

# Introduction

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**G**lobal forces such as the energy crisis, recession, and climactic catastrophes have resulted in the **sustainability** movement's growth in importance. With its origins from environmental management, the field of sustainability has emerged as a new business discipline—one that must find its way into the curriculum of business schools.

The position of the organization within the context of the natural world has caused a new awareness of our collective need for a sustainability emphasis. This book represents an introduction to the field. It will introduce the key business interactions with sustainable development while providing a basic background on environmental science.

## What Is Sustainability?

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Sustainability is difficult to define since it is an evolving concept. Similar to other concepts like democracy and globalization, sustainability is one of the most “ubiquitous, contested and indispensable concepts of our time” (Tavanti, 2010). In a very general sense, the term *sustainability* means to endure. Hence, in ecology, sustainability pertains to “how biological systems remain diverse and productive over time” (Tavanti, 2010). For human beings, sustainability is about the “potential for long-term maintenance of well-being, which in turn depends on the maintenance of the natural world and natural resources” (Bromley, 2008).

There are more than 500 definitions of sustainability, and most of these pertain to the specific discipline or field—for example, sustainable community or sustainable design. Despite the varied definitions of sustainability, the concepts include these basic precepts:

- Living on earth has environmental limits.
- Humans have the responsibility of preventing or cleaning up pollution.
- The economy, environment and society are interconnected and interdependent (Tavanti, 2010).

The most common definition of sustainability is one from the area of sustainable development provided by the World Commission on Environment and Development (WCED), also known as the **Brundtland Report**, that states, “Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987).

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## Sustainability-Related Definitions

*Sustainable university:* “A higher education institution, as a whole or as a part, that addresses, involves and promotes, on a regional or a global level, the minimization of environmental, economics, societal, and health negative effects in the use of their resources in order to fulfill its main functions of teaching, research, outreach & partnership, and stewardship among others as a way to helping society make the transition to sustainable life styles” (Velazquez, Munguia, Platt, & Taddei, 2006, p. 812).

*Sustainable education:* “Sustainable education involves active participation to create economic and social development programs and goals that will help balance and generate long standing improvements of a nation’s basic quality of life standards and needs. This can help generate empowerment to the nation’s citizens” (United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2002).

*Sustainable city:* “Sustainable urban development is improving the quality of life in a city, including ecological, cultural, political, institutional, social and economic components without leaving a burden on the future generations. A burden which is the result of a reduced natural capital and an excessive local debt. Our aim is that the flow principle, that is based on an equilibrium of material and energy and also financial input/output, plays a crucial role in all future decisions upon the development of urban areas” (Anastasiadis & Metaxas, 2010).

*Sustainable community development:* “Sustainable community development is the ability to make development choices which respect the relationship between the three ‘E’s’—economy, ecology, and equity: Economy—Economic activity should serve the common good, be self-renewing, and build local assets and self-reliance. Ecology—Human are part of nature, nature has limits, and communities are responsible for protecting and building natural assets. Equity—The opportunity for full participation in all activities, benefits, and decision-making of a society” (Mountain Association for Community Economic Development, n.d.).

*Sustainable food:* “Food that is healthy for consumers and animals, does not harm the environment, is humane for workers, respects animals,

provides a fair wage for the farmer, and supports and enhances rural communities” (MeetGreen, n.d.).

*Sustainable agriculture:* “[Sustainable agriculture is] an agriculture that can evolve indefinitely toward greater human utility, greater efficiency of resource use, and a balance with the environment that is favorable both to humans and to most other species” (Harwood, 1990).

*Sustainable design:* “Sustainable design is the set of perceptual and analytic abilities, ecological wisdom, and practical wherewithal essential to making things that fit in a world of microbes, plants, animals, and entropy. In other words, (sustainable design) is the careful meshing of human purposes with the larger patterns and flows of the natural world, and careful study of those patterns and flows to inform human purposes” (Orr, 1992).

*Sustainable society:* “A sustainable society is one which satisfies its needs without diminishing the prospects of future generations” (Brown, 1981).

*Sustainable value:* “As a value, it refers to giving equal weight in your decisions to the future as well as the present. You might think of it as extending the Golden Rule through time, so that you do unto future generations as you would have them do unto you” (Gilman, 1991).

*Sustainable processes:* “A transition to sustainability involves moving from linear to cyclical processes and technologies. The only processes we can rely on indefinitely are cyclical; all linear processes must eventually come to an end” (Henrik-Robert, 2010).

*Sustainability ethics:* “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (Leopold, 1948).

*Sustainability in commerce:* “Leave the world better than you found it, take no more than you need, try not to harm life or the environment, make amends if you do” (Hawken, 1984).

*Sustainable economy:* “A sustainable economy is one in which resources are not used up faster than nature renews them. It also marks a thriving climate for business that balances environmental, social, and economic vitality” (Oregon Environmental Council, 2010).

*Environmental sustainability:* “Sustainability means using, developing and protecting resources at a rate and in a manner that enables people to meet their current needs and also provides that future generations can meet their own needs” (Duncan, 2001).

*Government sustainability:* “A sustainable society needs local and central government to lead the way by consuming differently, and by planning

effectively and efficiently in order to integrate sustainable practices in the services it provides to citizens, and throughout its estates and workforce” (“Public Sector Sustainability,” 1999).

