

American Agricultural Law Association, 2019 Annual Educational Symposium
Bock Agricultural Law & Policy Program Panel
In Search of Sustainable Food: Perspectives from the Supply Chain
Outline (August 2019)

Abstract:

Consumer demand increasingly pushes the food supply chain to improve the sustainability of food. Sustainability begins at the farm level where the pressures from consumers can result in farmers adjusting their practices and operations, efforts that can increase risk, cost and management complexity. Agribusiness companies in the supply chain, including food companies, retailers and input suppliers, all manage complex efforts to source sustainably-produced commodities; efforts include assuring the supply chain, including the consumer, that they have achieved this meaningfully. This panel will review sustainability issues within the supply chain, offer perspectives, and raise questions for practitioners and academics.

I. Introduction

The topic of sustainable food production and systems continues to gain prominence and importance as work stretches across multiple points of concern from environmental to health.¹ It is a challenging topic for discussion, let alone effective implementation, given lack of knowledge and understanding at all levels of a food system, goals that can be conflicting and the need for trade-offs. Additional pressure on this discussion is being applied by the intensifying challenges posed by climate change. The discussion by this panel will involve perspectives from within the U.S. food system, reviewing the issues as they arise in practice and as efforts are implemented to achieve sustainability. Intended as food for thought, the discussion seeks to help inform research, practice, policy and negotiations.

II. Understanding the Demand for Sustainable Supply Chains

A. Driven by Voluntary Commitments, Consumers or Policy and Regulation

- Major food companies at work on this; an effort to employ data, science and technology to “govern their supply chains” as they seek to address challenges that are environmental, political and commercial.²

¹ See e.g., Béné, Christophe, Peter Oosterveer, Lea Lamotte, Inge D. Brouwer, Stef de Haan, Steve D. Prager, Elise F. Talsma, and Colin K. Khoury. “When food systems meet sustainability—Current narratives and implications for actions.” *World Development* 113 (2019): 116-130.

² See e.g., Freidberg, Susanne. “Big food and little data: the slow harvest of corporate food supply chain sustainability initiatives.” *Annals of the American Association of Geographers* 107, no. 6 (2017): 1389-1406.

- International in scope, questions and concerns are prevalent about the role of the United States and whether it is keeping pace.³
- For example, Nielsen found 48% of U.S. consumers would change consumption habits to reduce environmental impacts; sustainable consumer good spending topped \$128 billion in 2018.⁴
- Expanding direct-to-consumer sales (e.g., farmers' markets); growth and impact of social media, internet and other technology, especially among the large group of younger consumers (e.g., Millennials).⁵
- Policy and regulatory drivers; research investments.⁶

B. Costs and Benefits; Differentiation; Supply Chain Risk Mitigation

- Food supply chains are multi-tiered, often with many actors between producer and retailer or consumer; challenging when much of sustainability achievement or failure is far removed from buyer.⁷
- Keeping in mind the complexity of modern food supply chains and lack of transparency, working across many actors on an often-global scale but also having to work within local communities and with localized issues.⁸
- Complexity added where sustainability goals are consumer driven, assessments are by companies and experts but have to be implemented and followed by individual farmers on an international scale.⁹
- Concept of the food value chain.¹⁰

³ See e.g., Miles, Albie, Marcia S. DeLonge, and Liz Carlisle. "Triggering a positive research and policy feedback cycle to support a transition to agroecology and sustainable food systems." *Agroecology and Sustainable Food Systems* 41, no. 7 (2017): 855-879.

⁴ See, Nielsen.com, "Was 2018 the Year of the Influential Sustainable Consumer?";

<https://www.nielsen.com/us/en/insights/article/2018/was-2018-the-year-of-the-influential-sustainable-consumer/>.

⁵ See e.g., Campbell, Jeffrey M., and Marianne C. Bickle. "Bridging the Gap between Millennial Consumers, Social Media, and Agricultural Branding Programs: A Qualitative Assessment." *Journal of International Food & Agribusiness Marketing* 29, no. 4 (2017): 346-365.

