ONE STEP FORWARD, TWO STEPS BACK: ON THE POLITICS OF SUSTAINABILITY IN THE U.S.

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ABSTRACT

With the UN Conference on Sustainable Development occurring in 2012, this essay asks whether or not changes towards sustainability can be documented over the past twenty years and, if not, to ask why not, and what might be necessary to better ensure that movement towards sustainability characterizes the next twenty years.

Looking at the performance of the United States, it finds that measures of all major dimensions of sustainability—environment, social equity, and economic viability—reveal little progress towards sustainability. In trying to explain this lack of progress, our claim is that the "problem" of sustainability is not primarily technical or scientific, but rather it is political, and the real problem is that of power. In the US in recent years, anti-sustainability movements have captured national politics by removing sustainability from the national dialogue and from the agenda of public decision-making, and through the process of decentralization of decision-making to more local contexts where they may more easily control direct conflicts in decision.

Why are Americans sanguine about issues of sustainability? The essay examines three core beliefs that dominate American perceptions: (1) problems associated with lack of sustainability can and will be managed by simple economic growth, (2) whatever scarcities and problems we face down the road will be cured by advances in science and technology, and (3) fairness is more important than equality.

The concluding section calls for adoption of a "deep sustainability" paradigm versus the kind of "shallow sustainability" that characterizes the majority of policy and programs today labeled as sustainable. Borrowing the ecosophic concept of "deep ecology" from Norwegian philosopher Arne Naess, the guiding principle of a deep sustainability is one of equality, equality first of all among environmental, economic, and social objectives, and then social equity within each of these dimensions. Sustainability cannot be achieved under systems that have as their basic assumption the roles of winners and losers, rich and poor, haves and have-nots. If Rio+20 offers only solutions within the existing powerful paradigm of market-driven solutions, then the "green economy" will mean more commodification of food and water, land and biodiversity. It will mean that we have fallen further behind in our quest for sustainability.

Keywords: sustainability, sustainable development, political ecology, politics of nature, environmental policy

INTRODUCTION

2012 is the year of the UN Conference on Sustainable Development in Brazil, marking the 20th anniversary of the 1992 conference on Environment and Development, also held in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development in Johannesburg. With the occasion of Rio+20, it is very appropriate to ask whether or not changes towards sustainability can be documented over the past twenty years and, if not, to ask why not, and what might be necessary to better ensure that movement towards sustainability characterize the next twenty years. In this essay, I will address four major issues: the status of the United States (US) on the road to sustainability, dimensions of power and politics in sustainability, core beliefs that work against sustainability adoption, and the outlines of a necessary regime of deep sustainability.

PROGRESS TO SUSTAINABILITY

Assessing the performance of the United States is not a difficult task; any overview of indicators would have to conclude that the nation has not traveled very far at all on the road to sustainability. There are a variety of indicators and statistics, many of which have recently been collected together by John Dernbach (2012), that provide evidence for a claim that the US is not moving forward, except for some small steps here and there. Total emissions of carbon and other greenhouse gases, for example, is again at an all-time high, well over 6 million tons per year. It is true that per capita emissions are fairly much the same as five years ago, largely due to nearly four years of economic recession and greater technological efficiencies. But the per capita increase in 2010 was the highest in 22 years and when the 2011 data comes out, it is likely to confirm an even worsening trend. And this per capita increase comes in a country that adds another 3 million citizens to its population every year.

If one examines any of the three dimensions of sustainability—environmental, economic, and social—in the US, there is little cause for optimism. The ecological variables—including greenhouse gas emissions, farmland loss, eutrophication of waterways, conversion of marginal land to cropland, fracking for energy sources—are only the symptoms of a deeper illness, the expected outcomes of a system in trouble. What are equally concerning are two additional categories of trends: the deterioration in economic and social sustainability indices, and the increasing lack of any political will to reverse current trends. As for economic and social indicators, one need only review the obvious losses of jobs and home ownership, and the decreases in average household income and net worth, numbers of people in middle-income categories and the general deterioration of economic well-being and measures of happiness and well-being. Socially, the growing disparities in the economic lives of the majority of Americans versus the wealthiest 1 or 3 percent of the population are becoming increasingly well-known and documented, and are reflected in some of the tensions that underlie the whole Occupy Movement that achieved some notoriety in the US in 2011.