More definitions of sustainability and sustainable development can be found at Sustainable Measures (2010).

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## History of the “Green” Movement

Modern civilization has seen a dramatic shift in technology, science, and the way we live. The world has gone from a primarily agrarian society a mere 150 years ago, to a highly mechanized, industrialized, and urbanized society.

The industrialization of society made work easier and less labor intensive, but as we progressed with technology and production, jobs shifted to cities and with it brought pollution and crime.

History reveals a pattern: We create new technologies only to discover that they lead to health complications. Then we solve the problem with science. In the 19th century, cities and towns relied on horses for transporting and shipping. The automobile was designed to eliminate these problems.

We have a tendency to find out much too late that modern living is also killing us—for example, asbestos, chemicals, the food we eat, air pollution. We drove for many years before the smog accumulated through exhaust fumes was identified as harmful to your lungs. Meanwhile the tobacco and automobile industries became two of our biggest economies, with a legal force behind them to fight any threat.

The sustainability movement is not at all new, but it grows increasingly important with the cost and scarcity of fuel for energy. Its prominence today is caused by a perfect storm:

- Increased energy costs
- A number of calamities—some caused by man, others by nature
- The increasing attention paid to the green movement
- Economic recession

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## History of Pollution

Throughout history, raw sewage and industrial waste have been dumped into our rivers and streams, leading to outbreaks of cholera. The **Clean Water Act of 1972 (CWA)** prohibited discharge into waterways, helping improve the quality of our drinking water.

The use of coal to heat caused deadly smog to envelop London in 1880, killing 3,000 people, and again in 1952, killing 4,000 people. This led to the passing of the Clean Air Act of 1956. Similarly, a deadly fog killed 1,063 in

Glasgow, Scotland, in 1909. The death toll goes way beyond the immediate counts, due to the daily breathing of toxic materials. A grandmother of one of the authors of this book, a nonsmoker, died of lung cancer in 1946, most likely caused by her living and breathing the air in Glasgow, Scotland.

In 1977, rainfall in a community in New York resulted in corroding underground containers full of chemical waste. The resultant pollution leaked its way into homes and schools, leading to cancer, birth defects, and miscarriages. The Love Canal scandal exposed the damage caused by toxic waste and the care that must be taken in its disposal.

History is full of catastrophic events that cause immediate changes in process once the damage has already been done. In 1984, a Union Carbide plant in India released chemical gases into the air that killed thousands of people. In 1989, the **Exxon Valdez** tanker spilled oil off the coast of Alaska, decimating the ecostructure of the area. Twenty-four years later, an even costlier spill by British Petroleum (BP) wreaked havoc with the Gulf Coast. In 1986, a nuclear reactor in the Ukraine exploded. Combined with an incident in the United States at Three Mile Island, Pennsylvania, nuclear energy as a source of fuel became threatened, if not discarded.

## Urbanization

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The increasingly urban global population also creates added concerns for pollution control (see Table 0.1). Congregating automobiles in one city, with limited urban transit available, adds emissions into the air, causing health and breathing problems.

## Naturalists and Environmentalists

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While the world has become awash with pollution and natural resources are depleted, there have been key defenders of nature whose words and deeds have influenced legislation and thinking.

There are days which occur in this climate, at almost any season of the year, wherein the world reaches its perfection; when the air, the heavenly and the earth, make a harmony, as if nature would indulge her offspring; when, in these bleak upper sides of the planet, nothing is to desire that we have heard of the happiest latitudes, and we bask in the shining hours of Florida and Cuba; when everything that has life gives sign of satisfaction, and the cattle that lie on the ground seem to have great and tranquil thoughts. (Emerson, 1983)

There are many points in history that one could point to as a beginning of the sustainability movement. The transcendentalists of the 19th century,

**Table 0.1** Urban Proportions 1950–2030

Country	1950	1980	2010	2030
Afghanistan	5.8	15.7	24.8	36.3
Australia	77	85.8	89.1	91.9
Brazil	36.2	67.4	86.5	91.1
Canada	60.9	75.7	80.7	84.4
China	13	19.6	44.9	60.3
Finland	31.9	59.8	61.6	68.8
France	55.2	73.3	77.8	82.9
Italy	54.1	66.6	68.4	74.6
Japan	34.9	59.6	66.8	73.7
United Kingdom	79	87.9	90.1	92.2
USA	64.2	73.7	82.3	87

Source: Brown (2009).

including Ralph Waldo Emerson, Henry David Thoreau, Bronson Alcott, and Margaret Fuller, emphasized the interaction of man and nature in their writings and saw the world in a holistic sense.

Emerson's essays made him an influential figure in his lifetime, which was not the case of his young protégé, Henry David Thoreau (1854), whose famous work *Walden* would not receive acclaim until many years after his death. Thoreau's venture, to spend 2 years in a cabin, primarily living off the land, was a total immersion in nature and solitude and was an important work in influencing such future leaders as Mahatma Gandhi. His friend Bronson Alcott, the father of Louisa May Alcott, started one of the first communes—Fruitlands, an idealistic effort to live off the land and live as vegetarians.

