



Sustainability Risk Management

by Dan R. Anderson, Ph.D., CPCU

In my new book, *Corporate Survival: The Critical Importance of Sustainability Risk Management*, I have coined the term “sustainability risk management.” Sustainability risk management deals with risks emanating from the environmental and social justice areas. Examples include:

- global warming/climate change
- boycotts against major corporations by non-governmental organizations (NGOs)
- water contamination by chemicals
- pressures brought by socially responsible investors
- directors’ and officers’ failure to disclose environmental liabilities
- gender discrimination class-action suits
- damages to natural ecosystems
- impacts on multinational corporations by international regulations

While these sustainability risks are not necessarily new, it is only recently that their impacts are being felt by businesses. Environmental and social risk costs, which for years were externalized, are increasingly internalized to the firm. I firmly believe that sustainability risks are evolving into one of the critical risk areas of the twenty-first century. I hope this article and my book will spark more awareness and help the risk management and insurance industry to better manage sustainability risks. Sustainability issues are examined within a risk management framework. I argue that a strong business case can be made for firms improving their environmental quality and social programs. Environmental and social justice risk costs are reduced with the result being an improved financial performance. Reputation is improved, and competitive advantages are gained. Ignoring these risk costs results in lower profits, damaged reputation, and loss of competitive advantages.

Abstract

Sustainability risk management deals with risks emanating from the environmental and social justice areas. These sustainability risks are documented and examined. Sustainability risk management strategies are discussed for handling these expanding risks.

Tremendous business opportunities exist for risk managers, insurers, brokers, consultants, and academics in developing sustainability risk management strategies. Many businesses and industries will be changing the way in which they operate. Sustainability risks will be a catalyst for innovation and opportunities. The risk management and insurance industry can play an important role in supporting these changes and developments.

Sustainability

Sustainability can be described by employing the concept of the triple bottom line. The concept was introduced in 1997 by leading sustainability consultant and author of *Cannibals with Forks*, John Elkington. The triple bottom line includes the traditional bottom line—the financial performance of the company, its environmental record, and its social responsibility efforts in treating workers, communities, and people in a fair and equitable manner. If emphasis is only on maximizing the economic performance of the firm, then escalating risk costs in the environmental and social responsibility areas will ultimately cause the financial condition of the firm to deteriorate. But if sustainability risk management strategies are employed to reduce these risk costs, the financial condition of the firm will improve, and the triple bottom line will be maximized. Even environmental and social activists support these types of bottom-line profits. They want those firms, which are taking positive actions to reduce environmental damages and harm to workers and communities, to survive and be sustainable.

Sustainability is also part of the overall concept of sustainable development. The clearest articulation of sustainable development was captured in 1987 with the publication of the “Brundtland Report,” entitled *Our Common Future*. The report, chaired by Norwegian Prime Minister Gro Harlem Brundtland, was produced by the World Commission on Environment and Development, and defined sustainable development as “development that meets the needs of the present world without compromising the ability of the future generations to meet their own needs.”

The concept of sustainability is based on common sense. We live in a finite system, the biosphere on the planet Earth, with a finite amount of natural resources. If we do not protect the biosphere and use resources in a sustainable manner, it is not only unfair to future generations, we also threaten our economic, business, and social systems. When I was thinking about the book’s title, I came across a talk, given by Chris Pomfret from the marketing department of Birds Eye Foods, a division of Unilever, at a company-sponsored sustainability conference. She talked about how “sustainability is all about the long-term security of our supply chain.” For Unilever, sustainable oceans and waters are critical, as they are the world’s largest fish buyer for their products. In her wrap-up, she exclaimed, “You don’t do sustainability for short-term sales, but for survival.”

In my book, I discuss a number of examples of businesses, like Unilever, that understand the importance of sustainability to their operations. These businesses are changing their processes to operate in a more sustainable manner. Ray Anderson, CEO of Interface, is an excellent example of an executive who is leading the way to sustainability. Stumped by a request to deliver a company speech on his environmental vision, he happened upon Paul Hawken’s *The Ecology of Commerce*. Anderson had a veritable epiphany and totally changed the way that Interface had been run. He pledged that by 2020, Interface would be a completely sustainable company producing no dangerous waste, no harmful emissions, and using no oil. To date, waste has been reduced 80 percent, water intake 78 percent, emission of greenhouse gases 46 percent, energy consumption 31 percent, and the use of petroleum-based material 28 percent. Not only has Interface substantially reduced its sustainability risks, its total savings in the process have been \$231 million.

Dan R. Anderson, Ph.D., CPCU, is the Leslie P. Schultz Professor of Risk Management and Insurance, School of Business, at the University of Wisconsin-Madison. He is also an assistant editor of the CPCU eJournal.

The investment community also is beginning to understand the importance of sustainability. One of the leading measures of Socially Responsible Investment, the Dow Jones Sustainability Indexes, defines sustainability within a business framework:

Corporate sustainability is a business approach to create long-term shareholder value. Sustainability leaders embrace opportunities and manage risks which derive from economic, environmental, and social developments. As the importance of these trends increases, a growing number of investors integrate economic, environmental, and social criteria into their stock analysis and use sustainability as a proxy indicator for innovative and future-oriented management.

Sustainability Risks

The nature of sustainability risks are different than those traditionally encountered by risk managers and their insurers. Examples of emerging sustainability risks are useful in demonstrating their broad scope.

Boycott Risks

Boycotts are typically initiated by non-governmental organizations with their ability to instantaneously send information on negative corporate actions, around the world, at virtually no cost. Large corporations, particularly those with valued brands, are targets. As a member of Greenpeace put it, "Targeting brands was like discovering gun powder for environmentalists." Boycotts produce reputation damage and resemble business interruption risks, except no insurance is available to cover losses. A few examples are instructive.