What is true for the US is unfortunately true globally as well, although there are cases of greater successes in most other more-developed nations. The statistics on increased carbon and other emissions, soil depletion, mineral extraction, and water scarcities are never-ending, mind-numbing, and depressing. In February 2012, a report titled Opening Pandora's Box (Sibaud 2012) and sponsored by the Gaia Foundation and other non-governmental organizations, documented that over the last ten years, global iron ore production is up by 180%; cobalt by 165%; lithium by 125%, and coal by 44%. As the

report notes, the increase in prospecting has also grown exponentially, which means this massive acceleration in extraction will continue if nations continue to grant concessions as freely as they are seem to be doing at the present. Although not alone in its pernicious behavior, China, which has invested heavily in African mines, now sucks up much of the world's mineral resources—53% of the world's cement, 47% of its iron ore, 46% of its coal and more than 40% of the world's steel, lead, zinc and aluminum. Of course China re-exports much of this in the form of finished products to world markets in highly-industrialized and wealthy nations. The loss of enormous quantities of soil, the pollution and loss of scarce water resources, and the eviction of (mostly native) people to make way for large-scale extraction now threaten to make millions of people landless and hungry, a recipe for further social deterioration.

Of course it is possible to find small steps forward on sustainability objectives in the US. A good example is support for sustainable agriculture production. Having spent time in Washington, DC arguing for greater governmental support for sustainable agriculture as part of the (roughly) five-year US Farm Bill, I and other advocates can applaud increases in state expenditures on sustainable agriculture research and education programs. The US Department of Agriculture has increased their spending on sustainable agriculture research by more than twenty million dollars formal initiatives that contribute to greater sustainability in the country's food systems. On the balance, those who advocate for a true or deep sustainability are only gaining small victories. Sustainability supporters are working on the margins of major pieces of legislation and in the small spaces between the truly large components of policy and program decision-making. We are winning a contest here and there, but frankly we are losing the overall war over sustainability (Hollender et al 2010). What is happening in the US at the moment in terms of state support is what might be termed governmental managerial sustainability, borrowing from Redclift's concept of environmental managerialism (Redclift 1993). By this I mean that we can find support for a few sustainability initiatives and for development of some new degree programs in our universities. There is the occasional government-sponsored project on solar or other forms of alternative energy, sufficient to generating a nice news story of public interest, but clearly insufficient and ineffective in the larger scheme of things. At this point, the national government is doing enough to give off a patina of care, a shallow layer of sustainability. But this thin layer of sustainability paint is being applied to a canvas that is heavily leaden with the toxic chemicals of non-sustainability, with the continuing and increasing dependence on non-renewables, and with an ever expanding industrial agriculture and consumption appetite. I recognize the pessimism involved in making such an assessment, but while there is a greater movement on the local and grassroots level to achieve some aspects of sustainability, we have yet to achieve real change and the adoption of a deep sustainability paradigm. The sustainability movement remains sporadic and without unity or inclusiveness. Efforts tend to be single-issue oriented and we have yet to see the blossoming of any holistic movement truly combining social, economic, and social goals.

The lack of real progress in the US and globally, and the necessity for achieving a deep sustainability based on mitigation of harm rather than adaptation to it, is reflected in such a simple concept as the ecological footprint. Most people are by now familiar with the concept of the ecological footprint, developed initially more than 20 years ago by William Rees (1997) and colleagues and students at the University of British Columbia. Although there are various measures of global footprints and biocapacity, all agree that the earth is in a situation of ecological overshoot, that our use of available biologically-productive land and water areas exceeds the amount of such area that is available to us. If living sustainably means that as a country or planet we live within the ability of our habitat to

