a sustainable domestic energy source	9	Philosophical	Political			
American Petroleum Institute (API) Environmental Principles	n/a	USA	To develop and to use natural resources in an environmentally sound manner while protecting the health and safety of our employees and the public	11	Semi-structured	Economic			
<i>Agriculture</i>									
World Cocoa Foundation	2009	USA	To help guide economic and social development as well as environmental stewardship in cocoa-growing communities around the world	3	Three main philosophical principles and eleven specific goals are elaborated	Economic			
Principles for Great Plains Sustainability (IISD)	1993	Canada	To cultivate a better understanding of the issues pertaining to Great Plains, while bringing sustainability closer to a measurable state	9	Accompanied by criteria and key questions	Political			
Principles of Permaculture Design for habitats – Holmgren	1978	Australia	To fast-track the development of sustainable use of land and resources, whether that be in a context of ecological and material abundance or one of deprivation	12	Each principle has a rather long description of the provenance of the idea as well as guidance for implementation	Scientific			
Principles of Permaculture Design for habitats – Mollison	1978	Australia	To provide a set of universally applicable guidelines that can be used in designing sustainable habitats	34	Sometimes semi-structured statements	Scientific			
UK Food Industry Principles	2006	UK	To ensure that improved economic performance is not at the expense of the exploitation of people or the environment and that they do not disadvantage future generations	5	Eight strategies to help achieve the vision laid out by the principles	Economic			

Table 3 Continued

Principle	Date	Origin	Purpose	# of principles	Measurement/implementation guidance	Scientific/economic/political
<i>Forestry</i> FSC (Forest Stewardship Council)	1994	Canada	To promote environmentally appropriate, socially beneficial, and economically viable management of the world's forests	10	Very very specific; includes certification	Economic
SFI (Sustainable Forestry Initiative)	1994	USA	Covers key values such as protection of biodiversity, species at risk, and wildlife habitat; sustainable harvest levels; protection of water quality; and prompt regeneration	14	Very very specific; includes certification	Economic
<i>Fishing</i> Marine Stewardship Council (MSC) Principles	2002	UK	To contribute to the health of the world's oceans by recognizing and rewarding sustainable fishing practises, influencing the choices people make when buying seafood, and working with our partners to transform the seafood market to a sustainable basis	3	Each principle is elaborated with an intent and criteria for action	Economic
<i>Viticulture</i> Global Wine Sector Environmental Sustainability Principles	2006	France	Provides a framework to ensure that there is a coordinated, efficient, and results-driven approach to the international wine industry's commitment to environmental sustainability	7	Pretty broad	Scientific
<i>Transportation</i> The Rail Industry Sustainable Development Principles	2009	UK	To help the industry to embed sustainable practices in culture, policy, process, and decision making	10	Philosophical with some elaboration on intent	Economic
<i>Packaging</i> Consumer Goods Forum's Global Packaging Project	2007	Europe	To develop and use packaging which contributes to achievement of the European Union's Sustainable Development Strategy	6	Just high-level guidelines for thinking	Economic
<i>Mining</i> International Council on Mining and Metals	2003	UK	To show how the mining and minerals sector can contribute to the global transition to sustainable development	10	High-level guidelines for thinking with elaborated areas for action	Political
<i>Tourism</i> CHARTER FOR SUSTAINABLE TOURISM	1995	n/a	Creating sustainable policies at the micro level that cumulatively lead to sustainable development of the tourism sector, organizing the need to develop a tourism that meets economic expectations and environmental requirements, and respects not only the social and physical structure of destinations, but also the local population	18	Just high-level guidelines for thinking	Political

<i>Finance and Banking</i> Principles for Responsible Investing London Principles	2006	UN	To better align investors with broader objectives of society	6	Each principle is elaborated with suggested actions	Economic
	2002	UK	To propose conditions for a financial system, and the role of financial institutions within that system, that will enhance the financing of sustainable development	7	Illustrates through case studies only	Economic

subcategories: waste reduction, potentially hazardous wastes, recycling, and product reuse. Within these four subcategories there are 33 suggested actions that can be taken, including “Request vendors to provide ‘take-back’ services for used products,” “Compost food wastes, grass clippings, and woody debris for use in landscaping and revegetation or erosion control areas,” “Educate guests and train employees on recycling practices,” and “Collect and recycle waste products such as used motor oil, household appliance batteries, tires and unused solvents.”