Boise Cascade's cutting of old growth forests were disrupted by the Rainforest Action Network's (RAN) boycott. RAN began its campaign by running a full-page ad in *The New York Times* calling for Boise Cascade to end the cutting of old growth trees. RAN put pressure on key retailers like Home Depot and Wickes Lumber to only buy Forest Stewardship Council (FSC) wood. Boise Cascade eventually reversed its policy, but its protracted course resulted in reputation and financial damages along the way.

Boycotts against Nike, by United Students Against Sweatshops and other groups for their sweatshop practices, resulted in its stock price and revenues dropping. Nike actually is a fairly enlightened and modern company, but management was in the dark about conditions in its suppliers' factories. The boycott was particularly hard on employee morale. Nike has now developed strong sustainability initiatives, including its 2005 decision to disclose the names and locations of all its 700-plus supplier factories.

When Shell decided to dispose of its North Sea offshore oil platform, the Brent Spar, by sinking it in a deep water trench, Greenpeace protested. Rather than using its follow and blocking approach, employed to disrupt whaling operations, Greenpeace decided to transport volunteers onto the deck of the Brent Spar using a helicopter. Greenpeace then employed modern video cameras and high-tech satellite-based broadcasting gear to establish online links with major European wire services. Within hours of being installed on the Brent Spar, virtually every main European broadcast organization was covering headline images of the confrontation on their main newscasts. Greenpeace coupled these broadcasts with a consumer campaign to boycott Shell's retail products. The boycott was particularly effective in Germany. Within one week, Shell's retail sales in Germany and other European countries had fallen by 30 percent, resulting in hundreds of millions of dollars in lost sales. An emergency meeting of the Shell board reversed the deep ocean disposal of the Brent Spar in favor of on-shore disposal.

NGOs often target industry leaders for boycotts. When successful, they move on to the number-two company and so on. Industry leader Citigroup was boycotted by RAN for financing projects that were destructive to the environment and people in foreign lands. After some resistance, Citigroup formed a partnership with RAN. RAN then focused on Bank of America. Within three months, RAN announced that it was ending one of the shortest campaigns in its history by reaching an agreement with the Bank of America. Bank of America agreed to forest protection, climate change policies, and protections for indigenous people's rights on the eve of RAN's launch date (April 22—Earth Day) of its “No Way B of A” campaign. This quick response by the Bank of America demonstrates not only the power of a threatened boycott, but also the pressure that a competitor's action can produce. It took another year, but RAN's pressure resulted in an agreement by J.P. Morgan to establish a comprehensive policy to take meaningful measures on climate change, forest protection, and indigenous rights. And RAN is now working on Wells Fargo.

Global Warming/Climate Change Risks

Global warming/climate change may be the most significant of sustainability risks. Twenty-three of the 24 warmest years have been since 1980. The year 2005 was the warmest year ever recorded. The global atmosphere has warmed 1°F since the mid-1800s. The Intergovernmental Panel on Climate Change (IPCC) predicts a midpoint of warming over the twenty-first century at 5.4°F with a range of 2.5°F to 10.5°F. Glaciers around the world are melting. The Arctic is warming twice as fast as the rest of the world; its ice cap has shrunk 20 percent, and the ice is 40 percent thinner. The scientific support for human-induced global warming causing climate change is overwhelming. James Hansen, head of NASA's Goddard Institute for Space Studies, in referring to a research project published in *Science* that he led, stated:

There can no longer be genuine doubt that human-made gases are the dominant cause of observed warming. This energy imbalance is the “smoking gun” that we have been looking for.

Almost all climate change models predict increasing storm severity, stronger hurricanes, greater precipitation levels, and higher sea levels. Hurricanes Katrina and Rita in 2005, the record four Florida hurricanes in 2004, and flooding in Europe, Africa, Central America, and China are almost certainly connected to global warming. The property risk exposure of coastal buildings and businesses is increasing. Munich Re estimates world insured losses from natural catastrophes at \$75 billion in 2005, nearly double the 2004 figure. While increased property exposures may seem obvious, a series of other risks exist that are also associated with global warming/climate change. For instance, the island states of Tuvalu, Kiribati and the Maldives, the Inuits, and various environmental groups are exploring litigation against the United States and fossil fuel companies to recoup financial damages caused by global warming. Widener University Law Professor Andrew Strauss wrote a 2001 paper entitled, “Suing the United States for Global Warming Emissions.”

Health risks from heat stress and the spread of insect-borne diseases are on the rise. An Australian study predicts coral reef bleaching caused by warmer waters may result in the collapse of the Great Barrier Reef by the end of the century. The failure of the United States government to ratify the Kyoto Protocol, while most of the industrial world—European Union, Japan, Russia, Canada—have signed, presents dilemmas for U.S.-based multi-national companies. The uncertainty of not knowing if and when the United States might ratify the Kyoto Protocol has prompted many corporations to take preemptive action by voluntarily reducing their greenhouse gas emissions. DuPont, United Technologies, and Cinergy even appeared before a House Science Committee in May 2005 to testify in favor of mandated reductions.

Ecosystem Services Risks

Oil shortages and the resulting increases in gas prices have attracted considerable recent attention. Indeed, many knowledgeable experts predict that world peak oil production will be reached in the not-too-distant future. Oil is an example of a natural capital asset, one that essentially has been provided for “free.” Other natural capital assets or ecosystems are coming under increasing pressure, including groundwater, oceans, forests, and biodiversity of plant and animal species. Most of the world’s aquifers are experiencing falling levels as water is pumped out faster than it is being recharged. A study in *Nature* reported that industrial-scale commercial ocean fishing has reduced the world’s populations of large predatory fishes by 90 percent over the last 50 years. If current deforestation rates continue in the Amazon rainforest, it will be gone in 80 years. The preeminent biodiversity expert, E.O. Wilson, claims we are in the process of the sixth great wave of extinction, the last one occurring 65 million years ago during the age of the dinosaurs. Wilson states that, “The extinction rate is now at crisis proportions, perhaps a hundred to a thousand times higher than before humanity came along.”