support us indefinitely over time, then we are well past that point of our existence, and we have been for about twenty-five years or so. What is interesting about our situation of overshoot is this—the global footprint has hardly changed at all over the last thirty years. Using one popular measure, from the Global Footprint Network (Ewing et al 2012) presided over by Rees' former PhD student Mathis Wackernagel, the global measure was 2.8 hectares in 1970 and 1975 and 1980 and it was 2.7 in 2008. One could look at this and think of us like sheep whose eating habits do not change much year to year. A deeper examination of the demands we make reveals that our technology has helped by providing a savings per unit of output. For example, global diets today require more calories and inputs due to the increase in the consumption of meat and dairy products, but our cropland and grazing land footprints have actually decreased over time due to gains in yields per hectare. But this technology has of course come with a price—our growing carbon footprints and the incredible waste stream that we generate, the loss of biodiversity, soil loss and salinization, and other ills of industrial agricultural systems. Most important over this time is that the amount of biologically productive land and water area available to us has hardly changed at all; if anything, it has decreased a bit. Meanwhile our population has more than doubled since 1970, and so over the past forty years the amount of productive land and water area available per capita globally has been halved. The bottom-line is that if sustainability means simply trying not to increase the global footprint, in the end we will suffer the inevitable consequences of overshoot. We cannot maintain a situation of ecological overshoot indefinitely, this is an ecological truism, and indeed we are already witness to some of the consequences of exceeding aspects of the earth's ecological biocapacity.

ON POLITICS AND POWER OF SUSTAINABILITY

How have we come to this point over the last two decades? I contend that a major part of the problem of lack of progress towards a sustainable society is not primarily technical or scientific. And it is not an economic or a jobs problem. Arguments that frame sustainability as competitions between the environment and the economy perpetuate a false dichotomy and choice between jobs and maintenance of the ecosystems and services on which we depend for our existence. Such arguments at the same time marginalize social equity as movements to practice so-called green capitalism and other economic-based solutions typically fail to address social disparities. This is not to say that we have no need for increased efficiencies, new technologies, and other sociotechnical developments to lessen our ecological footprints. Absolutely we could help some of the billion people in the world who are food insecure if we improve yields, cut crop losses in less developed countries due to inefficient technologies, and rework our own waste streams so we don't throw away so much and waste so much. But many major global ills, including food insecurity and hunger, are as much issues of access and consumption as they are the availability and stability of food supplies.

And certainly the field of sustainable development remains characterized by disagreements on definitions of sustainability, on measurements and indicators of sustainability, and on to what extent sustainable development should also address such topics as poverty and food insecurity (Paehlke 1999; Parris and Kates 2003). But all of these discussions are distractions (and often more critical to academics than to those on the front lives of sustainability efforts). It would be wonderful to have consensus opinion on conceptual and measurement issues. Yet social conflicts over these constructs act to cloak

relatively unambiguous deteriorations of the ecosystems and the well-being of human and non-human species.

Sustainability is not primarily a technical or scientific or research problem—it is mainly a political problem. This same claim was made by geographer Raymond Bryant (1991) more than twenty years ago, and prior to the first Rio conference. The deeper problem of sustainability is that of politics, or really, that of power. "Political" refers to systems of governance and control. It is crucial to examine and understand the diverse practices and process through which power, in its multiple forms, is wielded and negotiated in policy-making concerning sustainability in the US and globally. And the fact is that advocates of what might be called a deep sustainability have little power, and those who advocate a shallow sustainability have greater power.

There are three dimensions of power through which weak sustainability advocates protect their interests, and here I acknowledge my debt to sociologist Stephen Lukes (1974), whose volume on Power: A Radical View continues to inform much critical social science research. Paraphrasing a recent synopsis of Lukes' work by McCright and Dunlap (2010), we can identify three contexts in which power (or the lack of it) harms the ability to make progress on sustainability objectives: (1) During direct conflicts over selected sustainability issues in public decision-making; (2) Confining the scope of decision-making to only those issues that do not seriously challenge shallow sustainability, and (3) Avoiding conflicts by shaping people's perceptions and beliefs about sustainability via ideology and propaganda. While the last dimension is of great interest to contemporary conflicts (e.g., belief about the seriousness of global warming), it is in the first two dimensions that overall progress on sustainability is most challenged.

