

**NOTICE: WARNING**  
**CONCERNING COPYRIGHT RESTRICTIONS**



- The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.
- Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific "fair use" conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

THE  
SUSTAINABILITY  
REVOLUTION

*portrait of a paradigm shift*

ANDRES R. EDWARDS

*foreword by David W. Orr*



NEW SOCIETY PUBLISHERS

## **Cataloging in Publication Data**

A catalog record for this publication is available from the National Library of Canada.

**Copyright © 2005 by Andrés Edwards.**

**All rights reserved.**

Cover design by Diane MacIntosh. Leaf image ©Photodisc Blue.

Printed in Canada. First printing April 2005.

Paperback ISBN: 0-86571-531-9

Inquiries regarding requests to reprint all or part of *The Sustainability Revolution* should be addressed to New Society Publishers at the address below.

To order directly from the publishers, please call toll-free (North America) 1-800-567-6772, or order online at [www.newsociety.com](http://www.newsociety.com)

Any other inquiries can be directed by mail to:

New Society Publishers

P.O. Box 189, Gabriola Island, BC V0R 1X0, Canada

1-800-567-6772

New Society Publishers' mission is to publish books that contribute in fundamental ways to building an ecologically sustainable and just society, and to do so with the least possible impact on the environment, in a manner that models this vision. We are committed to doing this not just through education, but through action. We are acting on our commitment to the world's remaining ancient forests by phasing out our paper supply from ancient forests worldwide. This book is one step towards ending global deforestation and climate change. It is printed on acid-free paper that is 100% old growth forest-free (100% post-consumer recycled), processed chlorine free, and printed with vegetable based, low VOC inks. For further information, or to browse our full list of books and purchase securely, visit our website at: [www.newsociety.com](http://www.newsociety.com)

NEW SOCIETY PUBLISHERS

[www.newsociety.com](http://www.newsociety.com)



## CHAPTER 1

# The Birth of Sustainability

*As to methods there may be a million and then some, but principles are few. The man who grasps principles can successfully select his own methods. The man who tries methods, ignoring principles, is sure to have trouble.*

—Ralph Waldo Emerson

*Small shifts in deeply held beliefs and values can massively alter societal behavior and results — in fact, may be the only things that ever have.*

—Dee Hock

## The Context

AT THE DAWN OF THE 21ST CENTURY, a new revolution is gaining strength — the Sustainability Revolution. The purpose of this work is to help those inside this revolution, as well as those presently outside, better understand where sustainability is coming from and where it might be going.

We will begin with a “pre-history” of the Sustainability Revolution, paying special attention to its relationship with its main precursor, the environmental movement of the 1960s and 1970s. Next we will follow the emergence of the Sustainability Revolution in the 1980s and its extraordinary flowering beginning in the 1990s. Then we will examine the reasons for the methodology we will use to grasp the revolution’s profound and fruitful diversity. We then will be in a

position to create a multidimensional portrait of the Sustainability Revolution today.

### **Environmentalism: The Precursor to Modern Sustainability**

At the foundation of modern sustainability lies the human connection with nature, expressed first in America through the New England transcendentalist movement of the 1800s. Transcendentalists such as Bronson Alcott, Margaret Fuller, George Ripley — and especially Henry David Thoreau and Ralph Waldo Emerson — pointed to the significance of nature as a mystery full of symbols and spirituality.

As Emerson stated, “The Transcendentalist adopts the whole connection of spiritual doctrine. He believes in miracle, in the perpetual openness of the human mind to new influx of light and power; he believes in inspiration, and in ecstasy.”<sup>1</sup>

In his book *Nature* (1836), Emerson viewed the natural world as a source of guidance and a mirror that reflects back the soul. He described our relationship with nature as having seven facets: commodity, beauty, language, discipline, idealism, spirits and prospects.<sup>2</sup> Each of these facets, in turn, supports the intuition and inspiration of the individual.

