COLLINS FAMILY FOUNDATION

COLLINS FAMILY FOUNDATION

Global Environmental Sustainability: Current Status, Positive Paths Forward, How the SWA Can Make a Difference

Dwight Collins Ph.D.

President

COLLINS FAMILY FOUNDATION

Three Alternative SWA Positions on Global Environmental Sustainability Proposed During Initial SWA Deliberations

- Support the creation and dissemination of environmental education.
- Encourage research to provide evidence documenting the causes of environmental deterioration and identify more sustainable environmental practices.
- Advocate the creation and enforcement of laws controlling harmful environmental practices.

My objectives today:

- Reinforce your proposed position for initiatives to support environmental education
- Demonstrate why it makes good sense to use business as a unifying thread for thinking about global environmental sustainability
- Demonstrate through the lens of business how the impact of the SWA's support for environmental education can have its desired effects
- Teach the SWA membership about current initiatives in sustainable business
- Provide some specific recommendations in the domain of environmental education

Some Guidance on Your Position With Respect to Environmental Education

- Environmental Education needs to be focused in three sectors:
  - Income earners
  - Customers who purchase goods & services
  - Investors
- Teaching a new "Sustainability Awareness" to people in each sector will accelerate our progress toward sustainability on our planet

Some Facts About The State of the World (2003)*

Energy/Atmosphere

- Fossil fuel use grows 1.5%
  - Oil - .5%. Coal – 1.9%, Gas, Natural gas 2%
- Nuclear power capacity grows 1.5%
- Wind energy capacity grows 27%
- Atmospheric CO_2 level up 18% since 1960
  - Most likely highest level in 20M yrs
- Severe weather events on the rise
  - 31% since 1750
  - Weather disaster economic losses grow 93% over 2001 to $53B
  - Cyclone intensity increases 10-20% with increasing temperature

Economic

- Humanity withdrawing earth resources 20% faster then renewal rate(45% in the US)

Nature

- 12% of 9800 bird species threatened with extinction in this century
  - Causes are habitat loss, exotic species, poorly regulated hunting, long line fishing
  - Birds disperse seeds, pollinate flowers, control insect & rodent populations

Transportation/Communication

- Vehicle production grows 2%
- Number of mobile & cell phone subscribers increases 21% to 1.15B
- Ratio of internet users between industrial & developing countries is 17:1 (40:1 in 1995)

Health & Social

- World births exceeded deaths by **74M** leading to population of 6.23B
- Population of the 49 poorest countries grows 2.4%, 10 times the rate of the industrial countries
- Number of people with HIV/AIDS rose to 42M
  - 5M became infected and **3.1M** died
  - 70% in sub-Saharan Africa
- Cigarette production down .5% to 5.6T
  - 82% of 1.1B smokers in low/middle income countries; expected hi growth due to marketing focus
  - Smoking killed **4.9M** (more than HIV/AIDS)
- Consumption patterns contribute to mortality, killing 38M
  - Heart condition and stroke kill 16.7M
  - Infectious & parasitic disease kill 14.4M
  - Cancer kills 6.9M

Military

- Resource wars plague developing nations (funds from resource extraction fund armed conflict)

*Data from State of the World 2003 published by the Worldwatch Institute, Washington, D.C.

Business Has Traditionally Assumed an Infinite Capacity Planet

- Business principles based on assumption of infinite natural resources and waste absorption capacity
- "The concept of multiple industries collaborating on a 'whole systems' approach, recycling each other's outputs into inputs is completely antithetical to the cult of the individual and the pioneer myth that so deeply characterizes American corporate culture."*
- US antitrust legislation has not allowed "collaboration"

*Oliver Kellhammer, MBA Student, Bainbridge Graduate Institute

But Business Can Provide Leadership in Creating a New Brand of Sustainable Capitalism

Why is Business Part of the Solution?

