



a survey of “sustainability”

Howard Silverman Guest Editor

Sustainability, writes environmentalist Bill McKibben, is a buzzword without the buzz. Though the word has variously been championed as a challenge to, or obfuscation of, the word growth, he says in a 1996 *New York Times* column, “‘Sustainability’ is doomed because it does not refer to anything familiar. We understand ‘growth,’ because everything that lives grows.”

A decade later, though the word sustainability still poses problems, interest in the idea of sustainability seems to be everywhere. ‘Green,’ as some say, is the new black. *Times* columnist Thomas Friedman declares green to be the new red, white and blue. “We’re mainstream!” announced architect William McDonough to the 12,000-strong audience at the 2006 Greenbuild conference. Yet, for all the sudden fascination with green living, little has been done to resolve the notion of sustainability with that of growth.

‘Sustain’ comes from the Latin *sustenare*, meaning to keep or hold up. Modern use of the word can be traced to German forestry science of the 1700s, which was the precursor to today’s ‘sustainable yield’: a level of resource extraction that can be maintained over time. *The Oxford English Dictionary* dates the first usage of ‘sustainable’—meaning “capable of being maintained at a certain level”—to 1965, when the *McGraw Hill Dictionary of Modern Economics* defined ‘sustainable growth’ as “a rise in per capita income or per capita real gross national product that is capable of continuing for a long time.” Today, the most commonly cited definition is from the 1987 United Nations report *Our Common Future*: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Several concerns are readily apparent. Perhaps most problematically, the meaning of sustainability does not stand on its own but varies with what is being sustained. Calculations of sustainable timber yields, for example, cannot tell us whether such land management will also sustain habitat for animals or allow for the sustained provision of the other public goods that forests provide.

In addition, while the theme of persistence over time comes through clearly in these definitions, other key themes are less evident. The quest for a more holistic, systemic approach to social and ecological relationships is prevalent throughout the numerous charters and principles that mark writings about sustainability. The Natural Step’s 1989 systems conditions, for example, define the physical constraints for successful human life on earth. The 2000

Earth Charter builds from a broad international dialog to draft a declaration for a just global society. And Aldo Leopold’s land ethic, articulated in the 1949 book *A Sand County Almanac*, has become the basis for a broad philosophical reconsideration of nature’s intrinsic, rather than merely instrumental value.

The systems approach to sustainability—and its conflict with unconstrained growth—are expressed in an anecdote told by economist Herman Daly. In 1992, when Daly was a senior economist at the World Bank, he attended a conference panel at the Smithsonian Institution to mark the 20-year update to the controversial book *Limits to Growth*. Thumbing through the book, he noticed a diagram showing the ‘human economy’ bounded by the larger ‘planetary ecosystem’. By coincidence, Daly had recently been frustrated in his attempt to include such a diagram in the 1992 World Bank report, *Development and the Environment*. “The facts are uncontested,” writes Daly, “the biosphere is finite, nongrowing, closed (except for the constant input of solar energy), and constrained by the laws of thermodynamics.”

Pointing to the diagram, Daly asked panelist and then World Bank chief economist Lawrence Summers whether the size of the economic subsystem relative to that of the total ecosystem was an important one. Summers’ reply was immediate and definite, Daly relates. “That’s not the right way to look at it.”

The mainstream of economic thought—represented, in this instance, by Summers—has rejected the idea of ecological constraints on the human economy largely for reasons that were outlined by economist Robert Solow in his 1973 critique of the same book, *Limits to Growth*: prices and markets can account for scarcity; productivity of resource use increases “more or less exponentially”; and the fact that the waste-disposal capacity of the environment goes un-priced is a flaw to be addressed through regulation and taxation.

Thirty-plus years later, with the potential for climate crisis making headlines, nature’s irreplaceable role in maintaining social and economic health is receiving some belated recognition. Daly’s former employer, the World Bank, has begun to include *natural capital*—soil, timber and so on—in its development equations and has attempted to distance itself from the premise that manufactured assets can perfectly substitute for natural ones. “You cannot make the same house by substituting more saws for less wood,” quips Daly.