Emerson’s description of the natural world as a mirror was enhanced by the work of his friend and contemporary, Thoreau. In *Walden* (1854), Thoreau described his experience of living a simple existence in a hut next to Walden Pond near Concord, Massachusetts. Thoreau’s observations of nature highlight the virtues of libertarianism and individualism. As he stated, “I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived.”<sup>3</sup>

The works of Thoreau and Emerson helped establish the transcendentalist movement’s view of nature as a teacher, which was enhanced by other writers and naturalists in the 20th century. One of these was the early 20th century American inventor, writer, naturalist and

conservationist John Muir, who played a pivotal role in bringing attention to the importance of preserving America’s wildlands.

Unlike the transcendentalists — who saw nature as a way to reflect the divine aspect within themselves — Muir stressed the systematic character of the natural world and the resulting importance of protecting such vital resources as forests and water supply. He also stressed the crucial role of wilderness for recreation and uplifting the human spirit: “Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul alike.”<sup>4</sup>

In books such as *Our National Parks* (1901) and *The Yosemite* (1912), Muir traced the impact on America’s wildlands of activities like sheep and cattle grazing. In this way, he influenced his contemporaries, including President Theodore Roosevelt, to establish a series of conservation programs and to create Yosemite National Park. Muir also was involved in establishing the Sequoia, Mount Rainier, Petrified Forest and Grand Canyon national parks. In 1892, he and his colleagues founded the Sierra Club, which has had a lasting influence on conservation issues, to “do something for wildness and make the mountains glad.”<sup>5</sup>

Following Muir’s lead, the 1940s American conservationist Aldo Leopold extended the notion of nature as not merely a mirror and teacher but an ecosystem directly tied to our survival. For Leopold, conservation called for an ethical approach based on respect for the environment.

In his essay, “The Land Ethic,” in *A Sand County Almanac* (1949) he stated:

An ethic may be regarded as a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not discernible to the average individual. Animal instincts are modes of guidance for the individual in meeting such situations. Ethics are possibly a kind of community instinct in-the-making.<sup>6</sup>

Although this was written over fifty years ago, Leopold's vision still stands as a milestone whose sensibility and concern for ethics underlie and inform the Sustainability Revolution today.<sup>7</sup>

American writer and naturalist Rachel Carson's publication of *Silent Spring* in 1962 set off an alarm heard through all levels of society. Carson's depiction of the devastating impact of toxins and pollutants on the environment caused the general public and government agencies to reevaluate the limits of ecosystems. Her description of the dangers of agricultural pesticides for animals and humans made clear that our survival is linked to the viability of ecosystems.

Seminal works such as *A Sand County Almanac* and *Silent Spring* became icons in the environmental field and were adopted by the Sustainability Revolution because of their powerful fusion of environment and ethics. The ecological awareness raised by Carson and other environmentalists in the 1960s culminated in 1970 with the first Earth Day, which attracted over 20 million people to enthusiastic and peaceful rallies throughout the United States.<sup>8</sup>

Senator Gaylord Nelson of Wisconsin, founder of the first Earth Day, called for a national "Environmental Teach-in" aimed mostly at college campuses. The event became what he later called a "grassroots explosion." In Nelson's view, the success of Earth Day stemmed from "the spontaneous, enthusiastic response at the grassroots. Nothing like it had ever happened before .... They simply organized themselves. That was the remarkable thing that became Earth Day."<sup>9</sup>

Earth Day served to educate the general public about the impact of industrial society on the environment. It also began the process that led the US government to pass laws such as the Clean Air Act and the Clean Water Act protecting the environment and to establish regulatory agencies including the Environmental Protection Agency (EPA), whose purpose was to monitor more closely the environmental impact of business and industry.

Thus, "pre-sustainability" environmentalism created significant constituencies at both the popular and the official levels and united four dominant concerns: 1) an awareness of the profound spiritual links between human beings and the natural world; 2) a deep under-

standing of the biological interconnection of all parts of nature, including human beings; 3) an abiding concern with the potential damage of human impact on the environment; and 4) a strongly held commitment to make ethics an integral part of all environmental activism.