The first dimension of power, in which subjective interests are protected during direct conflicts over selected issues, in public decision-making is the classic form of power familiar to those of us who follow the political economy of governmental decision-making. When a vote comes up in front of the US Congress, or the Czech or other national parliament or in any international fora like the Rio+20 conference, power is analyzed through focus on how people vote and the forces that affect their choices. Certainly sustainability has seemingly suffered in the present political economy of decision-making in the United States. Worldwide, people might be most familiar with the US Congress' decisions not to ratify the Kyoto Protocol on global climate change and its disinclination to participate in other international agreements.

Interestingly, the national context of decision-making in the US has not always been unfriendly to at least some dimensions of an ecological sustainability. At least at the time that the state felt compelled to act in the social good, when the forces of modernization and development motivated governments to become actors in both promoting growth and protecting the environment, the record of voting in the United States was actually not so bad. During the 1960s and 1970s, and into the 1980s, the federal government (under both Republican and Democrat presidents) enacted or established virtually every single environmental law and agency in the US. At this time, however, the modernization project was in full swing, the state was primary and a Keynesian economics favored public spending and government involvement in growing the economy and protecting the environment. It may come as a shock to realize at this time there were also significant strides made in social programs as well and considerable success in the areas of ethnic rights, anti-discrimination policy, and an opening of the country's borders to considerably higher levels of immigrants. Internationally, this was before the time of development labeled as sustainable, but the chief mechanisms of public investment, import substitution industrialization, education and infrastructure improvement, and land reform meant that

governments were making decisions, and often decisions that seemed to reflect some sense of promoting an active public good.

On the federal level in the US, the power that works against sustainability is frankly the success that certain constituencies have had over the past twenty years in confining the scope of decision-making to only those issues that do not seriously challenge their subjective interests. In other words, one can exhibit a second dimension of power not by marshalling forces to vote a certain way, but in successfully controlling the agenda in decision-making contexts so that issues are never even brought to a vote in the first place. This is one of the current tragedies of sustainability progress in the US—the fact that it really is not even on the agenda, not even really part of the dominant national conversation at the moment (Rikoon and Goedeke 2000).

Crucial for understanding this second dimension of power is the idea that actors within political systems attempt to mobilize bias by ensuring that some issues are included within the system and others are excluded. The mobilization of bias may be defined as a set of predominant values, beliefs, rituals and institutional procedures (the "rules of the game") that operate systematically and consistently to the benefit of certain persons and groups at the expense of others (McCright and Dunlap 2000). This bias is maintained through a process of non-decision-making rather than through attempts to control actual votes; in other words, one group exercises control of another by limiting, suppressing, or thwarting the discussion and consideration of issues that might challenge the interests of the ruling group. Thus the essence of the second dimension of power is that powerful actors prevent a decision that may directly challenge their interests by agenda-setting or creating a non-decision.

This process unfolds to lesser or greater degrees at the national level in perhaps every country and, too often, in international contexts as well. In the US, the American conservative movement has mobilized against the sustainability movement largely by attacking the seriousness of sustainability problems and, especially, the impact science upon which sustainability claims and policy proposals are often based (Rikoon and Goedeke 2000). This essay does not focus on how sustainability science is undermined in the political arena. I would point to the work of McCright and Dunlap (2010) as it thoroughly captures the processes by which the conservative agenda has most recently achieved their goals, particularly through the use of four strategies that have proven most successful: misrepresenting and manipulating the results of scientific research, intimidating or threatening individual scientists, invoking existing rules or creating new procedures in the political system, and invoking an existing bias of the media.

Similar consequences, albeit through the use of different strategies, occur in international policy-making contexts. For the past decade I have been a periodic official ngo representative to the International Governmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore, which meets under the auspices of the World Intellectual Property Organization. In brief, this IGC has been characterized by a general paralysis of action as developed nations bring procedural and misguided information to block considerations of international treaties that might adversely affect the profit margins of transnational corporations. At the same time, less developed nations block consideration of guidelines that might benefit indigenous peoples and thus threaten the income of governmental agencies and beneficiaries (Rikoon 2004).