A group of leading scientists, in a study published in *Nature*, estimated that the annual value of ecosystem services is \$33 trillion. If used in a sustainable manner, ecosystem services can be provided indefinitely. At present consumption levels, the use of these services is not sustainable. *The Millennium Ecosystem Assessment*, released in 2005, was carried out by more than 2,000 professions from around the world under the auspices of the United Nations. The governing board is comprised of international institutions, governments, businesses, NGOs, and indigenous people. The Assessment is the most comprehensive study of ecosystems to date, and confirms that many ecosystems are over-stressed, and that our current use of ecosystems is not sustainable. This presents global societal risks, but also could impact industries dependent on ecosystems, or firms that may be held accountable for damaging these systems.

Social Justice Risks

Social justice risks are exemplified by the 1.6 million women who are bringing the largest class-action gender discrimination suit ever filed against Wal-Mart for alleged poor treatment, under-compensation, and lack of promotion opportunities. A judgment of \$10,000 per claimant would produce a \$16 billion award, far above any insurance coverage Wal-Mart might have, and substantial damage to Wal-Mart’s reputation and future revenues would also result. Other companies paying sizeable recent settlements or judgments for gender discrimination include Morgan Stanley, Boeing, Merrill Lynch, and UBS.

Another example of social justice risks for global corporations involves litigation brought under the 1789 Alien Tort Claims Act (ATCA). Originally intended to allow foreigners to sue international pirates in U.S. courts, the act is now being used to sue U.S. corporations for their actions in harming people in foreign countries. One of the more significant cases was brought against Unocal, which was constructing a natural gas pipeline in Myanmar (Burma). Unocal paid the military to provide security, and was implicated in allegations that the military engaged in torture, genocide, and abuses of local villagers. Unocal chose to settle for an undisclosed sum estimated to be \$60 million. ATCA litigation has been brought against other multinational corporations, including IBM, Citigroup, Coca-Cola, ExxonMobil, and Chevron-Texaco. In referring to the ATCA, J. Daniel O’Flaherty, vice president at the National Foreign Trade Council, states: “Large jury awards will send a message that if you are going to do business in a country where the government is violating human-rights or labor standards, you may be sued.”

Some sobering statistics from a United Nations report demonstrate why both businesses and governments will need to focus their energies to deal with the world's social inequities.

1. The world's population is 6.2 billion people. Around 20 percent, or 1.2 billion, live on less than \$1 a day. Half the world's population exists on less than \$2 a day.
2. More than two-thirds of the world's population, or 4.4 billion people, live in developing countries. Of this group, nearly 60 percent lack basic sanitation, almost one-third do not have access to clean water, one-quarter lack adequate housing, 20 percent do not have access to modern health services, and 20 percent of the children do not attend school through grade five. Developing countries also tend to have the highest population growth, which compounds these problems.
3. Unclean water and associated poor sanitation kill more than 12 million people each year.
4. Indoor air pollution-soot from the burning of wood, dung, crop residues, and coal for cooking and heating are estimated to kill more than 2.2 million each year.
5. The world's richest countries, with 20 percent of the global population, account for 86 percent of total private consumption, whereas the poorest 20 percent of the world's people account for just 1.3 percent of total private consumption.
6. A child born today in an industrialized country will add more to consumption and pollution over his or her lifetime than 30 to 50 children born in the developing countries.

A survey by *The Wall Street Journal* of Nobel prize winners in economics asked them to list the world's greatest economic challenge. Several mentioned poverty and disease in poorer countries. As noted by Laurence Klein of the University of Pennsylvania, "The reduction of poverty and disease in a peaceful political environment is the challenge of our lifetime."

Bill Gates, CEO of Microsoft, the world's richest person, has been actively involved through his foundation in attempting to alleviate world poverty and disease. He has been particularly upset by the lack of resources committed to Africa by the rich countries. Gates states, "Millions of children die in Africa who shouldn't die, who it would be very easy to save. The fact that we don't apply the resources to the known cures or to finding better cures is really . . . the most scandalous issue of our time."

While not at the same level, similar inequities exist in the United States. For instance, the gap between the rich and poor more than doubled from 1979 to 2000, according to data from the Congressional Budget Office. The gap in 2000 is the largest between the rich and poor for any year since 1979, the year the budget office began collecting this data, according to the Center for Budget and Policy Priorities. Economists Thomas Piketty and Emmanuel Saez, using IRS data, calculated that the share of income going to the top 1 percent in 2002 was 14.7 percent, nearly double the amount in the 1970s. This is the highest percentage for the top 1 percent since the 1920s.

Since the Bush Administration's tax cuts were enacted in 2001, several studies show corporations and the wealthy paying a smaller share of the total tax burden. An August 2004 study by the nonpartisan Congressional Budget Office found that one-third of the tax cut benefits went to the top 1 percent in income, who earn an average of \$1.2 million annually. Their share of the total tax burden fell from 21.9 percent to 20.1 percent. For the middle incomes around \$75,600, their tax burden jumped from

18.7 percent to 19.5 percent of all taxes paid. Failure to address the Alternative Minimum Tax (AMT) will widen this gap even more.

The gap between the compensation of the top executives and ordinary workers has also increased. A generation ago, the average pay of CEOs at major companies was only 40 times that of an average worker. Today it is more than 10 times as much. A 2000 study by Towers Perrin showed that CEOs at large U.S. corporations earned 531 times what their hourly employees did on average.