### **Contemporary Environmentalism: The Roots of Sustainability**

A landmark event in the history of contemporary environmentalism was the 1972 United Nations Conference on the Human Environment in Stockholm, Sweden. This gathering internationalized the concerns of the American Earth Day events and focused on the regional pollution, especially the acid rain problems, of northern Europe.

Even more important, the Stockholm conference marked the first step toward what we see today as the Sustainability Revolution. This global forum began the attempt to find positive links between environmental concerns and economic issues such as development, growth and employment.<sup>10</sup> As a result of the Stockholm conference, numerous national environmental protection agencies were established, as well as the United Nations Environment Programme (UNEP), whose mission is to "provide leadership and encourage partnerships in caring for the environment by inspiring, informing and enabling nations and people to improve their quality of life without compromising that of future generations."<sup>11</sup>

During the 1970s Wes Jackson of The Land Institute and other pioneers brought to light the significance of sustainable practices. By the late 1970s the disposal of hazardous materials by burning them or dumping them underground or into waterways had become unacceptable. The "out of sight, out of mind" approach to toxic waste disposal, culminating in the contamination of Love Canal, where President Jimmy Carter declared a State of Emergency in 1978, spawned the creation by the US Congress of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), commonly known as Superfund. Superfund deals with

identifying and cleaning up hazardous waste sites and allows residents adversely affected by these sites to sue the federal government. Superfund created a new industry in waste clean-up and restoration services.<sup>12</sup>

By the early 1980s, sustainability had begun to gain wider public attention, chiefly as a result of the publication of Robert Allen's *How to Save the World* (1980) Lester Brown's *Building a Sustainable Society* (1981). Brown began with an incisive analysis of the economic predicament facing the world because of our careless inattention to, and disregard for, fundamental ecological limitations. He outlined a comprehensive strategy for moving from what he called "un-sustainable" practices to a global relationship with nature that reconfigures not only the human relationship with the Earth and its biological diversity but also the structure of values for integrating ecological and economic issues.

### **The Emergence of Sustainability: Brundtland (1987) and Rio (1992)**

The emergence of sustainability in its contemporary form stems from the UN's creation in 1983 of The World Commission on Environment and Development (WCED), headed by Gro Harlem Brundtland, former prime minister of Norway.

The General Assembly asked the commission:

- to propose long-term environmental strategies for achieving sustainable development by the year 2000 and beyond;
- to recommend ways concern for the environment may be translated into greater cooperation among developing countries and between countries at different stages of economic and social development and lead to the achievement of common and mutually supportive objectives that take account of the interrelationships between people, resources, environment, and development;
- to consider ways and means by which the international community can deal more effectively with environmental concerns; and
- to help define shared perceptions of long-term environmental issues and the appropriate efforts needed to deal successfully with

the problems of protecting and enhancing the environment, a long-term agenda for action during the coming decades, and aspirational goals for the world community.<sup>13</sup>

In 1984 Worldwatch Institute published its first *State of the World* annual report. This report provided a global perspective on the relation between the world's resource base and the dynamics of economic development: "We are living beyond our means, largely by borrowing against the future."<sup>14</sup> Subsequent Worldwatch annual reports helped create a global consciousness about the interconnection of ecological, economic and social issues — an awareness soon thrust into international prominence by the publication of the Brundtland report, *Our Common Future*, in 1987.

The most remembered quote from the Brundtland 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."<sup>15</sup> While this definition undoubtedly is important, the Brundtland report helped define the Sustainability Revolution in two even more significant ways. Institutionally, it created the first framework for concerted action to protect the Earth's life support systems while promoting both economic and social justice goals. Conceptually, the report contained the first articulation of the key to contemporary sustainability — the importance of evaluating any proposed initiative with reference to the interaction of three fundamental criteria: ecology/environment, economy/employment and equity/equality, known today as the Three Es.

