Is sustainability sustainable? Update on national sustainability standards

Jed Colquhoun
University of Wisconsin-Madison

National sustainability standards

- Many retailer/buyer certification programs in place, more coming
- Three drafted national standards:
  - The Keystone Center
  - The Stewardship Index for Specialty Crops
  - ANSI standards, proposed by Scientific Certification Systems

Private sustainability endeavors

- Walmart
  - Sustainability and locally grown products
  - “Scorecards”
- Sysco
  - IPM and GAP requirements
- McDonald’s
  - Sustainable supply chain performance indicators
  - 2008-2010: measure environmental impact of supply chain
    - April 2009: agreed to look at ways to reduce pesticide use in potatoes

The Keystone Center

- Outcome-based approach, not practice-oriented
- Applied at the grower-by-grower level
- “Develop a sustainability tool for growers to map and improve their own performance”
- Based on improved efficiency throughout supply chain
  - Production will need to double in 40 years
  - Less land will be in agricultural production

Steering Committee Members and Participants

- American Farm Bureau Federation
- American Soybean Association
- Bayer CropScience
- Bunge Limited
- Cargill
- ConAgra
- Conservation International
- Cotton Incorporated
- DuPont
- Fleishman-Hillard
- General Mills, Inc.
- Grocery Manufacturers of America
- John Deere
- Manomet
- Mars, Inc
- McDonald's
- Monsanto
- National Association of Conservation Districts
- National Association of Wheat Growers
- National Corn Growers Association
- National Cotton Council of America
- National Potato Council
- Syngenta
- The Coca-Cola Company
- The Fertilizer Institute
- The Kellogg Company
- The Nature Conservancy
- United Soybean Board
- World Wildlife Fund
- University of Arkansas
- University of Wisconsin

Components of a Complete Sustainability Index

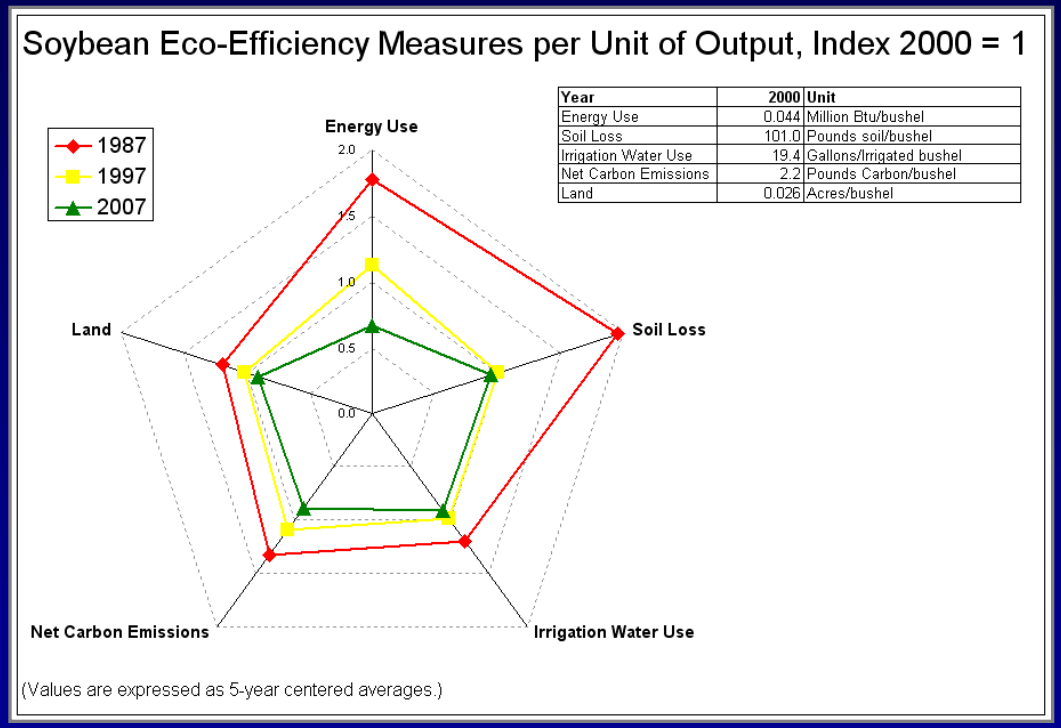
Field to Market has produced metrics for measuring environmental outcomes at the national scale (shaded cells). Specific socio-economic and health and safety outcomes are given as examples only; future work will determine which outcomes can be measured within these broad categories, as well as how they can be applied at different scales. Methods can also be applied to the full spectrum of technology choices and to other crops.