- Resource commitment is a requirement.
- It communicates initiatives and findings, including the almost 200 endorsing ski resorts (see pp. 18 and 19).
- It develops a capacity for repeated measurement to determine trends.
- It adjusts goals, frameworks, and indicators as new insights are gained.

Areas where this charter could improve include providing incentives and recognition awards for individuals, and organizations, and establishing standardized measurements wherever possible.

### Issues and trends

Since they are authored by industry groups, industry principles are often biased in favor of industry interests. They are focused on standards and certification that create a level playing field for industry participants. They take a global focus to even out the differing regulatory environments in individual countries. By standardizing safety technology, sourcing, transportation, accounting, resource conservation, and waste disposal procedures, they eliminate the conditions that may privilege one company and disadvantage another. These initiatives may sometimes be perceived as attempts to postpone or thwart government regulations. By voluntarily addressing known sustainability problems in an industry, companies can make a strong case for avoiding industry regulation. That is, if the companies are seen to be responding even at a low level to commonly encountered sustainability issues, they are seen to be already on board. Government interventions and attempts to regulate such an industry would therefore appear to be wasteful of public resources.

A potentially worrying trend is the focus on chain of custody and supply chain standards. On the surface, this would appear to be a positive trend, forcing corporations to take a closer look at their

**Table 4** Selected items from the National Ski Areas Association’s sustainability charter

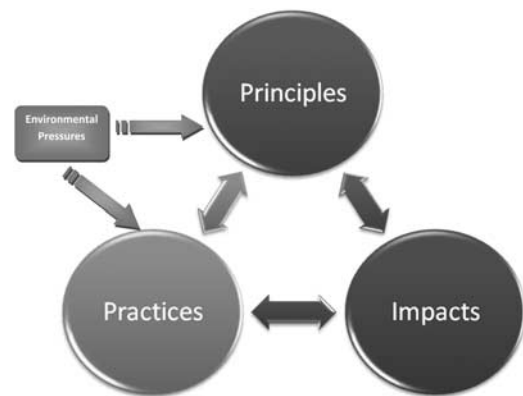
Area	# of main principles	# of action items
Planning, design and construction	7	16
Water use and management	5	37
Wastewater management	1	8
Energy conservation	9	36
Waste management	4	33
Fish and wildlife	1	13
Forests and vegetative management	1	19
Wetlands and riparian areas	1	8
Air quality	2	9
Visual quality	2	12
Transportation	1	7
Education and outreach	2	16

business partners. However, as a sustainability starting point for a corporation, it is actually much more of a means to dispel responsibility. In the absence of aligned mission and vision statements and corporate-wide sustainability initiatives, chain of custody principles merely set the stage for passing blame.

The difficulty in applying principles that are designed on a global level to the local context has spawned regional versions of principles, such as American Forest Foundation’s American Tree Farming System set of principles. The global Sustainable Forestry Initiative (SFI) does not adequately attend to growing renewable forest resources on private lands while protecting the environment and increasing public awareness of productive forestry practices. The SFI was developed as a voluntary third-party forest certification in the 1990s in response to concerns about forest management and illegal logging, primarily in developing countries.

Some principles and certification initiatives are prompted by the increasing consumer demand for certified products and better product labeling. Consumers are becoming more educated about the energy, resource, waste, and public safety consequences of product and process technologies. Standardization and certification often generate data that can fulfill consumer expectations. In the extractive industries there is heavy focus on compliance certification, whereas in other industries principles look beyond compliance to market opportunities.

The practical and applied nature of industry principles has meant that there is at least a shallow level of monitoring and revision. For example, SFI just did a major revision of its principles and certification, the International Organization for Standardization (ISO), which publishes the well-known ISO:9000 series of certification standards, is



**Figure 1** Multidirectional cycle of influences.

developing new ones for environment and ethics (ISO:26000), and the Forest Stewardship Council (FSC) is in the process of revising its principles.

The general trend in the specific principles is that their numbers are on the rise, as are the certification services available. More and more industries and regions are coming to the realization that general principles are a much needed guide to operating in the new economy, but also that they are difficult to translate into meaningful actions on the local level. Consequently, industry members form councils to define principles that are germane to their specific industry reality and needs, as well as actionable.

