



## VIEWS FROM THE FOOD SYSTEM FRONTIER

*Emerging trends, dilemmas, and opportunities in the changing global food system*

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### Measuring agricultural stewardship: Risks and rewards

The case for the Stewardship Index for Specialty Crops

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As a process facilitator working exclusively on food system issues, I spend a lot of time on the road talking to farmers and other food system actors about sustainability. The two most frequent comments I hear, particularly from producers, are “what the heck does sustainability mean?” and “if we were not sustainable, we would not be here today.”

The dialogue from this point may follow one of several paths. We can try to define sustainability abstractly, and inevitably someone will bring forward a definition that mimics the Brundtland<sup>1</sup> formulation: Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs. Others may say that sustainability is a set of practices, such as organic or biodynamic farming. Still others suggest that it has an ever-shifting end point, never reached and also never fully defined.

In the end, all of these exchanges prove unsatisfying. Without a common understanding of what stewardship means and how it ties to the

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<sup>1</sup> The Brundtland Commission, more formally the World Commission on Environment and Development, developed the first popularized framework for “sustainable development” in the mid-1980s.

everyday realities of producers and the communities and environments that the food system depends on, the conversation is just not productive.

For the past 18 months, a coalition of United States-based producers, nongovernmental organizations, and buyers have been trying another approach. What if, rather than trying to define stewardship and sustainability abstractly, we figured out what specific impacts of food production on people and place matter most to good stewardship — and then measure them? (More details are in “Stewardship Index Partners and Funding.”)

This is the core goal behind the Stewardship Index

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*This is the first in an ongoing series of columns by Mr. McIntyre on emerging trends, dilemmas, and opportunities in the changing global food system.*

for Specialty Crops<sup>2</sup> ([www.stewardshipindex.org](http://www.stewardshipindex.org)), an effort to establish a series of broadly agreed upon “stewardship” metrics for specialty crops supply chains grown in the United States. (See “15 Proposed Stewardship Metrics.”) Specialty crops are defined as essentially every food product other than the commodity crops of corn, wheat, soybeans, rice, and cotton.

The participants in the Index development process, who are working on 15 distinct indicators of stewardship, are not debating definitions, but rather focusing on the *performance* that can be measured. This is information that would give producers, buyers, and the public real data on the impacts of the specialty crop sector of the food system on the environment and society.

A metric approach is quite different from a practice-based one, such as certified organic or integrated pest management (IPM). One of the principles of the Index is that sustainability is the sum of the actual *impacts* you generate regardless of the practices you employ. Rather than require specific practices, the Index hopes to inspire a

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### Stewardship Index Partners and Funding

The Stewardship Index is a unique collaboration between organizations and individuals representing food production and processing, such as Western Growers Association and the National Potato Council, food buyers such as Sodexo, Sysco, and Del Monte, and civil society organizations including the National Resources Defense Council, California Rural Legal Assistance Foundation, and Defenders of Wildlife. Over 425 individuals from across the United States have signed up to participate in creating the project’s metrics. Early funding for the project has come from the Packard Foundation and a U.S. Department of Agriculture Conservation Innovation Grant.

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<sup>2</sup> For the past year Mr. McIntyre has served as the lead facilitator for the Stewardship Index for Specialty Crops, and his organization provides administrative services for the project.

cycle of continuous improvement and innovation in practices based on real data. In the arena of sustainability this approach is particularly critical, because there is still so much we do not know about which particular practices will generate the best overall sustainability results.

The task quickly becomes a technical one, rife with challenges. For example, how do you measure, farm by farm, agriculture’s contribution to greenhouse gas production? Immediately we get into complex biogeochemical processes that vary greatly by field, by crop, by region. Water use is clearly something that should be measured, but is it important in areas where water is not scarce? And then there are social metrics: what is the right way to account for wages? Can we use average wages paid to workers or should it be the percentage of

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### 15 Proposed Stewardship Metrics

The Stewardship Index is developing metrics in 15 distinct areas of impact at the farm, processing, distribution, and retail and food service levels. They are broken out here in a triple-bottom line formulation.

#### PEOPLE

Human resources (worker health and safety, employment practices, etc.)  
Community (local sourcing, local hiring, etc.)

#### PLANET

Air quality  
Biodiversity and ecosystems  
Energy use  
Greenhouse gas emissions  
Nutrients  
Packaging  
Pesticides  
Water quality  
Water use

#### PROFIT

Green procurement  
Fair price and incentives

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wages relative to a “living wage”? (See “Inside a Metric.”)