Thoreau (1854) wrote this in *Walden*:

I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. I did not wish to live what was not life, living is so dear; nor did I wish to practice resignation, unless it was quite necessary. I wanted to live deep and suck out all the marrow of life, to live so sturdily and Spartan like as to put to rout all that was not life, to cut a broad swath and shave close, to drive life into a corner, and reduce it to its lowest terms, and

if it proved to be mean, why then to get the whole and genuine meanness of it, and publish its meanness to the world; or if it were sublime, to know it by experience, and be able to give a true account of it in my next excursion.

## John Muir

The Scottish immigrant John Muir was an important figure in taking a stance for protection of the wilderness. Muir helped found the Sierra Club and was instrumental in the designation of Yosemite as a national park. Muir, like Thoreau, was a long-distance hiker, once chronicling his walk from Indiana to the Gulf as “A THOUSAND MILE WALK TO THE GULF.” The Muir Woods and Muir Beach in California were named for him in appreciation of his efforts to protect forests.

Today, the Sierra Club still maintains a strong presence in lobbying efforts to protect the wilderness, plus sponsoring eco-friendly tours.

## John James Audubon

John James Audubon was a 19th-century French immigrant naturalist/painter who catalogued his drawings into the opus *Birds of America*, a collection of over 400 illustrations of North American birds. The Audubon Society was formed in 1905 with the goal “To conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth’s biological diversity.”

## The Wilderness Society

Four individuals formed the Wilderness Society in 1935: (1) Robert Sterling Yard, who helped create the National Park Service; (2) Benton MacKay, the father of the Appalachian Trail; (3) Robert Marshall, chief of recreation for the Forest Service; and (4) Aldo Leopold, an ecologist at the University of Wisconsin. These men helped steer the Wilderness Act through Congress in 1964.

WILDERNESS, in contrast with those areas where man and his own works dominates the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. (“What Is Wilderness?,” 2009).

## Rachel Carson

Rachel Carson, a naturalist and scientific writer, wrote the book *Silent Spring*, which pointed out the harm caused to plants and wildlife by pesticides.

The initial reaction to her book was that it was unfounded nonsense, but further research validated her arguments, and the government acted to halt the use of DDT.

Carson's (1962) book was the beginning of awareness that consumers should be more careful about what they put into their bodies. For many years, the populace had been operating under the assumption that as long as they ate the recommended diet approved by the USDA, their health was safe. Although Carson cannot be considered the first environmentalist, she probably had the most impact.

## Gaylord Nelson

Gaylord Nelson (1970), a U.S. senator from Wisconsin, had witnessed how the timber industry had entered his region's white pine forest and "wiped it out in an eyewink of history and left behind fifty years of heart-break and economic ruin." He came to be known as the "conservation governor" for his efforts to preserve the natural resources of his state. Inspired by the teach-ins across colleges to protest the Vietnam War, he came up with the idea of Earth Day. The first Earth Day was held in 1970 and attracted 20 million participants. Each year since then, Earth Day has been observed around the world (Wilderness Society, 2012).

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## Ten Myths About Sustainability

1. Nobody knows what sustainability really means. The UN (Brundtland Report) definition states that sustainable development is "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs" (WCED, 1987). People everywhere realize there is a future price to pay if we do not take care now.
2. Sustainability is all about the environment. The focus of the original UN commission was to help poor nations catch up. Poverty often contributes to environmental degradation—that is, economies that survive by cutting the rain forest or slaughtering endangered species. However, inefficient resource use and emissions of greenhouse gases (GHGs) are also problematic since the ramifications might be irreversible.
3. *Sustainable* is a synonym for *green*. The term *green* usually suggests a preference of natural over artificial. However, in order to meet the needs of our population, there is a heavy reliance on technology.



4. It's all about recycling. Recycling, by itself, is a small part of the larger issue as energy and transportation are the biggest aspects of sustainability.
5. Sustainability is too expensive. Although sustainability efforts may require an initial capital outlay, it has a significant long-term impact. W. Edwards Deming fought the same battle with quality. Detractors argued that quality was expensive. Deming argued that not having quality is more expensive.
6. Sustainability means lowering our standard of living. It will mean a shift of employment, as withering industries lose employment to green industries.
7. Consumer choices and grassroots activism, not government intervention, offer the fastest, most efficient routes to sustainability. Since transportation and energy are key factors in sustainability and powerful lobbies exist in both areas, governmental legislation helps keep these companies active.
8. New technology is always the answer. There are cases where a creative business model might offer a better solution.
9. Sustainability is ultimately a population problem. Not quite, though the best way to curb population is by educating women and raising the standard of living. However, a larger focus needs to be placed on less waste of precious resources.
10. Once you understand the concept, living sustainably is a breeze to figure out. A practice cannot be termed sustainable without a complete life-cycle analysis of all the costs involved. (Lemonick, 2009)

Within business schools, academic majors are organized around the traditional major functional disciplines: management, marketing, finance, accounting, economics, and operations management. Where does sustainability fit within business schools—and further, within the organizational structure of the firm?

In terms of the organization, we see the eventual place for sustainability as a distinct function, equal with operations, accounting, and the others. Since sustainability is strategic in nature, its home may be found either in the business strategy domain, or, since it is very involved with process and maintenance, within operations management.

