



crop



dairy



livestock



**Commercializing Sustainability
Economics & Learnings**
by Matt Gould, Co-Lead Sustainability
October 24th 2023

Agenda

- Demand for B2B ‘sustainability products’
- The additional costs of a more sustainable dairy supply chain.
- Our learnings from implementation.

Four Drivers of Demand For 'Sustainability Products'

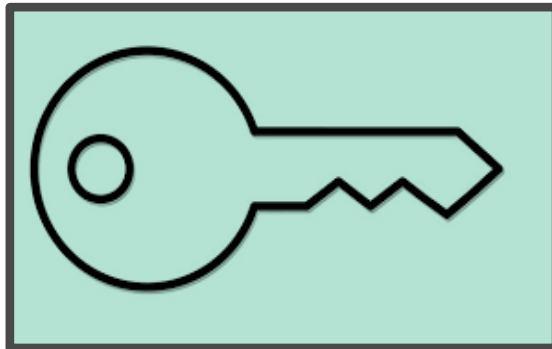
Consumer Demand



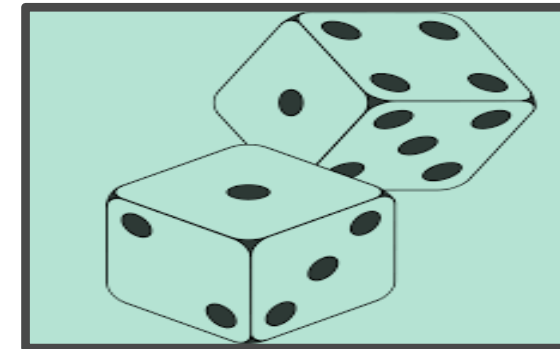
'ESG' Stakeholders



Market Access



Supply Chain Risks





Consumers Are Difficult to Pin Down

- *71% of consumers* have chosen a product in the last six months based on its sustainability credentials
- *80% of consumers* said they would be interested in buying products that come in refillable packaging to reduce their environmental impact
- *82% of consumers* across age demographics showed a willingness to pay more for sustainable packaging, up 4 points from 2022, and 8 points since 2021
- *90% of Gen-Z consumers* showed a willingness to pay more for sustainable packaging

Nearly half of respondents reported increased interest in eco-conscious habits over the past year, but remain wary of corporate sustainability claims

Source: Blue Yonder, March 28, 2023



What Risks Matter Most In Dairy Supply Chains?

Greenhouse Gas Reduction

Animal Welfare Improvements

Water Stewardship & Conservation

Regenerative Agriculture

Supply Chain Transparency

Biodiversity

Labor Protections



Source: Ever.Ag Analysis of 11 Different Corporate Agricultural Sustainability Programs

Ever.Ag Survey of Publicly Traded Food Companies

The Question:
What Risks Are Material To Your Business?

Source: Ever.Ag Analysis of Materiality Assessments from 27 Public Corporations

Category	Percent Total	Percent High Priority
Employee Rights	89%	37%
Climate	85%	70%
Product/Food Safety	81%	63%
Water	81%	33%
Governance	78%	44%
Labeling/Marketing/Transparency	70%	19%
Community Impact	70%	11%
Environmental Compliance	59%	33%
Sustainable Sourcing	59%	33%
Human Rights	56%	22%
Health and Nutrition	56%	15%
Sustainable Agriculture	52%	30%
Business Resiliency	48%	22%
Animal Welfare	48%	19%
Supply Chain Management	48%	15%
Waste	48%	4%
Packaging Sustainability	44%	26%
Energy	37%	11%
Biodiversity	37%	4%
Farmer's Rights	26%	15%
Food Access/Security	22%	7%
Public Policy	22%	4%
Data Privacy	22%	0%
Food Waste	19%	7%
Women's Rights	19%	0%

Ever.Ag Survey of Publicly Traded Food Companies

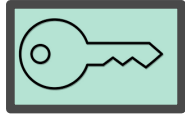
Areas Where Dairy Has Opportunity to De-Risk Customers:

12 of Top-25 Risks

Eight of Top-10 “High Priority” Risks

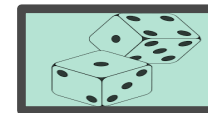
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Sustainable Sourcing	59%	33%
Human Rights	56%	22%
Sustainable Agriculture	52%	30%
Animal Welfare	48%	19%
Supply Chain Management	48%	15%
Packaging Sustainability	44%	26%
Biodiversity	37%	4%
Public Policy	22%	4%
Women's Rights	19%	0%

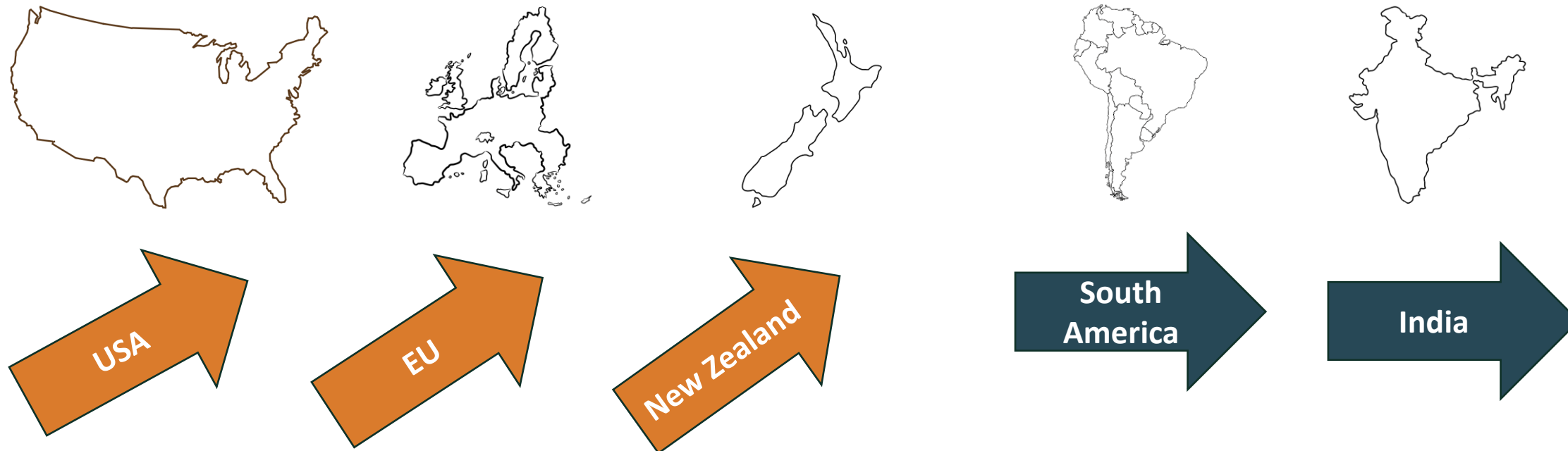


Sustainability is Driving Market Access

- Europe Parliament creates law to impose CO2 emissions costs on imports of steel, cement, fertilizers, aluminum, and electricity. **December 2022**
- U.S. Supreme Court upholds California's Proposition 12 Ban on gestation crates opening the door for other sustainability restrictions. **May 2023**
- The Netherlands receives approval for a €1.47 billion scheme to remove 30% of dairy cows in response to nitrogen pollution of waterways. **May 2023**
- Ireland proposes cap on cow numbers as part of 2030 Food Vision Strategy and incentives to reduce 200,000 cows. **June 2023**
- New York City bans foie gras for 'ethical' reasons and ban is upheld by court. **August 2023**
- Nestle and Mars begins ranking suppliers' plans to reduce CO2e emissions over price as part of strategic procurement process. **Q2 2023**