	Environmental Outcomes							Social and Economic Outcomes							Health and Safety Outcomes	
	Land	Soil	Water Use	Water Quality	Energy	Climate	Biodiversity	Producer Income	Labor	Productivity	Competing Land and product uses	Availability	Post Harvest Loss	Consumer Demand	Nutrition (access to calories, etc)	Safety
International Scale																
National Scale	x	x	X		x	x				x						
Regional Scale																
Local Scale																

Soybeans: Summary of Results

Over the study period (1987-2007),

- **Productivity** (yield per acre) increased steadily by 29 percent.
- **Land use** increased in absolute terms and by 31 percent while land use efficiency per bushel improved by 26 percent.
- **Soil loss** per acre decreased roughly 31 percent while soil loss per bushel decreased 49 percent. These trends coincide with significant changes in farming practices in states that grow the bulk of all soybeans.
- **Irrigation water use** per acre has changed little over time and water use per bushel improved 20 percent. However, only four to seven percent of the crop utilizes supplemental water.



Year	2000	Unit
Energy Use	0.044	Million Btu/bushel
Soil Loss	101.0	Pounds soil/bushel
Irrigation Water Use	19.4	Gallons/Irrigated bushel
Net Carbon Emissions	2.2	Pounds Carbon/bushel
Land	0.026	Acres/bushel

- **Energy use** per acre has decreased 48 percent while per bushel energy use decreased 65 percent. Soybeans have seen the most dramatic shift in inputs used, particularly herbicides and fuel for tillage, enabling per-unit energy requirements to decline substantially over time.
- **Greenhouse gas emissions** per acre declined 14 percent and emissions per bushel decreased 38 percent.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Alliance for Sustainable Outcomes for Agriculture
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Help
Sustainability Map
Land Use
Soil Loss
Irrigation
Energy Use
Climate Impact
Summary
Sustainability Index
0 20 40 60 80 100
You
Area Average
Land Use
Resources
Soil Loss
Resources
Water Use
Resources
Energy Use
Resources
Climate Impact
Resources
Land Use
Soil Loss
Water Use
Climate Impact
Land
Soil Erosion Golden Rules
Close x
• Avoid cultivations when the soil is too moist to be friable
• Avoid trafficking on wet soil
• Avoid leaving wheel ruts on the soil surface
• Use reduced tillage to improve soil structure and lessen erosion.
• Use more or longer grass breaks in the rotation
1987
1997
2007
You
PRINT
SAVE
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Stewardship Index for Specialty Crops

- Similar approach as Keystone Center, but for specialty crops in particular
  - Coordinating Council
  - Steering Committee
  - Metrics Review Committee
    - Currently has 290 participants

Stewardship Index for Specialty Crops: Coordinating Council

Environmental and Public Interest	Growers, Suppliers, Trade Associations	Buyers/Retailers
American Farmland Trust	CA Wine Grape Growers	Bon Appetit Mgt. Co.
CA Inst. for Rural Studies	DelCabo	Compass Group
CA Rural Legal Assist. Foundation	FreshSense	Food Marketing Inst.
Comm. Alliance w/ Family Farmers	Lodi Winegrape Comm.	Heinz
Defenders of Wildlife	National Potato Council	Markon Coop.
Eviron. Defense Fund	Produce Marketing Assoc.	Sam's Club
Natural Resource Defense Council	United Fresh Produce Assoc.	Sodexo
The Organic Center	Western Growers Assoc.	Sysco
World Wildlife Fund	Wine Institute	Unilever
		WalMart
Also: SureHarvest, Sustainable Food Lab, Univ. Arkansas		Wegmans