One way to conceptualize his question—what is the size of the economy relative to the total ecosystem—is through *ecological footprints*. These calculations estimate aggregate human impacts on the planet by reckoning the amount of land and water needed to sustain a certain population. The Global Footprint Network finds that we are now in *ecological overshoot*, demanding more than the biosphere can supply. In 2003, the human population required 1.25 earths to supply its resources and absorb its wastes. To sustain everyone at North American consumption rates would require five earths.

The footprint calculation highlights the fact that overpopulation—a concern since at least the time of Thomas Malthus—is but one factor behind environmental impact. Biologist Paul Ehrlich, whose 1968 book *The Population Bomb* echoed Malthus’ warnings, developed an equation for identifying environmental impact: $I = P \times A \times T$, where I is impact, P is population, A is affluence (consumption per capita), and T is technology (efficiency of resource use). With reference to this equation, physicist Albert Bartlett concluded, “Because of the high per capita consumption of resources in the U.S., we in the U.S. have the world’s worst population problem!”

Today, although we have avoided the direst predictions of Malthus and Ehrlich, the shadow of overshoot remains. An international study by more than a thousand scientists, the 2005 Millennium Ecosystem Assessment, finds many of the planet’s life-sustaining *ecosystem services*, such as water purification and climate regulation, seriously impaired. Because these services go unac-

counted for in the marketplace, maintaining their healthy function presents us with a variety of *social dilemmas*, conflicts between individual and collective rationality. Although I pay nothing for the CO₂ my car emits, we as global citizens pay dearly.

To resolve these dilemmas, we will need to forge new strategies for cooperation, both locally and globally. Recall that a dispute about international fairness and equity precipitated the U.S. withdrawal from the Kyoto Protocol process. Social equity stands with ecology and economy (sometimes called the 3Es) as fundamental to any notion of sustainability—for without it, we will not be able to foster the cooperation needed to solve these dilemmas.

In fact, when we peer through a social lens, we see sustainability from a broader perspective. “There can be no green movement unless it is also a black, brown and copper movement,” writes author Paul Hawken in the forthcoming book *Blessed Unrest*. Examining global efforts on behalf of social justice, world peace, and the environment, Hawken concludes that they are but strands in a larger “movement of movements” that counts as many as a hundred million people worldwide. The newfound power of this “emergent democracy” springs from a communications network that weaves its disparate efforts, says systems analyst James Moore. In a 2003 essay, he calls this global social movement “the second superpower.”

If visions of global cooperation seem too remote, it’s worth reminding ourselves of perhaps the most easily forgotten sustainability theme of all: the path to our common future starts right here in the present. This issue of Sockeye Magazine features a

range of tangible discussions about sustainability in practice. Bettina von Hagen envisions the design of an ecosystem service market to benefit the region’s forestland owners; Frank Ackerman examines how the economic practice of *discounting* devalues the future; and, Johnny Sundstrom talks about the collaborative approach to watershed restoration that has gained world renown for Oregon’s Siuslaw. Other topics, such as a discussion of a *precautionary principle* for the review of potentially harmful actions and policies, will have to wait until subsequent issues.

Twenty-five hundred years ago Confucius was asked, if invited to administer a state, what his first step would be. “By necessity, rectify the naming of things,” he replied. “For if language does not follow consistently, nothing will be clear, and then nothing can get done.” Today, the meanings of many of our words have become blurred. Perhaps most importantly, we need to learn to distinguish true development from mere economic activity.

As for ‘sustainability’, we might think of it as resilience, the ability to weather the passing storms. In economic terms, it’s a more reliable form of prosperity, rooted in the natural advantages of specific regions. In ethical terms, it’s the care of all creation, the Golden Rule extended to future generations. Or perhaps, as Bill McKibben writes, sustainability is just what comes after all that growth: maturity. 