In the business school curriculum, it should have a similar evolution. As it grows in importance, it brings more students and more courses. Some would argue that sustainability is a topic within business ethics, but that implies that operating in a sustainable way is an ethical choice. It is not a choice. Business ethics is a topic that crosses all functional boundaries. We do not get into business ethics in sustainability until we have a case in which ethics is breached.

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## The Case for Being Sustainable

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What forces companies to think about sustainability? The most obvious one is the link to profitability. The other reasons are image enhancement, response to shareholders, and business strategy among others.

### Profitability

Businesses that focus on sustainability can be more innovative and see an increase in profits. A report from BT and Cisco states that sustainability can create commercial success and lead businesses to develop new products and services. The 10 steps that can be taken by companies to become sustainability driven are as follows:

1. Make innovating for sustainability part of an overall corporate vision.
2. Formulate a strategy with sustainability at its heart.
3. Embed sustainability in every part of your business.
4. Emphasize actions, not words.
5. Set up effective board-level governance to make sustainability matter.
6. Set firm rules.
7. Bring stakeholders on board by engaging them.
8. Use people power through recruitment, staffing, training and rewards.
9. Join networks focused on sustainability.
10. Think beyond reporting—align all business systems with the company's sustainability vision. (GreenBiz Staff, 2008)

Stakeholders want to know more about what companies are doing to improve the world and lessen their impact on the world. Though profit is still important, it is not the sole criterion upon which companies are ranked.

### Linking Profitability to Development

Companies can contribute to global sustainable development through their core businesses so that they are both profitable and help development (World Business Council for Sustainable Development [WBCSD], 2009). The report by WBCSD provides perspectives on key challenges and opportunities for the poor countries. The key messages from the report are as follows:

1. The lives of people can be improved via direct employment, purchasing from local suppliers, and delivery of affordable products and services.

2. Companies can offer vocational training and capacity building, invest in energy infrastructure and renewable energy solutions, support healthcare initiatives and education, reduce dependence on scarce raw materials, create new businesses to preserve ecosystems, and help governments embed good governance.
3. Establish policies and legislation that establish the necessary framework conditions.
4. Government must show commitment by investing in core infrastructure and encourage investment and involvement from large corporations. (WBCSD, 2009)

### Competitiveness

Another reason is that companies need to be competitive. The **Carbon Beta and Equity Performance** report by Innovest (Murray, 2007) states that companies with comprehensive climate change strategies are outperforming their competitors over the past 3 years. This study was done on 1,500 companies, and it discovered that there was a strong correlation between industrial companies' sustainability in general and climate change in particular. The report states that the information reported by companies on their environmental initiatives is inadequate, and they find it hard to identify the companies with the lowest climate risk (Murray, 2007).

### Consumer Loyalty

Consumers are also providing a big push for companies to become sustainable. Specifically, the consumers worried about sustainability are seeking more environmentally friendly products and telling companies to lessen their impact on the planet. The Grocery Manufacturers Association/Food Products Association (GMA/FPA) argues that incorporating sustainable supply chain practices would be good because it will increase profit, help the industry work with government agencies to create regulations, and build consumer loyalty (GreenBiz Staff, 2007a).

### Global Warming Concerns

There is more interest in sustainability/green construction because of concerns on global warming and oil prices. It is estimated that only 6% of commercial developments are certified as "sustainable" or have applied for LEED (Leadership in Energy and Environmental Design) certification. It is expected that by 2010 it will be 10%. People in Japan are expected to have grass on their roof, computerized light systems, and an HVAC system. Prologis plans to create minimum design standards for new developments so that it meets

the requirements for environmental certification. The company Simon has reduced \$18 million a year in operating costs by green retrofitting and other projects. It reduced 110,000 metric tons of carbon dioxide emissions per year. The U.S. Environmental Protection Agency (EPA) encourages green environment measures by providing a free software tool called Portfolio Manager. The benefits of green buildings are lowering consumption and costs, attracting more tenants, tax credit, and insurance discounts (Marino, 2007).

## **International Pressures**

The European Commission new biofuels target for the European Union is increasing pressure on tropical forests and peatlands. The UN Food and Agriculture Organization plans to develop bioenergy guidelines, and Ecole Polytechnique Fédérale de Lausanne plans to draft global standards on sustainable biofuels. There is concern that growing more palm oil in Asia for bioenergy and food use will increase emissions of GHGs (“Sustainability Moves Centre-Stage,” 2007).

## **Public Exposure**

The Massachusetts Institute of Technology (MIT) awards an annual Lemelson–MIT Prize and the Lemelson–MIT Award for Sustainability. The Lemelson–MIT Prize is given to inventors who make a product or process that can offer significant value to society. The sustainability award is given to inventions that work to expand economic opportunity and community well-being in developing and developed countries (GreenBiz Staff, 2007b).

## **Greening the Supply Chain**

A survey conducted by eyeforprocurement showed that more than 50% of companies have policies on greening their supply chain. The survey asked 188 procurement professionals about their companies’ practices, policies, and plans on reducing the environmental impact of the materials used. The survey showed that two thirds of the professionals are practicing green procurement to support their companies’ environmental or sustainability strategies. About 49% said that they are practicing green in order to respond to customers’ interest in eco-friendly products and services. Companies responded that green purchasing continues to expand and customers’ demands are increasing (GreenBiz Staff, 2007c).