Ecology and economy are becoming ever more interwoven — locally, regionally, nationally, and globally

▼

**The most remembered quote  
from the Brundtland 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."**

▲

into a seamless net of causes and effects.<sup>16</sup> [S]ustainable development requires meeting the basic needs of all and extending to all the opportunity to fulfill their aspirations for a better life. A world in which poverty is endemic will always be prone to ecological and other [i.e., economic] catastrophes.<sup>17</sup> Hence, our inability to promote the common interest in sustainable development is often a product of the relative neglect of economic and social justice within and amongst nations.<sup>18</sup>

In 1992, five years after the publication of the Brundtland report, the United Nations Conference on Environment and Development (UNCED), known as the Earth Summit, took place in Rio de Janeiro, Brazil. The Earth Summit brought together more than 180 world leaders — delegates from UN agencies and international organizations — as well as world media and hundreds of nongovernmental organizations to build on the 1972 Stockholm conference and the 1987 Brundtland report.

Those attending the Earth Summit agreed to the 27 principles on environment and development of the Rio Declaration — which “made it plain that we can no longer think of environment and economic and social development as isolated fields” — and adopted a global program for action on sustainable development through Agenda 21:

A comprehensive blueprint for a global partnership, Agenda 21 strives to reconcile the twin requirements of a high quality environment and a healthy economy for all people of the world, while identifying key areas of responsibility as well as offering preliminary cost estimates for success.<sup>19</sup>

The Earth Summit also generated: 1) the Statement of Principles on the Management, Conservation and Sustainable Development of

All Types of Forests; 2) the UN Framework Convention on Climate Change; 3) the UN Convention on Biological Diversity; and 4) a recommendation for an international convention on desertification.<sup>20</sup>

Following the Earth Summit, President Bill Clinton in 1993 established the President’s Council on Sustainable Development (PCSD), headed by Ray Anderson, chairman and CEO of Interface, Inc. Building on the work of the Earth Summit, the Council provided a domestic agenda for sustainable development. The mission of the PCSD was to:

- Forge consensus on policy by bringing together diverse interests to identify and develop innovative economic, environmental and social policies and strategies;
- Demonstrate implementation of policy that fosters sustainable development by working with diverse interests to identify and demonstrate implementation of sustainable development;
- Get the word out about sustainable development; and
- Evaluate and report on progress by recommending national, community, and enterprise level frameworks for tracking sustainable development.<sup>21</sup>

In 1999, after more than 40 public meetings and workshops, the Council completed its third and final report, *Towards a Sustainable America: Advancing Prosperity, Opportunity, and a Healthy Environment for the 21st Century*. The report recommended 140 actions that aimed to “improve our economy, protect our environment, and improve our quality of life. Many of these actions address important current issues like sprawl, climate change, urban renewal, and corporate environmental responsibility.”<sup>22</sup>

In 2002 the World Summit on Sustainable Development (WSSD) conference was held in Johannesburg, South Africa, with the intention of having a review ten years after the 1992 Earth Summit in Rio. The outcomes of the conference included a Plan of Implementation and The Johannesburg Declaration on Sustainable Development. The Plan of Implementation designed a means for



acting on the topics discussed at the Earth Summit, such as poverty eradication, consumption and production issues and health concerns. The Johannesburg Declaration emphasized the current issues facing the world community and the significance of multilateralism and practical implementation strategies.<sup>23</sup>



**At the global level,  
sustainability is oriented  
toward solutions that do not  
doom developing countries  
to a permanently secondary  
place in the world economy  
under the rubric of  
“environmental protection.”**



diverse, worldwide, multicultural and multiperspective revolution built around the Three Es: 1) ecology/environment; 2) economy/employment; and 3) equity/equality. We now are in a position to examine these Three Es and their structural interaction while also introducing what might be considered the Fourth E: education.

### **The Core of Contemporary Sustainability: The Three Es**

We will be using the term “sustainability” in two senses. On the one hand, it will refer to the multifaceted revolution based on the Three Es and their simultaneous interaction. On the other hand, the term will refer to the ever-evolving body of ideas, observations and hypotheses about the myriad challenges to which the revolution is seen as a creative response.

In this dual context, the key innovation of sustainability is its expansion of the earlier focus of environmentalism on the preservation and management of ecology/environment (the First E) to include on an equal basis issues related to economy/employment (the Second E) and equity/equality (the Third E). Because of this expanded focus, the Sustainability Revolution offers the possibility of a much broader coalition for positive change both within and among societies. Rather than pitting “tree huggers” against lumberjacks — so often the trope of environmental discourse — sustainability seeks a context in which the legitimate interests of all parties can be satisfied to a greater or lesser extent, always within the framework of concern for equity.