Stewardship Index for Specialty Crops: Metrics

People	Planet	Profit
Human Resources	Air quality	Green procurement
Community	Biodiversity/Ecosystems	Fair price/Incentives
	Energy use	
	Greenhouse gas	
	Nutrients	
	Packaging	
	Pesticides	
	Soil	
	Waste	
	Water quality	
	Water use	

Scientific Certification Systems

- Independent third-party certification company based in CA.
- VeriFlora: sustainability certification program for fresh cut flowers and potted plants.
- The proposed national sustainability standard was based on VeriFlora

Scientific Certification Systems

- SCS develops draft sustainability standard
- Leonardo Group (Madison, WI) "administers" the draft standard
- ANSI approves the standard
- SCS or others certify compliance

Scientific Certification Systems

- Eight elements in original proposal:
  1. Sustainable crop production
  2. Ecosystem management and protection
  3. Resource conservation and energy efficiency
  4. Integrated waste management
  5. Fair labor practices
  6. Community benefits
  7. Product quality
  8. Product safety and purity

Scientific Certification Systems

- Caveats on the original proposed standard:
  - “Within the area of crop production, organic pest management and soil fertility practices are recognized as the highest tier of performance”

Scientific Certification Systems

- Caveats on the original proposed standard:
  - “The producer shall not use genetically modified organism (GMO) planting materials.”

Scientific Certification Systems

- Current status
  - Original proposal was taken back to the drawing board in September 2008
  - Current discussions on new directions
  - Opportunities to get involved in this process

Comparing the standards:

Keystone	Stewardship Index	ANSI
Outcome-based	Outcome-based	Practice-based?
Agronomic crops	Specialty crops	All crops?
Self-evaluation	Self-evaluation	Certification

Will consumers pay for sustainability? Healthy Grown Potatoes

- Unique collaboration of grower association, UW and environmentally-oriented groups
- High level of investment:
  - 20 grants worth $2.7 million
  - $200,000 per year from growers
  - 15 to 20 UW researchers

Will consumers pay for sustainability? Healthy Grown Potatoes

- The Healthy Grown program has worked:
  - Between 2001 and 2005, IPM adoption increased 30 to 40% while pesticide toxicity scores decreased
  - Unbiased: third-party certified by Protected Harvest
  - Rigorous: in 2006, only 35% passed minimum level for certification

Will consumers pay for sustainability? Healthy Grown Potatoes

- But will consumers pay for environmental conservation…
  - Market survey: 70% of consumers said that they were likely to purchase Healthy Grown potatoes after hearing story
    - 88% of those willing to purchase said they would pay $0.25 more
  - In 2004 and 2005: only 1% of the certified crop sold as Healthy Grown

Is sustainability quantifiable?

Measured with a meter?

Might be possible

maine.gov

Measured with a monitor?

Very difficult

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“Sustainability” is measurable in industrial processes. Why?

- The vast majority of parameters are metered:
  - Electricity, water use, natural gas, etc.
- Measurement allows for management:
  - IT SAVES MONEY!!!

maine.gov

Measuring “sustainability” is difficult in agriculture

- Vast majority of parameters are monitored:
  - Soil health, water quality, “fair pricing,” biodiversity, rural community health, etc.
- Monitoring is expensive:
  - IT COSTS MONEY!!!

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Where do we go from here?

- Increase grower involvement and representation
- Determine cost of “sustainability”
- Public relations: consumer-oriented overview of current best management practices and regulatory compliance
- Research: is sustainability quantifiable, and if so, how do organic, “sustainable,” conventional, and international production compare?

Implications for your industry:

- Traceability
- More paperwork: surveys
- More scrutiny
- Regulation eventually?
- Reduced sales of inputs?

“We Californians are really not very good conservationists - we're very good preservationists. Conservation means you use resources well and responsibly. Preservation means you are rich enough to set aside things you want and buy them from someone else."

-W. Libby, Forestry Professor, UC Berkeley