While arguments were made, during the soaring stock markets in the 1990s, that executives were worth this much, the precipitous drop in the markets dampened these arguments. In addition, a basic fairness issue is raised when the disparities between top-level executives and workers become so large. The fairness issue becomes especially troublesome when workers are laid off or when executives continue to make high levels of compensation, even when their companies are performing poorly.

Chemicals and Harmful Substances

In my book, I have a chapter on old sustainability risks, with the two most prominent examples being asbestos and Superfund. Asbestos litigation has been in process for 35 years, and resulted in the worst product liability toxic tort to date. Instead of abating as was expected, claims have begun to increase again, by bringing in new defendants. The Rand Institute for Civil Justice estimates that 750,000 claimants have sought recovery for their injuries through 2002, and 225,000 deaths will be attributed to asbestos through 2009. The Rand Institute estimates that \$54 billion has been spent on asbestos litigation as of 2000, and future costs will range from \$145 to 210 billion. It is estimated that up to 2.5 billion more claims may materialize in the future. The number of defendants has increased from 300 in 1982 to 8,000 in 2002, with approximately 70 bankruptcies resulting from asbestos litigation. Tillinghast-Towers Perrin estimates that insurers are picking up around 60 percent of the cost of asbestos claims.

Superfund liabilities have been incurred for some 25 years, but continue to disrupt organizations. Estimates for ultimate Superfund liabilities to clean up hazardous wastes have ranged into the \$100s billion. Approximately \$50 billion has been spent to date, with insurers estimated to be covering around 50 percent of costs. A particular visible case occurred when the EPA ordered General Electric to spend up to \$500 million to dredge toxic PCBs from bottom sediment of the Hudson River. In 1976, PCBs were banned by the U.S. Congress, and the Hudson River site was declared a Superfund site in the mid-1980s. The Hudson River operation, involving dredging up to an estimated 100,000 pounds of PCBs of the total 1 million pounds deposited, is the most ambitious river cleanup in U.S. history.

Liabilities for chemicals and hazardous waste exposure have spread beyond Superfund. For instance, in August 2003, Monsanto and Solutia (a company spun off from Monsanto) agreed to a \$700 million settlement paid to 20,000 Anniston, Alabama residents from damages resulting from PCB contamination. The \$700 million is on top of a previous \$100 million already awarded by the jury in the case. DuPont recently agreed to a \$340 million settlement for contaminating drinking water supplies in Ohio and West Virginia with the chemical perfluorooctanoic acid (PFOA). This chemical has been used for years in the production of Teflon. Two chemicals, perchlorate and methyl tertiary-butyl ether (MTBE), have recently received considerable attention for liability risks associated with groundwater contamination. Perchlorate is the main ingredient in solid rocket fuel used by the Pentagon and defense contractors. MTBE is an additive that oil companies added to gasoline.

Studies have reported disturbing findings of increasing diseases in children. While direct causal links with chemicals have not been established, the evidence strongly suggests an association with environmental contaminants. For instance, the childhood cancer rate in Canada increased 28 percent from 1970 to 2000. Studies documented similar results in the United States and Germany. In the United States, the childhood cancer rates increased 26 percent between 1973 and 1999, but some childhood cancer rates were much higher. Acute lymphocytic leukemia rose 62 percent, brain cancer rose 50 percent, and bone cancers rose 40 percent. In addition, previously rare conditions in children are increasing. These include autism, learning disabilities, allergies, and attention deficit disorders.

A U.S. EPA 2003 report, *America's Children and the Environment*, found that U.S. children are getting asthma at more than double the rate of two decades ago. The percentage of children with asthma went from 3.6 percent in 1980 to 7.5 percent in 1995 to 8.7 percent in 2001, a total of 6.3 million children. This report also found that 5 million U.S. women, or 8 percent of those in the childbearing ages of 16 to 49, had at least 5.8 parts per billion of mercury in their blood as of 2000. The EPA has found that children born to women with blood concentrations above 5.8 parts per billion are at risk of adverse health effects, including reduced developmental IQ and problems with motor skills such as eye-hand coordination. The report noted that mercury is a persistent pollutant, with the three major sources for mercury emissions being coal-fired power plants, municipal waste incinerators, and medical waste incinerators. The report also documented that the number of U.S. children with elevated levels of lead in their bodies was 300,000 in 2000.

A study published in September 2004 in the *New England Journal of Medicine* found that air pollution in Southern California can stunt the development of lung growth in children. A group of 1,759 school children were tested over eight years from fourth grade to high school graduation. After 30 years of air pollution regulations, air pollution persists and still results in harm. Underpowered lungs lead to a permanent reduction in the ability to breathe, which can lead to a lifetime of health problems, even premature death. This is the most comprehensive study ever conducted on childrens' exposure to dirty air.

Increasing exposures to chemicals and other harmful substances are accumulating much like asbestos exposures and hazardous waste accumulated in the past. The longer these potential risks amass, the more debilitating will be the eventual and inevitable financial and reputation costs incurred by responsible parties. Had action been taken against asbestos exposures back in the 1930s, when evidence was first being compiled on the deleterious effects of asbestos, the costs that have been incurred over recent years by asbestos defendants and their insurers would have been greatly mitigated. Had Superfund been passed in the early 1960s, when Rachel Carson and others began raising concerns about exposure to chemicals, the costs being incurred by PRPs and their insurers would also have been greatly reduced. The longer corporations take to develop sustainability risk management strategies for present risks, the greater will be their future costs and possibly the costs to their insurers.

