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## G-1 Sustainability and the APICS Professional

### Introduction

Sustainability and the natural environment have implications for the work we do as APICS professionals. Our natural environment with its 12 sets of problems will be summarized. The best thinkers on business and the natural environment will be introduced. Examples of companies becoming sustainable will be provided, as will anticipation of future developments. Business is a major factor in making the world more sustainable.

### Our Awesome World

Before considering problems and solutions, let's consider the context, planet Earth. Earth's water cycle and carbon cycle are part of what moved James Lovelock to see it as one big interrelated system. Edward O. Wilson and others help us appreciate living things. The human body with its systems, organs, cells, and organelles is a remarkable part of our world. Man is a maker of fantastic things such as buildings and airplanes.

### Twelve Environmental Problem Areas Plus Some Examples

The Earth's environmental problems have become a threat. Jared Diamond believes we have a dozen sets of problems we must solve to avoid collapse (Diamond, 2005, p.486-496). They can be grouped into four categories.

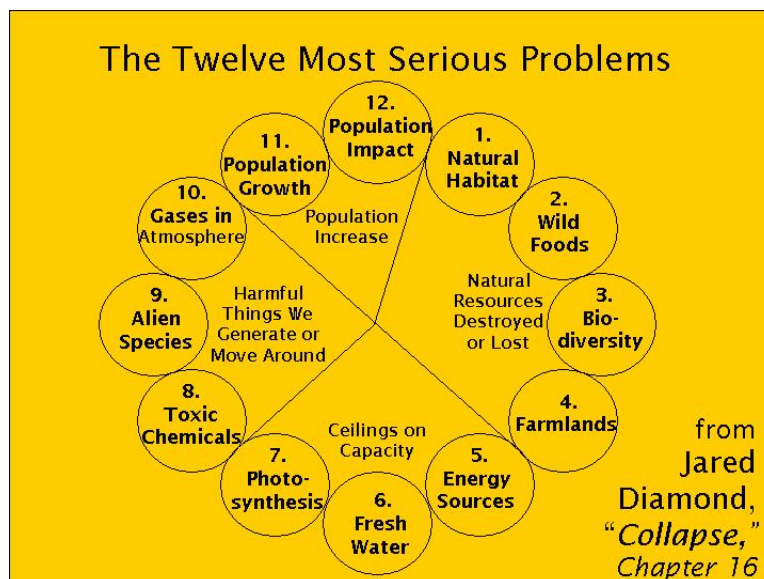


Table 1.

First is a loss of natural resources, including the destruction of natural habitats, over-exploitation of wild foods like fish, species extinctions, and soil erosion. Second, we have

ceilings on capacity, including dwindling fossil fuels, limits on freshwater, and use of sunlight limited by photosynthesis. Third, harmful things we move around, including toxic chemicals, alien species displacing native species, and gases in the atmosphere. Fourth, increasing human population pushes limits on resources and waste processing, and the per capita consumption multiplies impact. Some specific examples of problems include factory chicken farming, mercury pollution, and the threat of extinction to elephants.

Such truths are difficult to deal with and elicit responses such as denial, anger, bargaining, depression, and acceptance. Acceptance is necessary for dealing with the problems, but some consistent way of dealing with them is needed. A common framework of six categories of action supports making decisions:

- technical—innovate, redesign, use of windmills, and solar power
- economic—the profit motive, the invisible hand, supply and demand, markets, corporations
- logistics—point of use production, minimizing waste, value chain
- politics—lawmaking, administrative processes, often lags the sociocultural and economic
- legal—law enforcement, courts to resolve disputes
- sociocultural—changes in behavior, shifts in values, religious and cultural influences.

The APICS professional has a lead role in logistics and a supporting role in all the rest.

### **Best Thinkers on Business and the Environment**

Hunter Lovins portrays six waves of innovation. In APICS, we were at the center of the fifth wave as the paper-based kardex was replaced with computer-based enterprise resources planning (ERP). We are also part of the sixth wave as Just-in-Time (JIT) and lean foster resource productivity. A greater mission in this sixth wave is sustainability.



This section is a brief introduction to about half a dozen of the best and most relevant thinkers in the field: Lester Brown; Hawken, Lovins & Lovins; Wackernagel & Rees; Ernst von Weizsaecker; Karl-Henrik Robert; McDonough & Braungart; and John Elkington. Their seminal ideas integrate the environment and business.