⁶ See, 7 U.S.C. §3103; USDA-NIFA, <https://nifa.usda.gov/program/sustainable-agriculture-program>; Sustainable Agriculture Research & Education (SARE), <https://www.sare.org/>.

⁷ See e.g., Wilhelm, Miriam M., Constantin Blome, Vikram Bhakoo, and Antony Paulraj. "Sustainability in multi-tier supply chains: Understanding the double agency role of the first-tier supplier." *Journal of Operations Management* 41 (2016): 42-60.

⁸ See e.g., Freidberg, supra note 2; Endres, A. Bryan, Lisa Schlessinger, and Renata Endres. "Embracing the Sharing Economy and Preparing for Risk: The CSA Experience." *Drake J. Agric. L.* 23 (2018): 147.

⁹ See e.g., Alrøe, Hugo, Marion Sautier, Katharine Legun, Jay Whitehead, Egon Noe, Henrik Moller, and Jon Manhire. "Performance versus values in sustainability transformation of food systems." *Sustainability* 9, no. 3 (2017): 332.

¹⁰ See e.g., Diamond, Adam, Debra Tropp, James Barham, Michelle Frain Muldoon, Stacia Kiraly, and Patty Cantrell. *Food Value Chains: Creating Shared Value to Enhance Marketing Success*. U.S. Dept. of Agriculture,

III. Defining Sustainability at the Farm Level; the Search for Rules of the Road

A. *Defining Sustainability; Metrics, Benchmarking and Measurement or Assessment*

- Sustainability can have many definitions and understandings; has been historically focused on issues of production, such as degradation of resources needed for production; with multiple dimensions, the keys almost always incorporate:
 - Maintaining environmental integrity or viability, protecting and conserving natural resources (e.g., water, soil, biodiversity, etc.) and the environment necessary for production and upon which economic and social components depend;
 - Economic issues for both producers and consumers; and
 - Social issues such as health, nutrition, equity and human welfare.
 - Temporal issues that achieving sustainability in the near-term should not come at the expense of sustainability in the future or over the long-term.¹¹
- Standards and metrics are not considered the same, although they overlap and interconnect; they have been the focus of significant research and work, especially by the food companies.¹²
 - Standards: typically qualitative, compliance-driven using best practices; help identify and manage risks, strengthen image and brand; at best are developed using science that can help provide legitimacy and reduce political challenges.
 - Metrics: quantitative performance indicators that focus on outcomes and progress; measure and drive continuous improvement with incentives tied to them; provide for auditing, verification and certification.
- One example of science-based metrics using detailed agronomic data from Field to Market.¹³
- Other Definitional Issues with Producers.

Agricultural Marketing Service, May 2014 (<http://dx.doi.org/10.9752/MS141.05-2014>) available online, <https://www.ams.usda.gov/sites/default/files/media/Food%20Value%20Chains%20Creating%20Shared%20Value%20to%20Enhance%20Marketing%20Success.pdf>.

¹¹ See e.g., Bene et al., supra note 1.

¹² Friedberg, supra note 2, at 1391-92.

¹³ Field-to-Market, Sustainability Metrics, <https://fieldtomarket.org/our-program/sustainability-metrics/>.