The major point here is that the lack of progress on the road to a sustainable society is not due solely to bad decisions on the part of the federal government. It would be simple to ascribe blame to politicians if this were the case. Frankly, no one is making significant and impactful decisions in the national and international arenas that really count. Sustainability

decisions in public arenas of decision-making occur today in the US have been relegated to a more regional or local level. While some communities, cities and counties have made policy and program decisions to achieve greater sustainability, in general anti-sustainability forces are able to derail most local sustainability initiatives. The reasons for decentralization of decision-making have to do with successful attempts to decrease the power of the nation-state as a rule-making entity. The benefits and costs of the decentralization of power is an interesting topic for another discussion; what is relevant here, though, is the lack of will at a national level.

DECLINING SUPPORT AND CONCERN FOR SUSTAINABILITY

In 2008, in the campaigning for the US presidency, both the Democratic and Republican candidates, Barack Obama and John McCain, warned about man-made global warming and supported legislation to curb emissions. After he was elected, President Obama promised a new chapter in America's leadership on climate change. Though the evidence of climate change has, if anything, solidified, Mr. Obama now talks about "green jobs" mostly as a strategy for improving the economy, not the planet. He did not mention climate in his last three annual State of the Union addresses. Meanwhile, the administration is fighting to exempt United States airlines from Europe's new plan to charge them for CO2 emissions when they land on the continent. In Washington, 'climate change' has become a forbidden issue, and politicians concerned about their re-elections dare not talk about it anymore.

Across the nation, too, belief in man-made global warming, and passion about doing something to arrest climate change, is not what it was six years, when Al Gore's movie, *An Inconvenient Truth*, received so much public attention. The number of Americans who believe the earth is warming dropped to 59 percent in 2008 from 79 percent in 2006, according to polling by the Pew Research Group (2010). When the British polling firm Ipsos Mori (2011) asked Americans in 2011 to list their three most pressing environmental worries, "global warming" garnered only 27 percent, behind even overpopulation. Americans are not the only population group to become more skeptical about environmental vulnerabilities, particularly over the past four years as the recession has displaced ecological concerns in the public. At the same time, legislation and programs to control and mitigate greenhouse gas emissions have been more consistently forthcoming from virtually all other industrial countries.

Why are Americans so sanguine about issues of sustainability? There are many reasons, and it is wrong of course to generalize across more than 300 million people. But there seems to be three major ideas that seem to mark the perceptions and belief systems of the many US citizens who appear unconcerned at best, and resistant to the idea at worst. First, there is a continuing belief that actual and potential problems associated with lack of sustainability can and will be managed by simple economic growth. Although most Americans have never heard of a Kuznets curve, in fact they are believers in its veracity when it comes to the relationship between affluence and environmental quality. The basic idea of a Kuznets curve, which looks like an inverted V, as applied to issues of pollution for example, is that pollution increases as societies first industrialize and raise income. At a certain point (and there's not total disagreement on what that point is), however, pollution levels peak, and then begins to fall if affluence continues to rise. What people do not realize is that this curve does not work for all forms of pollution in the US, e.g., total carbon emissions. Most people also do not think globally—in fact pollution from certain sources, especially air particulates, have declined in the US in the last 20 or 30 years, but one of the

main contributing reasons to this has to be the simple exportation of the manufacturing and disposal processes connected with many pollutants to less developed nations. The air may be less polluted over Los Angeles today than it was 30 years ago, but residents of the city consume more than ever before and have simply exported parts of their ecological footprint to other places.

A second major belief of Americans that challenges adherence to any system of sustainability principles is that of technological utopianism, the belief that whatever scarcities and problems one society encounters in the future will be cured by advances in science and technology. Sustainability skeptics point to major prophets of human doom, from Thomas Malthus through Paul Ehrlich, to demonstrate how technology (in the form of machines, inventions, new chemicals and products, new ways of organizing work, material substitutions, and so on) have saved us every time. And this is the promise of genetically engineered crops and foods to keep pace with a rising population and the most bizarre schemes of carbon sequestration. The dominant belief here is that we do not have to worry about sustainability because we do not have to worry about scarcities (there will always be a replacement) or other problems. Obviously there is much wrong with using the past to predict the future, particularly when we are talking about a set of ecological and perhaps social issues which are at a level of complexity that defy comprehensive understanding, much less solutions. The psychology of technological utopianism is easy to understand and attractive if one desires to preserve the status quo, but of course it is antithetical to sustainability.