Lester Brown, author of *Plan B 2.0*, is amazing. More than 20 years ago, he founded Worldwatch Institute and has since been a leader in sustainability efforts. This book will provide the broad understanding of why what we are doing is important, as well as suggested specific action.

Paul Hawken, Amory Lovins, and Hunter Lovins developed *Natural Capital*, which provides eco-efficiency techniques, including life cycle analysis and eliminating waste.

Wackernagel and Rees, in *Our Ecological Footprint*, provide an innovative and intuitive approach to measuring resource use.

Ernst von Weizsacker, in *Factor Four*, sets out to answer the question, “Can we cut resource use to a quarter of what it is today?” The answer is yes.

William McDonough and Michael Braungart in *Cradle to Cradle* provide a collaboration of an American architect and a European chemist to introduce design principles such as “waste equals food” to remake the way we make things. It is a good introduction to life-cycle analysis.

Karl-Henrik Robert developed *The Natural Step* (TNS) in Sweden as a framework to use in considering environmental problems. An example of one of the four conditions (Robert, 2000, p.20) is, “In the sustainable society, nature is not subject to systematically increasing concentrations of substances produced by society.”

John Elkington wrote *Cannibals with Forks*. He is credited with the first use of the “triple bottom line,” of financial prosperity, environmental quality, and social justice. He identifies seven dimensions of a sustainable future: markets, values, transparency, life-cycle technology, partnerships, time, and corporate governance. This is the book on corporate social responsibility.

### **Examples of Companies Doing Well by Doing Good**

Real-world examples indicate companies can prosper while becoming sustainable. We begin this section looking at waste in the value chain, and then use Victor Innovatex, Herman Miller, and Marks and Spencer as examples.

Waste: just as we eliminate waste in the factory by implementing lean practices, opportunity in the entire value chain is huge. A snack food provides an example.

Victor Innovatex makes fabric that is not toxic to customers or the environment. Their Eco-Intelligent polyester is recyclable (not downcycled). Chemical use has been transformed, using no antimony and eliminating toxic dyes. Their Climatex LifeguardFR fabric is organically grown and compostable. Their Eco-Intelligent Initiatives (EII) include lean enterprise practice, continuous improvement, ISO14001 certification, more renewable energy, marketing sustainability, and the reclamation process.

Herman Miller (one of *Fortune's* most admired companies and the #14 Best Corporate Citizen) manufactures office furniture using cradle-to-cradle concepts. Their Environmental Quality Action Team uses lean, ERP, and supply chain management. Their sustainability targets: zero landfill and zero hazardous waste.

Marks and Spencer, in January, they announced their Plan A to address corporate social responsibility covering five areas: climate change, waste, raw material, fair partner, and healthy eating. Many major corporations (more than 2,000) now provide corporate social responsibility (CSR) reports covering both social and environmental spheres. The global reporting initiative (GRI) provides a structure for such reports.

### **Future Developments and Closing Comments**

We have reason to believe there is yet hope in the future to achieve sustainability. APICS professionals provide supporting practices as we improve technology and minimize waste, based on now traditional practices:

- JIT and lean
- waste elimination
- quality improvement, value stream analysis, theory of constraints, supply chain management, managing with the data.

Some new perspectives also needed include life cycle analysis, accounting for externalities, and corporate social responsibility. From a macro perspective, anticipate a new role for your company, new products, and a new place in the economy. From the micro perspective, companies will extend lean concepts to externalities and grapple with limits of supply in addition to meeting demand. The strategy will become making our society and our world sustainable.

These changes require our participation. As the Once-ler said in *The Lorax* by Dr. Suess, "... UNLESS someone like you cares a whole awful lot, nothing is going to get better. It's not."

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### **Essential Organizations**

International Standards Organization: ISO 14000 series provides guidance for developing an Environmental Management System.

<http://www.iso.org/iso/en/ISOOnline.frontpage>

Global Reporting Initiative: provides structure for corporate social responsibility reporting

[www.globalreporting.org](http://www.globalreporting.org)

World Business Council for Sustainable Development

[www.wbcsd.org](http://www.wbcsd.org)

Business for Corporate Responsibility

[www.bsr.org](http://www.bsr.org)

### **About the Author**

Ronald Sullivan, CFPIM, has several decades experience with the implementation of ERP systems and process improvement activities as a practitioner, systems analyst, and consultant. He has taught classes in material requirements planning, Just-in-Time, and supply chain management and has spoken at APICS international conferences. Sullivan has attended courses in the University of Washington's Program on the Environment.