- Business is focused on learning and change.
  - Change can and does happen relatively quickly
- Business is a global institution.
  - The challenges are fundamentally global in nature
- Business is the source of technological innovation.
  - Technology is the proximate cause of environmental impact

Dr. John Ehrenfeld, Director Emeritus, MIT Technology, Business and Environment Program

Recent History of Business With Respect to Global Environmental Sustainability

- A Wakeup Call in the 1970s
  - "Silent Spring" by Rachel Carson
  - The US EPA
- These events sensitized us but at the same time, cast the environment in a negative light in many ways

Definition: Sustainable Development

When the century began, neither human numbers nor technology had the power to radically alter planetary systems. As the century closes, not only do vastly increased human numbers and their activities have that power, but major, unintended changes are occurring in the atmosphere, in soils, in waters, among plants and animals, and in the relationships among all of these.

Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognizes that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which the developing countries play a large role and reap large benefits.

Our Common Future, 1987
The Brundtland Commission
(UN World Commission on Environment & Development)

Changing Business Approaches Regarding the Environment has Been Slow Going

- While events like the Brundtland Report pointed to the problem of environmental unsustainability, business has been slow to respond for many reasons
  - Institutional incentives to ignore the environment when costs could not be monetized
  - Antitrust legislation in many countries
  - Creation of mindset that taking the environment into account in business decisions always costs money (US EPA regulations in the US served a legitimate need)

The Good News: Pioneering Efforts to Make Business More Sustainable Without Sacrificing Profits are Isolated but Proliferating in the Market

- Eco-Effectiveness – producing more with less by thinking out of the box
- Converting product based markets to service based markets
  - **Interface Carpet**
- Producing products from sustainably grown plants instead of fossil fuels
  - **Cargill Dow** NatureWorks produces polymers (clothes, cups, packaging) from natural corn sugars
- Increasing knowledge intensity & reducing material intensity of products
  - **Dupont**
- Redesigning office products for take back - remanufactured at end of life
  - **Ricoh**
- Eco Efficiency – producing the same output more efficiently with less input
  - Redesigning electric motors

Examples of "Profitable Sustainability" (1)

- Xerox Europe
  - Waste-free products through product stewardship throughout whole life cycle
    - End-of-life equipment take-back
    - Quality manufacturing process
  - Design for Environment (DFE) supports product recovery
    - Reprocessed reusable components & reused as virgin parts
    - 2000 parts reduced to 250 to simplify disassembly/re-use
    - Bonus – hired and additional 400 people
  - 1997 Net Savings of over $80M
    - Potential disposal cost converted to revenue stream
  - Improved environmental performance, customer satisfaction, and company (financial) performance

Examples of "Profitable Sustainability" (2)

