The Stewardship Index for Specialty Crops, Performance Metrics, and Getting to Sustainability

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Stewardship Index for Specialty Crops

Tools to measure the efficacy of sustainability practices throughout the specialty crops supply chain—from farm to plate

Stewardship Index for Specialty Crops

- Transparent **multi-stakeholder** initiative and process.
- Develop and maintain **open source** metrics to measure sustainability performance for specialty crops.
- **Outcome-focused** for growers to benchmark, compare, and communicate their own performance.
- **A common yardstick** for measuring sustainable outcomes over time, **not a standard**.
- Help all participants **implement and communicate** clearly about sustainability activities.

Stewardship Index Coordinating Council

Growers and Grower Trade Associations

- Community Alliance with Family Farmers
- Jacobs Farm / Del Cabo
- Farm Fresh Direct
- Georgia Fruit and Vegetable Association
- National Potato Council
- United Fresh Produce Association
- Western Growers Association

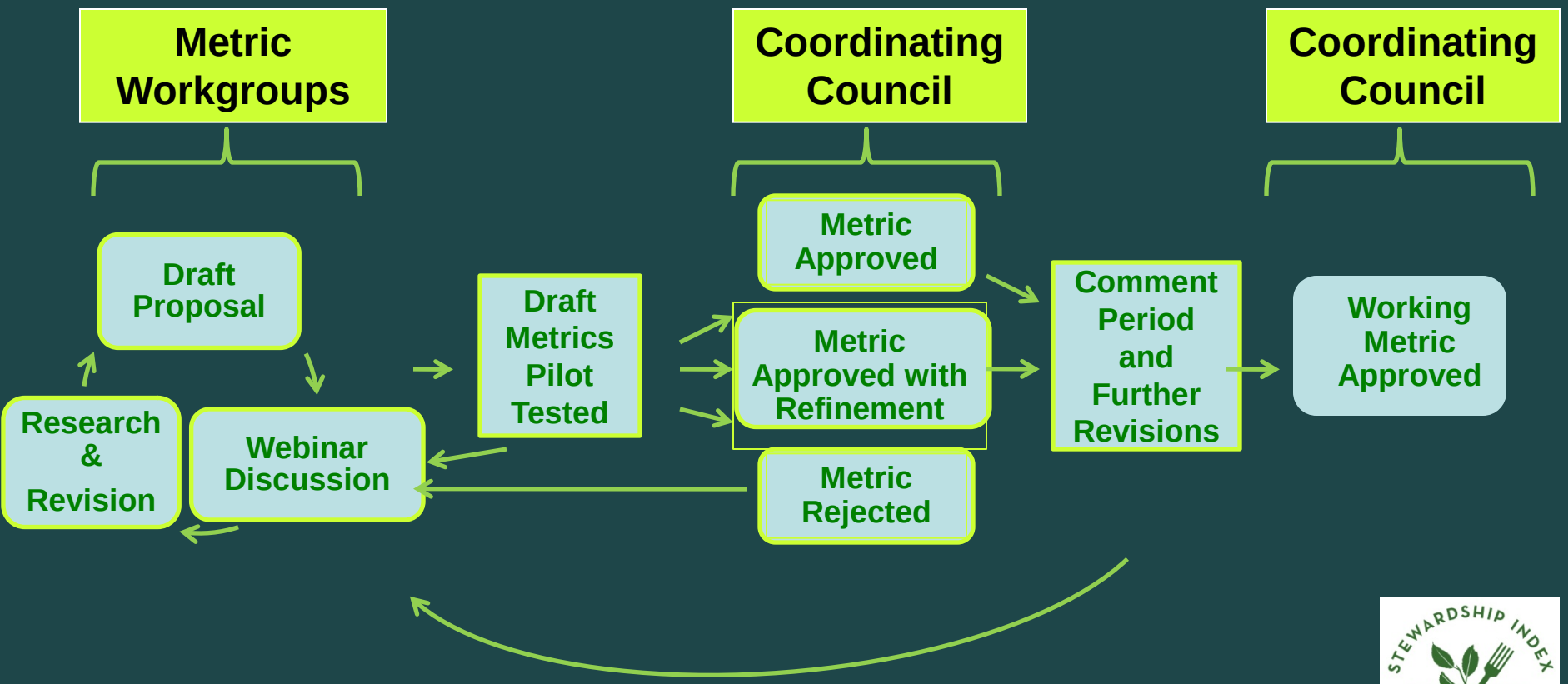
Environmental and Public Interest Groups