Growing Supply Chain Risk: 2023-2032



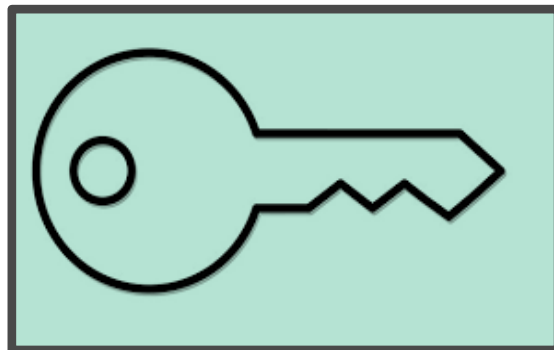
- We expect most key dairy regions to experience rising regulatory pressure, including reduced access to farming.
- Europe is already imposing supply constraints, the U.S. is at risk of greater supply constraints, and New Zealand will be taking action to reduce its footprint on water and CO₂e.

What Does a B2B 'Sustainability Product' Need to Address?

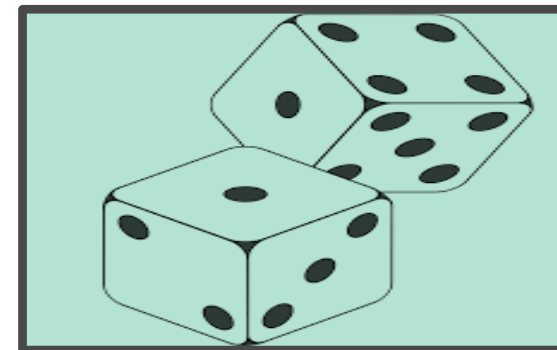
'ESG' Stakeholders



Market Access



Supply Chain Risks

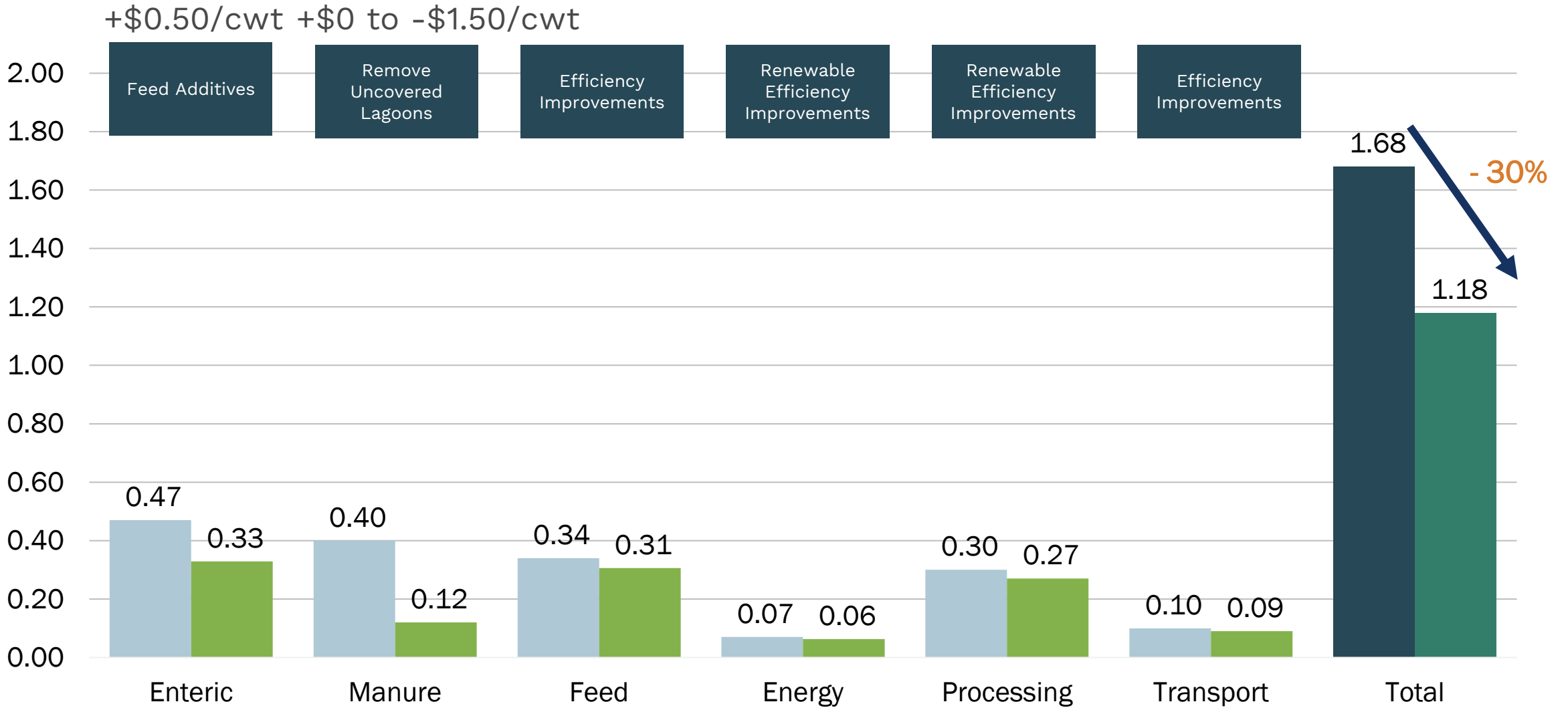


Taking The Next Step For Your Organization: Commercialization

- **Your customer has a need that they are willing to pay for:**
 - Today, the need is primarily in the form of 2025 and 2030 goals around carbon and regenerative agriculture goals.
 - Thank you to the work from the DSF, SAI, and GDP, we now have a ‘definition of sustainability’.
 - Many customers have funding available – important to have a ‘Good’, ‘Better,’ ‘Best’ offering.
- **Supplier has a product that meets that need & can provide it at a price point that the customer can afford (where industry is largely at today).**
 - Most of the first sets of programs were not designed to scale.
 - Mass Balance programs