It is perhaps helpful to consider the principles, the practices surrounding them, and the effects of these practices as sides of a multidirectional cycle (see Figure 1). Environmental (external) pressures present themselves and give rise to a set of principles. These principles then, due to their abstract nature (which makes them difficult to implement), give rise to practices. Finally, these



practices result in visible effects in the external environment.

This linear description, however, masks some real complexities and feedback loops that are more obvious when we examine the relationships in greater detail. For example, the double-headed arrows between principles, practices, and impacts indicate that the relationships can be multidirectional. It is conceivable, for instance, that environmental pressures gave rise to some practices, which, once their positive effects were observed, became indoctrinated in a higher-level series of principles.

At an even more complex level of analysis it becomes apparent that these relationships need not be encapsulated in a single epochal event. Over time, impacts can influence both the guiding principles as well as the practices themselves.

### Critique and suggestions

The list of principles that have emerged over the past four decades is impressive both in scope and depth. They cover a wide variety of industries and types of companies and economic and social situations. Their content addresses the main issues relevant to creating sustainable enterprises. If all these principles (or even some of them) were widely adopted and well implemented we would have been well on our way to sustainability. The reality is that over the same 40 years that these principles have been established, the ecological condition of the planet has continued to deteriorate. The eco-footprint of industries and organizations continues to be well above what is considered necessary for sustainable development and to avert drastic climate change. In this section, we comment on what purposes these principles have really served and make some suggestions for improvement.

1. Symbolic vs real value – Principles seem to be designed more as signals for companies regarding the values and standards to pursue. They do not have real force of actual standards or laws. They are deemed strong but voluntary guidelines for action. They serve an important symbolic role in that they represent a moral position on issues of concern to sustainability. They can have a huge motivational impact of people and organizations already inclined to act sustainably. In contested arenas such as sustainability, there is often a lack of strong consensus among industry groups and managers about how far and how fast companies should move toward sustainability. By articulating a general agreement

at least on symbolic and moral levels, these principles pave the way for action.

2. The principles intentionally represent simple value statements. Their simplicity is a source of appeal, but it also obscures complexities of the real world. Managers work under conditions of conflicting values and goals. There are conflicts between goals of organizational stakeholders, conflicts between individuals and groups internal to the firm, conflicts in value systems, conflicting legal systems, and cultural conflicts. Simple statements of principles do not address these conflicts. Therefore they lack connection to everyday pressures of running companies. They may get perceived as “good” ideas, but not very practical. Thus they create a motivational tension among managers. Managers would like to follow them for their moral clarity, but may not do so because of practical constraints.
3. There are a number of ways in which the creation and implementation of sustainability principles can be improved. Improvement possibilities include:
  - improving clarity and specificity of principles;
  - eliminating loopholes, enhancing consistency;
  - including performance metrics and reporting requirements to track implementation;
  - reducing implementation barriers by making resource commitment a requirement;
  - providing incentives and recognition awards for individuals and organizations;
  - instituting a limited number of indicators or indicator combinations to provide a clearer signal of progress, standardizing measurement wherever possible to permit comparison comparing indicator values to targets, reference values, ranges, thresholds, or direction of trends, as appropriate;
  - making the methods and data that are used accessible to all;
  - making explicit all judgments, assumptions, and uncertainties in data and interpretations;
  - aiming, from the outset, for simplicity in structure and use of clear and plain language;
  - developing a capacity for repeated measurement to determine trends;
  - adjusting goals, frameworks, and indicators as new insights are gained.

### In lieu of a conclusion

Core values and principles have been foundational in many areas of human endeavor. Major religions

are founded on principles, major wars have been fought over principles, and entire sectors of society are structured around principles. The challenge of “sustainability” and sustainable enterprise is one of those millennial challenges that can fruitfully be addressed at a foundational level by principles. All organizations are unique and face a unique set of conditions that must be addressed in the course of embracing sustainability. It is the very complexity of organizing that such principles aim to reflect.

Formation of multiple principles to address the many diverse forms of unsustainable organizing is a good beginning. We need more such principles to cover additional areas. For example, in a world moving toward information and knowledge economies, areas where principles are needed include office work, information processing, communications technologies, service industries, and the government sector. Sustainability principles can also aid in shaping the health care and defense sectors toward sustainability.