The third core belief that inhibits American ascription to sustainability principles is the idea that fairness is more important than equality. This is an interesting topic that few people discuss. In the US, there are many requests for fairness, and too seldom are there calls for equality. As important as the concept of fairness is to a society's legal and economic arrangements, a focus on fairness rests on the issue of what is fair in the eye of the beholder. Fairness is vaguer than equality, which has more explanatory value but which is also more dangerous in political discourse. Sometimes, talk of fairness is a way to avoid the harder but necessary discussion about equality, and whether, and how much, governments should strive to impose it. Thus opponents of the Kyoto Protocol in the US claim it is "unfair" for the US to limit CO2 emissions if developing nations such as China and Indian do not do so as well. Regretfully many Americans who focus on fairness do not question the equity issues related to the fact that the US is roughly five percent of the world's population and overall probably consumes 20 to 25% of most of the world's resources.

TOWARDS A DEEP SUSTAINABILITY

As a global society, it is time to recognize that we have entered a new global era, which may be defined as the Age of Sustainability. In this era, our security, even our survival, will depend on the world forging a triple commitment to end extreme poverty, to ensure human rights for all, and to protect the natural environment from human-induced crises of climate change, destruction of biodiversity, and depletion of fresh-water reserves and other vital resources.

A new era requires a new paradigm, and a transformational concept of sustainability (Hopwell et al, 2005). I advocate ascription to what might be called a "deep sustainability," versus the kind of "shallow sustainability" that characterizes the majority of practice and thought today labeled as sustainable, at least in the US. In using the phrase "deep

sustainability" I am of course following a path first laid by Norwegian philosopher Arne Naess in his call nearly 40 years ago for a "deep ecology" to replace what he saw as a "shallow environmentalism" (Naess 1973). As an ecological philosophy, or ecosophy, deep ecology recognizes an inherent worth of all living beings, regardless of their instrumental utility to human needs. It emphasizes the interdependence of organisms within ecosystems and that of ecosystems with each other within the biosphere. In contrast, Naess, and of course the many who followed him, lashed out at what they saw as a shallow environmentalism, shallow because of its utilitarian and anthropocentric attitude to nature, because of its materialist and consumer-oriented outlook, and because of its concern with conservation of the environment only for exploitation by and for humans purposes (Naess 1984). Deep ecology seeks a more holistic view of the world humans live in and seeks to apply to life the understanding that separate parts of the ecosystem (including humans) function as a whole.

Just as deep ecology rejects a narrow view of ecology as simply a branch of biological science, so must a deep sustainability avoid any notion of sustainability as a concern only of ecologists worried about the environment or economists concerned about financial viability or sociologists concerned about social acceptability. Rather, the guiding principle of a deep sustainability must be one of equality, equality first of all among the goals of environmental, economic, and social viability, and then equality within each of these dimensions as well. Social viability, for example, cannot mean perpetuation of systems that have as their basic assumption the roles of winners and losers, rich and poor, haves and have-nots. This has not worked over the past two hundred and fifty years and there is little reason to believe that it will work much longer into the future. And here we have come full circle back to the issue of power. So long as power resides in the hands of a relatively few powerful groups, than the policies and programs of sustainability will continue to enhance social inequity and the mining of surplus value from both nature and people. Such scenarios are not sustainable over time, socially, economically, or environmentally.

What does deep sustainability look like? Given the space limitations of this essay, let me just list here what might be ten central tenets of deep sustainability:

1. Seeks the well-being and flourishing of the biological and physical environment (including all species), human livelihoods, and the access to adequate physical resources necessary for all human beings to live healthy lives.
2. Recognizes the diversity of cultural and social lives and the ability of all humans to choose the cultural and social norms relevant to their lives.
3. Requires humans to recognize systems of rights and responsibilities for all peoples
4. Promotes the principle of equality and the centrality of social justice
5. Promotes mitigation over adaptation, recognizing as well that human behavior is dynamic over time and space.
6. Recognizes solutions must continuously be reviewed and adjusted; adaptive co-management is a key management strategy.
7. Promotes a cradle to cradle approach based on the premise that it is the value of natural and human capital that makes a sustainable process.
8. Values the democratic process and supports democratic governance
9. Recognizes that complex, self-organizing, and living systems depend on their very complexity and internal variety for long term viability.
10. Believes in appreciating quality of life rather than adhering to an increasingly higher standard of living.