## **Minimizing Waste**

Sonoco plans to help manufacturing companies save money eliminating and reusing waste streams. Sonoco Sustainability Solutions’ (S3) goal is to

reduce the amount of waste entering landfills. Sonoco plans to develop custom programs for their customers to reduce the amount of waste generated. S3 will find new ways to use the waste to generate a new revenue stream (GreenBiz Staff, 2007d).

### However . . . a Note of Caution

In spite of all the progress made by corporations and organizations, one needs to be careful. A lot of companies are being criticized for *greenwashing*, a practice of appearing green without incorporating actual, measurable goals that lead toward sustainability.

Real sustainability is complicated and more positive in that it aims to have humans and other life flourish on the planet forever. Sustainability is gained when everything is working well with everything else. A primary reason why the environment can't be fixed easily is consumption. Even though companies have created programs to reduce waste they are continuing to feed the beast. Companies need to offer products and services that help consumers to restore and maintain their ability to care, flourish, and be aware. Sustainability will help stop the addiction by providing carefully designed products and services that lead people toward responsible choices (Ehrenfeld, 2006).

## Why Sustainable Strategy? ---

The increase in the price of fuel, concern over global warming, and increased consumer demand for environmentally friendly products are just some of the factors that have made sustainability a strategic focal point in industry after industry. All organizations, whether for- or not-for-profit, compete for customers, and increasing awareness has altered the competitive landscape. All one needs to do is compare the websites in any industry—automobile manufacturing, hospitality, publishing, pharmaceutical, food products, even ice cream—and it is quite easy to see a growing emphasis on sustainability. Given the strategic importance of this area, we have devoted an entire chapter (Chapter 6) to reviewing the various frameworks that try to define and classify sustainability.

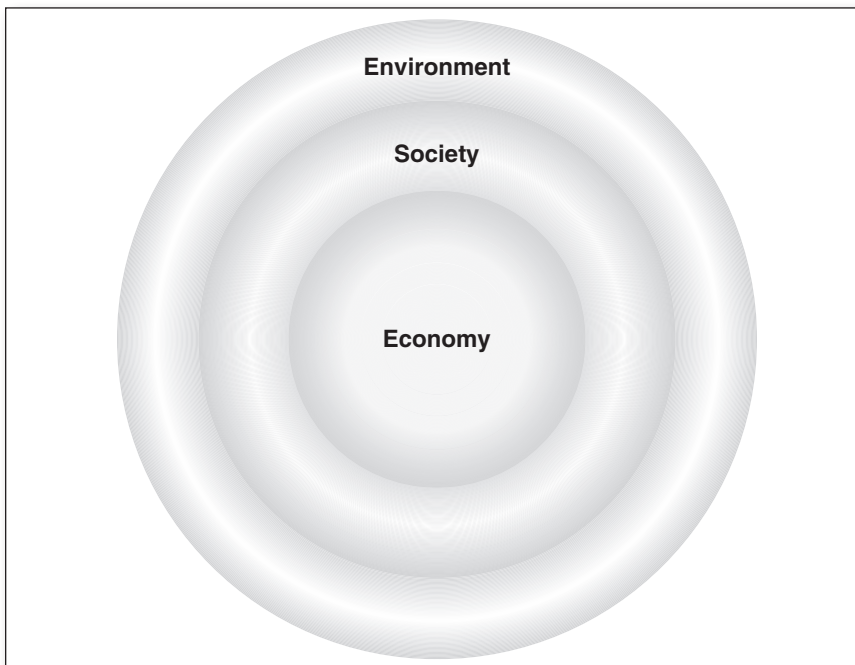
As with any trend, there are the skeptics who are doubtful and resistant to the trend. Then, there are the early adopters who embrace the trend and incorporate it within their organizations. Sustainability is no different; it has its share of believers and skeptics. As this trend unfolds, we shall see organizations that will be skeptical and do as much of the minimum as possible. There will be other organizations that will not want to be perceived as laggards and will attempt to be more engaged. But there will also be the organizations that will truly walk the talk and will embrace the concept and incorporate it throughout the ranks.

Peter Senge (2008) wrote a book titled *The Necessary Revolution* that discusses how organizations and individuals can work together to create a sustainable world. Indeed, there are plenty of organizations that are huddled together in paralysis and inaction. Rather than being proactive, these organizations think that doing nothing is the safe way to go. However, there are other organizations that believe that in order to survive in the future they need to incorporate sustainability into their long-term goals. How does sustainability become a priority for organization leaders? The initial step is to change the view, refocus the vision. The traditional, accepted industrial-age view is one wherein the largest and most important circle is the economy that contains smaller subareas of society and environment. The only way to change this view is to shift priorities and integrate sustainability into the organization. This can be done by reconsidering the traditional view. In the new way of looking at the world, the largest circle is the environment, within which is contained a circle of human activity. The circle representing the economy, the industrial systems, is the smallest circle within (see Figure 0.1).

The economy is the wholly owned subsidiary of nature, not the other way around.

—U.S. Senator Gaylord Nelson,  
quoted by Ray Anderson (Senge, 2008)

**Figure 0.1** The Real, Real World



Source: Adapted from Senge (2008).