Directors and Officers Risks

The risks above certainly impact directors and officers, but some sustainability risks impact top management even more directly and personally. Under Sarbanes-Oxley, CEOs and CFOs must certify that financial statements do not contain any material misrepresentation or misleading information with respect to the financial condition of the company. They must also certify that certain internal control standards are being met. Greg Rogers, a Dallas attorney, who specializes in directors and officers exposure to environmental risks, maintains that internal control standards include pollution risk

oversight, which is the process by which board members attain reasonable assurance that the company's environmental related objectives will be met. These environmental related objectives are regulatory compliance, financial reporting, and risk management. He defines environmental risk management as:

The company should identify environmental-related risks that could have a material adverse impact on achievement of its financial and operational objectives, and take timely and appropriate action to control and finance these risks.

Rogers also points out that a new FASB pronouncement, FASB Interpretation No. 47, effective in 2006, increases the accounting disclosures of potential environmental liabilities.

These increased pressures to disclose environmental liabilities are part of a more general trend toward increased transparency. John Elkington, sustainability consultant, states in *Cannibals with Forks*:

No matter how successful some companies may be in devising "stealth" strategies to mask what they are doing, or intend to do, most businesses will increasingly operate in a high-visibility environment. International business will find that the Internet will enormously increase the geographical reach and magnifying (and distorting) power of the goldfish bowl.

Another consultant, Judy Larkin, author of *Strategic Reputation Risk Management*, even more succinctly states, "Work as though everything you say and do is public." Or as I often advise my students, "If you do not want to read in the newspapers, about what you are doing, quit doing it."

The Global Reporting Initiative calls for greater transparency and standardization for sustainability reporting in order "to elevate the quality of reporting to a higher level of comparability, consistency, and utility." Investors are demanding more information regarding corporations' exposures to sustainability risks. For example, the Carbon Disclosure Project involves a group of around 100 institutional investors, managing more than \$10 trillion, surveying the Fortune 500 on their exposure to climate change risks. Another investor-related sustainability risk facing directors and officers are shareholder resolutions, particularly relating to global warming, which ask companies to calculate and disclose their annual greenhouse gas emissions, and to draft a plan for reducing these emissions. The Coalition for Environmentally Responsible Economies (CERES) and the Interfaith Center on Corporate Responsibility (ICCR), which represents 275 faith-based institutional investors with combined holdings of around \$90 billion, have coordinated the filing of shareholder resolutions over the last 10 years.

A 2002 CERES report, *Value at Risk*, found that climate change poses significant financial risks to a wide range of industry sectors. The report asserted that failure to address these risks could represent a breach of fiduciary responsibility by directors and officers. CERES has been active in the area of climate risks facing investors. Investor risks can become risks for directors and officers. Several publications are available at its web site, including the *Investor Guide to Climate Risk* and *Investor Progress Report: Results Achieved Since the 2003 Institutional Summit on Climate Risk*. This latter report was released at the May 2005 Institutional Investor Summit on Climate Risk at the United Nations. At the Summit, a 10-point action was released calling on: "U.S. companies, Wall Street firms, and the Securities and Exchange Commission to intensify efforts to provide investors with comprehensive analysis and disclosure about the financial risks presented by climate change."

Directors and officers are facing pressures brought by socially responsible investing (SRI). SRI has a long history, but a recent growth spurt has resulted in more than 10 percent of invested money under professional management being directed by SRI screens and evaluations. Traditionally, it was felt that SRI stocks would not perform as well as other stocks. Investments in environmental and social initiatives were looked at as costs that would reduce a company's profits and result in lower stock prices. Recent studies are providing empirical evidence that SRI funds may not have lower returns—indeed, some funds may have higher returns. For instance, the Domini Social Index's (DSIs) 10-year annualized return for the period ending May 31, 2005, was 10.9 percent, and Calvert's was 10.4 percent, versus 10.2 percent for the S&P 500.

The Dow Jones Sustainability Indexes publish leaders across 60 industry groups. Leaders include Toyota and Volkswagen in auto manufacturers, Sainsbury in food retailers and wholesalers, Herman Miller in furnishings and appliances, 3M Company in biodiversified industrial, Baxter International and Coloplast in medical products, Starbucks in restaurants and lodging, Intel in semiconductors, and Swiss Re, AGF, Allianz, Friends Provident, ING, and Storebrand in insurance. Being an industry leader(s) greatly enhances a company's sustainability reputation, particularly when compared to competitors.

If directors and officers needed to be persuaded that sustainability risk management is important, they might heed the advice of Matthew Kiernan, CEO of Innovest Strategic Value Advisors, in a *Financial Times* article:

The "prudent fiduciary" equation is being turned on its head. Since there is now evidence that superior environmental and social performance improves the risk profile, profitability, and stock performance of publicly-traded companies, fiduciaries can be seen to be derelict in their duties if they do not consider sustainability.

Regarding sustainability risks, the exposure of directors and officers is compounded by the frequent lack of insurance. Since the 1986 "absolute" pollution exclusion to the Commercial General Liability (CGL) policy, relatively few corporations have responded to fill the coverage void with separate environmental insurance policies. In addition, it is quite common for directors and officers insurers to exclude claims arising out of a pollution event.

Directors and officers are also subject to criminal prosecution for sustainability risks. All the major federal environmental acts provide for criminal penalties. W.R. Grace and seven senior executives were indicted by federal prosecutors for knowingly exposing miners and residents in Libby, Montana, to asbestos in its vermiculite ore operations. Given the large number of executives receiving jail sentences for corporate scandals involving Enron, WorldCom, and others, there may be an increased tendency to jail executives for egregious sustainability-related acts. The personal givebacks by Enron (\$13 million) and WorldCom (\$24.75 million) directors from their own assets, despite insurance coverage, raises another expanded exposure.

Even if risk managers are not often involved directly in the environmental and social justice areas of their organizations, they still have the responsibility to anticipate all risks that may adversely impact the firm. I believe that this holds particularly true with directors and officers risk exposures. For those risk managers who are prepared, the emergence of sustainability risks provides an enormous opportunity for risk managers to become more involved with the overall strategic management of the corporation.

