

Using Farm Metrics to Build Stronger, More Sustainable Supply Chains

A practical how-to guide for everyone in the specialty crop supply chain — from field to point of sale.

■ Measure to Manage

Data only has value when it drives on-farm decisions.

■ Continual Improvement

Progress over time matters more than a single snapshot.

■ Context is Everything

Numbers without regional context will be misunderstood.

■ Data Privacy First

Growers must feel safe before they can share.

■ Whole-Chain Cooperation

Real improvement requires every link working together.

GUIDE CONTENTS

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The supply chain model, core principles, and how to use this guide

■ Growers

Data collection, metric calculation, management use, and safe data sharing

■ Grower Groups & Associations

Aggregation, member support, peer comparisons, and reporting

■ Packer/Shippers & Processors

Bridging growers and buyers with responsible aggregation and context

■ Brands & Distributors

Requesting data, understanding context, and using trends responsibly

■ Buyers & Retailers

Interpreting data, multi-year analysis, and building real sustainability programs

Overview: How This Guide Works

Select your section to see your specific action steps, responsibilities, and best practices. Everyone in the chain should understand the full picture.

The supply chain data flow



Metric results and contextual information must move together — data without context loses its value and risks misuse.

■■ CRITICAL REMINDER FOR EVERYONE

A number without context is just a number. Before comparing, requesting, or acting on any metric results, every supply chain partner must understand the regional, climate, soil, and farming context behind the data. Skipping this step risks penalizing growers for factors outside their control and undermines the entire program.

Growers: Your How-To Guide

These metrics are primarily a tool for you — to help you manage your operation more effectively. Reporting to buyers comes second.

— PHASE 1: SET UP DATA COLLECTION —

1 Know what data each metric needs — before the season starts

Why: If you wait until after harvest, you'll be missing data. Set up your recordkeeping before the crop goes in the ground.

- Visit stewardshipindex.org and review the metric tech sheets for each metric you plan to use.
- Make a list of every data point required — water, energy, nutrients, soil tests.
- Add these data items to your existing crop recordkeeping procedures now.
- Note any data you currently don't collect — plan how you'll capture it this season.

2 Define your "farm management areas" — your geographic units of measurement

Why: A management area is the geographic unit where your cropping practices are the same. How you define these shapes what questions you can answer with your data.

- Decide on the right level of detail for your needs: individual fields, blocks within fields, or groups of fields.
- Each management area should have the same crop (or rotation), be in the same county/state, and ideally be contiguous.
- If your buyer requires a specific level of reporting, confirm that with them before the season starts.
- More granular data gives more powerful management insights — weigh that against the added recordkeeping effort.

3 Understand the reporting timeframe: harvest-to-harvest

Why: SISC uses a harvest-to-harvest timeframe, not a calendar year. This captures all inputs that went into a crop, even if applied in a prior calendar year.

- The reporting year is the year your crop is harvested — not planted or reported.
- Track water, energy, and nutrient applications from the day after your previous crop's last harvest through the last day of the current crop's harvest.
- If multiple crops are grown on the same ground in a year, each gets its own harvest-to-harvest interval.
- Inputs applied after the last harvest of the year get reported in the next reporting year.

4

Collect data in an electronic recordkeeping system

Why: Electronic records make it far easier to compare your performance year-over-year and enter data into the metric calculator.

- Use whatever system you have — even a well-organized spreadsheet works.
- Store data at the management area level you chose in Step 2.
- Capture data as it happens during the season — don't rely on memory after harvest.
- Electronic records also make it easier to respond to buyer data requests without starting from scratch.

— PHASE 2: CALCULATE & USE YOUR METRICS —

5

Use the SISC calculator (or an approved equivalent) to calculate your metrics

Why: Using a consistent, approved calculator ensures your results are comparable to other growers' and to your own results over time.

- Download the latest SISC Excel calculator from stewardshipindex.org/metric_calculator.php
- If you use third-party farm management software, check that it's SISC-approved before relying on its metric results for reporting.
- Calculate metrics after each harvest season.

6

Save your annual results so you can track trends over time

Why: A single year's data is just a snapshot. Three to five years of results reveal real trends — and real improvement.

- The SISC Excel calculator only holds one season at a time. Export and save each year's results separately.
- Create a running log that allows you to compare multiple years side-by-side for each management area.

7

Use your metrics to drive your farm management review

Why: This is the core value of metrics — not reporting to buyers. Use results to understand your operation more deeply and make better decisions.