It is known that all the stakeholders of an organization—from customers to suppliers, employees to shareholders—care about the environment and social issues. With information being instantly disseminated on the web blogs and Internet, the organizations have no place to hide. Indeed, organizations that ignore sustainability issues run the risk of losing market share, losing talented employees, and incurring damage to their reputations. For those organizations that want to be on the front lines, there needs to be enough evidence for opportunities from embracing sustainability. The following is a small list of benefits:

- Gaining competitive advantage from goodwill
- Preference of green brands by consumers
- Recruiting and retaining good employees
- Saving money from efficiency and waste reduction
- Making money from creative forms of waste re-generation
- Sustainability as point of differentiation
- Shaping future of industry
- Becoming preferred supplier
- Providing competitive edge to customers
- Changing image and brand (Senge, 2008).

## Five Stages on the Path to Sustainability

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For any organization, there are five stages to go from noncompliance to full integration of sustainability into a company's strategy and purpose.

*Stage 1* is noncompliance where an organization is essentially getting fined for not complying with local emission regulations.

*Stage 2* is compliance where, perhaps in a reaction to external pressure from nongovernmental organizations (NGOs) and regulators, the organizations begin to comply but the actions are primarily aimed at compliance so as not to incur fines or taxes. At this point, the organization is meeting minimum legal requirements with regards to air emissions, water effluents, or toxic waste emissions.

*Stage 3* is beyond compliance. Organizations discover that savings and payoffs of going further than compliance can far outweigh the initial investments. This reinforces the win-win scenario, or the snowball effect, wherein reinvestment of initial savings leads to positive gains including an improvement in brand value and reputation.

*Stage 4* is where sustainability is fully integrated into strategy. This happens when organizations decide to proactively integrate sustainability factors into every aspect of their business strategy. In addition, sustainability is also factored into the core of the investment and decision-making process across the organization. Numerous companies from Alcoa, General Electric (GE), Wal-Mart, and DuPont have made the move to Stage 4.

*Stage 5* is where organizations stepped into without passing through other stages, usually due to a mission of making a change or to contribute to society. Examples are Patagonia, Seventh Generation, The Body Shop, and several others. Ray Anderson, the CEO of Interface the carpet tile company, set out to make his company a restorative enterprise “a sustainable operation that takes nothing out of the earth that cannot be recycled or quickly regenerated, and that does no harm to the biosphere” (Dean, 2007). More organizations move to Stage 5 as their mission begins incorporating sustainability. A movement from Stage 4 to 5 can also be the result of a natural progression as the leaders can learn from the experiences of launching new initiatives that get positive feedback from employees (Senge, 2008, pp. 114–117).

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## Triple Bottom Line

**Triple bottom line (TBL)** states that the success of a company needs to be measured along three lines—(1) economic, (2) social, and (3) environmental. It also goes by the term *3P*, which stands for people, planet, and profits; it states that companies need to measure their impacts not only on the bottom line (profits) but also on the community (people) and the environment (planet). The phrase was first used in 1989 by John Elkington, cofounder of a consultancy focused on sustainability.

The TBL is a form of reporting that states that the business’s responsibility extends to all of its stakeholders, not merely to its shareholders. In other words, it takes into account the impact of the business in terms of social and environmental values along with financial returns. Whereas traditional models were about making money and garnering profits, TBL accounting recognizes that without satisfied employees and a clean environment, business is doomed to be unsustainable in the long run (Green Living Tips, 2010).

*People:* This is also known as **human capital**, and it relates to fair and beneficial business practices toward labor and the community and region in which a corporation conducts its business. In simplest terms, it means treating your employees right. In addition, businesses should not only pay fair wages but also reinvest some of its gains into the surrounding community through sponsorships, donations, or projects that go toward the common good (Green Living Tips, 2010).

*Planet:* This is **natural capital**, and it refers to the company’s environmental practices. A business will strive to minimize its ecological impact in all areas—from sourcing raw materials, to production processes, to shipping and administration. It’s a *cradle to grave* approach and in some cases *cradle to cradle* (C2C)—that is, taking some responsibility for goods after they’ve been sold such as offering a recycling or take-back program. In addition, a TBL business will also not be involved in the production of toxic items (Green Living Tips, 2010).

*Profit:* “This is more about making an honest profit than raking a profit at any cost—it must be made in harmony with the other two principles of People and Planet.” The profit aspect is the real economic value created by the company, one that deducts the cost of all inputs (Green Living Tips, 2010).