At the global level, sustainability is oriented toward solutions that do not doom developing countries to a permanently secondary place in the world economy under the rubric of “environmental protection.” If, for example, the industrial nations want Brazil to stop the catastrophic decimation of the Amazon rainforest, they must help Brazil find an alternative path to economic development — preferably one that will contribute to the eradication of the brutal *favelas* in which so many poor Brazilians live.

With this background understood, we now can turn to a brief examination of each of the Three Es.

#### **The first E: ecology/environment**

There are three crucial issues in ecological sustainability: 1) short-term versus long-term perspective; 2) piecemeal versus systemic understanding of the indispensability of ecosystems for the viability of human existence; and 3) the concept of built-in limits to the human impact that ecosystems can sustain.

Environmental sustainability requires the long-term viability of our resource use, especially in areas such as resource extraction, agriculture, transportation, manufacturing and building. At the same time, civilized human existence necessarily includes such basics as clean air and water, heating and cooling and food that is safe to eat — all of which are dependent on the successful functioning of major ecosystems.

In this context, the concept of ecosystem services becomes significant. Broadly speaking, these can be defined as “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life .... These services include purification of air and water; mitigation of floods and droughts; detoxification and decomposition of wastes ... [and] pollination of crops and natural vegetation ....”<sup>25</sup>

The existence of limits on ecosystems can be simply illustrated by the ecological crisis and long-term economic dislocation created by the destruction of oceans by overfishing, forests by clearcutting and fresh water by toxins and pollutants.

### **The second E: economy/employment**

Economic sustainability departs from traditional environmentalism in its recognition of the importance of providing secure, long-term employment without jeopardizing the health of ecosystems. Creating a healthy environment, free of pollution and toxic waste, and simultaneously providing the basis for a dynamic economy that will endure for an extended period are viewed as complementary rather than conflicting endeavors.

It is crucial to note that what Paul Hawken and Amory and Hunter Lovins call “natural capital, made up of resources, living systems and ecosystem services” is as important for economic development as the more conventionally recognized human, financial and manufactured forms of capital.<sup>26</sup> By pointing out this key (though often ignored) aspect of economic development, sustainability makes a more realistic assessment of the dynamics of long-term economic activity than does conventional economics — an achievement made all the more powerful and appealing by a simultaneous awareness of the need for social justice.

### **The third E: equity/equality<sup>27</sup>**

This third aspect of sustainability adds a sense of community to the existing mix of ecologically based, long-term economic develop-

ment. Community-building recognizes the importance of cooperation and concern for one’s neighbor. At a fundamental level, members of a sustainable community understand that the well-being of the individual and the larger community are interdependent. Social cohesion, compassion and tolerance are more likely to thrive in an environment where all members of the community feel that their contribution to the whole is appreciated and where an equitable distribution of resources is recognized as essential for the long-term viability of the society.

At the level of the nation-state, equity/equality addresses the fair distribution of such resources as food, affordable housing, health care, education, job training and professional opportunities. Globally, inequities such as famine and homelessness are seen as problems of distribution rather than lack of resources. Just and equitable resource allocation is not simply ethical but essential for the well-being of the larger community — in this case, the entire world.

### **The three Es plus one: education<sup>28</sup>**

The Three Es and their interaction are made even more powerful by an active commitment to public education. Education is the catalyst for helping everyone understand the dynamic nature of the interrelationship of the Three Es. Through education we gain knowledge with which to overcome the cognitive and normative — and hence emotional — obstacles to understanding our global dilemma. Through education, sustainability can become firmly established within the existing value structure of societies while simultaneously helping that value structure evolve toward a more viable long-term approach to systemic global problems.

### **The Methodology: Fundamental Principles**

It is in this context of the Three Es Plus One that we turn to the question of how to create a nuanced, dynamic and multidimensional portrait of the Sustainability Revolution today.