- What practices changed this year? Why? What did they do to my results?
- Were there climate events, pest or disease pressures, or soil issues that affected outcomes?
- Where did I create efficiencies? Where is there room to improve?
- How do results compare across my different management areas and across seasons?
- Use your findings to inform your management plan for next season.

8

Before sharing any data: get a data sharing agreement in place

Why: Your data is yours. Any organization asking you to contribute metric results must have a clear privacy and security policy you agree to first.

Data ownership: Your metric results belong to you.

Anonymization: Your individual results will not be identifiable to other supply chain participants.

What data is being collected and for what specific purpose.

Who has access to your data and in what form.

What you'll get back: Ask for peer comparison reports so you can see how you're doing relative to others anonymously.

- An **opt-out mechanism** if you ever want to withdraw individual data.

9

Always share context alongside your metric results

Why: Without context, your results can be easily misunderstood — and you can be unfairly compared to growers operating under very different conditions.

- Climate type and water year (wet vs. dry)
- Soil type and irrigation water salinity
- Whether fields are new or established ground
- Cropping rotation (what was planted before)
- Planting date and harvest timeframe
- Any unusual events: pest pressure, disease outbreaks, under-harvested acreage due to market conditions
- Organic vs. conventional; field-grown vs. greenhouse

10

Stay in conversation with your packer/shipper about what buyers need

Why: Data requests from buyers should not surprise you mid-season. Ongoing dialogue means you're prepared and your data answers the actual questions being asked.

- Ask your FoodCo contact: what are your buyers asking about? What do they need to report?
- Make sure you understand the purpose behind data requests — not just what data is being asked for.
- Provide feedback if you feel a data request is unclear, unfair, or would put your data at risk.
- Treat your FoodCo as a partner in navigating buyer requirements.

GROWER QUICK-START CHECKLIST

- Reviewed metric tech sheets and know what data I need to collect
- Defined my farm management areas
- Updated recordkeeping system to capture required data elements
- Downloaded the SISC calculator or confirmed my software is approved
- Set up a way to save results year-over-year
- Reviewed (or requested) a data sharing agreement before submitting to any program
- Talked with my FoodCo about what buyers are asking for this year

Grower Groups & Associations: Your How-To Guide

You sit at a critical juncture: you understand both farming realities and supply chain demands. Your role is to aggregate and protect grower data while helping members improve.

— SETTING UP YOUR PROGRAM —

1 Build a data privacy and security policy before collecting anything

Why: Growers will only participate if they trust the process. A clear, written policy is the foundation of that trust.

- A clear statement that growers own their own metric results data
- How data will be anonymized and what "anonymous" means in practice
- Who within your organization and downstream can access the data, and in what form
- How data will be stored securely (access controls, storage security, retention periods)
- What growers will get in return — peer comparison reports, regional trend summaries, etc.
- An opt-out mechanism for individual data sharing

2 Define your aggregation approach — and document it

Why: How you group data determines what insights it can yield. Aggregating too broadly strips context; too narrowly risks identifying individual growers.

- Always aggregate by crop type first — never mix lettuce and almonds in the same analysis.
- Aggregate regionally: Salinas Valley lettuce should be reported separately from Yuma lettuce.
- Set a minimum number of data contributors before displaying any comparison (to protect anonymity).
- Deliver data in both aggregate form and disaggregated form (by region) so buyers can understand regional differences.
- Document all aggregation rules and share them with your grower members.

3

Create a standardized reporting format for your members

Why: Consistent data formats make aggregation and comparison valid. Without standardization, you're comparing apples and oranges.

- Develop a clear submission form specifying exactly what data is requested, in what units, and for what time period.
- Include step-by-step instructions and a FAQ so growers can complete submissions without hand-holding.
- Where possible, use a web-based submission tool. At minimum, provide a well-structured spreadsheet template.
- Make submission deadlines clear and give adequate lead time.

— SUPPORTING YOUR MEMBERS —

4

Provide peer comparison reports back to every participating grower

Why: Growers who contribute data deserve to benefit from it. Peer comparisons help them see where they stand and motivate improvement.

- Create annual reports showing each grower's results against anonymized peer results (same crop, same region).
- Include both single-year and multi-year trend data (3–5 year rolling average where data is available).
- Pair numeric results with relevant contextual notes — e.g., "This was a drought year in this region."
- Clearly explain any ranking or scoring methodology used.

