

Presentation
of

Robert Costanza's, et al.
“Managing Our Environmental
Portfolio”

March 31, 2004

The paper was first published in:

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Brief Paper Summation:

Provides a background on the differing
extreme views of:

Economic/Technology Optimists

vs.

“doom and gloom” Environmentalists

Proposes an environmental management
approach akin to managing a stock portfolio.

An extreme optimist's POV, (Myers and Simon 1994):

“...the technology to feed, clothe,
and supply energy to an ever-
growing population for the next 7
billion years...”

An extreme pessimist's POV:

Environmentalists may argue that
any human presence is
detrimental to the planet, and the
planet would be better off
without them.

Debating with different visions:

“The technological optimist worldview is one of continued expansion of humans and their dominion over nature. Through technological change, humans become independent of nature.”

Debating with different visions cont.:

“The technological skeptic vision recognizes the importance of technological change but depends much less on it and more on social and community development.”

Costanza suggests we should follow the skeptic:

“....the costs of being wrong when pursuing the optimist’s policies are far greater and less reversible than the costs of being wrong when pursuing the skeptic’s policies.”

Why the skeptic?

- Great past civilizations have collapsed because of lack of attention to degradation of their environmental resource base
- I.e. Egyptian, Mesopotamian, Roman, Olmec, Chacoan, Mayan

Why the skeptic? cont.:

- Peaked in per capita cereal grain production, mid 80's
- Peaked in fisheries yield
- 10-20 fold increase in human refugees
- Depletion of freshwater supplies
- Intensification of food production

Managing Uncertainty

- The rational choice in extreme uncertainty with ultrahigh stakes is the skeptical view
- Need to manage risks appropriately in balance with costs, benefits and uncertainties w/o risking the health of humans or ecosystems

My opinion:

Payoff Matrix

- Not a good use of game theory for this exercise
- Results are skewed because Costanza is obviously taking the skeptical viewpoint
- Overly simplified

How to manage an environmental portfolio?

Use similar strategies that have been proven in managing business portfolios with uncertainty.

Protect Your Capital

“Natural capital stock must be protected so that humans can continue to enjoy the flow of services that derive from that stock.”

Hedge Your Investments

- Preserve Natural Capital
- Hedge against the possibility that technological change may not yield expected returns

Don't Risk More Than You Can Lose

- Cannot afford to lose or damage our natural capital base
- It should not be put at risk
- Past civilizations have fallen in this trap

Buy Insurance

- Don't harvest everywhere (leave refuges and reserves)
- Don't harvest anywhere close to the sustainable limit

Why aren't we managing in this way?

- The global environment is a common-property resource
- Open-Access is the norm
- The management problem has scaled beyond existing institutions capabilities

First Step:

- Acknowledge the value of our environmental assets to humanity's survival
- Acknowledge the uncertainty that technology cannot substitute for all our eco-services

Costanza et al. (1998) proposed principles for sustainable governance:

- Responsibility
- Scale-matching
- Precaution
- Adaptive Management
- Full cost allocation
- Participation

Examples of Successful Models:

- Shared-based and co-managed fisheries
- Integrated watershed management
- Marine protected areas

Costanza Argues:

- Need to focus on common ground
- The challenge is to manage the planet as an asset in order to maximize the chances that it can continue to support human well-being indefinitely