This endeavor can best be undertaken through an analysis of the fundamental principles that each organization identifying itself with sustainability lays out at the beginning of its public self-definition — whether in brochures, booklets and other standard media or on web-sites in cyberspace.

Why focus on fundamental principles? By definition, a principle is “a guiding sense of the requirements and obligations of right conduct.”<sup>29</sup> A statement of principles provides the “guiding sense,” or basic direction, that any organization will use in orienting itself to the world and in making decisions in concrete situations. Principles play a key role in setting the context for the ethical choices that organizations make.

The focus on principles can help us make sense of sustainability in the wake of the explosion of groups identifying themselves with the revolution since the publication of the Brundtland report in 1987. The flowering of organizations worldwide claiming adherence to sustainability illustrates the popularity of this self-identification. An Internet search on any aspect of sustainability yields thousands of individuals, organizations and government agencies professing allegiance to sustainable practices. The best way to gain a well-rounded perspective on their multiple viewpoints is to focus on the fundamental principles these groups articulate.

We see five reasons to focus on these fundamental principles:

1. A statement of principles is almost always one of the first messages these groups present and therefore would seem very important to the groups themselves.
2. Although in some cases there are gaps, there is a critical structural connection between the principles and the actions these groups attempt to take.
3. These principles present the authors’ perspectives in their own words.
4. Examining statements of principles is a convenient and concise tool for the analysis of sustainability as a whole.

5. To the best of our knowledge, this is the first comprehensive analytical study of these statements of principles.

### Criteria for Selecting Principles<sup>30</sup>

We have used five criteria for selecting the organizations and individuals whose fundamental principles we will examine. These criteria are:

1. obtaining a wide range of viewpoints on sustainability
2. including perspectives from individuals, organizations and government agencies
3. incorporating cross-cultural viewpoints on sustainability by examining work done by groups from a variety of different cultures and nation-states
4. examining industries that have a close association with our basic human needs (such as food, shelter and energy) and natural resources (such as petroleum, wood and fisheries)
5. including sustainability perspectives from various levels — local, regional, national, global and from diverse fields of endeavor including science, philosophy, business and architecture

Using these criteria, we have chosen to analyze sustainability principles in five basic categories. These are:

1. community
2. commerce
3. natural resources
4. ecological design
5. the biosphere

Although education originally was designated as a distinct category, it has been integrated into all the others. Since it provides a way to understand and evaluate the perspectives of all the principles, education is at the foundation of sustainability.<sup>31</sup>

## Principles as Songlines

For millennia, the Australian Aborigines have relied on a system of Songlines, tracks created by their ancestors that define the physical landscape and serve as guideposts during their travels. These landmarks conjure stories illustrating the laws the Aborigines try to follow for living with nature and navigating their seemingly barren and inhospitable land.

They refer to the Songlines as the “Way of the Law” or the “Footprints of the Ancestors” — providing both a land ethic and a compass for connecting in a harmonious way with the land and their communities, current and past:

[E]ach totemic ancestor, while travelling through the country, was thought to have scattered a trail of words and musical notes along the line of his footprints, and ... these Dreaming-tracks lay over the land as ‘ways’ of communication between the most far flung tribes .... A song ... was both map and direction-finder. Providing you knew the song you could always find your way across country .... In theory, at least, the whole of Australia could be read as a musical score. There was hardly a rock or creek in the country that could not [be] or had not been sung. One should perhaps visualize the Songlines as a spaghetti of Iliads and Odysseys, writhing this way and that, in which every ‘episode’ was readable in terms of geology.<sup>32</sup>

The principles of sustainability are like the Songlines of the Aborigines. They represent the footprints of the various groups that make up the Sustainability Revolution. Like the Songlines, these statements of principles articulate a group’s values, archive its history and indicate the future direction of its actions. Understanding these statements can shed light on the motivations of the groups in the Sustainability Revolution and provide a way of tracking the evo-

lution of their core values over time. Like the Songlines, then, statements of principles act as both a tracking device — describing the route already traveled — and a compass — pointing the way to the future.