This arena of sustainability principles offers organizational researchers many issues for future research. Concept and theory development oppor-

tunities abound in the design and framing of principles. We need to understand what economic, social, ecological, and political theories and values can make such principles appealing and compelling to organizations and their stakeholders. We must measure the impacts of principles on firm performance. It would be useful to understand the empirical reality underlying implementation or adoption of these principles. How widely and deeply have they been adopted? Does adherence to principles impact firm performance positively? What organizational and inter-organizational processes and social dynamics lead to creation of a successful set of principles? Which institutions need to be involved, who can effectively broker inter-stakeholder dialogues, what kinds of scientific, social, legal, and political skills are needed for developing principles? What are more and less effective ways of organizing principles?

Future directions in research on principles must address these items as well as how they influence each other, and what are the key impacts that drive changes to the practices and principles themselves.

## References

- Adams, H. (1918). *The education of Henry Adams*. Boston: Houghton Mifflin.
- American Forest Foundation's Center for Family Forests (2004). The American Tree Farming System standards of sustainability. [http://65.109.144.60/cms/test/26\\_34.html](http://65.109.144.60/cms/test/26_34.html), visited 31 August, 2010.
- Benyus, J. (1997). *Biomimicry: Innovation inspired by nature*. New York: William Morrow and Company.
- Brown, L.R. (2008). *Plan B 3.0: Mobilizing to save civilization*. New York: W. W. Norton.
- Carson, R. (1962). *Silent spring*. Boston: Houghton Mifflin.
- CERES. (2010) <http://www.ceres.org>, visited 31 August.
- Ehrenfeld, J. (2008). *Sustainability by design*. New Haven, CT: Yale University Press.
- Environmental History Timeline. (2010) <http://www.environmentalhistory.org>, visited 31 August.
- Environmental Institute of Houston. (2010) <http://prtl.uhcl.edu/portal/page/portal/EIH/archives/projects/TFORS/history>, visited 31 August.
- Environmental Protection Agency. (2010) <http://www.epa.gov/greatlakes/aoc/cuyahoga.html>, visited 31 August.
- Freeman, E.R., Pierce, J. & Dodd, R. (2000). *Environmentalism and the new logic of business*. New York: Oxford University Press.
- Intergovernmental Panel on Climate Change (IPCC) (2007). *Fourth synthesis report*. Geneva: IPCC.
- International Maritime Organization. (2010) [http://www.imo.org/environment/mainframe.asp?topic\\_id=231#2](http://www.imo.org/environment/mainframe.asp?topic_id=231#2), visited 31 August.
- Jackson, S.E. & Seo, J. (2010). The Greening of Strategic HRM Scholarship. *Organization Management Journal*, 7(4): 278–290.
- Lappe, F.M. (1971). *Diet for a small planet*. New York: Random House.
- Malthus, T.R. (1798). *An essay on the principle of population*. London: J. Johnson.
- Meadows, D.L., Randers, J. & Behrens III, W.W. (1972). *The limits to growth; A report for the club of Rome's project on the predicament of mankind*. New York: Universe Books.
- National Oceanic and Atmospheric Administration. <http://www.incidentnews.gov/incident/6206>, visited 31 August, 2010.
- National Ski Areas Association (2005). Sustainable slopes. [http://www.nsaa.org/nsaa/environment/sustainable\\_slopes/Charter.pdf](http://www.nsaa.org/nsaa/environment/sustainable_slopes/Charter.pdf), visited 31 August, 2010.
- Post, J.E., Preston, L.E. & Sachs, S. (2002). *Redefining the corporation: Stakeholder management and organizational wealth*. Stanford, CA: Stanford University Press.
- Sharma, S. & Vrendenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal*, 19(8): 729–753.
- Shrivastava, P. (1995). The role of corporations in achieving ecological sustainability. *Academy of Management Review*, 20: 936–960.
- Shrivastava, P. (1996). *Greening business: Profiting the corporation and the environment*. Cincinnati, OH: Thomson Executive Press.
- Stern, N. (2006). Stern review on the economics of climate change. [http://www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm), visited 11 February, 2008.
- The Met Office, Government of the UK. [http://www.metoffice.gov.uk/education/teens/casestudy\\_great\\_smog.html#p03](http://www.metoffice.gov.uk/education/teens/casestudy_great_smog.html#p03), visited 31 August, 2010.
- Warren, L.S. (2003). *American environmental history*. London: Blackwell.
- World Commission on Environment and Development (WCED) (1987). *Our common future*. New York: Oxford University Press.





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