- New Concepts such as Regenerative Agriculture; largely a focus on soil health; and carbon farming.¹⁴
- Priority for Water Stewardship; Valuing Water Stewardship Activities, an example.¹⁵
- Labor and other issues: connections between producers and consumers; issues of ethics, knowledge, culture, social justice and equity.¹⁶

B. Developing Protocols and Standards for the Supply Chain

- Differences between approaches based on performance and those based on values:
 - Performance-based: a focus on measurement; establishing targets and benchmarks to motivate transformation.
 - Values-based: focus on communication and mediating sustainability with coordinated and cooperative action to achieve transformation.¹⁷
- One important difference is between contract growers that are meeting certain specifications under the contract versus commodity growers in longer and more complex supply chains; the latter requires a collaborative approach within supply chain to engage farmers.
- Example of Field to Market’s six-step process: (1) Request for new or revised metric; (2) review by committee; (3) technical working group to develop, including technical documentation; (4) submit for peer review and comment; (5) make available for public comment; and (6) implementation.¹⁸

C. Partnering with Industry on Sustainability

- Many organizations partnering with supply chains and companies to engage farmers in sustainability; include agricultural input retailers, Certified Crop

¹⁴ See e.g., Codur, Anne-Marie and J. Watston, “Climate smart or regenerative agriculture? Defining climate policies based on soil health.” *Global Development and Environmental Institute*, Tufts University, Policy Brief No. 9 (April 2018), <http://ase.tufts.edu/gdae/Pubs/climate/ClimatePolicyBrief9.pdf>. See also, <https://medium.com/circulateneeds/regenerative-agriculture-how-to-grow-food-for-a-healthy-planet-9a5f637c0f3e>.

¹⁵ Volumetric Water Benefit Accounting (VWBA): A Method For Implementing and Valuing Water Stewardship Activities, World Resources Institute, <https://wriorg.s3.amazonaws.com/s3fs-public/volumetric-water-benefit-accounting.pdf>.

¹⁶ See e.g., Miles et al., *supra* note 3.

¹⁷ See, Alrøe et al., *supra* note 10.

¹⁸ Field-to-Market, Metrics Standard Operating Procedure, http://fieldtomarket.org/media/2018/09/FTM_Metrics-Development-SOP-2018.pdf.

Advisors (CCA), land-grant Extension, local nongovernmental organizations (NGO), grain companies and elevators, producer organizations, and USDA.¹⁹

- Case Studies and Examples; Lessons Learned.²⁰

IV. Delivering Sustainability and Managing the Ever-Evolving Sustainable Supply Chain.

A. Branding and Messaging to Consumers and Other Stakeholders.

- Younger consumers and social media demands; disconnection from farm production.²¹
- Examples and lessons learned; feedback and adaptation.

B. Messaging and Developments in the Policy and Public Arenas.

- From the Farm Bill and local agricultural markets to food waste and international efforts at shaping policy and outcomes.²²
- The Farm Bill's conservation programs are the primary investment in addressing environmental/natural resource impacts from farming.²³
 - They present obstacles and opportunities to help farmers adopt sustainable practices and adapt.²⁴

¹⁹ See e.g., Field to Market example, <https://fieldtomarket.org/our-members/>; Danone, <https://www.danone.com/about-danone/sustainable-value-creation/our-company-goals.html>; National Sustainable Agriculture Coalition, <https://sustainableagriculture.net/about-us/>.

²⁰ See, Field to Market: projects directory, <https://fieldtomarket.org/our-program/fieldprint-projects-directory/>; case studies based on annual awards program: <https://fieldtomarket.org/our-program/case-studies/>; additional examples, <https://fieldtomarket.org/our-program/cross-sector-partnerships/>.

²¹ See e.g., Campbell and Bickle, *supra* note 5.

²² See e.g., National Sustainable Agriculture Coalition, NSAC's Blog, "A Closer Look at the 2018 Farm Bill: Local Agriculture Market Program," January 22, 2019, <http://sustainableagriculture.net/blog/2018-farm-bill-local-agriculture-market-program/>; Ellison, B. "The Farm Bill Looks to Tackle Food Loss and Waste." *farmdoc daily* (9):123, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, July 3, 2019, <https://farmdocdaily.illinois.edu/2019/07/the-farm-bill-looks-to-tackle-food-loss-and-waste.html>; G20 Insights, Policy Area: Food Security and Sustainable Agriculture, https://www.g20-insights.org/policy_area/food-security-and-sustainable-agriculture/.