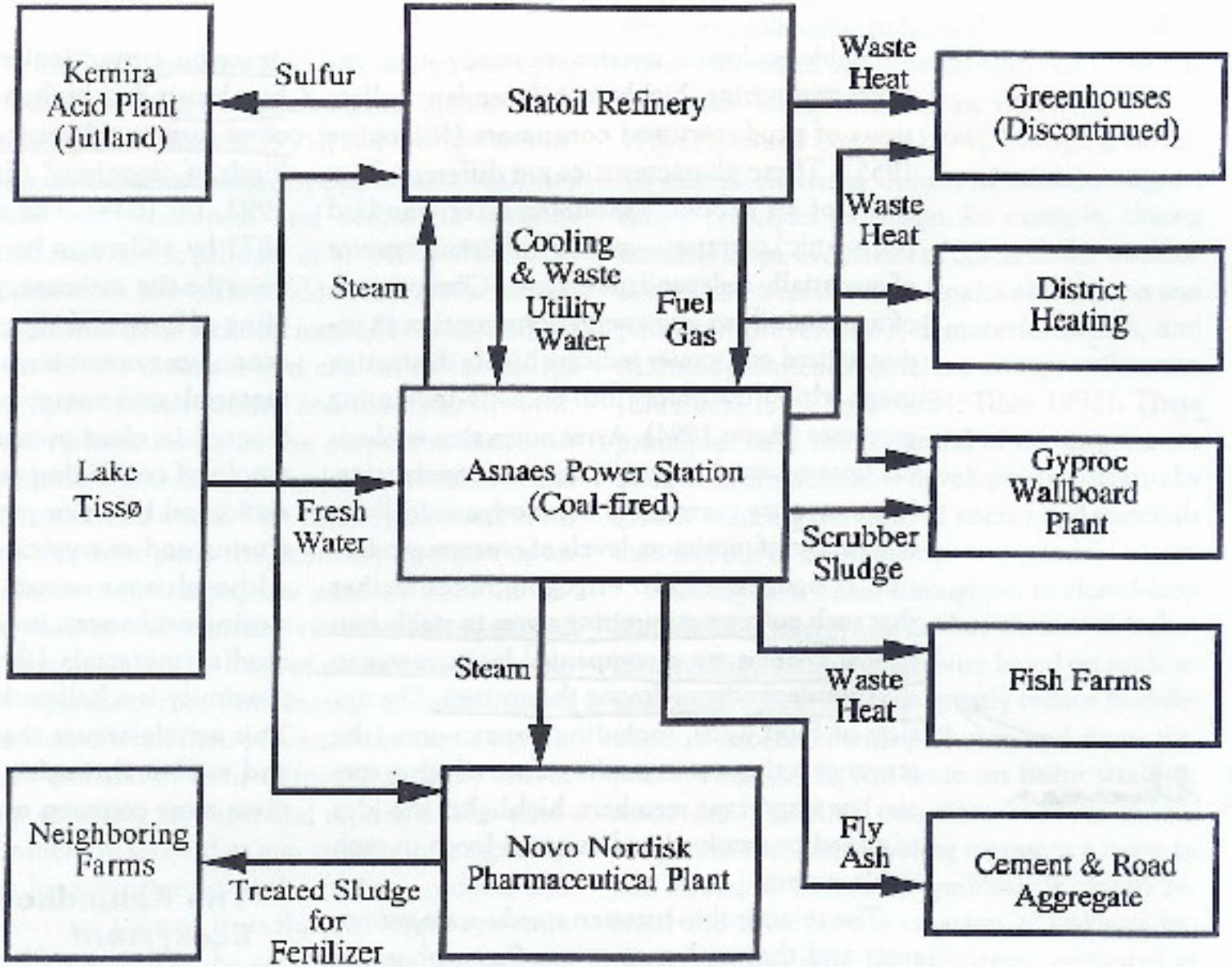
- International Paper Androscoggin Mill (Maine)
  - Highly polluting mill cleaned up through extensive use of ***stakeholder engagement, closing of materials loops, taking new approaches to waste reduction,*** and ***toxics use reduction***
- S.C. Johnson Landfill Gas Plant (Johnson's Wax, Windex, Pledge)
  - Built gas turbine plant supplied by fuel from nearby landfill instead of consuming energy from new coal fired plants built by local electric utility

An Example of Environmental Education: A New Business Discipline Called ***Industrial Ecology***

- The means by which humanity can deliberately approach and maintain sustainability, given continued *economic, cultural, and technological evolution*.
- An industrial system needs to be viewed not in isolation from its surrounding systems, but in concert with them.
- This is a systems view. One seeks to optimize the total materials cycle from virgin material, to finished material, to component, to product, to obsolete product, and to ultimate disposal. Factors to be optimized include resources, energy, and capital.
- Principles: (1) Close material loops, (2) Don't discard waste that has energy content, (3) Eliminate materials (e.g., heavy metals) that upset system, and (4) Deliver function with fewer materials.*

*Graedel, Thomas, and Brad Allenby, Industrial Ecology, Second Edition, 2003.

The Kalundberg, Denmark Eco-Industrial Park, an Example of Closing Loops



New Performance Measurement Tools: The Life Cycle Assessment (LCA)

- An objective process to evaluate the environmental burdens associated with a product, process, or activity by identifying and quantifying energy, material usage, and environmental releases, to assess the impact of those uses and releases on the environment, and to evaluate and implement opportunities to effect environmental improvements.
- The assessment includes the entire life cycle of the product, process or activity, encompassing extracting and processing raw materials; manufacturing, transportation, and distribution; use/reuse/maintenance; recycling; and final disposal.