The above examples offer a flavor of the scope and emerging nature of sustainability risks. As damages became more apparent, those parties adversely impacted will seek to hold responsible corporations accountable. As I discuss in my book, a series of

developments are currently expanding sustainability liability exposures. Even in countries outside the United States, litigation appears to be increasing.

Sustainability Risk Management

A strong business case can be made for managing sustainability risks. Sustainability risk management can reduce overall costs, increase profits, produce competitive advantage, increase the stock price, and result in greater financial gain for the firm and its shareholders. Ignoring these risks will have the opposite effects, and in a worst-case situation could imperil the survival of the firm.

In my book, various sustainability risk management strategies are discussed for dealing with these expanding risks. These strategies are quite different than what are covered in a conventional risk management text. In formulating strategies, risk managers have the opportunity to be involved in and contribute to overall corporate strategic planning. Risk managers can demonstrate how sustainability risk management techniques reduce risk costs and augment financial performance. A brief look at some sustainability risk management strategies will demonstrate how risk costs can be reduced.

Waste Reduction

After their experience with Superfund liabilities, corporate management and their insurers do not need much encouragement to reduce hazardous waste. Waste reduction reduces both operating costs and potential Superfund and premises liabilities. As an example, DuPont reduced toxic releases 74 percent from 1987 to 1993, halved its landfill waste, and cut its \$1 billion per year waste treatment bill by \$200 million. DuPont has also cut its emissions of cancer-causing chemicals by almost 70 percent since 1987. The giant chip maker, Intel, halved its hazardous waste over a 10-year period, while it was increasing its revenues by ninefold. Corporations are also increasingly treating hazardous waste on site to reduce the risk of a waste disposal facility mishandling their waste.

In reference to reducing hazardous substances, Linda Bagneschi, an environmental consultant, emphasizes that “from a risk management standpoint, source reduction is preferred to recycling and treatment options because it is likely to pose the lowest environment risk.” Bill McDonough and Michael Braungart in their path-breaking book, *Cradle to Cradle*, list the first step in the five-step process to eco-effectiveness, as being: “Get free of known culprits.” In designing products or manufacturing systems, one should make every effort to remove such materials as PVCs, cadmium, lead, and mercury. As an example, they point out that, when all mercury-based thermometers are eliminated, more than four tons of mercury, the amount estimated to produce a one year’s supply of thermometers for hospitals and consumers in the United States, will be removed from the product cycle.

ISO 14001 Certification

The development of sustainability risk management practices can be bolstered through certification and standards programs. One of the best-known programs is ISO 14001, a standard created by the International Organization for Standardization for developing environmental management systems. An environmental management system is defined as “the part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy.”

Attaining ISO certification augments environmental risk assessment and control efforts by requiring that a business have certain minimum standards and procedures in place to control environmental risks. It can also be useful in screening suppliers in a firm's supply chain for meeting certain levels of environmental performance. Many corporations today are requiring that their suppliers be ISO 14001 certified. These include Ford, GM, IBM, Xerox, and Bristol-Myers Squibb. Since its beginning in 1996, at least 36,765 companies have been ISO 14001 certified in 112 countries. Other certification programs include Social Accountability 8000 and AccountAbility 1000.

Product Design

Life Cycle Assessment (LCA) and Design for Environment (DfE) can be used both as risk assessment and risk control tools. The objective of LCA is to assess the environmental or social costs during the whole life cycle of the product or service. DfE has a similar objective but it concentrates on the design phase. Products liability has been one of the largest loss-producing risks for corporations. Products quality control programs to deal with products liability risks are a key component of risk management systems. A products liability control program could be coordinated with LCA and DfE programs to produce products that minimize both products liability claims and environmental and social justice risks.

McDonough and Braungart stress that product design must consider and eliminate the use of harmful inputs and outputs, must produce a product that is safe to workers and customers, and must include a strategy at the product's end life for recycling or properly disposing of the product.

Brian Natrass and Mary Altomare in their book, *The Natural Step for Business*, write:

Today, more and more people throughout the world are becoming concerned that the basic design of our entire industrial society is both faulty and inadequate for the long-term voyage that is the dream of humanity.

The authors note that business and society do not have to choose between maintaining profits and diminishing sustainability risks:

There need be no conflict or compromise between commercial profits and the environmental health and well-being of humanity and other life forms if the design of commerce is aligned with the inherent design of the natural world.

Good design has immediate risk control results. Removing harmful substances and processes throughout a product's life will also remove the risks of being liable for any resulting injuries and damages. Workers compensation costs are lowered. Boycott and reputation damages are also eliminated, as are any related shareholder actions. Good design is good risk management.

Energy Efficiency

Using more efficient energy systems not only saves operating costs, but also reduces risks associated with greenhouse gas emissions. Corporations often have the option of satisfying at least some of their electricity needs by using alternative energy sources, like wind and solar. By using wind and solar, rather than coal-generated electricity, corporations reduce greenhouse gases and may save on operating costs. Wind and solar-generated electricity can be incorporated into onsite generation, or purchased as an option from many utilities. When incorporated with green building methods, energy savings can be substantial.

Green Building

Green building presents tremendous opportunities for innovation and developing new methods of design and construction. A critical juncture came in 2000 with the development of Leadership in Energy and Environment Design (LEED) certification. LEED certification was established by the U.S. Green Building Council, a nonprofit organization founded in 1993 and comprised of designers, developers, government institutions, builders, environmentalists, and manufacturers. LEED certification and green building in general involves minimization of energy and water consumption, use of sustainability produced, nontoxic and recycled materials, emphasis on access to public transportation or carpools, green roofs, and maximization of the advantages of nature like fresh air, natural sunlight, views, and outdoor access.