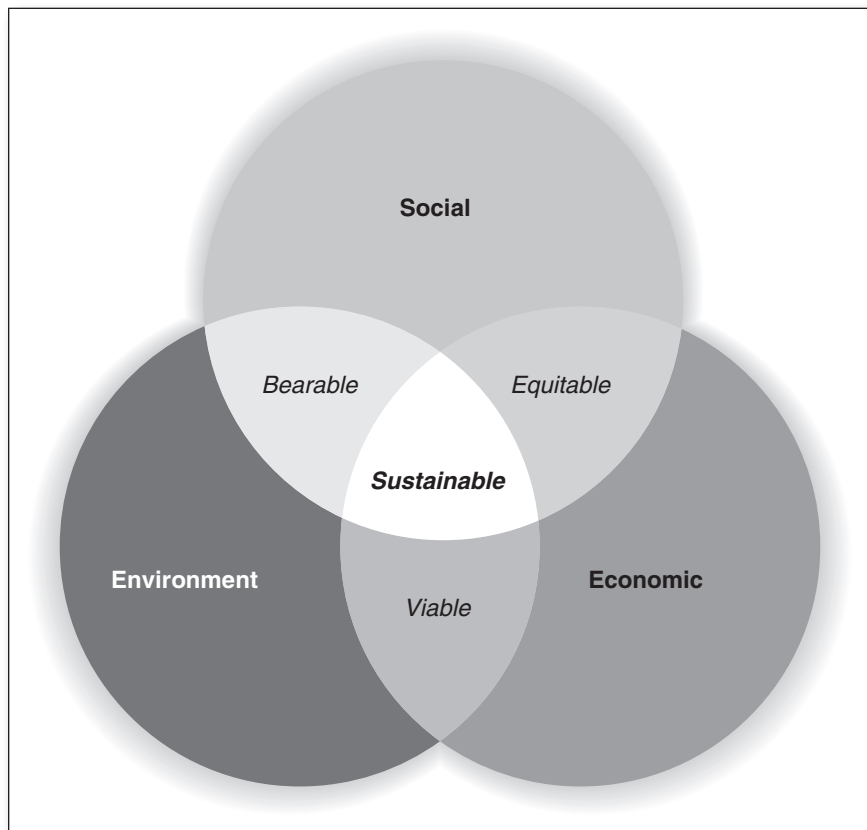


## The Importance of Triple Bottom Line

Of the 100 largest economies in the world, 51 are businesses and the other 49 are countries. In terms of financial power, “General Motors is now bigger than Denmark; DaimlerChrysler is bigger than Poland; Royal Dutch/Shell is bigger than Venezuela; IBM is bigger than Singapore; and Sony is bigger than Pakistan” (Anderson & Cavanagh, 2000).

Instead of being an award, accreditation or a certification, the Triple Bottom Line is an ongoing process that just helps a company in running a greener business and demonstrates to the community at large they are working not just towards riches, but the greater common good. Green business is simply good business [in practice]. (Green Living Tips, 2010)

Figure 0.2 Triple Bottom Line



Source: Dreo (2006).

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## Chapter Outline

The purpose of this book is to provide a comprehensive treatment of the relationship between business and sustainability. Our goal is that this book serves as a key source for instructors and students wanting to learn about sustainability within a business context. The opening chapters of this book address the major issues confronting our natural resources. It is important to get a grounded perspective on these critical issues before addressing the strategic issues of the firm. Businesses must have a clear understanding of the consequences of wasted resources and polluted environments. Therefore, we begin the book with a basic overview of the concerns surrounding resources (see Figure 0.2).

The approach that we take in this book is to start with Part II: Renewable Resources and discuss the natural resources such as air, water, forests, soil, and biodiversity. This discussion provides a starting point so that the later chapters on environmental challenges can be framed within an appropriate context. We also include a chapter on energy and fuel that discusses conventional forms of energy along with renewable, clean sources of energy. The next section of the book is Part III: Stakeholder Interest and Choices. The first chapter in this section provides a comprehensive discussion of strategies and frameworks used to understand and implement sustainability. The rest of this section presents various stakeholder perspectives such as the role of consumers (what people buy), the role of corporations (what companies sell), and the role of governments and NGOs (how people organize and govern). This section also presents the concept of ecological footprint and illustrates how to compute an individual carbon footprint. The last section of the book is Part IV: Strategies for a Sustainable Future. This section of the book presents chapters on reporting and measurement, carbon markets, the design of sustainable cities, and green marketing.

### *Part I: Renewable Resources*

The first bottom line is the one that concerns the planet. The planet is our **natural capital**, and together we need to preserve the planet and its resources. In this section, we will present the renewable resources that the planet has offered to its inhabitants. Can we, as consumers, hope to preserve nature while we make use of its goods and services? This section will contain numerous chapters as listed next.

#### *Chapter 1: Air and Climate Issues*

In this chapter, we will do the following:

- Explain the basic causes and outcomes of air pollution.
- Discuss the UN 27 principles of sustainability.
- Discuss the goals of the Kyoto Protocol.

- Discuss Agenda 21.
- Discover the effects of indoor air quality (IAQ).
- Determine the measurement of air quality.
- Research local air quality information.
- Discover the potential problems caused by global warming.

### *Chapter 2: Water Issues*

In this chapter, we will do the following:

- Explain the problems created by plastic water bottles.
- Describe the major causes of water pollution.
- Explain the importance of conserving water.
- Discuss the impact water legislation acts have at the national and state level.
- Develop sustainable water protection and conservation strategies.

### *Chapter 3: Sustainable Agriculture and Food*

In this chapter, we will do the following:

- Discuss sustainable agriculture.
- Discuss the foods we eat.
- Recognize the differences between natural and organic foods.
- Examine companies involved in the food industry, including McDonald's, Wal-Mart, and Monsanto.
- Discuss malnutrition.

