Communicating and Implementing Indicators

Sustainable Water Resources Roundtable
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Sustainable Silicon Valley
December 7, 2011
Communicating with Indicators

“I'm a climate change skeptic and, perhaps a skeptic of most things trendy and alarmist.”

– Head of money markets investment group for major European-owned bank in U.S.

“There has always been climate change. I drive a hybrid but I don’t believe that climate change is caused by human beings.”

– Head of a wastewater treatment utility in the SF Bay Area
Three Stocks (Buckets)  
(analogy from Dennis Meadows)

- GHG Emissions
- Heat
- Consequences of Heat
Impact on Food and Water

Global rainfall deficiency summary June 2011

Famine and Fighting In Somalia
Costs/Impacts of Climate Change
Hydrological Cycle Accelerating

Some of the Costs – $ Billions Lost $
• Deaths/Injuries
• Rescue costs
• Rebuilding
• Lost income and tax revenues
• Business interruption
• Failed crops
• Supply chain disruption

Drought Australia 2011
St Louis Airport Tornado 2011
Iowa Flooding 2011
Role of Indicators
Measuring Smoke and Heat?
Communicating with Indicators

- Who needs to understand the story behind the data?
  - The public (ratepayers, voters, investors)
  - Utility management (staff and elected officials)
  - Agricultural, industrial, commercial water users
  - Non-human water users (ecosystems, fish, etc)

- What is their responsibility?
- What information do they need to make good decisions in a meaningful timeframe?
- What are their constraints?
Indicators to Drive and Evaluate Action

- What indicators are enough to
  - Characterize the system?
  - Identify levers for change?
  - Track changes?
- What policies/measures are needed to change system performance?
  - Pricing (signal for appropriate investment)
  - Rules to govern use of common resource
  - Consequences for cheating
- How is this information conveyed to result in meaningful action at scale of the challenge?
Ecosystem for Communication and Action

- Rules
- Costs
- Investments

- Science
- Engineering

- Action
- Data
- Indicators

- Policy
- Stories

- Public Understanding
- Education
- Games

- Media Communications
Regional Resiliency

- Local use: water, energy, and material resources
- Smart infrastructure for distributed water and energy
- Share information and culture locally and globally
- Invest in education, training, & research
- Design land use and transportation to enhance interaction and relationships
- Regional food system augmentation
Regenerative Capitalism

- Regenerative Capitalism
  - Replenish natural capital
  - Enhance other sources of capital
    - Education, Science, Research, Relationships, Culture
- Economics of Enough: Goal = Dynamic Equilibrium
- Cradle to Cradle Economy
  - Shift to Net Zero Carbon Buildings, Transportation and Manufacturing
  - Industrial Ecology Cycles Materials/Waste
  - Expanded Timeframes and Communities of Interest
Renewing the Urban Water Infrastructure
Centralized/Decentralized Smart Use & ReUse

- **Urban Water Infrastructure**

  Centralized purple-pipe infrastructure

  Living Machine – on-site H2O treatment
  Otay Border Crossing, San Diego

  Spiral Separator
  from PARC, Meng Lean
Climate Volatility, Global Trade & Regional Resilience
January 27, 2012
www.sustainablesv.org
Establishes the urgency of the global water crisis as the central issue facing our world this century.

Opening
May 4, 2012
EcoCloud™ Innovation Platform

- [http://ecocloud-sv.com](http://ecocloud-sv.com)

- Major Focus Areas

- Platform where companies, municipalities, thought leaders and academia can collaborate and innovate sustainable solutions.
EcoCloud™ Collaborative Innovation

- Innovative optimization of resources, materials, energy, and water flow
- Collaborative sharing of project information and best practices
- Unique models enable systemic solutions for:
  - Reducing energy usage
  - Conserving resources
  - Eliminating waste
  - Cutting costs to improve bottom line
- Share product information - virtual marketplace
- Exchange knowledge - virtual webinar
EcoCloud™ Features
EcoCloud enables working groups or people with shared interests to collaborate on specific projects and advance the practice of sustainable disciplines.

Groups come equipped with:
- Private discussion forum
- Rating and ranking content
- RSS reader
- Text box and comment wall
- Several other privacy settings
Exposition showcases your products, services, and success stories

Benefits:
- **Advertise** on a page dedicated solely to your company
- **Elevate market readiness** of clean and green technology solutions
- **Increase traffic** to your company website
- **Cultivate relationships** through interaction with members
- **Access over 125 SSV partners** including SAP, Symantec, IBM, City of San Jose, Santa Clara University and more
Analytical tools help make the business case within your organization for investing in green projects and solutions.

Comparative analysis across projects and facilities.

Multiple project types including recycled water usage.
Geo Maps

- Project analysis uses geographic information
  - Proximity to recycled water pipes
  - Proximity to other facilities
EcoCloud™ Focus Areas
EcoCloud™: Water

Areas Covered
- Recycled Water
- Decentralized Water
- Water Conservation
- Energy/Water
- Policy and Planning
- Metrics & Reporting

EcoCloud™ exists as part of a larger context. Let’s take a look at the big picture of water on Earth, then focus in on the areas to be addressed through participation in EcoCloud™.

Global View: the Natural Water Cycle

The Natural Water Cycle, or Hydrologic Cycle, describes the continuous storage and circulation of water on Earth over time and space through the processes of evaporation, condensation, precipitation, infiltration, run-off and transpiration. The following diagram gives an overview of the Natural Water Cycle.

Image: U.S. Geological Survey
EcoCloud™: Energy

- Energy
- Smart Grid and Micro Grid
- Renewable
- Solar
- Wind
- Efficiency
- Green Building
- Green Vehicle Tech
- Energy Policy Laws
EcoCloud™: Materials

- Areas Covered
  - Disposables
  - E-Waste
  - Hazardous Materials
  - Recycling
  - Design for Environment

- Highlights Recycling Market Development Zones
  - Attractive loans
  - Technical assistance
  - Free product marketing to qualifying businesses
EcoCloud™: Sustainability

- Sustainable environments are built on healthy ecosystems
- Ecosystems are interconnections of producers & consumers of a material or resource
Contribute Content

- We invite you to participate on EcoCloud:
  - Blogs
  - Forums
  - Events
  - Suggestions
  - Videos
  - Groups
- We really appreciate your content!
  - EcoCloudContent@SustainableSV.org
Join EcoCloud™!

Contribute indicators, stories, case studies, policy guidelines, reports, blogs, recommendations, working groups…

http://ecocloud-sv.com

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Personal Sustainability
We Wear Many Hats

Transportation
Food
Clothing
Community/Schools
Leisure
Faith
Work
Investments
Political Participation
Green Holidays
Doing and Being (not Having)
Vision for a Resilient World

The world has transformed from *consumptive* society to *sustainable* society, and is becoming a *regenerative* society.
Systems Thinking

System Elements:

• **Economy** - resources, trade, financial systems, government policies and decision-making.

• **Society** - community, religion, culture, values, attitudes and government.

• **Environment** - water, air, soil, interwoven relationships among organisms, and geological systems (ecosystem products and services).
Regenerative Cities produce surplus food, export energy, and exhale purified air and water.
Cradle To Cradle: “Be Good Not Less Bad”
Industrial Ecology: Exchange Wastes and Materials