The Society of Environmental Toxicology and Chemistry

Typical Building Production Life Cycle

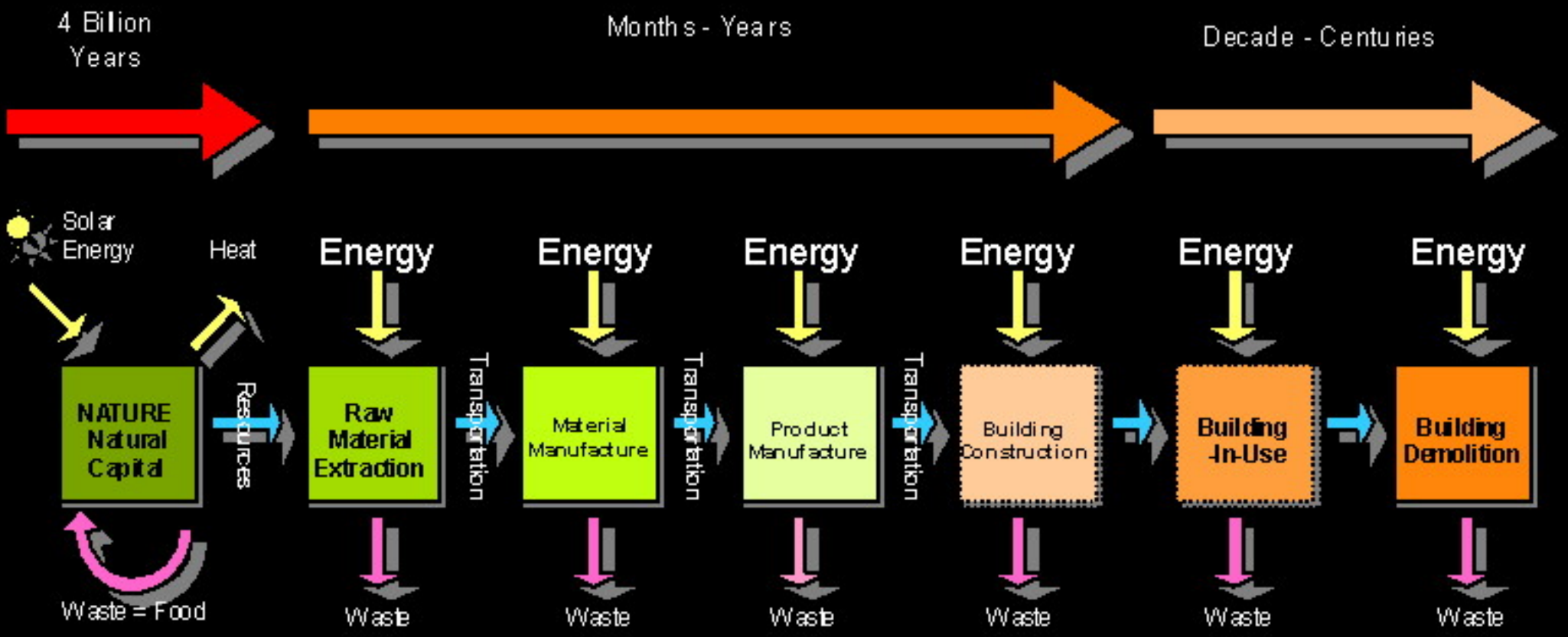


*Diagram provided by Neil Collie, Sustainable Products Purchasing Coalition, Seattle, WA

An LCA Projects Flows of Materials Throughout the Life Cycle of a Product

Resources

- Electricity (location)
- Water (location & type)
- Fuel (in ground)
- Minerals (in ground)
- Biomass (harvested)
- Land use (area & location)

Air

- CO_2
- CO
- PM (10, 2.5)
- CH_4
- SO_X
- NO_X
- NH_3
- Hg
- Pb
- VOC (NM)
- Dioxin
- PAH's