Green building results in direct risk management cost savings with lower workers compensation costs, and reductions in costs associated with Sick Building Syndrome conditions. Additional savings result from energy savings, less water use, less extensive mechanical systems, more pleasant working environments, more productive employees, and less turnover and absenteeism. Upfront costs for green building pay for themselves over time. For instance, a state of California-commissioned study of its 33 LEED-certified buildings found that they cost an average of \$4 more per square foot, but over a 20-year period, they generate savings of \$48.87 to \$67.31 per square foot.

Transportation Efficiency

Incorporating hybrid vehicles into transportation systems results in fuel savings and reduces greenhouse gas emissions. In 2000, Environmental Defense approached FedEx with the idea of producing a hybrid truck to replace FedEx's old diesel trucks. After careful thought, FedEx made a commitment to replace its entire 30,000 express van fleet with hybrid gas-electric models in 10 years. Besides fuel savings, FedEx has reduced pollutants and greenhouse gas emissions from burning diesel that could present regulatory, liability, boycott, and reputation risks. The increasing use of biodiesel and ethanol in fuels, as well as natural gas-powered vehicles, are producing further fuel cost savings and reductions in greenhouse gas emissions. Currently, one of every five new transit buses in the United States is powered by natural gas.

An excellent book to bolster a company's sustainability risk management efforts is *Natural Capitalism* by Paul Hawken, Amory Lovins, and L. Hunter Lovins. A considerable number of innovative examples and strategies to promote more efficient energy, transportation, and building systems are presented. The promotion of sustainability efforts will require innovation and creative efforts. Enlightened risk managers can be an important part of this process that improves the overall effectiveness of their risk management programs.

Partnerships

Partnerships between corporations and various stakeholders can be an effective sustainability risk control strategy. Corporations and NGO environmental/social justice groups have traditionally been in separate camps and locked in states of confrontation. Corporations could afford to ignore NGO arguments, until recent boycott pressures and other techniques have had a material negative impact, giving NGOs more leverage and power. A number of companies are working with NGO sustainability groups to try to find common ground. Some prominent partnerships are:

- Environmental Defense—FedEx, McDonald's, General Motors, and S.C. Johnson
- Rainforest Alliance—Kraft Foods

- Natural Resources Defense Council—Staples
- Rainforest Action Network—Citigroup, Bank of America, and J.P. Morgan Chase

The World Resources Institute partners with 400 corporations, governments, and NGOs in 50 countries around the world. All these partnerships work on a cooperative, rather than confrontational, basis while emphasizing the sustainability performance of the involved corporations. These partnerships lessen the probability of liability suits, help to insulate the participating companies from boycotts and shareholder actions, and improve their reputations.

Business Associations

A number of business associations have been established to promote environmental, social justice, and sustainability efforts. These voluntary groups are particularly helpful to companies that are in the early stages of developing sustainability strategies. By sharing experiences and striving toward common goals, these groups can facilitate progress in sustainability risk management. One of the best-known groups is the Coalition for Environmentally Responsible Economies (CERES). CERES is a nonprofit organization, established in the United States in 1989, which sets forth 10 environmental principles for member organizations. The CERES Principles were originally known as the Valdez Principles, as they were established after the Exxon Valdez oil spill in Alaska. Some of these principles have direct application to sustainability risk management, including reduction and disposal of wastes, risk reduction, and safe products and services. CERES has been particularly active in responding to global warming risks through research, partnerships, and support of shareholder resolutions. Members of CERES include General Motors, Ford, American Airlines, Con Edison, ITT, Nike, Bethlehem Steel, Polaroid, BankAmerica, Coca-Cola, and the Body Shop.

The International Chamber of Commerce (ICC) created the Business Charter for Sustainable Development in 1991 in Rotterdam. Sixteen principles for environmental management are set forth by the Charter, which has been published in more than 20 languages, including all the official languages at the United Nations. The ICC encourages member companies to express their support and implement the Charter and its principles.

The World Business Council for Sustainable Development (WBCSD) is a coalition of more than 120 international companies united by a commitment to the environment and to the principles of economic growth and sustainable development. Its members are drawn from 35 countries and more than 20 major industrial sectors. It has a global network of 15 national business councils, as well as regional business councils and partner organizations in developing countries.

Sustainability Reports

Assessing environmental and social risks will require creativity. As a starting point, sustainability risks must become a priority in the risk assessment process. An Association of British Insurers study, *Investing in Social Responsibility: Risks and Opportunities*, reports that “Social, ethical, and environmental (SEE) risks are part of that management challenge, but they have typically not been systematically included in established risk assessment work in most companies.” Preparing a corporate sustainability report can be an effective strategy to improve sustainability risk assessment. These reports typically examine sustainability efforts of the firm, potential sustainability risks, and risk control systems. Just the process of going through the preparation of a report helps to assemble and organize sustainability data and efforts within the firm. As reports are prepared over the years, benchmarking can measure the progress of the corporation over time and also

relative to competitors and leading companies. Excellent sources that can be utilized include *The KPMG International Survey of Corporate Sustainability Reporting*, and The Corporate Register, which provides access to 9,000 corporate non-financial reports.

Regulatory Preparations

Risk managers should be aware that the European Union (EU), and other countries like Japan, have adopted sustainability-related regulations. These regulations are particularly important for multinational firms based in the United States, as they will be subject to those regulations when operating in the European Union and Japan.

As signatories to the Kyoto Protocol, the European Union and Japan require companies operating within their borders to reduce greenhouse gases or pay to buy greenhouse gas credits on emission trading markets. The EU Directive on Waste Electrical and Electronic Equipment (WEEE) mandates the taking back and recycling of most electrical products and equipment by manufacturers. The Directive on the Restriction on Hazardous Substances (RoHS) effectively bans the use of lead, cadmium, mercury, hexavalent chromium, and some flame retardants in electronic products sold in Europe. The EU Registration, Evaluation, and Authorization of Chemicals (REACH) Directive requires the environmental safety and testing of thousands of chemicals. This testing will result in the ban or restricted use of the most hazardous chemicals.