Despite the hurdles, the group has progressed far enough to begin piloting eight metrics on almost 100 farms and facilities, a substantial success. The goal of the pilot phase is to determine if the metrics themselves are workable, the data accessible, and the collection process sufficiently user friendly. Extreme care is being used to protect the security of the self-reported data during the pilot phase to assure all participants that incomplete or misleading data is not disclosed. A core principle of the Index is that the data created by participants belongs to them and may only be disclosed by them.

Based on the information collected in the pilot phase, the metrics will be further refined and then the Index will be rolled out for widespread use in the industry. A successful Index is envisioned as “one-stop shop” for a producer’s sustainability reporting, avoiding expensive duplicative requirements that occurred in the leafy green food safety case. Producers would have a consistent set of

measuring sticks to compare themselves with their peers and to report performance to their supply-chain partners. Buyers would have data to assess the stewardship performance of their entire supply chain, since metrics for off-farm processing and distribution are included in the Index, and identify opportunities for improvement. Commodity groups and civil society organizations would have aggregated and anonymized data from the Index to report changes in specialty crop stewardship performance.

If only it were that simple. The development of metrics brings into focus the current challenges in specialty-crop business relationships. Producers are concerned that collecting, and in particular *sharing*, stewardship information could be used against them by buyers who would have new data to pit one producer against another. The deep imbalance in influence between producers (particularly small and medium producers, but also very large multi-national agribusinesses) and the biggest buyers, such as Walmart and Tesco, intensifies the fear that many already have about sharing data.

Geography also plays a large role: consider a water metric that included information about water scarcity (which is not currently part of the Stewardship Index). Ninety-eight percent of California agriculture is irrigated, much of it in arid regions that require water imports to be productive. How would buyers and consumers rate produce from California, realizing that some of it came from potentially overdrafted groundwater, versus rain-fed produce from Michigan? Measuring stewardship will inevitably reveal regional disparities in production practices that result in more or less use of fertilizers, crop-protection chemicals, energy, and a host of other stewardship variables that are now hidden.

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### Inside a Metric

The members of the Stewardship Index’s Metric Review Committees have been charged with determining exactly what to measure for each metric. The goal has been to select metrics that have real impact and can be measured in a cost-effective manner using current technologies and understanding.

The Water Metric, which has been approved for pilot testing in the field during the summer of 2010, includes two specific measurements:

1. Simple Irrigation Efficiency

$$\text{Simple Irrigation Efficiency} = \frac{\text{Crop evapotranspiration}}{\text{Applied water per acre}}$$

2. Water Use Efficiency

$$\text{Water Use Efficiency} = \frac{\text{Crop yield per acre}}{\text{Applied water per acre}}$$

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Producers are not the only ones with reservations about the metrics; agricultural input companies have also expressed concerns. The Pesticide Metric Review Committee of the Index is considering adopting the IPM Institute of North America's Pesticide Risk Mitigation Engine, a new tool that looks at the on-field toxicity of crop-protection regimes. Consistent with the Index's goal of measuring impacts and not practices, the tool attempts to give farmers a view of the actual impact on insects, animals, and humans of their pesticide use. One implication is that it is possible to use a combination of integrated pest management and lower-toxicity chemicals and applications and still get an acceptable yield. This of course could affect the mix of crop-protection chemicals growers select.

Meg Wheatley, an American change management thinker, wrote in her book *Leadership and the New Science*,

The most profound strategy for changing a living network comes from biology....If a system is in trouble, it can be restored to health by connecting it to more of itself. ...The system needs to learn more about itself from itself.

My experience is that this is true. Increased flows of information and rekindled relationships are powerful tools for change. Despite the challenges,

efforts like the Stewardship Index *must* succeed. Moving toward sustainability means understanding what sustainability looks like on the ground in the form of the actual impacts on people, planet, and profit. With that knowledge in hand, we can generate a new cycle of innovation in the way we grow and process food. The fears are real (and are being addressed in a variety of robust dialogues the Index is conducting), but the opportunity is great as well. Information from the Index can help the entire supply chain reduce input costs, improve soil health, and increase the confidence consumers have in the foods they eat.

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### **Get Involved**

Development of the Stewardship Index for Specialty Crops is an open process that is open to the participation of anyone interested. You can join a Metric Review Committee or get more information at [www.stewardshipindex.org](http://www.stewardshipindex.org).

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A first effect of measuring actual stewardship performance of the specialty crop supply chain may be the uncovering of uncomfortable information. We might learn that we are not as sustainable as we need to be. As troubling as that might be, it is critical data to quicken the pace of innovation in the farming and processing of the fruits and vegetables we all need. And that is good news indeed. 