Water

- COD
- TDS
- TSS
- BOD (5,7,10)
- Flow
- ΔTemperature
- NH3 (as N)
- TKN (as N)
- NO3, NO2 (as N)
- PAH's
- Phosphates (as P)
- Cu, Ni, As, Cd
- Cr, Pb, Hg

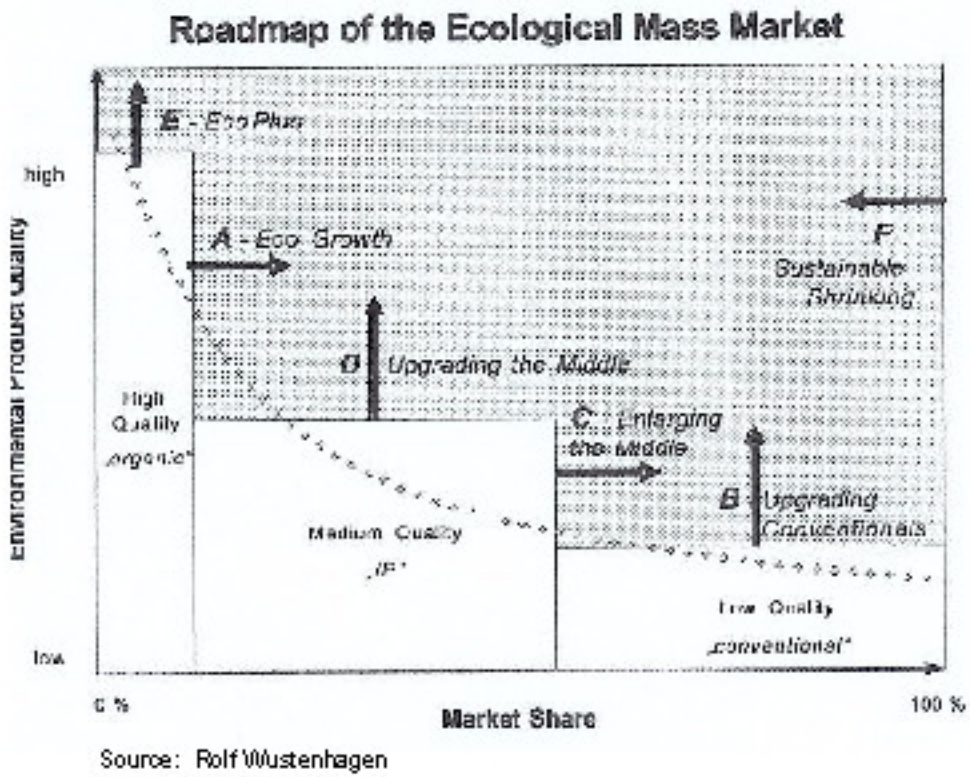
Wastes

- Solid waste
- Radioactive Waste (high, low, medium)
- Hazardous Waste

Analysis using powerful LCA software leads to A Lighter Environmental Footprint and Reduced Business Risk

Research Points to Ways to Convert Niche Markets for Sustainably Produced Products to Mainstream Markets

- Many examples of sustainable business being successful in niche markets
  - Organic cotton used by Patagonia, Nike (2%), Gaiam
  - Cotton production consumes 25% of all pesticides worldwide
- Demand curve for organics shows different consumer segments
- Each consumer segment makes buying decisions based on different factors
  - Organic core - decision based on knowledge of environmental impact of product & authenticity
  - Medium environmental product quality - decision based on brand loyalty, buying/using "experience", expert opinion, and price
  - Low environmental product quality - decision based on convenience and price



Source: Rolf Wustenhagen

Providing more consumers with a "sustainability awareness" (environmental education) moves niche market values to mainstream consumers

- **May pay more until increase in volume of sustainable product brings price down**

Educating the Investor is Beginning to Pay off: The Capital Markets are Rewarding Companies that Make Profits AND Operate Sustainably with Higher Stock Prices