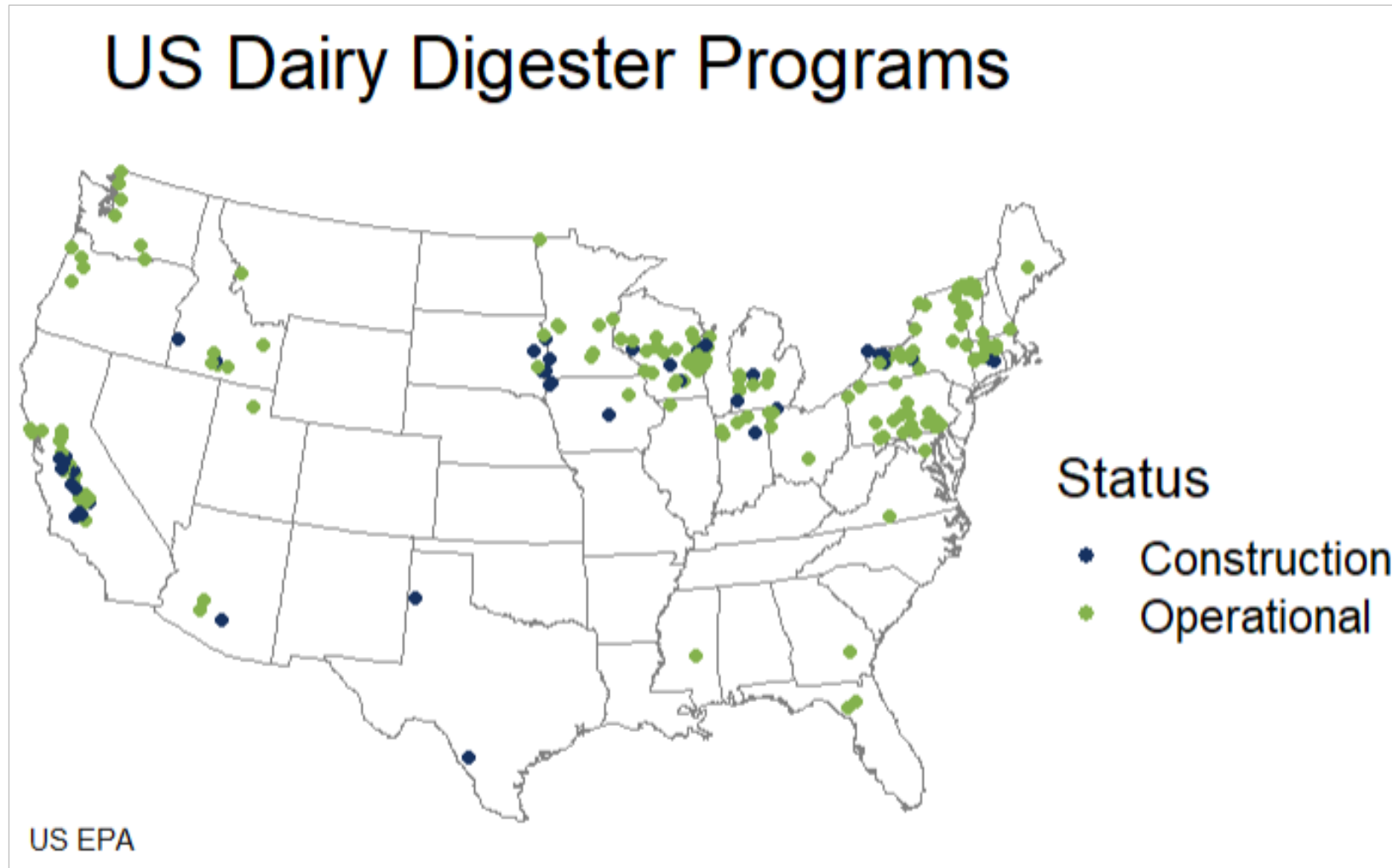
The Dollars and Cents of Sustainability

~30% Carbon Reduction Possible w/ Today's Technology.