- American Farmland Trust
- The Freshwater Trust
- Natural Resources Defense Council
- The Nature Conservancy
- Washington State University
- Sustainable Conservation
- The Willamette Alliance
- World Wildlife Fund

Buyers and Trade Associations

- California Sustainable Winegrowing Alliance
- Campbell Soup
- Compass Group
- Del Monte Foods
- Markon Cooperative
- Produce Marketing Association
- Sodexo
- Unilever
- Wal-Mart

Metric Development Process



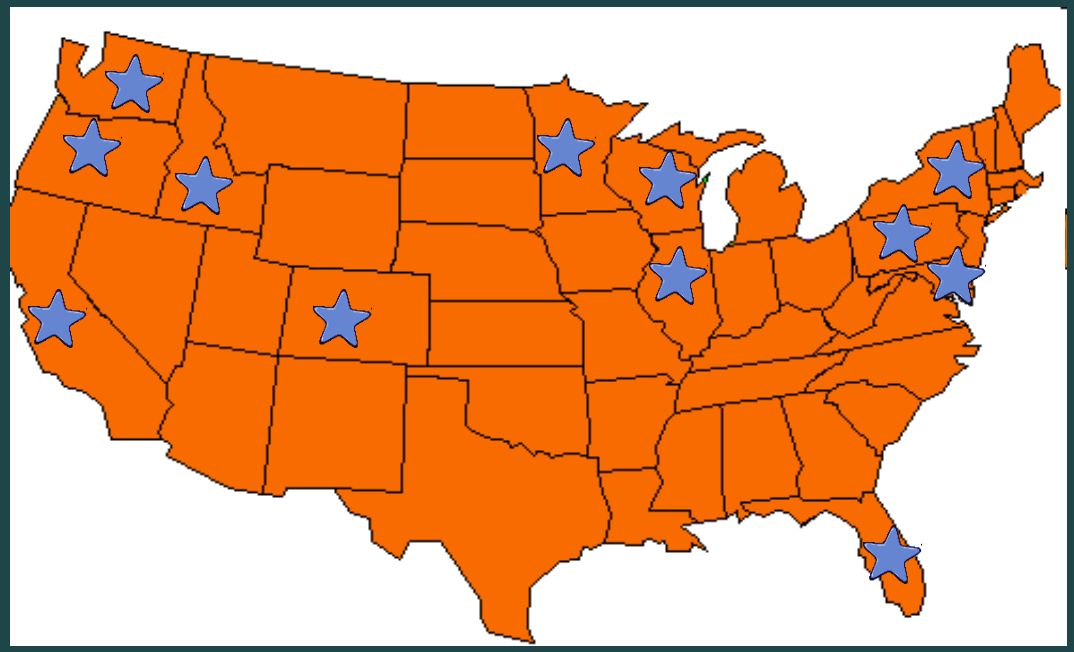
Pilot Participation

- Pilots conducted in 2010, 2012 & 2013 seasons
- 500+ growers in 23 crops in 12 states

- **Processing tomatoes**
- **Raisin grapes**
- **Broccoli**
- **Leafy Greens**
- **Onions**
- **Almonds**
- **Pome Fruit – Apples, Pears**
- **Fresh market tomatoes**
- **Peas**
- **Cabbage**
- **Green Beans**
- **Potatoes**
- **Walnuts**
- **Stone Fruit – Apricots, Cherries, Peaches**
- **Winegrapes**
- **Citrus**
- **Carrots**
- **Herbs (fresh)**
- **Sweet Corn**
- **Berries**

STEWARDSHIP INDEX FOR SPECIALTY CROPS

Pilot Participation - Geography



- California
- Idaho
- Wisconsin
- Pennsylvania
- Oregon
- Colorado
- Illinois
- Florida
- Washington
- Minnesota
- New York
- New Jersey

www.stewardshipindex.org

Efficiency is a win-win for growers and environment

Version 1.0 Working Metrics developed through multi-stakeholder collaborative process:

- Applied Water Use Efficiency
- Energy Use
- Nitrogen Use
- Phosphorus Use
- Soil Organic Matter

Three metrics in development:

- Biodiversity
- Greenhouse Gases
- Simple Irrigation Efficiency

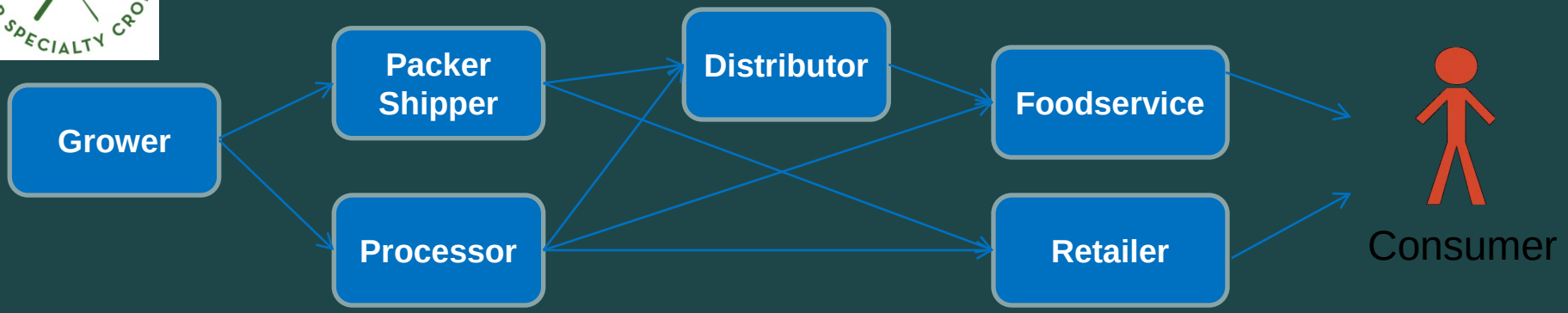
The SISC Metrics

Applied Water Use Efficiency	$\frac{\text{Acre-inches applied water}}{\text{Tons of product harvested}}$
Energy Use	$\frac{\text{Total BTU}}{\text{Ton of product harvested}}$
Nitrogen Use	$\frac{\text{Pounds N added to system}}{\text{Ton of product harvested}}$
Phosphorus Use	$\frac{\text{Pounds P added} - \text{Pounds P recommended}}{\text{Ton of product harvested}}$
Soil Organic Matter	$\frac{\text{Soil Organic Matter}}{\text{Soil Organic Matter Potential}}$

Metric Alignment

CA CIG Pilot Project Overview

Supply Chain Design – Value Examples



Value Drivers

Grower Value

Shipper Value

Retailer Value

- Use sustainability data for marketing purposes
- Maintain/improve market access
- Understand supply risks and potential supply disruption

- Benchmark water and nitrogen use
- Have metric results to easily answer buyer questionnaires
- Potential savings on input costs

Shared Value

- Understand supply risks and potential supply disruption
- Help tell ag sustainability story to buyers

SISC Metrics V1.0 – Lettuce Pilot Project

Nitrogen Use	$\frac{\text{Pounds N added to system}}{\text{Ton of product harvested}}$	

Notes:

- *N inputs include:*

$$N\ applied_{synthetic} + N\ applied_{organic} + N\ applied_{irrigation\ water} + N\ fixed_{leguminous\ crops}$$

- *Includes all fertilization events from the end of the previous harvest to the current harvest (non-cash cover crops applied to subsequent cash crop).*
- *For educational purposes, metric can also be presented on a per-acre basis as:* **Pounds N added to system /acre planted**

Applied Water Use Efficiency	$\frac{\text{Acre-inches applied water}}{\text{Tons of product harvested}}$	

Notes:

- *Applied water: Total ground and surface water applied.*
- *The same land area (an acre, a field of known size) should be used to quantify both acre-inches applied and tons of product harvested.*
- *Includes all irrigation events from the end of the previous harvest to the current harvest.*
- *For educational purposes, metric can also be presented on a per acre basis as:* **Acre-inches applied water/acre planted**

Draft Metric – Simple Irrigation Efficiency

$$\text{Simple Irrigation Efficiency} = \frac{\text{volume of applied irrigation water}}{\text{ETc (volume of water used through crop evaporation and transpiration}}$$

- Measures how efficiently irrigation water is used to meet a crop's water demand
- Controls for regional climatic context

Performance Metrics For Sustainability

- Value of performance metrics varies by user group
- Confidentiality of data and potential uses
- Value and Risk of Big Data
- Buyer and Corporate incentives in support of metrics

Questions?

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Stewardship Index detail - www.stewardship index.org

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