Mutual fund managers that focus on "socially responsible investments" have long talked up the value of owning shares in environmentally conscious companies. But could investing green really be the best way to make money in stocks? That's what a group of analysts at the New York firm Innovest argue. They contend that a company's strategic response to environmental risk—from air-clogging emissions to toxic waste —is a window into the company's management ability. The more "eco-efficient" a company is, the better its stock performance is likely to be compared with others in its industry —and that's true, apparently, whether the industry is oil, mining, or solar energy …When researchers at Erasmus University in Rotterdam tested the claim, they found that over the eight years leading up to 2003, Innovest's model stocks did, in fact, command a 6% premium compounded annually over the eco-losers—and more important, that the edge could be traced specifically to the companies' environmental efficiency as opposed to other market factors.

— Abrahm Lustgarten FORTUNE July 26, 2004

Profitable Sustainability
THE FUTURE OF BUSINESS

PRESENTED BY

Profitable Sustainability Executive Planning Committee

NBIS/NW

THE FUTURE 500

COLLINS FAMILY FOUNDATION

Profitable Sustainability: The Future of Business

- Learn from CEOs charting new paths to profitability
- Explore innovative new technologies
- Develop new business strategies and alliances
- Find solutions to everyday challenges and obstacles

September 26-29—Westin Hotel—Seattle, WA

www.nbis.org/conference

Teaching Environmental Sustainability Through a New MBA Education Paradigm

Bainbridge Island Graduate Institute

- "The first Graduate School of Sustainable Business" (http://www.bgiedu.org)
- There are many ways to change business, government regulation, consumer choice, socially responsible investment, etc. Most neglected of the ways is the choices people make at work to serve their values.
- Traditional business schools train students to focus on making money, not serving their other values. Graduates leave with a much narrower sense of responsibility than they came in with.
- ***The market for people who need a business education, but want their work to serve their values is large and underserved.***

The BGI mission

- Prepare leaders to achieve socially and environmentally responsible business success.
- Partner with other schools to help them incorporate environmental and social responsibility in their curriculum.

Presidio World College

MBA in Sustainable Management

Our Goal: Equip graduates with the **skills** and **knowledge** of a traditional program that will enable them to **understand** and **influence** business strategy and culture, as well as provide "new ways of thinking and acting" about how enterprises large and small can add economic, social and environmental value in a sustainable and profitable way.

World Resources Institute (WRI) Environmental Education Program

NEWS RELEASE: WRI receives U.S. environmental education award

WASHINGTON, DC, January 20, 2000 -- The World Resources Institute (WRI) today received a National Environmental Education Achievement Award for its Business-Environment Learning and Leadership (BELL) project.

The annual award, given by the National Environmental Education & Training Foundation (NEETF), honored WRI for **effectively integrating environmental education into a school system.**

Launched in 1994, the BELL project is credited with helping the world's leading business schools to incorporate the environment into their management curricula. Business schools traditionally viewed the environment as purely technical subjects and did not have materials to teach environment-business issues.

"The genius of the BELL project is building on companies' needs and students' interests to foster business school leadership on how to build business strategies that combine social, environmental and financial goals," said Jonathan Lash, WRI president.

The BELL project has produced over teaching 40 case studies covering the intersection between profitability and sustainability in such areas as accounting, finance, marketing, organizational behavior and production. A 1999 WRI and Aspen Institute report, **Beyond Grey Pinstripes: Preparing MBAs for Social and Environmental Stewardship**, found that almost half (5 of 12) of business school professors' favorite case studies on the environment is published by WRI.

In addition, the BELL project holds an annual conference that ensures business school professors stay on top of issues that are important to both the business and the global environmental communities. Regular regional workshops are also held throughout the year.

In giving the award, NEETF president Kevin Coyle said that it is given to organizations like WRI that are helping society by developing and implementing innovative approaches toward solving complex environmental problems.