### *Chapter 4: Forests, Wildlife, and Biodiversity*

In this chapter, we will do the following:

- Discuss the relationship between the forest and climate.
- Discuss the various methods of tree cutting.
- List the certification programs for sustainable forestry.
- Understand the importance of urban forests.
- Explain the importance of preserving wilderness.
- Discuss the Endangered Species Act of 1973 (ESA).
- Research the issues concerning economics and biodiversity.

### *Chapter 5: Alternative Clean Energy and Fuels*

In this chapter, we will do the following:

- Discuss the need for clean energy.
- Present the four types of conventional energy.
- Explain the different types of renewable energy.
- Compare and contrast solar and wind energy.
- Evaluate the promise of plant-based energy from ethanol to wood waste.

- Discuss other forms of energy, such as tidal to geothermal.
- Evaluate the most viable alternative energy and fuel sources for businesses today.

### *Part III: Stakeholder Interest and Choices*

In this section, the focus of the book moves away from renewable resources to issues faced by stakeholders. At what level are the various stakeholders impacted by degradation of our natural resources? Are some communities or some nations at a higher risk than other, more affluent communities or nations? What can consumers, organizations, and governments do in order to prepare for a sustainable future? The second bottom line concerns the people that inhabit the planet. The people as a collective is our human capital and, similar to the natural capital, this human capital also needs to be treated in a way that is fair and beneficial to the entire community. In this section, we will present some of the strategies and frameworks used to understand sustainability. In addition, this section will discuss the role of consumers, the role of the corporation, and the role of NGOs and governments.

#### *Chapter 6: Sustainability Strategies and Frameworks*

In this chapter, we will do the following:

- Explain the concept of sustainable value creation.
- Understand the precepts of natural capitalism.
- Examine activities via the natural step.
- Discover examples of industrial ecology and biomimicry.
- Compare and contrast the principles of the cradle to cradle (C2C) approach with biomimicry.
- Explain environmental management system (EMS) and environmental stewardship.
- Compare and contrast various tools and processes used for sustainable strategies.

#### *Chapter 7: Role of the Consumer*

In this chapter, we will do the following:

- Discuss consumption and its link to ecosystem services.
- Evaluate the link between consumption and environment.
- Detail the sustainable choices in food, drink, housing, clothing, and transportation.
- Explain the role of consumers.
- Discuss the ecological footprint and compute carbon footprint.
- Elaborate on the role of business in promoting sustainable consumption.
- Examine the future of consumption.

### *Chapter 8: Role of the Corporation*

In this chapter, we will do the following:

- Present the chrysalis economy.
- Discuss why sustainability is more than green.
- Define corporate social responsibility (CSR) and link it to sustainability.
- Understand the phases of CSR and how to make a case for CSR.
- Discuss the benefits and challenges of CSR.
- Explain green supply chains and sustainable value chains.
- Examine the role of logistics, transportation, and green procurement.
- Map out a business case for sustainability.

### *Chapter 9: Role of Governments and Nongovernmental Organizations*

In this chapter, we will do the following:

- Understand the role of governments in promoting sustainability.
- Present the role of the EPA.
- Explain Agenda 21 and the role of local governments.
- Discuss the history, growth, and funding of NGOs.
- Expand on the role of NGOs in social development, community development, and sustainable development.
- Explore NGOs and business partnerships.
- Discuss the role of NGOs and sustainable consumption.
- Present the five types of environmental NGOs.

### *Part IV: Strategies for a Sustainable Future*

The third bottom line concerns the profits that are derived from the operations of the corporations. The basic idea is that corporations ought to be focused on making an honest profit than raking a profit at any cost—it must be made in harmony with the other two principles of people and planet. The profit aspect is the real economic value created by the company—one that deducts the cost of all inputs. This section focuses on the role of transparency and reporting along with discussing carbon markets and green marketing.

### *Chapter 10: Transparent Reporting, Measurement, and Standards*

In this chapter, we will do the following:

- Understand the need for reporting and transparency.
- Present voluntary reporting on sustainability.

- Discuss the role of the Global Reporting Initiative (GRI).
- Compare and contrast the various ISO 14001 standards.
- Explain ISO 26000 standards.
- Discuss the UN Global Compact.
- Present some other reports, repositories, and indexes.

### *Chapter 11: Carbon Markets*

In this chapter, we will do the following:

- Present the concept of carbon neutrality.
- Explain the Kyoto Protocol.
- Discuss the details of carbon markets.
- Compare and contrast the various types of offsets.
- Present the market standards.
- Discuss proceedings of Conference of the Parties (COP17) Durban.

### *Chapter 12: Designing Sustainable Cities and Communities*

In this chapter, we will do the following:

- Discuss the sustainability plan highlights of major cities across the world.
- Understand the components of a sustainability city plan.
- Discuss the city's contribution to corporate sustainability.

### *Chapter 13: Green Marketing*

In this chapter, we will do the following:

- Know the basic rules of green marketing.
- Understand greenwashing: trying to pass a company off as green when it is questionable.
- Explain the “five green Ps.”
- Discuss the consumer groups that marketers target.

### *Appendix: Green Jobs*

This appendix is an excerpt from the *one* report on green employment.

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## Conclusion

This book will explore ideas and concepts for a future that is more sustainable. The range of ideas are multipronged—investing in alternative energy sources, going back to the old methods of purchasing seasonal food from