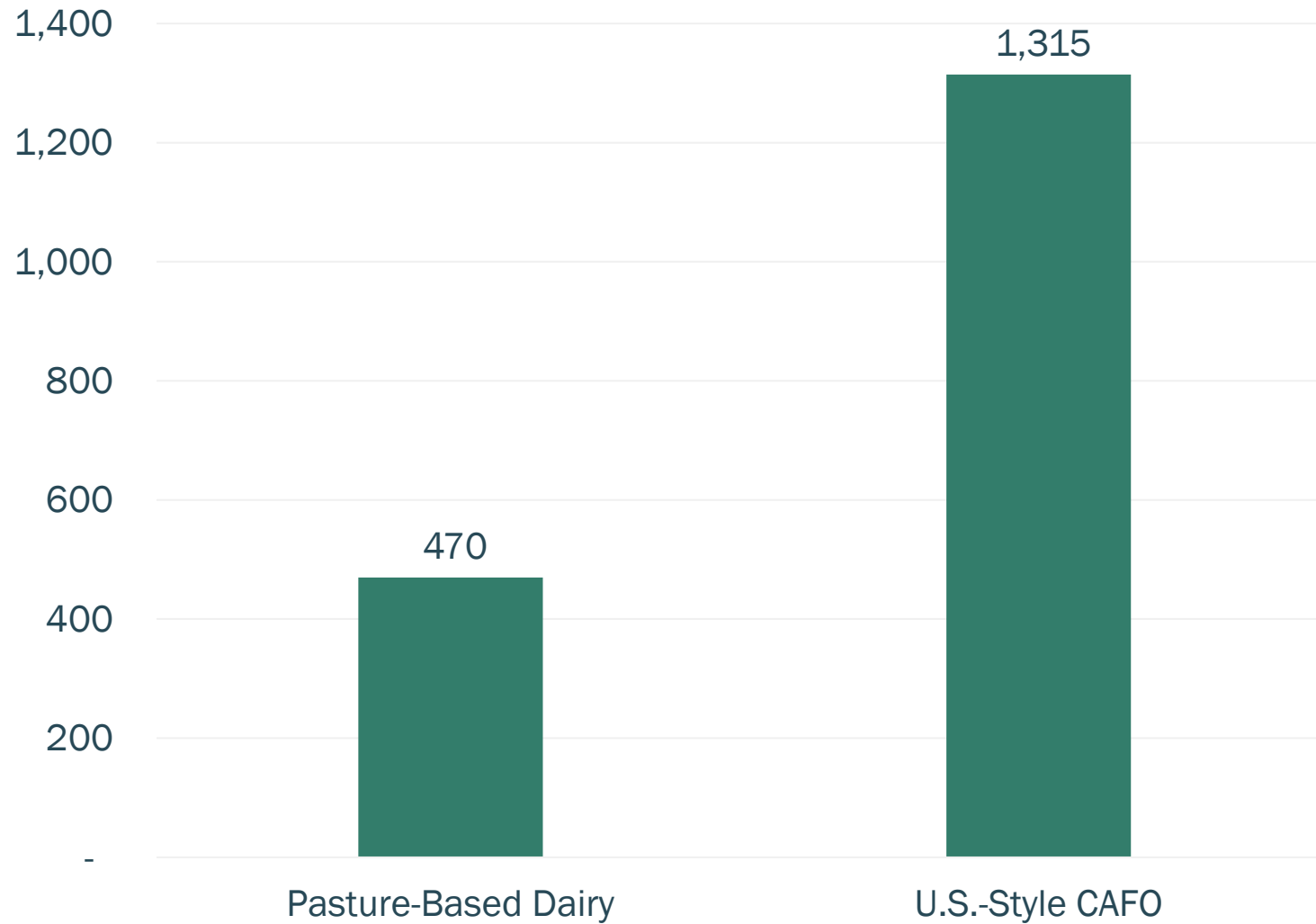
Estimates of the makeup of carbon footprint (CO2e/KG of Milk) KG CO2e/KG of FPCM Milk and Ever.Ag estimates

Economics of Methane-Reducing Manure Systems



- 20-year contracts are Adding \$100-\$200/cow/year in profitability.
- After a digester is installed, footprints of 0.8-1.0 kgCO₂/KG of Milk.
- Digesters do not start to become economical until farms with at least 1,000 cows (~2/3 of U.S milk supply)

Impact of Feed Additives



- Cost is believed to be ~\$110/cow/year (\$0.48/cwt).
- U.S. style dairy (CAFO) may feed around double the quantity of additive than a pasture-based system and achieve approximately double the enteric reduction.
- Industry is rapidly evolving and innovating. Currently, feed additives are cost-prohibitive in most cases.

Sustainability Economics of Beef on Dairy



- 90% of dairy calves are heifers (sexed semen) – 60% are beef crosses.
- Dairy/Beef crosses mature 3 months earlier than traditional beef breeds, which is generating carbon reductions for major beef buyers resulting in \$190 premium over dairy bull calves.
- Beef on dairy is currently creating an additional \$114 in profitability per cow per year.

Learnings:

What We Have Learned:

1) **Manufacturers need to propose solutions to customers.**

Brands do not know farming well. Most sustainability programs designed by brands have hurdles in achieving adoption by farmers because of implementation issues.