²³ See e.g., Phelps, Jess R. "Conservation, Regionality, and the Farm Bill." *Me. L. Rev.* 71 (2018): 293; Coppess, Jonathan W. "A Perspective on Agricultural Policy in the Age of Nutrient Loss." *Drake J. Agric. L.* 23 (2018): 29; Coppess, Jonathan. "A Return to the Crossroads: Farming, Nutrient Loss, and Conservation." *UALR L. Rev.* 39 (2016): 351.

²⁴ See e.g., Doering, Otto. "Federal policies as incentives or disincentives to ecologically sustainable agricultural systems." In *Integrating Sustainable Agriculture, Ecology, and Environmental Policy*, pp. 21-36 (Routledge, 2018); Jordan, Anna L. "The Commercialization of Conservation: Using Economic Principles to Promote Sustainability." *Drake J. Agric. L.* 22 (2017): 383.

- Growing pressure on corporations produces pressure on policy and vice versa.²⁵
- Another source of pressures builds as we grapple with climate change.²⁶

C. *The Role(s) of Technology, Research and Data.*

- From smart machines and sensors delivering farm data for the potential for improving farm management and sustainable production.²⁷
- Emerging technologies and potential; will Blockchain help?²⁸
- Experiences in data management, working with producers.

V. Conclusion

Growing consumer pressures and increasing concerns about the impact of food production are pushing on all levels of the food supply chain to make continuing improvements to sustainability; climate change is adding further pressure, concern, urgency and challenge. This discussion featured real-world experiences from the U.S. food supply chain, raising issues and topics for further research and work. The information offers academics, practitioners and policymakers perspectives for consideration and further work. Ultimately, technology and policy will play key roles but achieving a sustainable food system will continue to require millions of localized decisions and practices with impacts aggregated across regions and on a global scale. The lessons that experience can teach will remain among the most valuable data points available.

²⁵ See e.g., Sustainable Food Policy Alliance, Issue, Environment, <https://foodpolicyalliance.org/issue/environment/>; Chkanikova, Olga, and Oksana Mont. "Corporate supply chain responsibility: drivers and barriers for sustainable food retailing." *Corporate Social Responsibility and Environmental Management* 22, no. 2 (2015): 65-82; Vorley, Bill. "The chains of agriculture: sustainability and the restructuring of agri-food markets." (2001), https://www.researchgate.net/profile/William_Vorley/publication/237534788_The_Chains_of_Agriculture_Sustainability_and_the_Restructuring_of_Agri-food_Markets/links/54a6e2220cf257a6360aaa1a.pdf.

²⁶ See e.g., Lehner, Peter H., and Nathan A. Rosenberg. "A Farm Bill to Help Farmers Weather Climate Change." *J. Food L. & Pol'y* 14 (2018): 39; Juliette Majo, "Climate change and a new agricultural system," Institute for Agriculture & Trade Policy, <https://www.iatp.org/climate-change-and-new-agricultural-system>. See also, Sustainable Food Policy Alliance, Climate Policy Principles, <https://foodpolicyalliance.org/news/sfpa-climate-policy-principles/>.

²⁷ See e.g., Wolfert, Sjaak, Lan Ge, Cor Verdouw, and Marc-Jeroen Bogaardt. "Big data in smart farming—a review." *Agricultural Systems* 153 (2017): 69-80, <https://www.sciencedirect.com/science/article/pii/S0308521X16303754>; Kamble, Sachin S., Angappa Gunasekaran, and Shradha A. Gawankar. "Achieving sustainable performance in a data-driven agriculture supply chain: A review for research and applications." *International Journal of Production Economics* (2019).

²⁸ See e.g., Saberi, Sara, Mahtab Kouhizadeh, Joseph Sarkis, and Lejia Shen. "Blockchain technology and its relationships to sustainable supply chain management." *International Journal of Production Research* 57, no. 7 (2019): 2117-2135.