For more information, contact:
Adlai Amor, WRI, Washington, DC, (202) 729-7736, aamor@wri.org

Sustainability & the Ithaca College Curriculum

(http://www.ithaca.edu/sustainability/)

Interest in developing a curriculum that embraces sustainability at its core has long been evident across the Ithaca College campus. In addition to the specific examples outlined below, a committee of faculty members from the School of Business is investigating educational strategies that could be used to introduce sustainable management practices into the curriculum, and faculty and students from the School of Humanities and Sciences have formed study circles to discuss outside of class the issues and questions raised by sustainability.

An "Applying Science to Sustainability" grant from the National Science Foundation provides faculty summer grants to assist in developing sustainability curricula ***across the College's 100+ degree programs***.

Ithaca College courses developed or modified to incorporate Sustainability include:

- Environmental Futures, a capstone course for environmental studies majors
- A first-year seminar exploring the politics of sustainability
- An Environmental biology course infused with themes of sustainability
- A Persuasive Argument writing course that incorporates writing assignments on sustainability issues
- An Economic Development course that includes readings and research assignments on sustainable development issues
- An Environmental Economics course integrating readings and research assignments on sustainable development issues
- A Leisure Travel course that now includes more readings and assignments on the social impact of tourism and ecotourism
- A Business Ethics course that studies sustainability as related to corporate social responsibility
- An Environmental History course that includes the study of sustainability issues
- A School of Business course on Environmental Law and Policy
- Sustainability Management, a business course being introduced in fall 2004

The developments above happened because of education about environmental sustainability at many levels

- Brundtland Report (UN World Commission on Environment & Development)
- Eco-effectiveness, Eco-efficiency, Triple Bottom Line
- Pioneers at 3M, Xerox, Ricoh, Interface Carpet, Dupont, Cargill Dow NatureWorks, International Paper, S.C. Johnson
- UN Environmental Program (UNEP)
- New disciplines: Industrial Ecology, Life Cycle Assessment Tools
- Conferences - Profitable Sustainability: The Future of Business
- MBAs in Sustainable Business – BGI, PWC
- Innovative sustainability education initiative at Ithaca College

SWA Position to Support Creation & Dissemination of Environmental Education (1)

- Examples of Specific Initiatives
  - Letters to university presidents
    - More environmental sustainability content in business school curricula in the spirit of Bainbridge Grad Inst., Presidio World College
    - Environmental sustainability content thoroughly integrated in undergraduate curricula in the spirit of Ithaca College initiative
  - Letters to engineering accrediting agencies and engineering school deans recommending courses in Industrial Ecology
  - Letters to World Governments recommending additional funding of UN Environmental Program to support global environmental sustainability education initiatives

SWA Position to Support Creation & Dissemination of Environmental Education (2)

- Examples of Specific Initiatives
  - Lobby sustainable MBA programs like BGI and PWC, and undergraduate programs like Ithaca College to offer sustainability training to high school teachers
  - Lobby US EPA and corresponding government agencies in other countries to support/endorse material eco-labeling campaigns
  - Solicit expert support for Op Ed based campaign to teach the consumer a "sustainability awareness,"
    - E.g., Land Institute Prairie Writers' Circle

(http://www.landinstitute.org/vnews/display.v/SEC/Publications%3E%3EPrairie+Write
)

Some Information Sources on Global Environmental Sustainability

- Organizations that provide expertise
  - The Natural Step, ZERI (Zero Emissions Research Initiative)
  - NBIS, Future 500, The Collins Family Foundation
- Books
  - ***The Ecology of Commerce*** – *Hawkin (1993)*
  - ***Biomimicry*** – Benyus (1997)
  - ***Cannibals with forks*** (The "Triple Bottom Line") – Elkington (1997)
  - ***Mid-Course Correction*** – Anderson (1998)
  - ***Natural Capitalism*** – Hawkin, Lovins, & Lovins (1999)
  - ***Cradle to Cradle*** - McDonough/Braungart (2002)
  - ***What We Learned in the Rainforest -*** Kiuchi & Shireman (2002)
  - ***Walking the Talk*** – Holliday et al (2002)
  - ***The Sustainability Advantage*** – Willard (2002)

Costa Rican Rainforest, March 2003 with Russell Genet