U.S.-based companies with European operations must decide whether to make two sets of products or use two sets of chemicals, or whether to follow the higher standards set in the European Union for all their products and operations. Given that these regulations make a considerable amount of common sense, U.S. companies are subject to the risk that future administrations may pass similar legislation in the United States. Even U.S. companies not subject to regulation will feel competitive pressure to raise their standards of operation. As noted by the Dow Jones Sustainability Index management:

Drivers for business success become increasingly global. This is also true for the growing impact of sustainability trends and applies especially to the big multinational companies which we analyze for the DJSI family. We believe that the world's leading companies set global standards for themselves, thereby making the assessment criteria to be relevant no matter where the company is based. The competition is global.

Risk Financing

Since the 1986 pollution exclusion was incorporated into general liability policies, a separate environmental insurance market has evolved. The market is led by a handful of insurers including AIG, XL, Zurich, ACE, Chubb, Liberty Mutual, Quanta, and ARCH. The major brokers, Marsh, Aon, Willis, and Gallagher, handle most placements of coverage. It is estimated that annual premiums are approximately \$2 billion with only about 1 percent of businesses carrying some form of environmental insurance.

The lack of insurance may be particularly troublesome for directors and officers. Most D&O insurers exclude liabilities arising out of pollution events. If a corporation incurs a pollution liability claim, it probably does not have environmental insurance. A claim brought against directors and officers, because they did not have appropriate pollution mitigation systems in place, would also not be covered. Claims may also be brought against directors and officers for failing to disclose environmental liabilities. In all likelihood, these claims are also excluded by directors and officers liability policies. Such claims are exasperated by the disclosure and signing off (by CEOs and CFOs) requirements under Sarbanes-Oxley. The purchase of environmental insurance is the most effective risk financing tool to protect against these claims, but it appears few risk managers or companies have acted to make this decision.

Business Opportunities

What has become increasingly clear to me as I wrote my book is that corporations are going to have to change the way they conduct business. In their book, *Cradle to Cradle*, McDonough and Braungart make a prophetic statement with risk management implications:

Negligence is described as doing the same thing over and over even though you know it is dangerous, stupid or wrong. Now that we know, it's time for a change. Negligence starts tomorrow.

But with these changes come enormous business opportunities. Stuart Hart, S.C. Johnson Professor of Sustainable Global Enterprise at Cornell University, in his award-winning *Harvard Business Review* article, "Beyond Greening: Strategies for a Sustainable World," states that "sustainable development will constitute one of the biggest opportunities in the history of commerce."

In my book, I discuss numerous examples of companies pursuing these opportunities. I have selected a couple with sustainability highlights to include in this article.

General Electric

- One of the world's largest and most profitable corporations.
- CEO, Jeff Immelt, announced "Ecomagination" initiative.
- Invest in energy and environmental technologies—wind, solar, hybrids, water systems.
- Half of product revenues will come from environmentally approved products by 2015.
- Increase its own energy efficiency and reduce GHG emissions.

"We're at a tipping point where energy efficiency and emissions reduction also equal profitability."
—Jeff Immelt, CEO

Toyota

- Leading automobile manufacturer in the world.
- Leading producer of hybrid vehicles.
- Plans to take entire production to hybrid.
- Reduced its GHG emissions and use of oil.
- Reduced average energy consumption per vehicle produced by 17 percent, 2000–2004.
- 5R program to refine, reduce, reuse, recycle, and retrieve energy.
- Reduced land disposal of waste by 68 percent, with goal of 80 percent.
- Ranked #1 in Corporate Knight's list of world's most sustainable companies at 2005 World Economic Forum.

Home Depot

- World's largest home improvement retailer.
- Ceased using wood from old growth forests.
- Partnered with Forest Stewardship Council (FSC).

- Buys FSC-certified wood.
- Influenced competitors Lowe's, Wickes Lumber, and Home Base to buy FSC-certified wood.
- Approaching wood suppliers from around to world to alter forest-damaging practices.

Costco

- Eleventh largest retailer in the world.
 - Matches Wal-Mart's profits, while paying workers on average \$4 more per hour.
 - Costco's employee turnover is much lower, and productivity is higher.
- "Paying your employees well is not only the right thing to do but makes good business sense."
 –James Sinegal, CEO

Final Thoughts

We are the first generation with the capacity to alter the planet's ecosystems. We are also the first generation with the capability to create the innovations to make our economic systems sustainable. In his book, *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond writes of how ancient societies collapsed because they destroyed their environments. Diamond issues a chilling warning in his book:

The world's environmental problems will get resolved, in one way or another. . . . The only question is whether they will become resolved in pleasant ways of our own choice, or in unpleasant ways not of our choice, such as warfare, genocide, starvation, disease epidemics, and collapses of societies.

In my book, I try to show how risk management and insurance professionals can help to lead us down the first path.

I have shown that a strong business case can be made for firms improving their environmental quality and social programs. While some companies are developing sustainability strategies based on ethical motives i.e., it is the right thing to do, most firms do so for business reasons. The business opportunities in developing sustainability strategies are enormous. Risk management and insurance professionals have a tremendous opportunity to contribute to their firm's overall management strategy by implementing sound sustainability risk management practices. Firms incorporating sustainability risk management strategies into their operations can decrease sustainability risk costs, augment competitive positions, improve reputations, increase bottom lines, and above all survive and prosper.

Reference

Source for all information, quotations, and studies referenced in this article are from Dan R. Anderson, *Corporate Survival: The Critical Importance of Sustainability Risk Management*, New York, iUniverse, 2005.