5

Hold annual conversations with growers about their results

Why: Data on its own doesn't create improvement. Conversations do. Annual discussions help growers interpret results and identify what to do next.

- Review each member's data with them — don't just send a report. Listen to the story behind their numbers.
- Ask: What changed this year? What regional issues might explain these trends?
- When you spot regional trends (e.g., nitrogen levels rising in groundwater), flag these and discuss them openly.
- Connect growers who show opportunities for improvement with relevant external resources: NRCS, local Resource Conservation Districts, university extension programs.

6

Map SISC metrics to regulatory and industry reporting requirements

Why: One of the biggest complaints from growers is duplicative reporting. Show members how SISC data satisfies multiple needs at once.

- Review your region's regulatory requirements and identify where SISC metric data aligns.
- Create a simple "one data, many uses" map showing which data elements satisfy which reporting requirements.
- Share this map with members at the start of each season so they understand the full value of collecting data.

Packer/Shippers & Processors: Your How-To Guide

You are the critical bridge. You collect data from growers, aggregate it responsibly, communicate it to buyers, and make sure context travels with every number.

■ YOUR MOST IMPORTANT RESPONSIBILITY

Growers are counting on you to represent their data honestly and completely — including the context that explains it. If you send a number to a buyer without its context, you risk your growers being unfairly compared, penalized, or misunderstood. This damages trust and ultimately undermines the whole program.

— WORKING WITH YOUR GROWERS —

1 Tell your growers what buyers are asking — at the start of each season

Why: Growers need lead time to set up their recordkeeping. Surprising them mid-season or post-harvest with data requests means the data either doesn't exist or is low quality.

- Before the growing season, share with growers: exactly what metrics are being requested, by whom, at what level of geographic detail, and for what purpose.
- Help growers understand why the data is being collected — not just what. Buy-in increases when growers understand the goal.
- Create a standing annual process so growers know to expect this conversation every year.

2 Have a signed data sharing agreement with every grower before collecting data

Why: This protects growers — and it protects you. Clear agreements about ownership, access, use, and anonymization prevent misunderstandings.

Grower owns their own data

Anonymization: How data will be anonymized before going to buyers

Scope: What data will be collected and for what program

Security: How you will store and protect data

Feedback: What reports growers will receive in return

Opt-out provision for growers who wish to withdraw individual data

3

Incentivize and reward growers for participating

Why: Collecting and submitting data takes time and effort. If there's no benefit to growers, participation will be low and data quality will suffer.

- Provide peer comparison reports back to all participating growers — this is a direct, tangible benefit.
- Acknowledge growers who are improving and moving in the right direction, even if their absolute numbers aren't the best.
- Advocate to your buyers for supplier recognition programs that flow back as real rewards to growers showing improvement.

— AGGREGATING & REPORTING DATA —

4

Anonymize all individual grower data before aggregation and before sharing with buyers

Why: Buyers should never see individual grower results. The moment a buyer can identify a specific grower's data, trust in the whole program breaks down.

- Remove all personally identifying information from data before it goes into aggregate analysis.
- Set a minimum threshold for number of contributors before displaying any comparison chart or report.
- Only allow individual data to be identified if the grower has explicitly opted in.

5

Always pair aggregated data with its regional context — never send numbers alone

Why: A buyer who sees high water use numbers without knowing about a regional drought, or saline irrigation water, will draw the wrong conclusions.

- Regional climate type and whether this was a wet, dry, or drought year
- Dominant soil types and any salinity issues
- Proportion of organic vs. conventional in your supplier base
- Any unusual events: disease pressure, under-harvested acreage, extreme weather
- Cropping rotation notes that explain nutrient levels
- Deliver data in both aggregate form and disaggregated by region

6

Report multi-year trends, not single-year snapshots

Why: One bad water year doesn't mean a grower is performing poorly. One great year doesn't mean the problem is solved. Trends tell the real story.

- Once you have 3 years of data, report 3–5 year rolling averages alongside individual year results.
- Show year-over-year trends visually — a chart communicates trajectory far better than a table.
- Clearly state to buyers: "This data should not be used to evaluate individual suppliers until we have at least 3–5 years of baseline data."

7

Have annual conversations with your buyers about what you're seeing — and what it means

Why: Data reports without conversation lead to misinterpretation. You know your growers. Buyers don't. Your job is to translate.