There can be little doubt that shallow forms of sustainability are currently dominant, and they will continue to remain so under the dominant political economy of global capitalism

(Hollender et al 2010. A sustainability that preserves present social inequalities may for a time be appearing to address economic or environmental goals, but this condition is temporary and illusionary. One cannot in good faith condone the use of the same social, political and economic mechanisms that have lead to the ills of the present as the basis of a belief in a new future. Specifically, there is scant reason to suppose, for example, that the market mechanisms that have lead to increasing exploitation of natural and human capital can ever be the tools of sustainability (Costanza 2012). Cap-and-trade, carbon taxes, and other so-called market-based tools are examples of a reformist and shallow sustainability, one that, for example, may help to limit future greenhouse gas emissions but will never reverse global warming within the reigning productivist and consumptionist ethics of the present economic order.

Sustainability is most often defined as meeting the needs of the present generation without diminishing the ability of future generations to do the same. But one problem with today's global capitalist system is that it vastly undervalues the welfare of unborn generations (Daly 1990). For most of the era since the Industrial Revolution, this has not mattered, as the continuing pace of technological advance has trumped short-sighted policies. By and large, each generation has found itself significantly better off than the last. But, with the world's population surging above seven billion and undoubtedly on its way to more than nine billion by 2050, and with harbingers of resource constraints becoming ever more apparent, there is little reason or guarantee that this trajectory can be maintained.

The early stages of sustainability have been concerned mostly with making changes on the margin of the existing system to "make it sustainable"; that is, reforming our agricultural, transportation, and energy systems by increasing efficiency and substituting non-sustainable materials and energy with more sustainable alternatives. A deeper look often shows that the existing system is inherently exploitative of people and nature, and that no amount of tinkering (efficiency or substitution) will make that system sustainable.

While there is nothing intrinsically wrong with efficiency or substitution, deep sustainability recognizes that there is a difference between doing things right and doing the right thing. Shallow sustainability focuses on doing things right, on the techno-centered means we use to accomplish an end (Rees 1997). For example, a shallow sustainability approach to our transportation crisis focuses on creating more efficient cars which use alternative fuels. A Deep Sustainability approach addresses the ends, on creating a high quality of life where people are able to meet their needs close to where they live so that the need for automobile transportation is reduced, if not eliminated. The ability to implement efficiency and substitution solutions is appropriate in the short term; at the same time, we need to work from a more deeply sustainable, transformative, radical system-redesign perspective that will be much more effective in the long term.

The power of dominant political and economic interests to control the policy arenas and discourse about sustainability does not give one much confidence in Rio+20 to change the present course. UN member-states agreed that the Rio conference would focus on "green economy within the context of sustainable development and poverty" and the "institutional framework for sustainable development." But what is the "green economy" and what is the "institutional framework for sustainable development"? If the answers are offered in the existing powerful paradigm of market-driven solutions that today dominate the American scene, then "green economy" will mean more of the same. It will mean more focus on schemes like carbon trading, which has generally failed to reduce emissions. It will mean more commodification of food and water, land and biodiversity, which has failed to reduce hunger, poverty and ecological degradation and has instead increased it. It will mean that we have fallen further behind in our quest for sustainability.

The world order built on the economic fundamentalism of greed, marketization of all life, limitless growth, and the technological fundamentalist idea that there is a technological fix for every social and environmental ill is clearly collapsing. As noted early in this essay, the world's greatest shortage is not that of oil, clean water, or food, but rather of moral leadership. With a commitment to truth – scientific, ethical, and personal – a society can overcome the many crises of poverty, pollution, disease, hunger, and social instability that confront us. Yet power abhors holistic truth, and battles it relentlessly. I can think of no better model of the use of truth to create deep and lasting change than the late Václav Havel. Havel showed how a new paradigm, informed by the chance to live in truth, can transform society. We should only be so brave in embracing a deep form of sustainability.

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