2) **Segregation is not scale-able. But, “mass balance” is.**

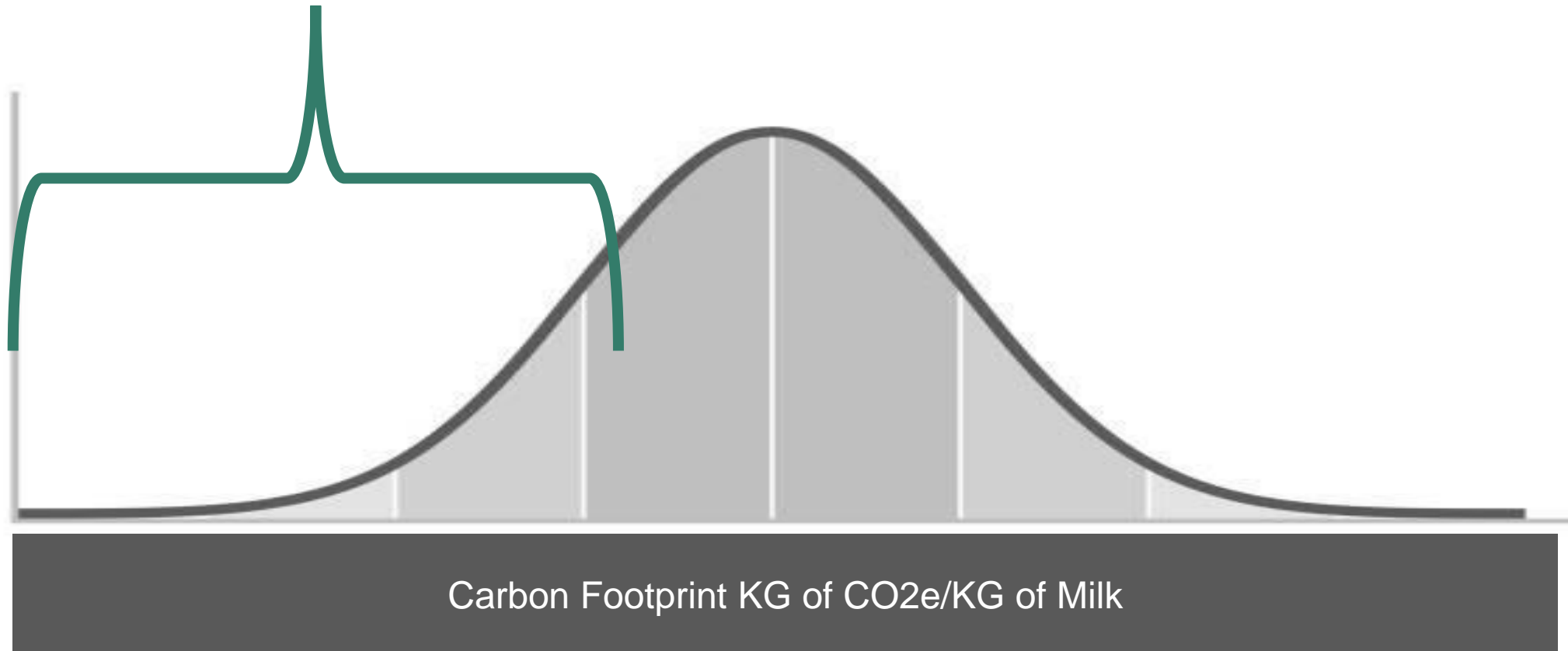
Programs that require milk to be separated are too expensive and rigid.

3) **Brands need simple solutions at Good, Better, Best price points.**

Brands are not dairy experts, but they do need to achieve their climate goals. Customers need our industry to provide them easy-to-understand solutions that comply with their reporting standards.

Learnings: Attractive Footprints Are Marketable Today.

~25% Have Footprints That Are Desirable
by Brands Today!
<1.00 KG of CO₂e/KG of Milk



Closing Summary

- What is driving demand for sustainability products?
 - ESG Stakeholders
 - Market Access
 - Supply Chain Risk
- Sustainability Math
 - Possible to reduce carbon footprint by ~30% based on technologies available today.
 - Reductions in carbon footprints will cost at least \$0.50/cwt
- Learnings: The Three 'S's'
 - Specification.
 - Supported by economics.
 - Simplicity.