- Hold an annual review meeting with your key buyers to walk through metric results in context.
- Tell the story behind the numbers: who is doing what, why, and how things are changing.
- Bring regional issues and trends to the buyer's attention — and propose collaborative solutions.
- Ask buyers to share what sustainability goals they're trying to hit so you can help your growers align.

Brands & Distributors: Your How-To Guide

You're asking your suppliers for data that took real work to collect. Use it responsibly: understand what it means before acting on it, and build partnerships that actually improve things on the ground.

— REQUESTING DATA THE RIGHT WAY —

1 Define what you actually need — and tell your suppliers clearly

Why: Vague requests create extra work for suppliers and produce data that doesn't answer your actual questions. Be specific up front.

Which metrics you need (water use efficiency, nitrogen, energy, etc.)

At what geographic level you need results (by region? by crop? aggregated across all suppliers?)

The time period you need covered

The purpose — internal reporting, consumer communication, regulatory compliance, buying decisions

What format you need results in

- Share this definition with your packer/shipper contacts well ahead of the season.

2 Build your sustainability team's knowledge of farming — genuinely

Why: If the person analyzing and acting on metric data doesn't understand how farming works, they will misinterpret results. The consequences for growers can be severe and unfair.

- Have sustainability staff spend time on farms in each of the key regions you source from — at minimum once per year.
- Build a working vocabulary of key contextual factors: climate type, soil salinity, crop rotation, leaching requirements, harvest timing.
- Approach farm visits with genuine curiosity. Listen to what growers are dealing with.
- Build relationships — not just transactions — with your supply chain partners.

— USING DATA RESPONSIBLY —

3

Never compare suppliers without accounting for regional context

Why: A supplier sourcing from a desert region will always show higher water use than one in a coastal region — even if the desert grower is doing everything right.

- Only compare the same crop to the same crop
- Compare within the same geographic region or explicitly account for regional differences
- Compare the same cropping practices (organic vs. conventional, field-grown vs. greenhouse)
- Ask your suppliers to explain the contextual factors behind their numbers

4

Use 3–5 year rolling averages — never make decisions based on a single year

Why: Annual variation in climate, pest pressure, and market conditions can make any single year's results unrepresentative. Trends over time are what matter.

- For the first few years of data collection, treat results as baseline-building only — not evaluation.
- Once 3 years of data are available, use rolling averages as your primary reference point.
- Always look at year-over-year trends alongside the rolling average to catch inflection points.
- When in doubt, ask your packer/shipper to explain what happened in any given year before drawing conclusions.

5

Require that aggregated data is delivered in disaggregated regional form

Why: Highly aggregated data can hide regional issues and improvements. Regional data lets you spot real trends and ask real questions.

- Ask your packer/shippers to report results by region and crop type — not just as a single aggregate number.
- When you receive regional data, ask for the context that explains it.
- Use regional data to identify where your supply chain faces the greatest resource stewardship challenges.

6

Provide feedback to your suppliers — and reward improvement

Why: One of growers' biggest frustrations with sustainability programs is that data goes up the chain but nothing comes back down.

- Share anonymous peer comparison data with your packer/shipper suppliers so they can see how they're performing relative to peers.
- Acknowledge suppliers who are making measurable progress — even if their absolute numbers aren't the best.
- Recognize suppliers who invest in helping their growers improve.
- If you build a supplier recognition program, base it on all the guidelines in this document — not just a single metric or a single year.

■ ON BUYING DECISIONS BASED ON METRICS

If you are considering using metric results to inform buying decisions: build at least 3–5 years of baseline data first, then allow a further period of tracked improvement before acting. Give suppliers advance notice of any performance thresholds — they need time to adapt. Only use data you're confident is accurate and has been evaluated in context.

Buyers & Retailers: Your How-To Guide

You have significant influence in this supply chain. Use it to build genuine sustainability programs — not just to check a box.

— GETTING STARTED —

1 Invest in agricultural literacy for your sustainability and buying teams

Why: You are asking for highly technical, context-dependent on-farm data. The people who act on that data need to understand what they're looking at.

- Create formal onboarding for sustainability and buying staff covering crop production fundamentals, key contextual factors, and how these affect metric results.
- Organize annual farm visits for relevant staff across your key sourcing regions.
- Build ongoing relationships with key supply chain contacts — not just data exchanges.
- Treat every data conversation with a supplier as an opportunity to learn, not just to extract information.

2 Be clear about what you're asking for and why — before you ask

Why: Vague or overly broad sustainability surveys create enormous burden across your supply chain. Clear, purposeful requests get better data and build trust.

- Define which metrics you need, at what scale, for what specific purpose before approaching suppliers.
- Share your intent: Are you building a baseline? Communicating to consumers? Meeting a regulatory requirement?
- Coordinate your requests through established supply chain channels — don't bypass your direct suppliers to go straight to growers.

— INTERPRETING & ACTING ON DATA —

3

Always interpret metric results alongside their regional context

Why: This is the single most important rule for buyers. Data without context is nearly always misleading.

- Climate type & water year: drought years mean higher water use regardless of management quality
- Soil type: sandy or saline soils require more water and different nutrient management
- Irrigation water salinity: growers must apply extra water to leach salts — this shows up as higher water use
- Crop rotation: prior crops affect current season nutrient needs
- Market-driven under-harvest: inputs for unharvested acreage must still be reported — buyer decisions can inflate a grower's metrics

Context Factor	Why It Matters for Metric Interpretation
Climate type & water year	Drought years mean higher water use regardless of management quality
Soil type	Sandy or saline soils require more water and different nutrient management
Irrigation water salinity	Growers must apply extra water to leach salts — shows up as higher water use
Crop rotation	Prior crops affect current season nutrient needs; nitrogen "credits" reduce fertilizer needs
Organic vs. conventional	Different nutrient sources and application timing affect results
Market-driven under-harvest	Buyer order changes that cause unharvested acreage inflate grower metrics

4

Use 3–5 year rolling averages. Never act on a single year of data.

Why: Single-year data is too volatile — annual climate and market variation alone can create dramatic swings. Trends are what matter.

- Treat the first 3 years of data collection as baseline establishment only. Do not use this data to evaluate or rank suppliers.
- Once 3 years of data are available, use rolling averages as your primary decision-making tool.
- Re-evaluate and update your interpretation of trends as more data becomes available.
- Build "3–5 year rolling average" into any supplier sustainability program language — never reward or penalize based on single-year snapshots.

5

Have one-on-one conversations with suppliers about their data — annually

Why: Reports don't build supply chain resilience. Relationships do. Annual conversations are where you learn what's actually happening, what's improving, and where you can help.

- Acknowledge that you understand the story behind the numbers — then demonstrate that you do.
- Ask your suppliers: What are the biggest resource challenges in your growing regions right now?
- Share what sustainability goals you're trying to meet — so suppliers can help you get there.
- Explore how your own buying decisions (order changes, short-notice cancellations) affect the sustainability metrics your suppliers report.

— BUILDING A REAL SUSTAINABILITY PROGRAM —

6

Give back: provide peer comparison reports to your suppliers

Why: Suppliers who submit data deserve to benefit from it. Without feedback, participation drops and data quality suffers.

- Provide annual peer comparison reports showing supplier performance against anonymized peers (same crop type, same region).
- Include multi-year trend data alongside the current year so suppliers can see their trajectory.
- Clearly explain the methodology and assumptions behind any comparisons or rankings.

7

Reward improvement — not just absolute performance

Why: A supplier from a water-scarce desert region may never have the best water use numbers — even if they're doing extraordinary work.

- Design recognition programs that reward measurable year-over-year improvement, not just top rankings.
- Reward suppliers who invest in their own grower relationships and help growers improve.
- Use the story behind the data — gathered from one-on-one conversations — as much as the numbers themselves.
- Announce any performance standards well in advance — suppliers need time to adapt.

8

Use real, multi-year data as the foundation of your sustainability marketing

Why: Consumers are increasingly skeptical of sustainability claims. Real data from real supply chain partnerships builds credibility. Greenwashing does the opposite.

- Ground every sustainability story in verified, multi-year data — not projections or aspirations.
- Tell the honest story: what challenges exist, what is improving, what you and your supply chain partners are doing about it.
- Engage your supply chain partners in telling that story — it's stronger when growers and suppliers put their names to it.

BUYER / RETAILER PROGRAM READINESS CHECKLIST

- Sustainability staff have had training on crop production fundamentals and contextual factors
- Data requests are specific: which metrics, what scale, what time period, what purpose
- We receive data disaggregated by region and crop type — not just a single aggregate number
- We are using 3–5 year rolling averages, not single-year data, for any analysis
- We hold annual one-on-one conversations with our direct suppliers about their results and context
- We provide peer comparison feedback to our suppliers
- Our recognition/reward program accounts for improvement, not just absolute ranking
- Any buying decision based on metrics is backed by 3–5 years of baseline + improvement data